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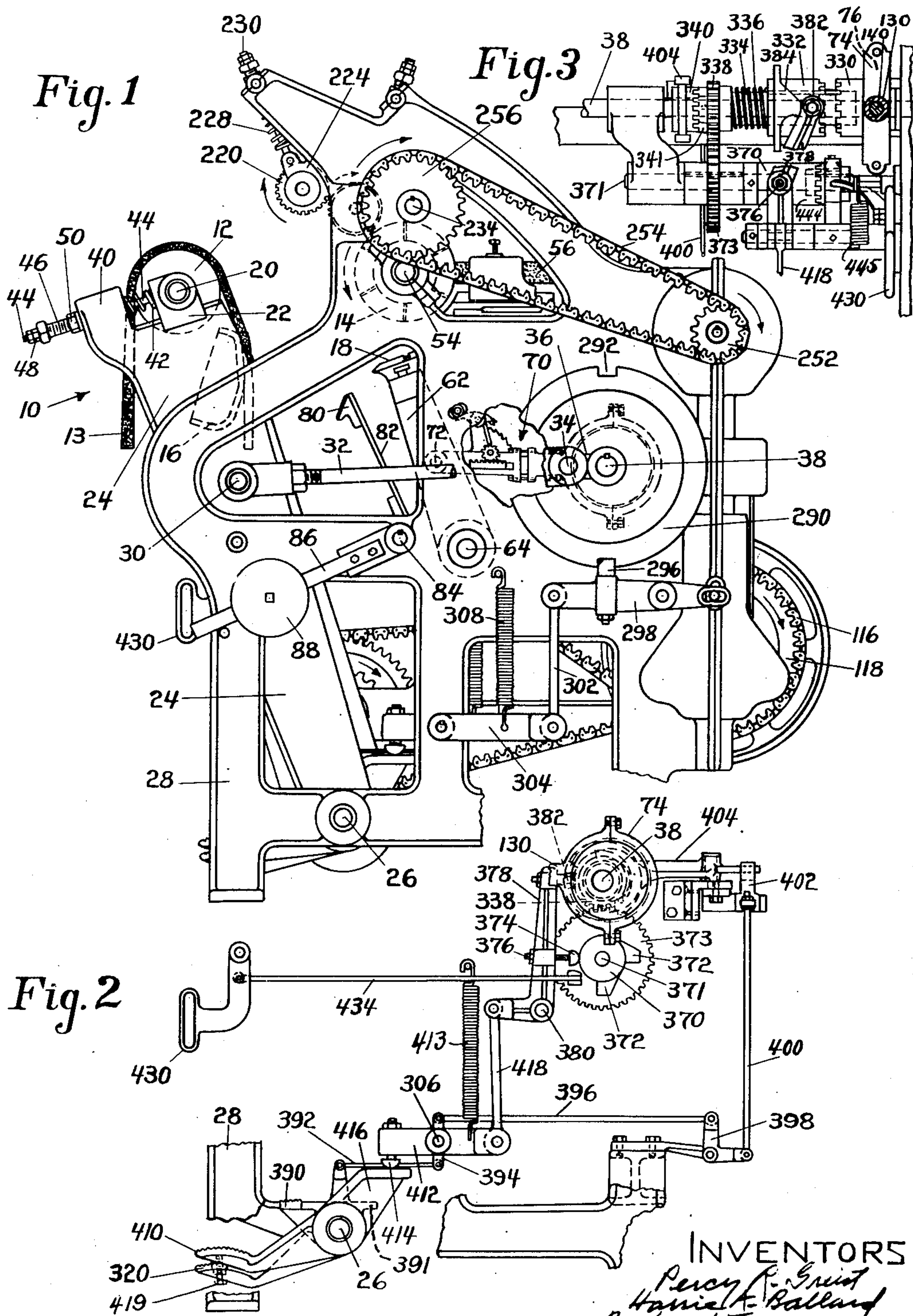
P. R. GREIST ET AL

1,908,342

MACHINE FOR OPERATING UPON HIDES, SKINS, AND LEATHER

Filed March 13, 1930

6 Sheets-Sheet 1



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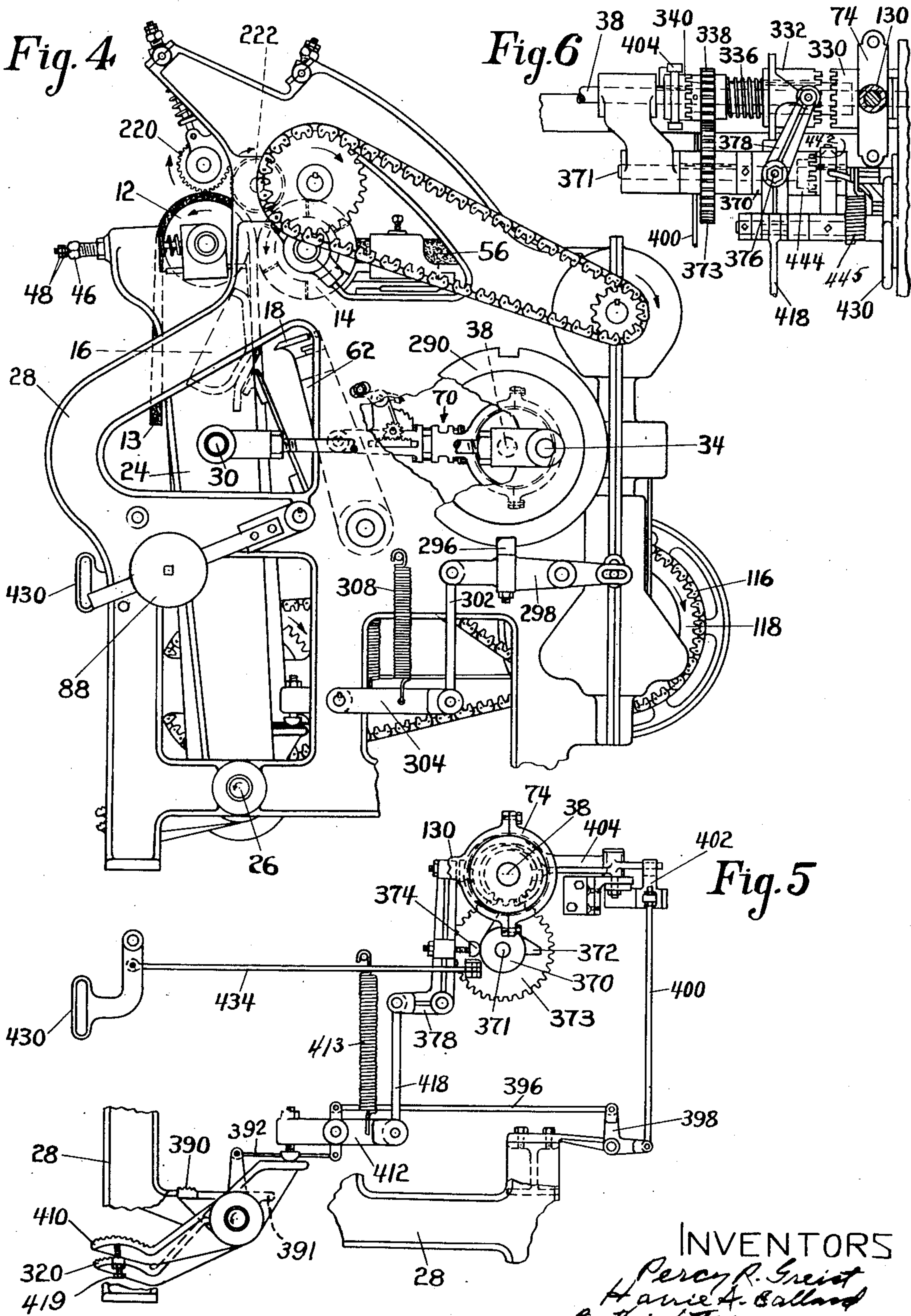
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6 Sheets-Sheet 2



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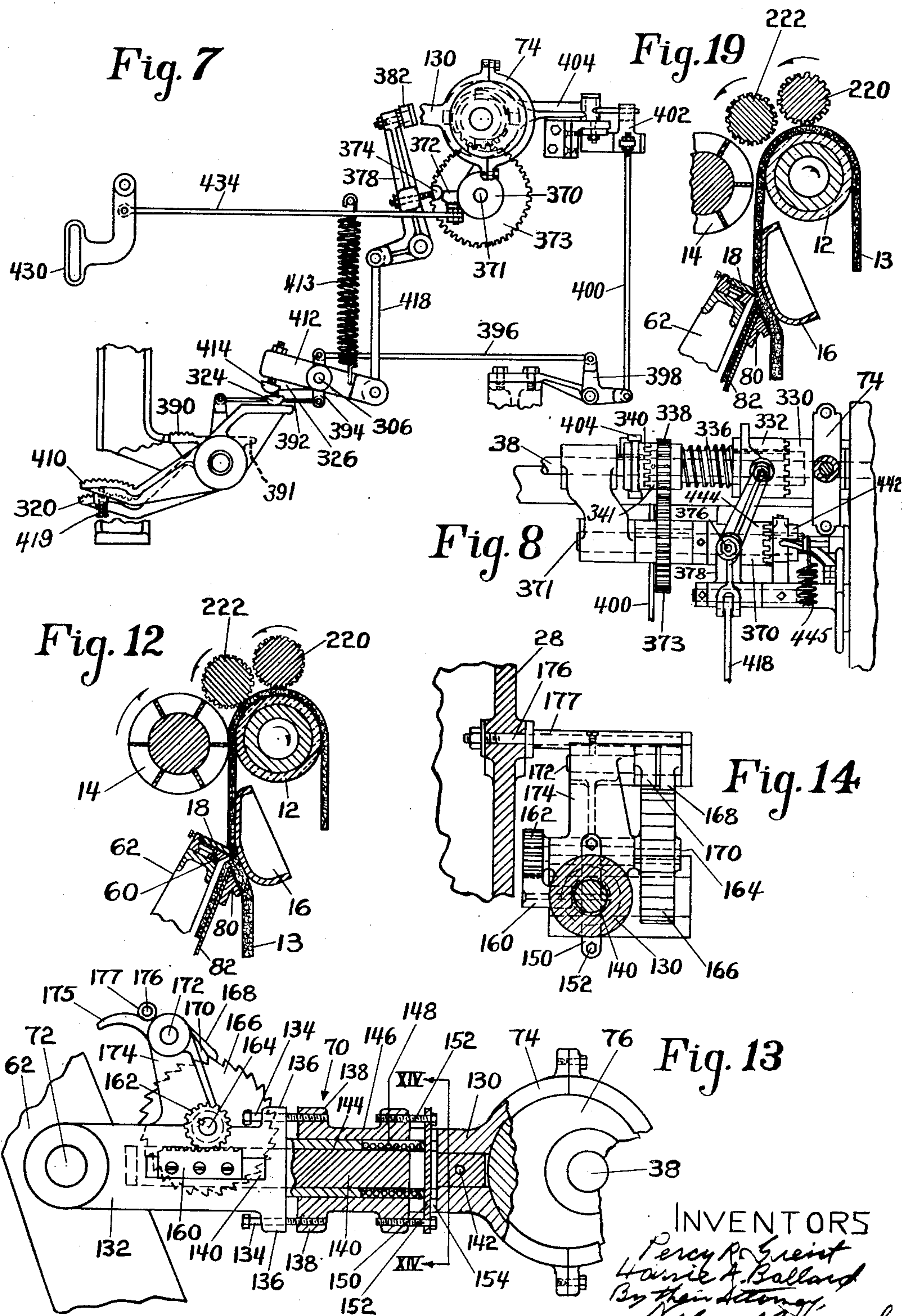
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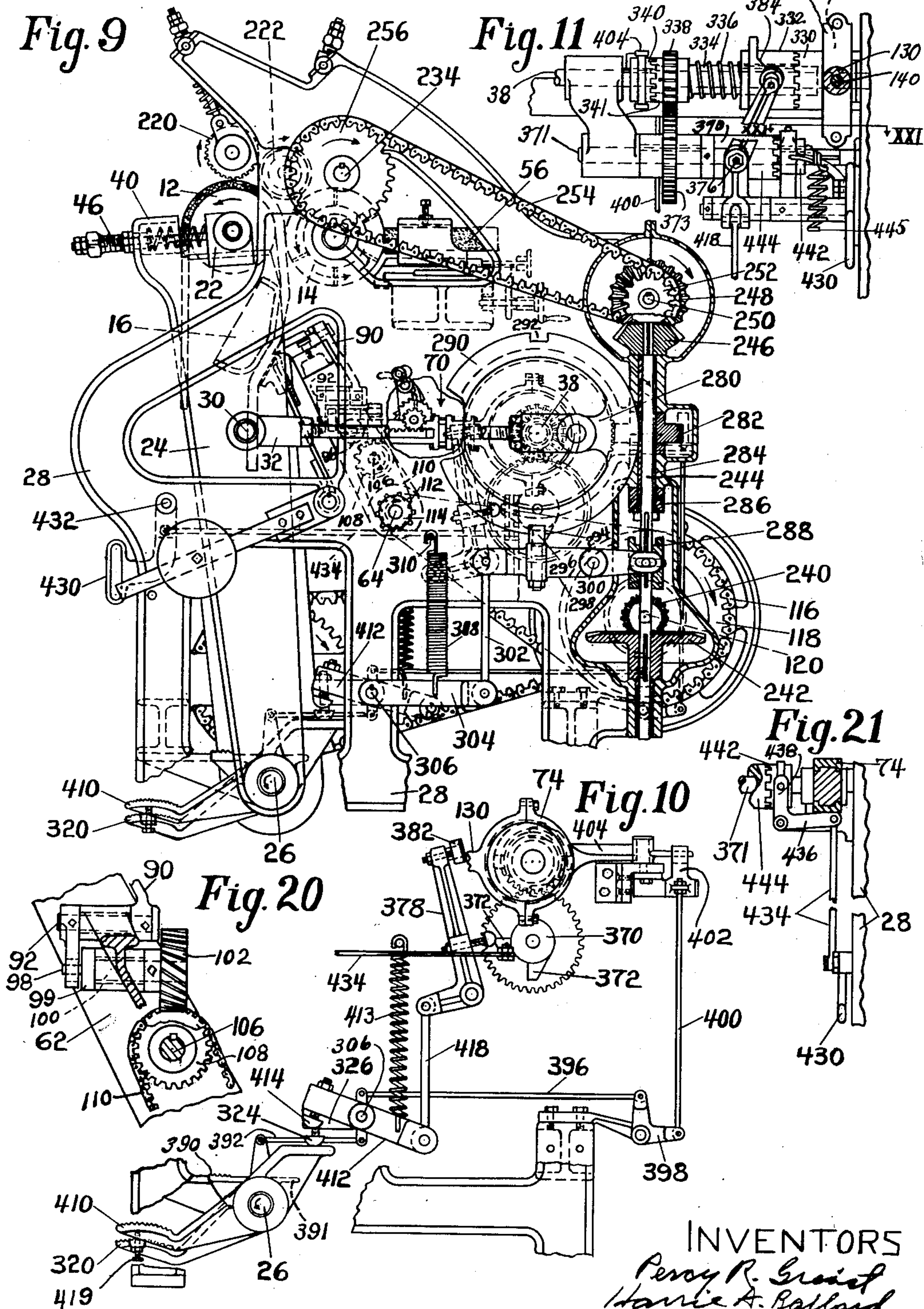
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Fig. 9



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Fig. 15

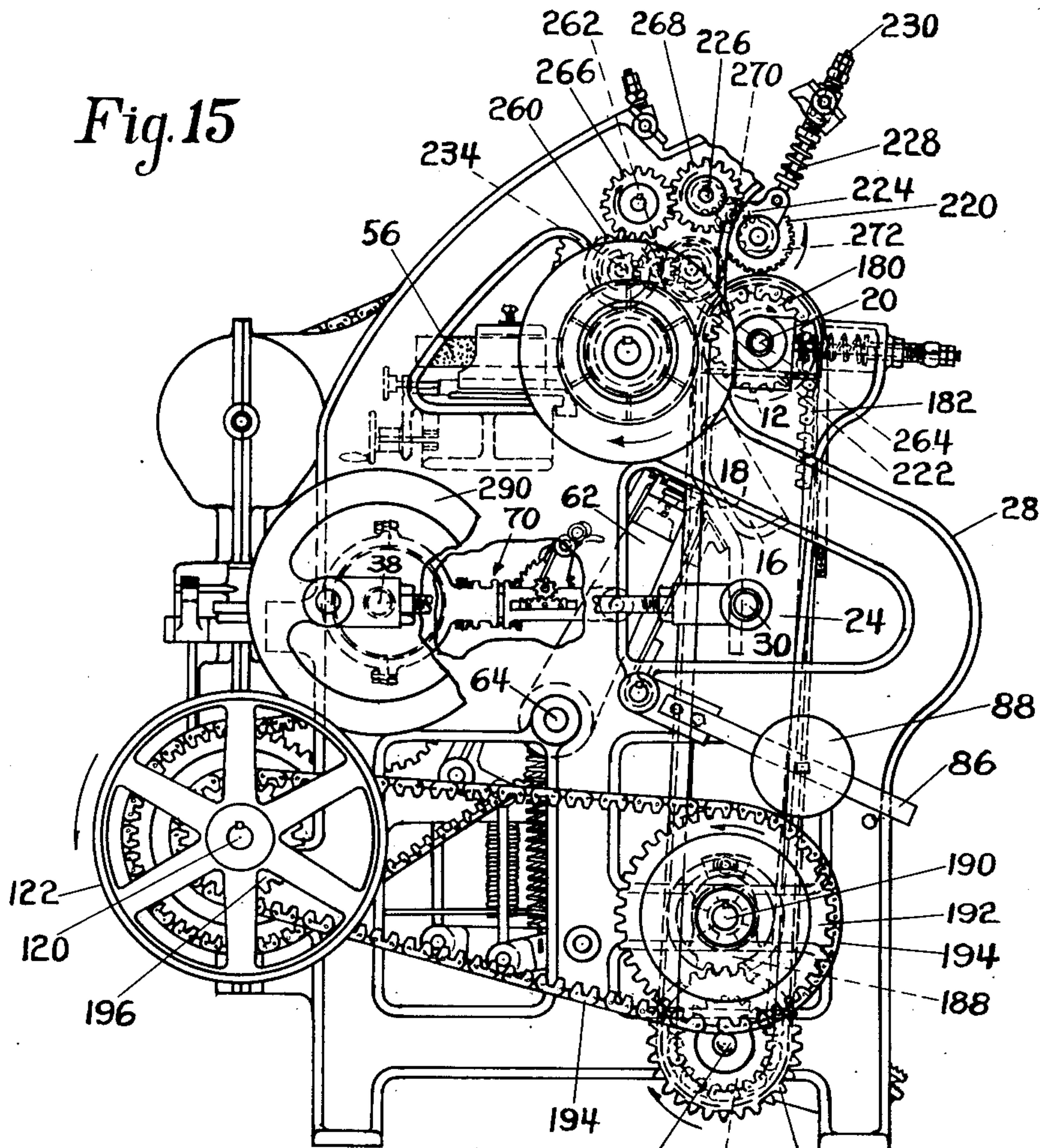


Fig. 17

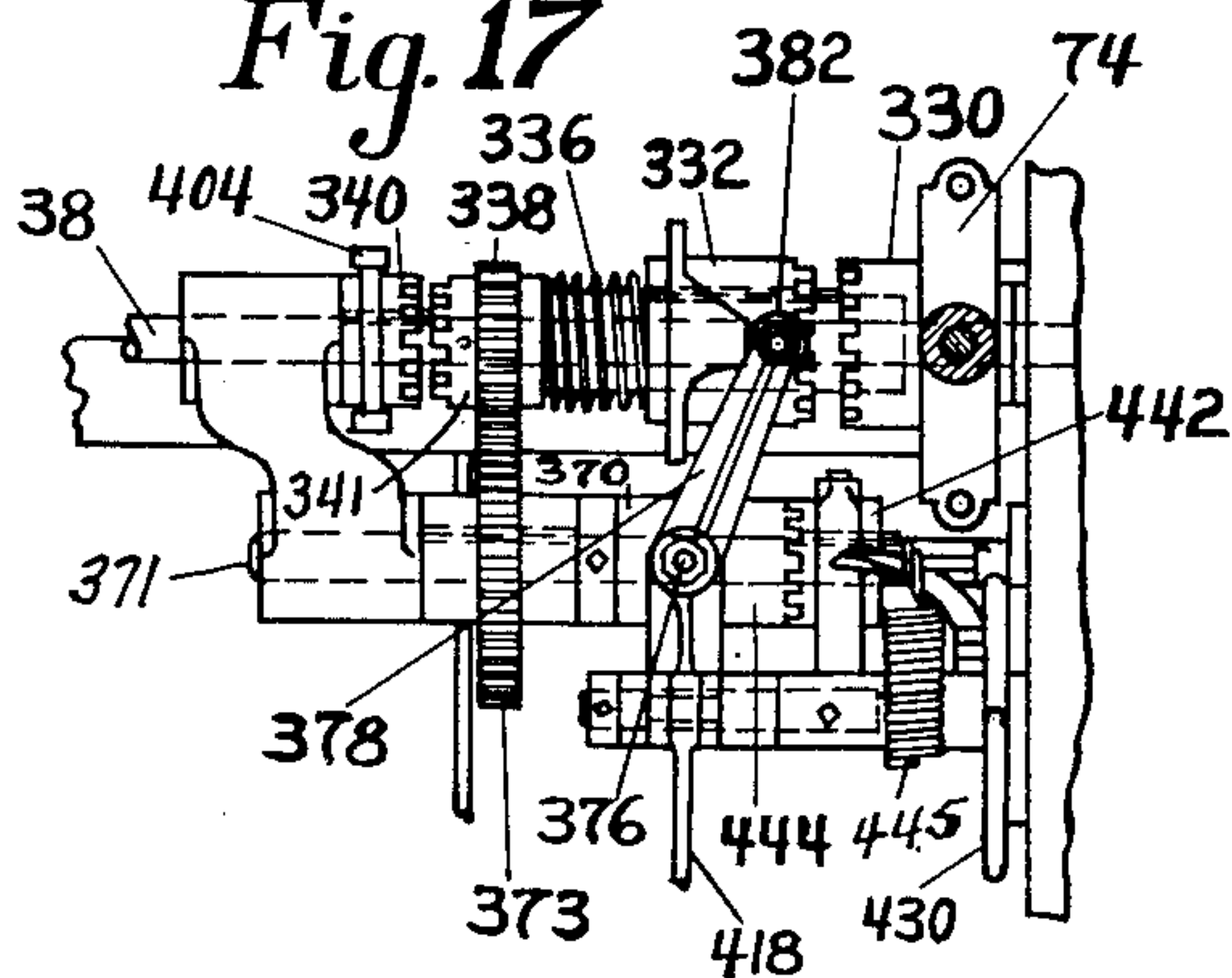
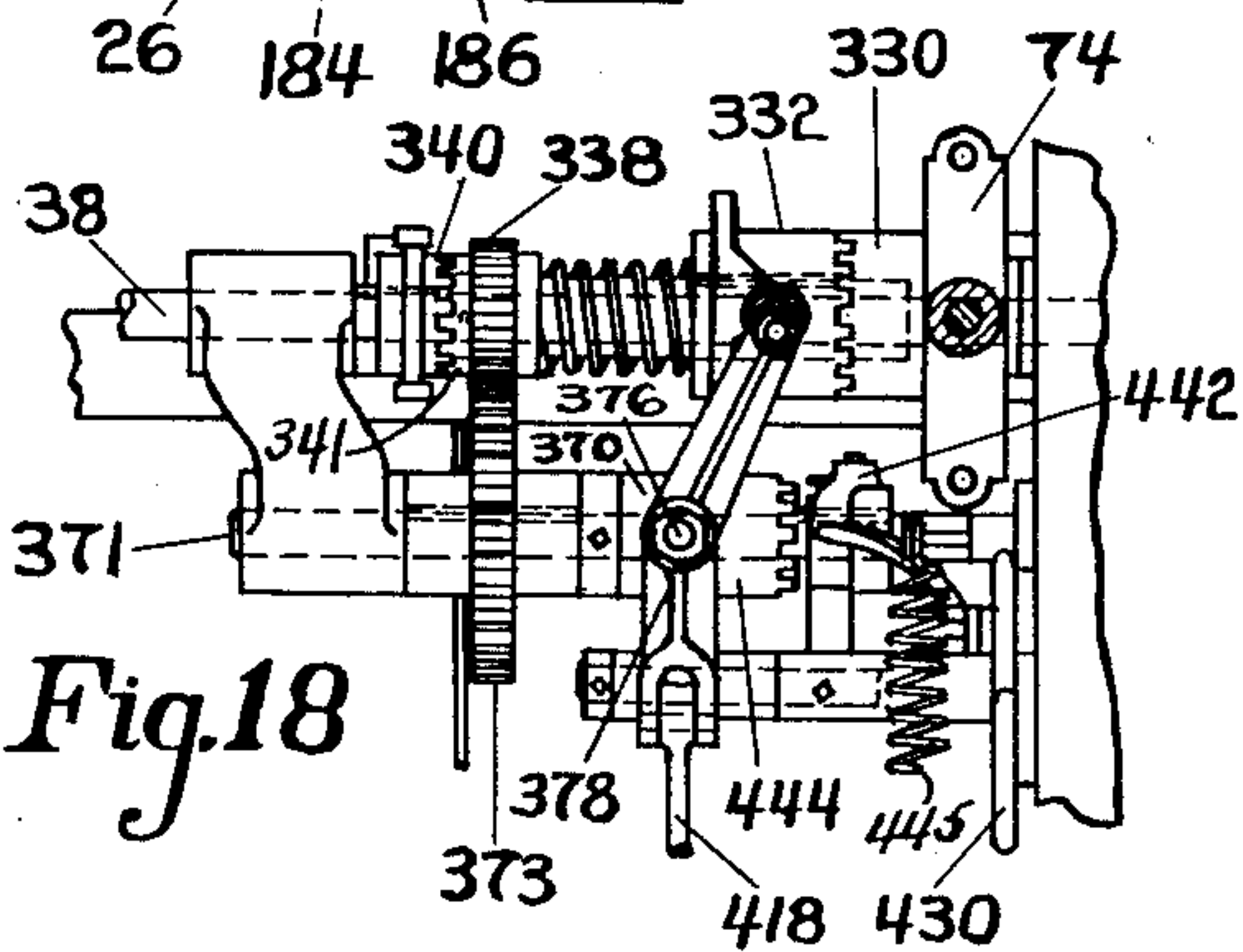


Fig. 18



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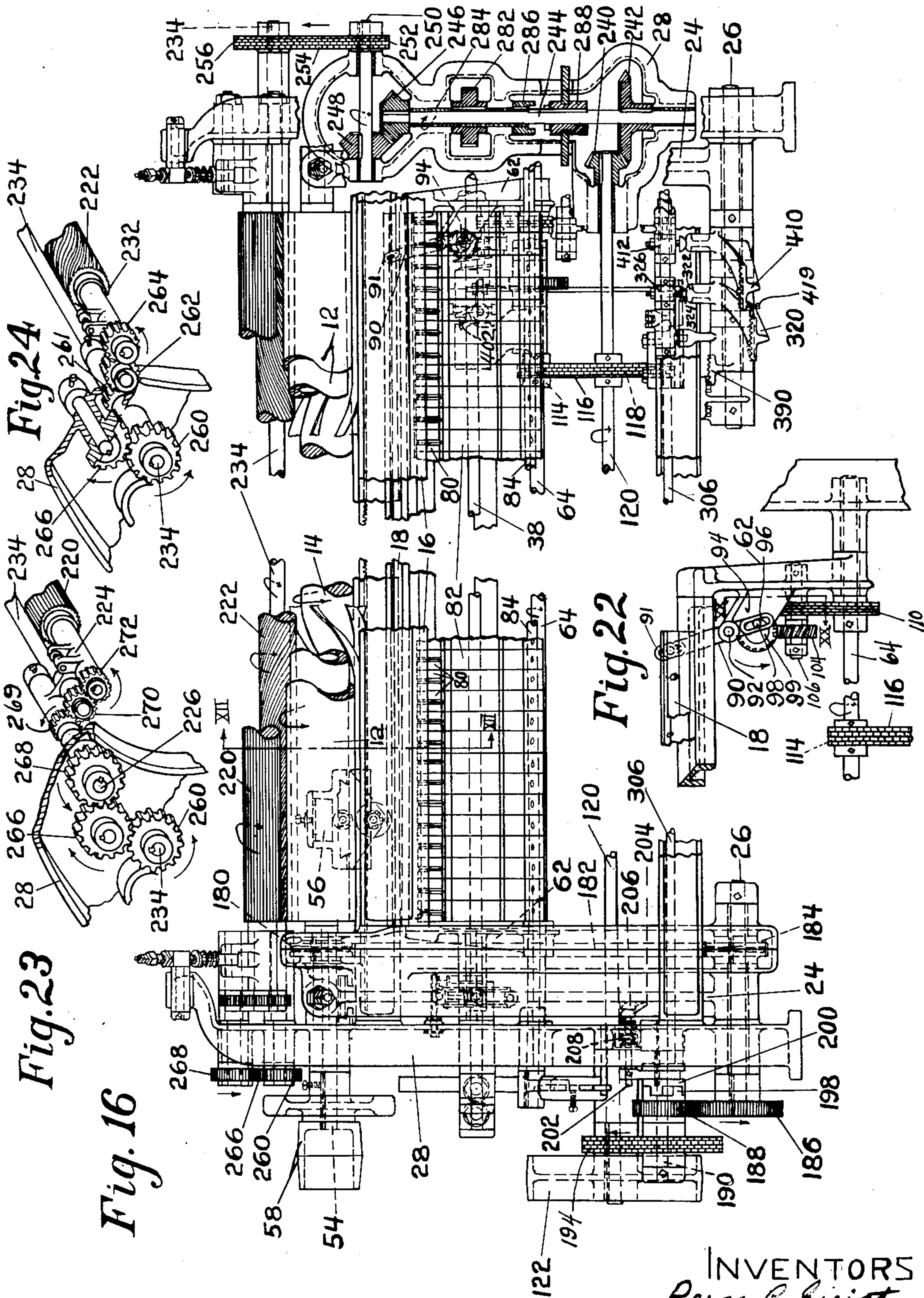
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6 Sheets-Sheet 6



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MACHINE FOR OPERATING UPON HIDES, SKINS, AND LEATHER

Application filed March 13, 1930. Serial No. 435,609.

This invention relates to machines for operating upon hides, skins and leather and is illustrated as embodied in a machine for fleshing and for reducing the thickness of portions of hides and skins. It is to be understood, however, that the invention and various important features thereof may have other applications and uses.

Early in the process of preparing hides and skins for tanning they are subjected to a fleshing operation by which portions of flesh and connective tissue on the flesh surface of the hide or skin are removed, usually through the operation of a bladed cylinder while the work is backed by a bed roll or other similar member. It is common also to cheek hides and skins either before or after the fleshing operation. In the cheeking operation, the head and neck portions of a hide or skin are reduced in thickness by having a piece cut or sliced from these relatively thick portions so that when thus reduced in thickness they will correspond more or less closely in thickness to that of the body portion of the same hide or skin. In the past, machines have been provided for fleshing and other machines for cheeking hides and skins. In these operations, therefore, the hides and skins had to be handled twice and two machines operated for each cheeking and fleshing operation.

Objects of this invention are to provide a machine for performing both fleshing and cheeking operations on hides and skins and to reduce very materially the labor of handling the work by cutting down the number of times that hides and skins must be introduced into machines in order to accomplish both the cheeking and fleshing operations. It is a further object of the invention to facilitate both fleshing and cheeking operations on hides and skins.

To these ends, and in accordance with an important feature of the invention, cutting devices are provided, in the illustrated hide, skin, and leather working machine, for performing fleshing and cheeking operations simultaneously upon the same piece of work. Hence, both cheeking and fleshing operations are performed in the same time

and with the same manipulations of the work and of the machine on the part of the operator as was heretofore required in performing fleshing operations alone with machines formerly provided for the purpose. Since in cheeking and fleshing operations upon the ordinary run of hides and skins, both cutting operations are performed only upon that half of the hide or skin which comprises the head and neck portions and not upon the butt end of the hide or skin, means is provided for controlling the cutting devices so that both cutting devices may operate simultaneously or independently. Conveniently, the machine may be so arranged as to perform alternately two cutting operations, such as fleshing and cheeking, and one cutting operation, such as fleshing.

For fleshing operations upon very heavy hides and upon hides or skins of lighter weight which have been badly flayed, the illustrated machine may be so arranged as to perform both cutting operations simultaneously throughout successive cycles of machine operations. This means that a slicing cutter, which ordinarily operates on the head end only of a hide or skin to cheek the same, is caused to operate also when the butt end of the hide is introduced. Since the slicing cutter operates on the work before it reaches the fleshing cutter, and since the slicing cutter will slice off extra thick pieces wherever occurring on the flesh surface of the hide, the work of the fleshing cutter is facilitated by the described reduction in the thickness of the work and in the amount of material removed.

Preferably and as shown, work supporting means is arranged to move between a work receiving position and a work presenting position with respect to a plurality of cutting instrumentalities. In the illustrated machine, the means for supporting the work against the thrust of one cutter serves also as part of means for feeding the work progressively along during the operation of a plurality of cutting means. It will be seen that this arrangement is distinctly advantageous since, in the illustrated machine, one

feeding means serves to feed the work during both cheeking and fleshing operations whereas, heretofore, the feeding means had to be practically duplicated in fleshing and cheeking machines.

As illustrated, a rotary cutter is provided for performing those cutting operations which result in fleshing the hide or skin, while a longitudinally movable cutter or knife is provided for slicing off the excess thickness portion from the head and neck parts of hides and skins in cheeking operations thereon. In a preferred embodiment of the invention the knife is so located as to operate to reduce the thickness of the head and neck portions of a hide or skin at the same time that the rotary cutter is operating upon adjacent body portions of the hide or skin, the arrangement being such that the hide or skin is fed in a direction from the knife toward the rotary cutter. This arrangement of the knife and cutter has the advantage of lessening materially the feeding tension of the work since the thicker portions of the work, which would have to pass the rotary cutter were it not for the cheeking operation, are reduced in thickness by that operation, thus facilitating the fleshing operation and the feeding of the work during the fleshing operation.

It is an important feature of the illustrated machine that means is provided for automatically adjusting the cheeking cutter or knife to each piece of work, in an organization wherein both the knife and the means for supporting the work against the thrust of the knife are movable toward and from each other to effect operation on the work and to permit of removal of the work and introduction of a fresh piece, this movement of the work supporting means and of the knife being also utilized to caliper the work preliminarily to cheeking operations upon the work.

Preferably and as shown, the bed roll is driven by means comprising a clutch arranged to be controlled by movement of the bed roll between work receiving and work presenting positions so that the bed roll will automatically start rotating in a direction to feed the work out of the machine just the instant before the bed roll presents the work to the bladed fleshing cylinder, the arrangement being also such that the bed roll driving means is rendered inoperative early in the movement of the bed roll toward work receiving position so that the bed roll may come to rest to receive a fresh piece of work without any tendency to displace or discharge the work placed thereon. Conveniently, the clutch of the described driving means is controlled by a cam carried by one of the arms which operate to move the bed roll between work receiving and work presenting positions.

These and other features of the invention and novel combinations of parts will now be described in detail and then pointed out more particularly in the appended claims.

In the drawings,

Fig. 1 is an end elevation looking toward the right in Fig. 16;

Fig. 2 is a similar view of the treadles, clutches, and clutch control mechanism;

Fig. 3 is a front elevation of three clutches showing them in a position corresponding to the position of the machine parts in Fig. 1;

Fig. 4 is a view similar to Fig. 1 but showing the work undergoing a fleshing operation;

Figs. 5 and 6 are views similar to Figs. 2 and 3 but with the parts in positions corresponding to Fig. 4;

Figs. 7 and 8 are similar to Figs. 5 and 6 but show the parts in a new position following movement of the work support to work receiving position;

Fig. 9 is an end elevation of the machine looking from the right in Fig. 16 showing both the fleshing and cheeking elements in operative position;

Figs. 10 and 11 show the treadles and clutches in positions corresponding to Fig. 9;

Fig. 12 is a section along the line XII—XII of Fig. 16, showing both fleshing and cheeking elements in operative position;

Fig. 13 is a detail view of one of the pitmen which control and move the cheeking cutter between operative and inoperative positions;

Fig. 14 is a section along the line XIV—XIV of Fig. 13;

Fig. 15 is an end elevation looking from the left in Fig. 16;

Fig. 16 is a front elevation of the machine, parts being broken away the more clearly to disclose certain features of construction;

Fig. 17 is a front view of the three clutches in position for securing fleshing only, during successive cycles of the machine;

Fig. 18 shows the arrangement of the clutches when it is necessary to hold a given position in order to repeat either the cheeking or the fleshing and cheeking operations;

Fig. 19 is a view similar to Fig. 12 but illustrating the position of the parts when the machine is adjusted for performing cheeking operations only;

Fig. 20 is a detail view along the line XX—XX of Fig. 22;

Fig. 21 is a detail view taken along the line XXI—XXI of Fig. 11;

Fig. 22 is a detail view of the parts for reciprocating the cheeking cutter, the parts being viewed in a direction at a right angle to that of Fig. 20; and

Figs. 23 and 24 are detail views showing the driving mechanisms for the feed rolls 220 and 222, respectively.

In the illustrated machine, which is specially designed for fleshing and cheeking operations upon hides and skins, there is provided a work support 10 for supporting a piece of work such as a hide or skin. Mounted in the upper part of the work support 10 is a bed roll 12 arranged to support a piece of work 13 against the thrust of a rotary cutter or bladed cylinder 14. Below the bed roll 12 is a smooth-surfaced member 16 which is adapted to back the work while it is being operated upon a cutter or knife 18.

Preferably, and as shown, the bed roll 12 has a shaft 20 which is journaled at each end in a block 22 slidably mounted in the upper end of an oscillatory arm 24 which forms part of the work support, there being one arm 24 at each side of the machine for supporting the corresponding end of the bed roll 12 and of the smooth-surfaced member 16. As illustrated, each arm 24 is rotatably mounted upon a short shaft 26 journaled in an end frame 28 of the machine. For moving the two oscillatory arms 24 each has pivotally connected thereto at 30 a pitman 32, the other end of which is pivoted at 34 upon a crank 36 rigid with a shaft 38. It will be clear that upon rotation of the shaft 38 the oscillatory arms 34 are moved between the work receiving position shown in Fig. 1 and the work presenting position shown in Fig. 4.

In order that the bed roll 12 may yield with respect to the rotary cutter 14 to accommodate variations in the thickness of the work between the bed roll and cutter, the blocks 22 are mounted slidably upon the upper ends of the arms 24. Interposed between each block 22 and an abutment 40 at the upper end of each oscillatory arm 24 is a spring 42 which yieldingly backs the sliding block 22. Preferably, and as shown, the spring 42 surrounds a rod 44 which is secured at one end to the block 22 and which passes through an opening in the abutment 40 and through an exteriorly screw threaded member 46, nuts 48 being provided upon the end of rod 44 to hold it in place against the tension of the spring 42. As will be readily understood the exteriorly screw threaded member 46 is rotatable within an interiorly screw threaded portion of the opening in the abutment 40, a member 50 being provided to serve as a nut lock in connection with the adjacent face of the abutment 40, the arrangement being such that upon rotation of the member 46 the tension of the spring 42 may be varied in accordance with the judgment of the operator. When the spring 42 is under normal tension, as when the bed roll 12 is in open work receiving relation with respect to the rotary cutter 14, the nuts 48 are in contact with the end of the sleeve member 46. However, when the

bed roll 12 yields away from the bladed cylinder 14 through compression of the spring 42 the nuts 48 will be spaced from the end of the sleeve 46, as shown in Fig. 4, a substantial spacing indicating that a thicker portion of the work required the bed roll to yield with respect to the rotary cutter 14.

For supporting the rotary cutter or bladed cylinder 14 there is provided a shaft 54 to which the cutter cylinder is fixedly secured, the shaft 54 being journaled in bearings provided by the end frame members 28. Since the illustrated machine is designed for the work of cheeking and fleshing hides and skins, the blades on the rotary cutter 14 will be of the type used on fleshing cylinders and these blades are kept sharp by means of a grinding mechanism of a well-known type indicated at 56 in Fig. 1 of the drawings. Preferably and as shown, the bladed cylinder 14 is driven from a pulley 58 (Fig. 16) fixed to the shaft 54.

The cutter 18 which is provided for operating upon that portion of the work backed by the smooth-surfaced member 16 is, in the illustrated construction, a reciprocatory knife having a face substantially parallel to the adjacent work supporting surface of the member 16 so that the knife makes a cut in the work along a plane substantially parallel to said work supporting surface in slicing off a portion of the work. The knife 18 is mounted on a guide bar 60 (Fig. 12) supported at the upper ends of a pair of arms 62 rotatable on a shaft 64 journaled at its ends in bearings provided by the end frame members 28. While the oscillatory arms 24 which rigidly carry the smooth-surfaced member 16 are moved alternately between the work receiving position of Fig. 1 and the work presenting position of Fig. 4, means is also provided in the illustrated machine for moving the reciprocatory cutter in directions toward and from the smooth-surfaced member 16. It requires a separate movement of the reciprocatory cutter 18 and of its supporting arms 62 to bring the cutter into operative position and this is secured through a pair of specially constructed pitmen one of which is shown at 70 in Fig. 1, the forward end of the pitman 70 (Fig. 13) being pivoted at 72 to the arm 16 and the other end of the pitman 70 having a strap 74 arranged to surround an eccentric 76 arranged to be clutched to the shaft 38, the timing of the clutching operation and of the shaft 38 being such that the arms 62 are moved to bring the cutter or knife 18 into operative relation to the work where it is backed by the smooth-surfaced member 16 just as the latter reaches its final inward position.

For pressing a part of the work 13 against the smooth-surfaced member 16 and thus

positioning it for the operation of the reciprocating knife 18, there is provided a pressing means comprising a plurality of presser members 80 (Figs. 1 and 16). Each presser member 80 has a vertical rib on its work engaging face, the ribs on all of the presser members serving to hold the work from following the cutter 18 during the draw cutting movements of the latter. As shown, the presser members 80 are carried at the upper ends of bars 82 each of which is fixed at its lower end to a shaft 84 which is also journaled at its ends in the end frames 28 of the machine. Secured to each end of the shaft 84 beyond the end frames 28 is an arm 86 (Fig. 1) which carries a weighted member 88 slidable on the arm and adapted to be secured in adjusted position, the two weights 88 serving to hold the presser members 80 yieldingly in pressing position. Hence, when the oscillatory arms 24 with the smooth-surfaced member 16 move inwardly to work presenting position, the work in front of the member 16 is pressed against the presser members 80, as shown most clearly in Figs. 4, 9, 12 and 19. The presser members 80 are pushed back, lifting the weighted members 88, as the work support reaches working position. In this way the work is properly positioned upon the member 16 and guided for the operation of the knife 18 which operates upon the work along a line just above the presser line of the presser members upon the work.

Power means is provided for reciprocating the cutter or knife 18. For this purpose there is provided a lever 90 (Figs. 9, 16, 20, and 22) having a slotted upper end 91 to engage a pin on the knife 18, the lever 90 being pivoted at 92 upon a bracket 94 extending laterally from the arm 62 at the right in Fig. 16. The lower end of the lever 90 is provided with a cam slot 96 arranged to be operated by an eccentric pin 98 secured to disk 99 on a shaft 100 (Fig. 20) journaled in the bracket 94, said shaft carrying fixedly secured thereto, a spiral gear 102 (Fig. 20) which is constantly in mesh with a spiral gear 104 (Fig. 22) carried by a stud shaft 106 journaled in the arm 62. Shaft 106 has fixedly secured thereto a sprocket wheel 108 about which passes a chain 110 arranged to be driven by a sprocket wheel 112 secured to the shaft 64. For driving shaft 64 there is provided a second sprocket wheel 114 around which passes a chain drive 116 driven from a sprocket wheel 118 on the power shaft 120. The power shaft 120 is journaled at each end in bearings provided by the end frame members 28. Power is supplied to the shaft 120 from any suitable source, as by a belt, not shown, adapted to engage a pulley 122 (Fig. 16) secured to one end of the shaft. So long as the shaft 120

is driven, the cutter 18 is continuously reciprocated.

In order that the cutter 18 may be moved yieldingly into position so that it may be adjusted automatically to the thickness of various pieces of work, the pitman 70 is made up of two relatively moving parts 130, 132, (Fig. 13), one part 130 being integral with the eccentric strap 74 while the other part 132 is pivoted at 72 to one of the arms 62, it being understood that the specially constructed pitman 70 shown in detail in Fig. 13 is the same at both ends of the machine shown in Fig. 16. In other words, the long cutter 18 is carried by two arms 62, each arm being operated by a specially constructed pitman 70. The part 130 of the pitman 70 is slidably connected to the pitman part 132 by means of screw threaded bolts 134 which pass loosely through perforated projections 136 on the part 132 and are adjustably screwed into screw threaded openings in projections 138 integral with the pitman part 130, the parts 130 and 132 being otherwise slidably connected by reason of a cylindrical member 140 pinned to the pitman part 130 at 142, being slidably received within a socket or bore in the pitman part 132. The part 132 also has a cylindrical projection 144 which is bored to receive the cylindrical member 140 and which fits within a barrel portion 146 of the member 130. The cylindrical projection 144 stops short of the length of the barrel 146 so that a spring 148 may be accommodated within the barrel portion 146 surrounding the cylindrical member 140 and pressing at its other end upon a plate 150 adjustably secured by bolts 152 to the end of the barrel portion 146, a slot 154 being provided extending transversely through the pitman part 130, as most clearly shown in Fig. 13. Since the cylindrical projection 144 of pitman part 132 slides within the barrel portion 146 of the pitman part 130 compressing the spring 148 when the work is engaged where it is backed by the smooth-surfaced member 16, it is obvious that the greater the thickness of the work the greater will be the compression of the spring 148 and the greater the relative movement of the pitman parts 130, 132 in the direction of shortening the pitman 70. As the pitman parts slide on each other in the direction mentioned, the rack bar 160, secured to the cylindrical member 140 and extending through a slot in the side of the pitman member 132, engages with and operates a gear 162 secured to a short shaft 164 (Figs. 13 and 14) which also carries, fixedly secured thereto, a ratchet wheel 166 adapted to be engaged by two pawls 168, 170 fixed on the spindle 172 carried by a bracket 174 integral with the pitman part 132. Secured to the spindle 172 is a cam arm 175 which

is adapted to be operated by a stationary pin 176 surrounded by a freely rotatable sleeve 177 and carried fixedly but adjustably by the end frame 28 of the machine. It will be clear from the above description that, upon rotation of the shaft 38 (Fig. 13) and of the eccentric 76, the cutter carrying arm 62 is moved yieldingly into the position shown in Fig. 13 to press the cutter 18 yieldingly against the work where it is backed by the member 16 (Fig. 12). Hence, the cutting begins at a depth determined by the thickness of the work calipered between the cutter and the member 16. This caliper-
 ing takes place at a time when the cam arm 175 is depressed by engagement with the pin 176, thereby throwing the pawls 168 and 170 up out of engagement with the ratchet wheel 166, thus permitting free sliding movement of the pitman parts 130 and 132 with respect to each other. Just at the end of the movement of the arm 62 and of the pitman 70 the cam arm 175 is carried to the position relative to the pin 176 shown in Fig. 13 whereby the cam arm 175 is permitted to move upwardly, thereby permitting the pawls 168 and 170 to engage the ratchet wheel 166 with the result that the pitman parts 130 and 132 are locked in their automatically adjusted position in accordance with thickness of the work. The described relative movement between the cam arm 175 and the pin 176 is due in large part to downward movement of the left end (Fig. 13) of pitman 70 as the arm 62, to which the pitman is connected, rocks to the left (Figs. 1, 4 and 9) on its shaft 64 to press the cutter 18 against the work on the surface 16. It is to be understood that, in the operation of the machine, the operator will introduce the head end of the hide or skin far enough into the machine so that a body portion of average thickness is interposed between the smooth-surfaced member 16 and the cutter 18, the thicker head and neck portions of the hide or skin being thus positioned below the cutter 18. Hence, these thicker portions must pass the cutter as the work is being fed out of the machine and will, therefore, be reduced in thickness through the slicing effect of the cutter 18, the thickness to which the head and neck parts are thus reduced being that of the parts calipered originally between the smooth-surfaced member 16 and the cutter 18.

For driving the bed roll 12 there is provided securely fastened to the bed roll shaft 20, a sprocket wheel 180 (Figs. 15 and 16) around which passes a sprocket chain 182, the lower end of the chain 182 also passing around a second sprocket wheel 184 fixedly secured to the short shaft 26. This shaft 26 has, at its other end, fixedly secured thereto, a gear 186 arranged to be constantly in mesh with a second gear 188 normally loose upon

a stub shaft 190 mounted in a bracket extending laterally from the end frame 28. The shaft 190 carries fixedly secured thereto a sprocket wheel 192 with which there is engaged a chain 194, the other end of which passes around a sprocket wheel 196 (Fig. 15) secured fixedly to the shaft 120, which is the power shaft. In order that the gear 188 which is normally loose upon the short shaft 190, may be driven at the proper time, there is provided a clutch member 198 (Fig. 16) rigid with the hub of the gear 188 and also a second clutch member 200 which is keyed to the shaft 190 for sliding movement thereon toward and from the clutch member 198. For moving the clutch member 200 into engagement with the clutch member 198 there is provided a pin 202 fixedly secured to a projecting part of the clutch member 200, said pin 202 projecting through an opening in the end frame 28, the free end of the pin 202 having a rounded head 204 adapted to be engaged by a cam projection 206 on the side of the oscillatory arm 24, the arrangement being such that, as the oscillatory arms 24 approach the position wherein the bed roll 12 is about to present the work to the bladed cylinder 14, the clutch members 198 and 200 will be caused to engage, thereby initiating rotation of the bed roll in the direction to feed the work out of the machine, this rotation of the bed roll taking place just before the work is pressed against the bladed cylinder 14. For withdrawing the clutch member 200 from the other clutch member 198, there is provided a spring 208 surrounding the pin 202 and operating to project the pin and perforce the clutch member 200 to the right in Fig. 16 as soon as the pin 202 is released by the cam 206. By this construction and arrangement of the driving means, the latter is controlled in such a way that the bed roll is stationary while the work is being placed thereon and while the bed roll and work are moving toward the bladed cylinder. Hence, the work will not be displaced during this traveling movement of the bed roll.

For co-operation with the bed roll 12 in feeding operations upon the work there is provided a fluted feed roll 220 and also a helically fluted grip roll 222. As will be seen upon inspection of Figs. 1, 15, 16, 23 and 24, the feed roll 220 is mounted in two arms 224 one at each end of the machine, each arm being pivoted on a short shaft 226 and being pressed downwardly by a spring 228 (Figs. 1 and 15) surrounding a rod 230, the arrangement being such that the feed roll 220 may yield upwardly against the tension of the springs 228. Similarly the grip roll 222 is mounted upon arms 232 each arm being pivoted upon a shaft 234 carried by the end frame members 28. The grip roll 222 is pressed downwardly by spring means

similar in all respects to the spring means 228 employed in yieldingly pressing the feed roll 220 into gripping and feeding relation with respect to a piece of work on the bed 5 roll 12.

For driving the feed and grip rolls 220, 222, driving connections are provided between the shaft 234 and the power shaft 120, the said driving connections comprising a bevel gear 240 (Figs. 9 and 16) secured to the shaft 120 and arranged to be constantly in mesh with a second bevel gear 242 keyed to a vertical shaft 244 having secured to its upper end a bevel gear 246 arranged in mesh with a bevel gear 248 keyed to a shaft 250 to which there is also secured a sprocket wheel 252 around which passes a chain 254 also engaged with a second sprocket 256 secured to one end of the shaft 20 234. It follows from the description just given that the shaft 234 is constantly driven so long as power is applied to the pulley 122 on the machine power shaft 120. At the other end of the shaft 234 there is secured a 25 gear 260 (Figs. 15, 23, 24) and also a gear 261 (Fig. 24) in mesh with an intermediate gear 262 in mesh with a gear 264 secured to the end of the shaft of the grip roll 222 for driving the latter continuously during 30 the operation of the machine. The gear 260 is also arranged to be in mesh with a gear 266 (Fig. 23) which in turn meshes with a gear 268 to drive the shaft 226 secured to which is a gear 269 meshing with an intermediate gear 270 which meshes with a gear 35 272 secured to the shaft of the feed roll 220. Hence, both the feed roll 220 and the grip roll 222 are driven from the same shaft 234 at equal speeds and in the direction to feed 40 the work out of the machine and toward the operator.

It will be recalled that the bed roll 12 is caused to begin its rotation just before the work is pressed against the bladed cylinder 45 14. At the same instant that the bed roll 12 begins to rotate, it presses the work against the feed roll 220 and the grip roll 222 which are at the time in motion so that the work is gripped and feeding of the work 50 begun just an instant before the work is contacted by the bladed cylinder 14. Hence, the work is under control at the time that the blades of the cylinder begin operating thereon.

For moving the work support 10 between work receiving and work presenting positions there is provided, as hereinbefore described, a pair of pitmen 32 pivoted upon crank members 36 rigid with the shaft 38. 60 Fixedly secured to the shaft 38 is a large spiral gear 280 (Fig. 9) arranged in mesh with a spiral gear 282 secured to a sleeve 284 which is freely rotatable upon the shaft 244. Also secured to the sleeve 284 is a clutch 65 member 286 with which there is adapted to

cooperate a movable clutch member 288 keyed to the shaft 244 but slidable vertically thereon. When the clutch member 288 is moved upwardly in Fig. 9, the sleeve 284 is clutched to the constantly driven shaft 244 7 and the shaft 38 is rotated through the driving connections just described. In order that the shaft 38 may make one-half of a revolution and stop there is secured to the shaft 38 a large disk 290 having oppositely 75 disposed notches 292, 294. As shown in Fig. 9, a stop member 296 is engaged in the notch 294 so that the shaft 38 is held stationary with the work support 10 in work presenting position with respect to the rotary cutter 80 14. Upon actuating the clutch part 288 a second time and simultaneously therewith withdrawing the stop 296 from the notch 294, the shaft 38 is given a second half revolution, the stop 296 then dropping into notch 85 292 just as the work support 10 reaches its extreme open or work receiving position.

For controlling the movable clutch part 288 there is provided a lever 298 pivoted at 300 on the right end frame 28 of the machine. Connected to the lever 298 at its 90 other end is a link 302 which is also pivotally connected at its lower end to a lever 304 fastened to a shaft 306. Secured to the lever 304 is a spring 308 the upper end 95 of which is secured to a pin 310 projecting from the frame 28, the spring 308 being tensioned to hold the lever 298 yieldingly in the position shown in Fig. 9 in which the stop 296 is engaged in the notch 294 or in the 100 notch 292. After the lever 298 is actuated from a treadle, as will be hereinafter described, to initiate movement of the work support 10 it (the treadle) is released by the operator and the stop 296 rides upon the circumference of the disk wheel 290 until it 105 drops into the opposite notch 292, thereby locking the work support in open or work receiving position and disengaging the movable clutch part 288 from the stationary clutch part 286, thus terminating the motion of the shaft 38. 110

Throwing in of the clutch parts 286, 288 to initiate movement of the work support 10 is accomplished by depression of treadle 115 320 (Figs. 9, 10, and 16). This treadle is mounted rotatably upon the shaft 26 and has an operative end portion 322 (Fig. 16) arranged to engage the rounded end of a bolt 324 carried fixedly by a lever 326 120 fixedly secured to shaft 306. Hence, when the shaft 306 is rocked in a clockwise direction in Fig. 9 by depression of the treadle 320, the lever 304 (also fixed to shaft 306) 125 has its outer end depressed, thus pulling down on the corresponding end of the lever 298 and causing the movable clutch part 288 to engage with the fixed clutch part 286, thus initiating operation of the shaft 38 and 130

movement of the work support 10, as already described.

For light skins and possibly for all hides and skins which have been properly flayed, this machine normally will operate to flesh one-half of each hide or skin presented upon the bed roll 12 and, upon a second actuation of the treadle 320, the other half of the same hide or skin reintroduced into the machine will not only be fleshed but cheeked through the operation of the reciprocatory cutter 18. For operating the machine to accomplish alternately fleshing of one part of the hide or skin and cheeking and fleshing of the other part of the same hide or skin, there is provided means for causing operation of the cheeking knife or reciprocatory cutter 18 as will now be described. As heretofore stated, the cutter 18 and its carrying arms 62 are moved toward and from a piece of work backed by the smooth-surfaced member 16 by means of specially constructed pitmen 70 operated by eccentric straps 74 surrounding the eccentrics 76 loosely mounted on the shaft 38. These eccentrics 76 must be clutched to the shaft 38, otherwise they will not be rotated to actuate the pitmen 70 to move the cutter to operative position. Upon inspection of Fig. 3 of the drawings it will be observed that the eccentric 76, within the eccentric strap 74, has a hub portion 330 loose on the shaft 38 and provided with clutch teeth adapted to be engaged by a movable clutch member 332 keyed to and slidable upon a sleeve 334, a spring 336 being provided between the clutch member 332 and the hub of a gear 338 fixed to the sleeve 334, the spring being normally operative to move the clutch member 332 into clutching engagement with the clutch part 330 whereby the eccentric 76 is clutched to the shaft 38 when a clutch 340 keyed to the shaft 38 is in clutching engagement with a clutch part 341 on the gear 338. In Fig. 3 the clutch parts 330 and 332 are shown disengaged, in which case the eccentric will not be driven upon rotation of the shaft 38, and hence the cutter 18 will not be moved to operative position. Upon depressing the treadle 320 the first time while the work support 10 is in open work receiving position, the work support is moved to present the work to the bladed cylinder 14 but the reciprocatory cutter 18 is in inoperative position, shown in Fig. 4 of the drawings, the clutch parts 330, 332 being in the position shown in Fig. 3. Upon depressing the treadle 320 a second time the work support 10 is moved to open, work receiving position whereupon the hide or skin is replaced upon the work support with the head and neck portions extending below the smooth-surfaced member 16. Following this reinsertion of the work, the treadle 320 is again depressed and

this time the reciprocatory cutter 18 is moved to operative position so that it slices an excess thickness portion from the head and neck parts of the hide and skin at the same time that that part of the hide or skin which is backed by the bed roll 12 is being fleshed by the rotary cutter 14. To insure operation of the cutter 18 once in each four depressions of the treadle 320 there is provided a cam member 370 (Figs. 2 and 3) arranged to be clutched to a shaft 371 having keyed thereto a gear 373 arranged to be constantly in mesh with gear 338 to be driven thereby. Cam member 370 has projecting cams 372, the cams 372 being arranged to contact with a rounded head 374 on a bolt 376 projecting from a lever 378 pivoted at 380 upon an end frame 28 of the machine. As most clearly shown in Figs. 2, 3, 5, and 7, the upper end of the lever 378 is provided with a cam roll 382 which is adapted to engage a cam surface 384 (Fig. 3) to move the clutch member 332 away from the stationary clutch member 330 in which case the eccentric 76 is not clutched with respect to the shaft 38 and, therefore, remains stationary while this shaft is rotating. If, however, one of the cams 372 strikes the rounded end 374 of the bolt 376, thus displacing the lever 378 to the left in Fig. 2, as shown, for instance, in Fig. 7, the cam roll 382 is removed from the path of the cam surface 384 and the clutch member 332 is moved by the spring 336 into clutching engagement with respect to the clutch member 330 rigid with the eccentric 76, whereupon the eccentrics 76, one at each end of the shaft 38, move with the shaft 38 and the reciprocatory knife 18 is moved to operative position with respect to the work on the smooth-surfaced work supporting member 16. The cam member 370 makes a one-fourth turn upon each depression of the treadle 320, the gear 338 on shaft 38 having one-half the number of teeth of the gear 373. Hence, one or the other of the cams 372 will operate in properly timed relation to move the lever 378 to inoperative position, thereby permitting the clutch members 332 and 330 to engage, with the result that the reciprocatory cutter 18 is put into operation. This, as stated, occurs once in four depressions of the treadle 320. During the remaining three depressions of the treadle the reciprocatory knife 18 remains in inoperative position, it being understood that two depressions of the treadle are followed by movements of the work support 10 to open work receiving position and the other depression of the treadle is followed by movement of the work support to work presenting position with respect to the bladed cylinder 14 to effect fleshing only of the hide or skin. It is to be understood, therefore, that in the regular operation of

the illustrated machine the treadle 320 is the only treadle that is to be depressed by the operator. Upon the first depression of the treadle after having placed the butt end of the hide or skin upon the work support, the butt portion is fleshed. Upon depressing the treadle 320 a second time, the work support moves to open position. Upon the third depression of the treadle following introduction of the head and neck portions of the hide or skin in such a way that they hang below the smooth-surfaced member 16, the work support 10 moves to work presenting position whereupon the bladed cylinder 14 fleshes portions of the work while they are backed by the bed roll 12, and the cutter 18 reduces the thickness of the head and neck portions as they pass over the smooth-surfaced member 16. At the end of this operation the treadle is depressed a fourth time to cause the work support to move to open work receiving position.

To insure that the eccentrics 76 shall not be clutched to the shaft 38, and hence that the cutter 18 shall not become operative, the clutch part 340 may be moved to the left in Fig. 3, and as shown in Fig. 17, in which case the machine may be used entirely as a fleshing machine since the eccentrics 76 which operate to move the cutter to operative position cannot possibly become operative when the sleeve 334 is unclutched from the shaft 38 by a movement of the clutch member 340 to the left into the position shown in Fig. 17. This movement of the clutch member 340 is accomplished by depression of the front or heel portion of a treadle 390 (Figs. 2 and 16), the treadle 390 also having a toe portion 391 for a purpose hereinafter described. It will be noted that treadle 390 is mounted for rocking movement upon the shaft 26 and that it has pivotally connected thereto a link 392 (Fig. 2) in turn pivoted to a lever 394 pivoted intermediate between its ends upon the shaft 306 and having pivotally connected to its other end a link 396 which is also pivotally connected to a bell crank lever 398, the other arm of which is pivotally connected to a link 400 connected to a bell crank lever 402 having an arm for actuating a clutch shifter 404, the clutch shifter 404 (Figs. 2 and 3) being engaged with the clutch member 340. Hence, when the treadle 390 is depressed the clutch member 340 is withdrawn to inoperative position where it remains until moved by operating the toe portion 391 of the treadle to return it to operative position, operation of the toe portion of the treadle 390 causing movement of the clutch shifter 404 in a direction opposite to that caused by depressing the treadle 390. When the clutch member 340 is in inoperative position, the cutter 18 is

definitely and continuously out of operative position so that the machine may be used only for fleshing operations.

It is sometimes desirable to employ the machine as a combined cheeking and fleshing machine at every cycle of the machine, especially if the flaying has been poorly done, since the cutter 18 will remove thick portions of flesh wherever found on the flesh surface of the hide or skin, thus rendering the fleshing operations more certain. To operate the illustrated machine in this manner, the clutches will be set in the position shown in Fig. 18 and the machine will be tripped using a treadle 410 (Figs. 2 and 16), this treadle 410 being arranged to withdraw the cam roll 382 (Figs. 2 and 3) from the path of the cam surface 384 on the clutch member 332 to permit movement of the clutch member 332 into engagement with the clutch member 330 whereupon the eccentrics 76 become operative to move the reciprocatory cutter 18 into operative position. It will be recalled that this movement of the cam roll 382 is effected mechanically (Figs. 7 and 10) by cams 372 on the cam member 370 when the machine is being operated alternately to flesh and to cheek and flesh hides and skins. When, however, it is desired to operate the machine so that it becomes a cheeking and fleshing machine at every cycle, the treadle 410 (Fig. 2) is depressed to control the lever 378 and the cam roll 382 directly from the treadle, this being accomplished through connections comprising a lever 412 having a round ended bolt 414 resting upon an arm 416 rigid with the treadle 410. Upon depression of the treadle 410 the lever 412, which is held in normal position by a spring 413, is rocked about its pivotal mounting on the shaft 306, thus pulling down on a link 418 which is pivoted to the lower arm of the lever 378. Hence, depression of the treadle 410 results in moving the lever 378 into the position shown in Fig. 10, thus making the reciprocatory cutter operative at every cycle of the machine. Depression of the treadle 410 also causes depression of the treadle 320 because of the bolt 419 which extends up from treadle 320 to contact with the under surface of treadle 410. Since treadle 320 controls the shaft 38, it is clear that the work support 10 is moved to operative position and that both cutters 14 and 18 are rendered operative.

Should it be desired to convert the illustrated machine into a cheeking machine only, the bed roll 12 is drawn back so that it will not present the work to the bladed cylinder 14, this being accomplished by moving the bearing blocks 22 to the left in Fig. 1 of the drawings to provide such a clearance between the bladed cylinder and the hide or skin on the bed roll 12, when the work support 10 is in working position, that

the cylinder 14 cannot operate on the work. At the same time, the back grip roll 222 is raised to clear the front grip roll 220 which is adjusted downwardly into contact with the skin on the bed roll 12. It follows that, as a result of these adjustments, shown in Fig. 19, the bladed cylinder cannot operate on a piece of work where it is backed by the bed roll 12. Now to cause operation of the reciprocatory cutter 18 the machine is tripped by depressing the treadle 410.

When, in the operation of the illustrated machine adjusted to perform alternately fleshing operations and fleshing and cheeking operations upon hides and skins, it is desired to repeat either the fleshing upon the butt end of a hide or skin or the cheeking and fleshing upon the head end of a hide or skin, a hand lever 430 (Figs. 9, 10, 18, and 21), is operated by being pulled toward the front of the machine. This hand lever 430 is pivoted at 432 to one of the end frames 28 of the machine and has pivoted thereto a link 434 the other end of which is connected to a lever 436 (Fig. 21) having a forked arm 438 operative to move a clutch member 442 out of engagement with a clutch member 444 integral with the cam member 370, whereby the controlling cam member 370 and its cams 372 remain in the position of the preceding cycle of the machine and are not turned one-fourth of a turn as they would normally be if they remained clutched to the shaft upon which they are mounted. Hence, the cycle just passed may be repeated by a depression of the treadle 320. The clutch part 442 is returned to normal clutched position, upon release of handle 430, by spring 445.

In operating the illustrated machine for the purpose of completing cheeking and fleshing operations upon hides and skins, a hide or skin will be first introduced with the butt end suspended in the space between the bed roll and the bladed cylinder 14. When the treadle 320 is depressed, the work support 10 is moved to work presenting position, the bed roll 12 pressing the work against the bladed cylinder 14, with the result that a fleshing operation is performed upon the introduced portion of the work, the work being fed out toward the operator as the fleshing proceeds. When the work has been fed out of the machine the operator depresses the treadle 320 a second time, thus causing the work support 10 to move to open or work receiving position. The operator then reverses the hide or skin throwing in the head end to such an extent that the head and neck portions of the hide or skin extend below the smooth-surfaced work supporting member 16. He then depresses the treadle a third time whereupon the work support 10 moves to work presenting position and the reciprocatory cutter 18

moves to operating position, with the result that both cheeking and fleshing operations are performed upon the introduced portion of the hide or skin. When the work has been entirely fed out by the machine, the operator depresses the treadle 320 for the fourth time, causing the work support to move to open or work receiving position, thus placing the machine in position to begin operations upon a fresh piece of work. Description has already been given in detail of adaptations of the machine for the performance of fleshing only, cheeking only, and of combined fleshing and cheeking upon every cycle of the machine.

Having described our invention, what we claim as new and desire to secure by Letters Patent of the United States is:

1. In a machine for operating upon hides, skins and leather, work supporting means, cutting devices arranged to operate simultaneously upon a piece of work while it is backed by the work supporting means, said cutting devices comprising a cutter having a surface movable with respect to the work for cutting portions of flesh and connective tissue from the flesh surface of a hide or skin and a second cutter having a single effective blade of a length greater than the greatest transverse dimension of the hide or skin being operated upon for slicing off thicker portions of the same hide or skin, said first-mentioned cutter being located to operate on portions already treated by the second cutter.

2. In a machine for operating upon hides, skins and leather, work supporting means, two cutting devices, one for fleshing a hide or skin and the other for cheeking the same hide or skin, and means for operating both cutting devices simultaneously and then only one cutting device automatically in alternate cycles of the machine.

3. In a machine for operating upon hides, skins and leather, work supporting means, two cutting devices, one for fleshing a hide or skin and the other for cheeking the same hide or skin, a manually operable member, and means controlled by the manually operable member for causing simultaneous operation of both the fleshing and cheeking cutting devices and the fleshing cutting device alone automatically in alternate cycles of the machine.

4. In a machine for operating upon hides, skins and leather, work supporting means, a rotary cutter for removing flesh and connective tissue from the flesh surface of a hide or skin, and a cutter of substantially the same length as the rotary cutter and having a drawing cut for performing slicing operations on the flesh surface of a hide or skin simultaneously with the operation of the first named cutter, said rotary cutter being positioned to operate on those portions

of the hide or skin already operated upon by said slicing cutter.

5. In a machine for operating upon hides, skins and leather, work supporting means, a cutter arranged to co-operate with one of said work supporting members for removing flesh and connective tissue from the flesh surface of a hide or skin, a cutter arranged to cooperate with another work supporting member for performing slicing operations on the flesh surface of a hide or skin simultaneously with the operation of the first-named cutter, and feed rolls arranged for co-operation with the first mentioned work supporting member in feeding a hide or skin past both cutters.

6. In a machine for operating upon hides, skins and leather, work supporting means, a cutter for removing flesh and connective tissue from the flesh surface of a hide or skin, a cutter for performing slicing operations on the flesh surface of a hide or skin simultaneously with the operation of the first-named cutter, means for moving the work supporting means between work receiving and work presenting positions with respect to the fleshing cutter, and means for moving the slicing cutter between inoperative and operative positions with respect to the work supporting means in timed relation to the movement of the latter to operative position.

7. In a machine for operating upon hides, skins and leather, work supporting means, a rotary cutter for operating upon a piece of work backed by the work supporting means, and a reciprocatory cutter of a length greater than the greatest transverse dimension of the hide or skin being operated upon, the last-mentioned cutter being arranged to operate upon the work simultaneously with the operation of the rotary cutter, and said rotary cutter being positioned to operate upon portions of the work already treated by the reciprocatory cutter.

8. In a machine for operating upon hides, skins and leather and other similar pieces of work, work supporting members, a rotary fleshing cutter, a cheeking cutter, both the fleshing cutter and the cheeking cutter being arranged to cooperate each with its own work supporting member in simultaneous operations upon the piece of work, and means comprising one of the work supporting members for feeding the work past both cutters.

9. In a machine for operating upon hides, skins and leather, work supporting means having a plane surface, a reciprocatory cutter for slicing off a piece of the work, said cutter having a face substantially parallel to the adjacent plane work supporting surface of the work supporting means and operative to make a cut in the work along a plane parallel to said work supporting sur-

face, work-controlled means for adjusting the cutter with respect to the plane surface of the work supporting means, and means for locking the cutter in adjusted position.

10. In a machine for operating upon hides, skins and leather, work supporting means, a rotary cutter, a knife, and means for moving the work supporting means into cooperative relation with respect to the rotary cutter and for moving the knife toward the work supporting means in timed relation to the movement of the latter whereby both the rotary cutter and the knife co-operate with the work supporting means in cutting operations upon a piece of work.

11. In a machine for operating upon hides, skins and leather, work supporting members, a rotary cutter normally spaced from its work supporting member, a knife cutter, means for causing relative movement between the work supporting members and the two cutters whereby a space is provided for introduction of a piece of work and subsequently the work supporting members and cutters are brought automatically into cooperative relation for operating upon the piece of work.

12. In a machine for operating upon hides, skins and leather, a movable work support comprising a bed roll and a smooth surfaced member for supporting and backing different portions of a piece of work, a cutter for co-operating with the bed roll, a cutter for co-operating with the smooth-surfaced member in cutting operations upon the piece of work, and means operating in timed relation to the movable work support for locking the last-mentioned cutter and the smooth-surfaced member against movement away from each other.

13. In a machine for operating upon hides, skins and leather, a work support comprising a bed roll and a smooth-surfaced member for supporting and backing different portions of a piece of work, a cutter for co-operating with the bed roll, a cutter for co-operating with the smooth-surfaced member in cutting operations upon the piece of work, said bed roll being yieldingly mounted to accommodate variations in the thickness of the work as the latter is passed along between the bed roll and the first-mentioned cutter, and the second-mentioned cutter and the smooth-surfaced member being movable relatively to each other so as to become adjusted to the thickness of the work as a preliminary to cutting operations upon the portion of the work passing over the smooth-surfaced member, and means for locking the second-mentioned cutter and the smooth-surfaced member against movement away from each other before the beginning of cutting operations.

14. In a machine for operating upon hides, skins and leather, a work support, a

rotary cutter, a knife cutter, means for causing relative movement between the work support and the two cutters whereby a space is provided for introduction of a piece of work and subsequently the work support and cutters are brought into co-operative relation for operation upon the piece of work, spring means for yieldingly backing a portion of the work support against the thrust of the rotary cutter, and spring means for backing the knife cutter so that it may yield with respect to another portion of the work support in a preliminary adjustment with respect to the thickness of the work.

15. In a machine for operating upon hides, skins and leather, a work support comprising a bed roll and a smooth-surfaced member for supporting and backing different portions of a piece of work, a cutter for co-operating with the bed roll, and a cutter for co-operating with the smooth-surfaced member in cutting operations upon the piece of work, said bed roll being yieldingly mounted to accommodate variations in the thickness of the work as the latter is passed along between the bed roll and its co-operative cutter, and the second cutter being yieldably moved into co-operative relative relation with respect to the smooth-surfaced member so as to become adjusted to the thickness of the work as a preliminary to cutting operations upon the portion of the work passing over the smooth-surfaced member, and means for locking the second cutter in adjusted position at the beginning of cutting operations.

16. In a machine for operating upon hides, skins and leather, a work support, a cutter for operating upon a piece of work backed by the work support, a reciprocatory cutter for operating upon another portion of the same piece of work while it is backed by the work support, means for causing relative movement between the work support and the first-mentioned cutter in directions toward and from each other, and means for moving the reciprocatory cutter toward and from the work support in timed relation to the relative movement of the work support and first-mentioned cutter in a direction toward each other.

17. In a machine for operating upon hides, skins and leather, a work support, a cutter for operating upon a piece of work backed by the work support, a reciprocatory cutter for operating upon another portion of the same piece of work while it is backed by the work support, means for causing relative movement between the work support and the first-mentioned cutter in directions toward and from each other, means for moving the reciprocatory cutter toward and from the work support, means for yieldingly mounting the portion of the work sup-

port which co-operates with the first-mentioned cutter, and means for yieldingly backing the reciprocatory cutter so that it may adjust itself to the work on the work support preliminarily to cutting operations on the work.

18. In a machine for operating upon hides, skins and leather, a work support, a rotary cutter for performing fleshing operations upon a hide or skin backed by the work support, a cutter having a drawing cut for slicing portions from the hide or skin while backed by the work support, and automatic means for causing simultaneous operation of the rotary cutter and of the slicing cutter and then of only one of said cutters in alternate cycles of the machine.

19. In a machine for operating upon hides, skins and leather, a work support, a cutter for performing fleshing operations upon a hide or skin backed by the work support, a cutter for slicing a portion from the thicker head and neck parts of the hide or skin while backed by the work support, means for causing simultaneous operation of the fleshing cutter and of the slicing cutter, and automatically controlled means for operating the fleshing cutter, while the slicing cutter remains inoperative with respect to the work, in certain predetermined cycles of the machine.

20. In a machine for operating upon hides, skins and leather, a work support, a cutter for operating on the work where it is backed by the work support, means for moving the work support toward the cutter, means for moving the cutter yieldingly against the work where it is backed by the work support so that the cutter may be adjusted to the thickness of the work at the beginning of cutting operations, and means for locking the cutter against movement away from the work support.

21. In a machine for operating upon hides, skins and leather, a work support, means for pressing a piece of work against the work support, said work support and pressing means being movable relatively to each other to accomplish the pressing of the work against the support, a cutter for operating on the work where it is backed by the work support along a line just above the pressure line of the pressing means upon the work, means for moving the work support toward the pressing means and toward the cutter, and means operating in timed relation to the work support moving means for moving the cutter yieldingly against the work where it is backed by the work support so that the cutter may be adjusted to the thickness of the work at the beginning of cutting operations.

22. In a machine for operating upon hides, skins and leather, a work support, presser members for pressing a piece of

work against the work support upon movement of the work support to press the work against the presser members, a cutter for operating on the work along a line just above the pressure line of the presser members upon the work, means for moving the work support toward the presser members and toward the cutter, and means operating in timed relation to the work support moving means for moving the cutter yieldingly against the work where it is backed by the work support so that the cutter may be adjusted to the thickness of the work at the beginning of cutting operations.

23. In a machine for operating upon hides, skins and leather, a work support, presser members for pressing a piece of work against the work support upon movement of the work support to press the work against the presser members, a cutter for operating on the work along the line just above the pressure line of the presser members upon the work, means for moving the work support toward the presser members and toward the cutter, means for moving the cutter yieldingly against the work where it is backed by the work support so that the cutter may be adjusted to the thickness of the work at the beginning of cutting operations, and means for locking the cutter in adjusted position during its operation upon the work.

24. In a machine for operating upon hides, skins and leather, a work support, presser members for pressing the work against the work support, a cutter for operating upon the work just above the line of pressure of the presser members upon the work, means for moving the work support toward the presser members and toward the cutter, and means for moving the cutter toward the work support, said cutter being yieldingly backed during its movement into contact with the work on the work support so that the cutter may be adjusted to the work at the beginning of cutting operations.

25. In a machine for operating upon hides, skins and leather, a work support, presser members for pressing the work against the work support, a cutter for operating upon the work just above the line of pressure of the presser members upon the work, means for moving the work support toward the presser members and toward the cutter, means for moving the cutter toward the work support, said cutter being yieldingly backed during its movement into contact with the work on the work support so that the cutter may be adjusted to the work at the beginning of cutting operations, and means for locking the cutter in adjusted position during its operation upon the work.

26. In a machine for operating upon hides, skins and leather, a work support, a rotary cutter for performing fleshing operations

upon a hide or skin, a knife of substantially the same length as the work support and having a drawing cut for performing cheeking operations upon the same hide or skin, and means to feed the work progressively past both the knife and the cutter in the direction from the former to the latter whereby cheeking and fleshing operations are performed simultaneously upon the hide or skin and feeding of the work past the cutter is facilitated through prior operation of the cutter.

27. In a machine for operating upon hides, skins and leather, a work support comprising a bed roll, a rotary cutter for co-operation with the bed roll in fleshing operations upon a hide or skin, a knife for co-operation with the work support in cheeking operations upon the same hide or skin, and means co-operating with the bed roll to feed the work from the knife to the cutter and progressively past both cutter and knife whereby cheeking and fleshing operations are performed simultaneously upon adjacent portions of the hide or skin and fleshing of the latter is facilitated through operation of the knife prior to the cutter.

28. In a machine for operating upon hides, skins and leather, a work support comprising a bed roll, and a smooth-surfaced member, a cutter for co-operation with the bed roll in fleshing operations upon a hide or skin, a cutter for co-operation with the smooth-surfaced member in cheeking operations upon the same hide or skin, and means co-operating with the bed roll to feed the work in a direction from the second cutter to the first mentioned cutter and progressively past both cutters whereby cheeking and fleshing operations are performed simultaneously upon the hide or skin and feeding of the latter past the fleshing cutter is facilitated by the prior operation of the cheeking cutter.

29. In a machine for operating upon hides, skins and leather, a work support comprising a bed roll and a smooth-surfaced member, a cutter for co-operation with the bed roll in fleshing operations upon a hide or skin, a cutter for co-operation with the smooth-surfaced member in cheeking operations upon the same hide or skin, means co-operating with the bed roll to feed the work progressively past both cutters whereby cheeking and fleshing operations are performed simultaneously upon the hide or skin, and automatic means for causing one cutter to remain inoperative, while the feeding means and the other cutter remain operative to effect operations upon successive pieces of work, in certain predetermined cycles of the machine.

30. In a machine for operating upon hides, skins, leather and other similar pieces of work, a cutter for operating on a piece of

work, a pivotally mounted work support movable between work receiving and work presenting position with respect to the cutter, said work support comprising a bed roll, means comprising a clutch for driving the bed roll in a direction to feed the work out of the machine, and means controlled by the oscillatory movement of the work support for throwing the clutch alternately into and out of operation.

31. In a machine for operating upon hides, skins, leather and other similar pieces of work, a cutter for operating on a piece of work, a work support movable between work receiving and work presenting position with respect to the cutter, said work support comprising a bed roll, means comprising a clutch for driving the bed roll in a direction to feed the work out of the machine, and a cam carried by the work support for controlling said clutch whereby the driving means for the bed roll is rendered alternately operative and inoperative.

32. In a machine for operating upon hides, skins, leather and other similar pieces of work, a cutter, a bed roll movable between a work receiving and a work presenting position with respect to the cutter, power means comprising a sprocket and sprocket chain connected to the bed roll for rotating the latter so that successive portions of the work are presented by the bed roll to the cutter, said power means comprising a clutch, and a cam movable with the bed roll between its work receiving and work presenting positions for operating the clutch to initiate rotation of the bed roll just as the latter reaches work presenting position.

33. In a machine for operating upon hides, skins, leather and other similar pieces of work, a cutter, a bed roll movable between a work receiving and a work presenting position with respect to the cutter, power means comprising a sprocket and sprocket chain connected to the bed roll for rotating the latter so that successive portions of the work are presented by the bed roll to the cutter, said power means comprising a clutch, a cam movable with the bed roll between its work receiving and work presenting positions for operating the clutch to initiate rotation of the bed roll just an instant before the latter reaches work presenting position with respect to the cutter, and means for throwing out the clutch early in the movement of the bed roll toward work receiving position.

34. In a machine for operating upon hides, skins, leather and other similar pieces of work, a rotary cutter for fleshing hides and skins, a cutter for slicing portions of hides and skins, a work support comprising a bed roll for supporting a piece of work against the thrust of the rotary cutter, said work

support having also a portion to back the work during the operation of the slicing cutter, means for moving the work support between a work receiving position and a work presenting position with respect to the rotary cutter, and automatic means for causing operation of the slicing cutter during each alternate cycle of the machine.

35. In a machine for operating upon hides, skins, leather and other similar pieces of work, a rotary cutter for fleshing hides and skins, a cutter for slicing portions of hides and skins, a work support comprising a bed roll for supporting a piece of work against the thrust of the rotary cutter, said work support having also a portion to back the work during the operation of the slicing cutter, means for moving the work support between a work receiving position and a work presenting position with respect to the rotary cutter, and means comprising a mechanically controlled clutch member for causing operation of the slicing cutter at each alternate cycle of the machine.

36. In a machine for operating upon hides, skins, leather and other similar pieces of work, a rotary cutter for fleshing hides and skins, a cutter for slicing portions of hides and skins, a work support comprising a bed roll for supporting a piece of work against the thrust of the rotary cutter, said work support having also a portion to back the work during the operation of the slicing cutter, means for moving the work support between a work receiving position and a work presenting position with respect to the rotary cutter, and automatic means comprising an intermittently operated cam for causing operation of the slicing cutter at each alternate cycle of the machine.

37. In a machine for operating upon hides, skins, leather and other similar pieces of work, a rotary cutter for fleshing hides and skins, a cutter for slicing portions of hides and skins, a work support comprising a bed roll for supporting a piece of work against the thrust of the rotary cutter, said work support having also a portion to back the work during the operation of the slicing cutter, means for moving the work support between a work receiving position and a work presenting position with respect to the rotary cutter, and automatic means comprising an intermittently rotated cam member for causing operation of the slicing cutter at each alternate cycle of the machine.

38. In a machine for operating upon hides, skins, leather and other similar pieces of work, a rotary cutter for fleshing hides and skins, a cutter for slicing portions of hides and skins, a work support comprising a bed roll for supporting a piece of work against the thrust of the rotary cutter, said

work support having also a portion to back the work during the operation of the slicing cutter, power means for moving the work support between work receiving and work presenting positions with respect to the rotary cutter, a treadle for controlling said power means, the arrangement being such that the work support is moved to work presenting position at each cycle of the machine, power means for moving the slicing cutter to operative position with respect to the work support, and means for causing operation of the last-mentioned power means at each alternate cycle of the machine.

39. In a machine for operating upon hides, skins, leather and other similar pieces of work, a rotary cutter for fleshing hides and skins, a cutter for slicing portions of hides and skins, a work support comprising a bed roll for supporting a piece of work against the thrust of the rotary cutter, said work support having also a portion to back the work during the operation of the slicing cutter, power means for moving the work support between work receiving and work presenting positions with respect to the rotary cutter, a treadle for controlling said power means, the arrangement being such that the work support is moved to work presenting position at each cycle of the machine, power means for moving the slicing cutter to operative position with respect to the work support, and an intermittently operated member for initiating operation of the last mentioned power means at each alternate cycle of the machine.

40. In a machine for operating upon hides, skins, leather and other similar pieces of work, a rotary cutter for fleshing hides and skins, a cutter for slicing portions of hides and skins, a work support comprising a bed roll for supporting a piece of work against the thrust of the rotary cutter, said work support having also a portion to back the work during the operation of the slicing cutter, power means for moving the work support between work receiving and work presenting positions with respect to the rotary cutter, a treadle for controlling said power means, the arrangement being such that the work support is moved to work presenting position at each cycle of the machine, power means for moving the slicing cutter to operative position with respect to the work support, and means comprising a rotary cam member for initiating operation of the last-mentioned power means at each alternate cycle of the machine.

41. In a machine for operating upon hides, skins, leather and other similar pieces of work, a rotary cutter for fleshing hides and skins, a cutter for slicing portions of hides and skins, a work support comprising a bed roll for supporting a piece of work

against the thrust of the rotary cutter, said work support having also a portion to back the work during the operation of the slicing cutter, power means for operating the work support between work receiving and work presenting positions, power means for moving the slicing cutter to operative position with respect to the described work supporting surface of the work support, and a single treadle for controlling both power means so that the rotary cutter and the slicing cutter become operative at each cycle of the machine.

42. In a machine for operating upon hides, skins, leather and other similar pieces of work, a fleshing cutter, a cheeking cutter, a work support, power means for moving the work support between work receiving and work presenting positions with respect to the cutters, power means for moving the cheeking cutter between operative and inoperative positions with respect to the work support, a manually operable member for controlling the first-mentioned power means, and means automatically operative in each alternate cycle of the machine to control the second-mentioned power means so that upon the first operation of the manually operable member the work support and the fleshing cutter co-operate in fleshing operations upon the work and upon a subsequent operation of the manually operable member the work support moves to work presenting position with respect to the fleshing cutter and the cheeking cutter moves to operative position with respect to the work support whereby both fleshing and cheeking operations are performed upon the work.

43. In a machine for operating upon hides, skins, leather and other similar pieces of work, a fleshing cutter, a cheeking cutter, a work support, power means for moving the work support between work receiving and work presenting positions with respect to the cutters, power means for causing operation of the cutters comprising a clutch, a cam member for controlling the clutch, and a manually operable member for controlling the first-mentioned power means so that upon operation of the manually operable member the work support moves to work presenting position and the fleshing cutter co-operates therewith in fleshing operations, the construction and arrangement being such that upon the second operation of the manually operable member the work support moves to work receiving position while upon the third operation of the manually operable member the work support returns to work presenting position and the cam causes throwing in of the clutch to cause operation of the cheeking cutter whereby both fleshing and cheeking of the work take place, the operation of the manually oper-

able member for the fourth time resulting
in movement of the work support to work
receiving position.

In testimony whereof we have signed our
5 names to this specification.

PERCY R. GREIST.
HARRIE A. BALLARD.

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