June 5, 1934.

H. R. WILLIAMS

1,961,273

WRAPPING MACHINE

Filed March 29, 1926

7 Sheets-Sheet 1

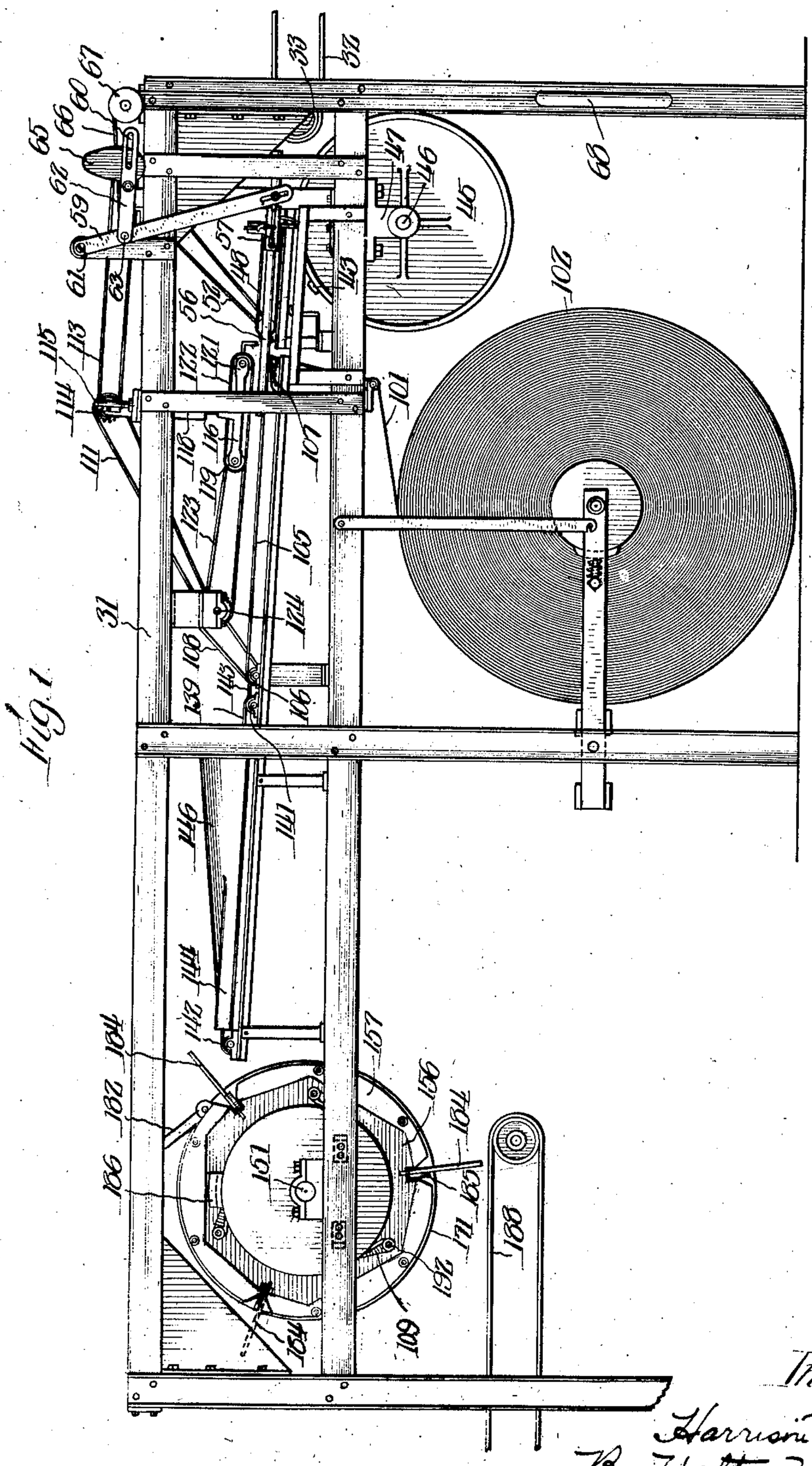

Fig. 1.

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WRAPPING MACHINE

Filed March 29, 1926 7 Sheets-Sheet 2

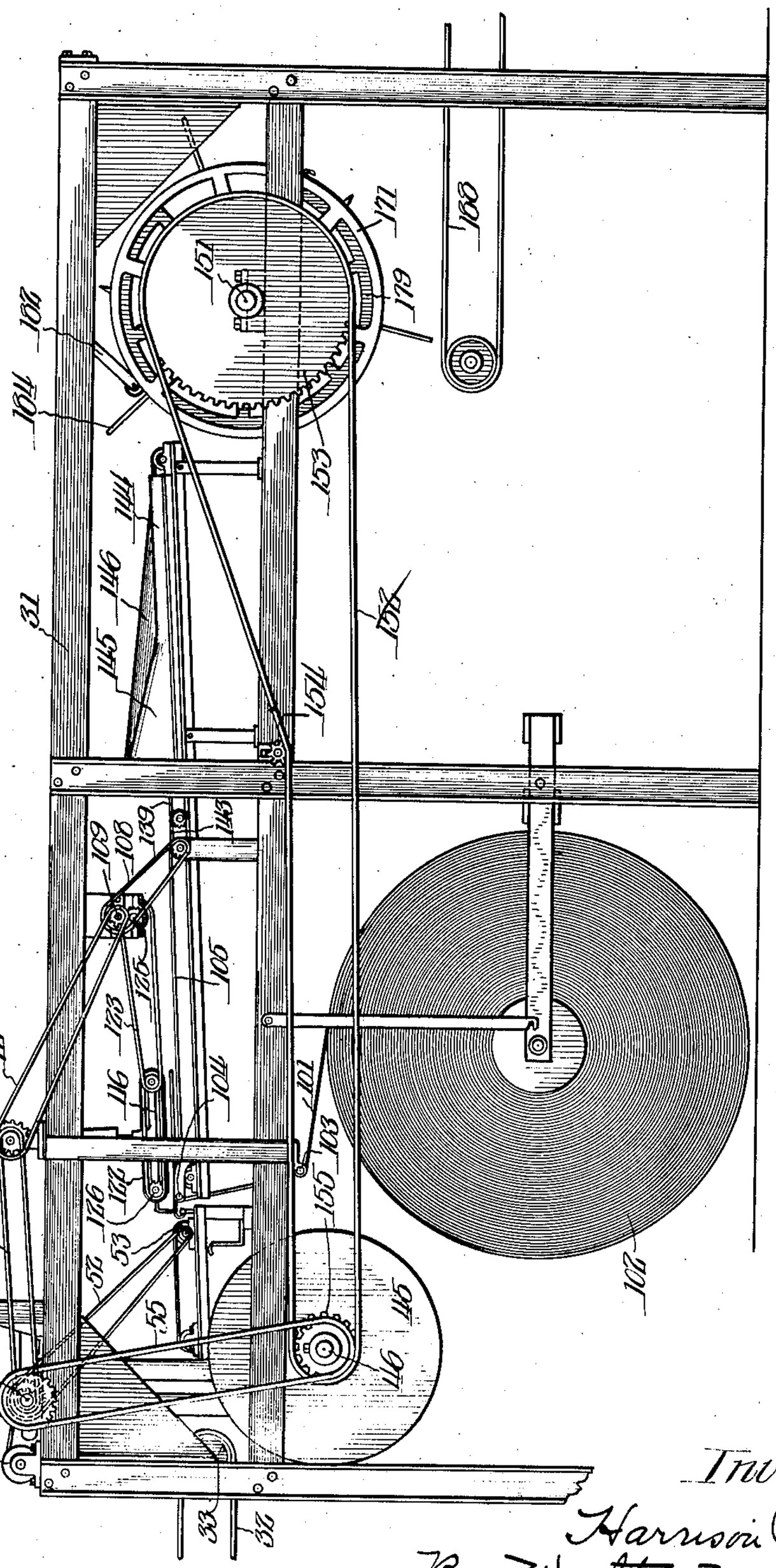

Fig. 2.

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WRAPPING MACHINE

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7 Sheets-Sheet 3

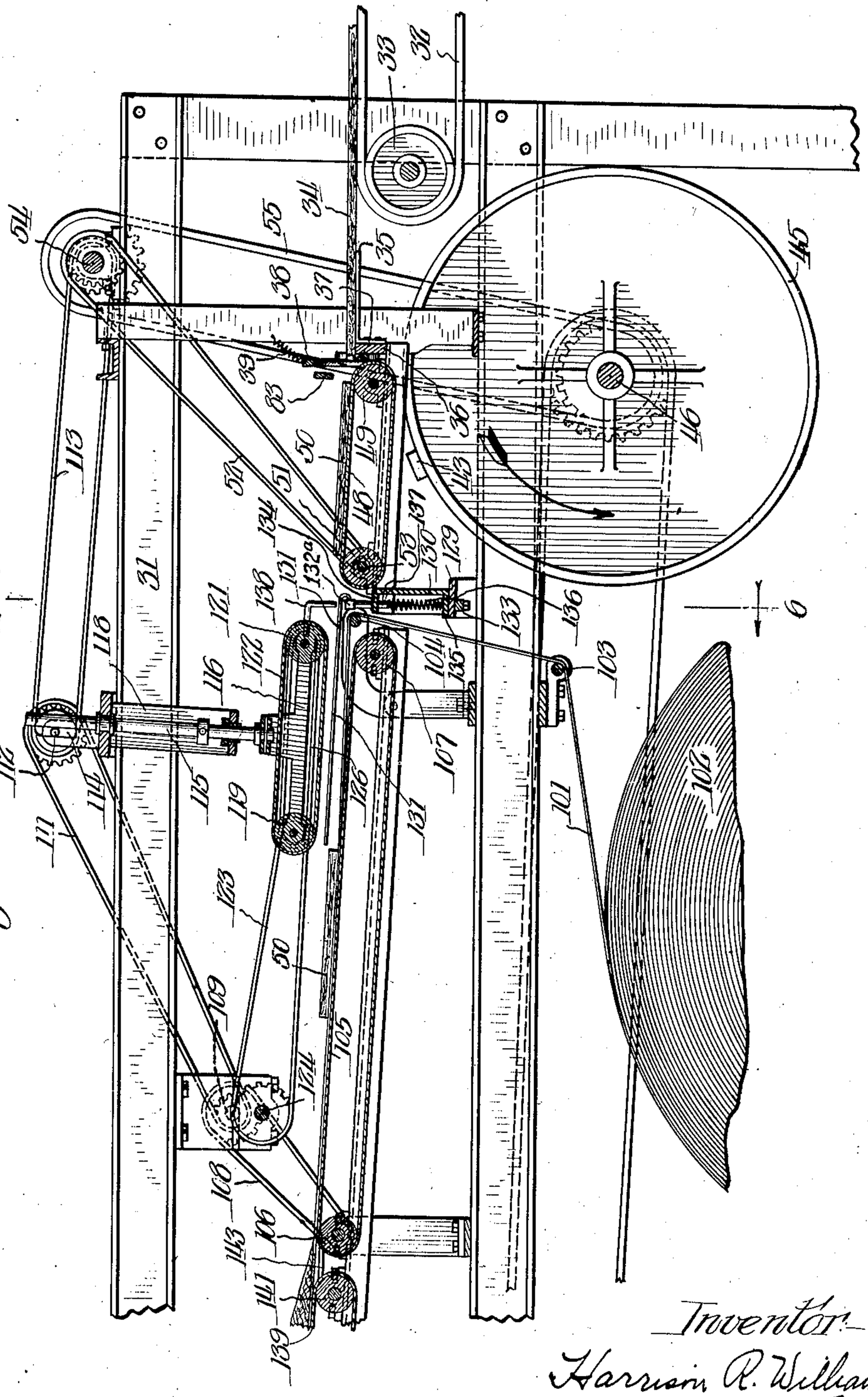

Fig. 3

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WRAPPING MACHINE

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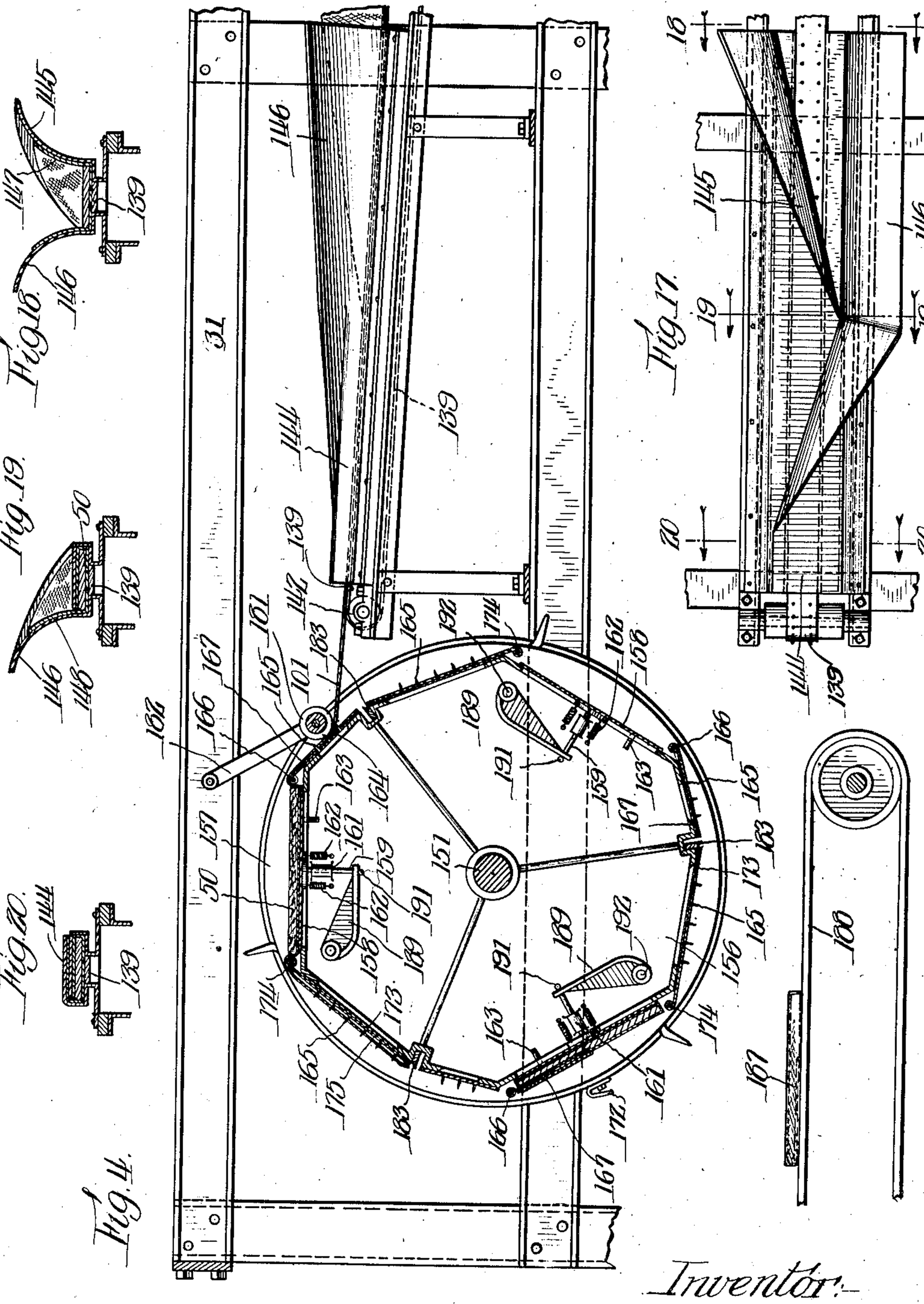
7 Sheets-Sheet 4



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WRAPPING MACHINE

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Fig. 6.

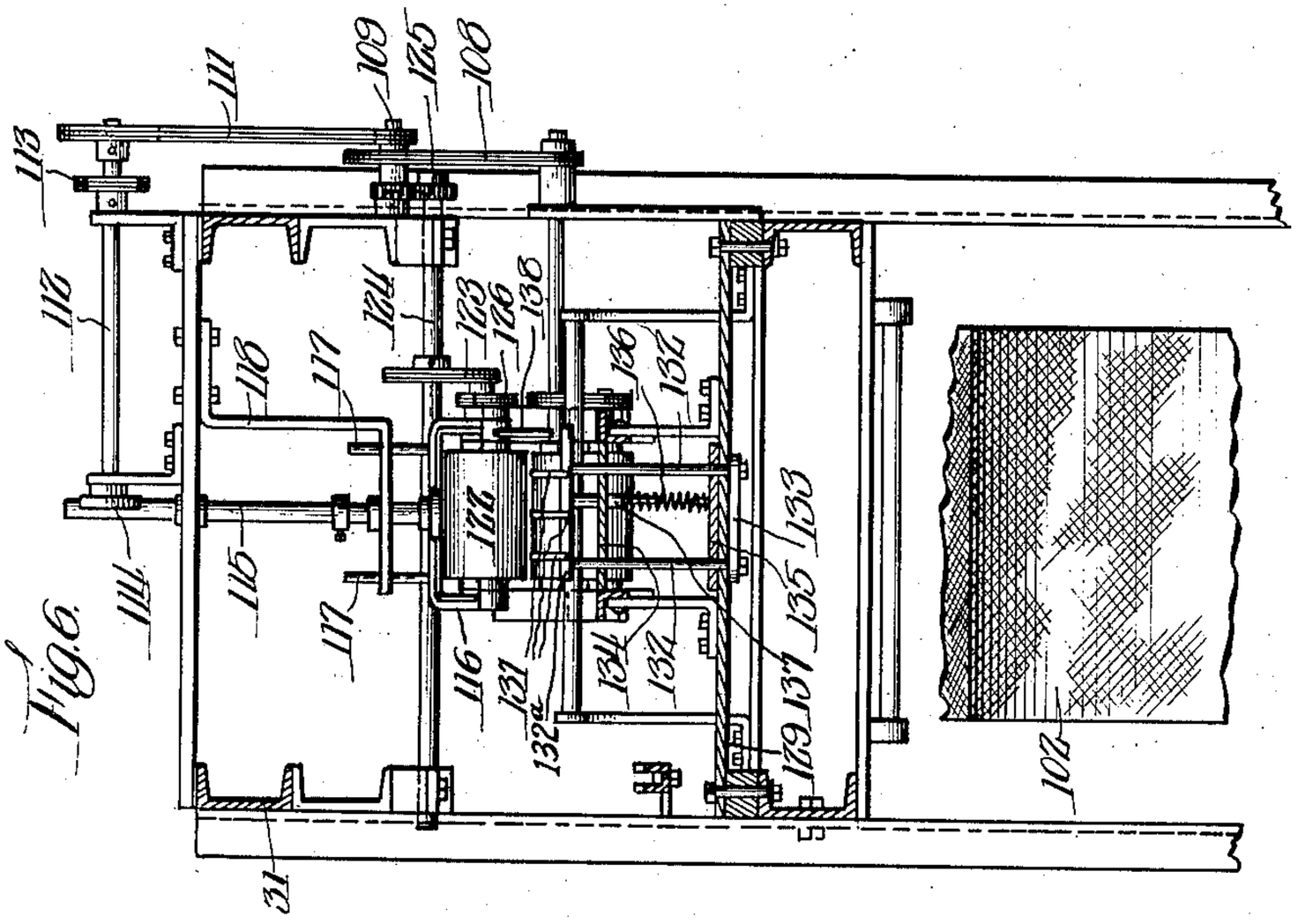
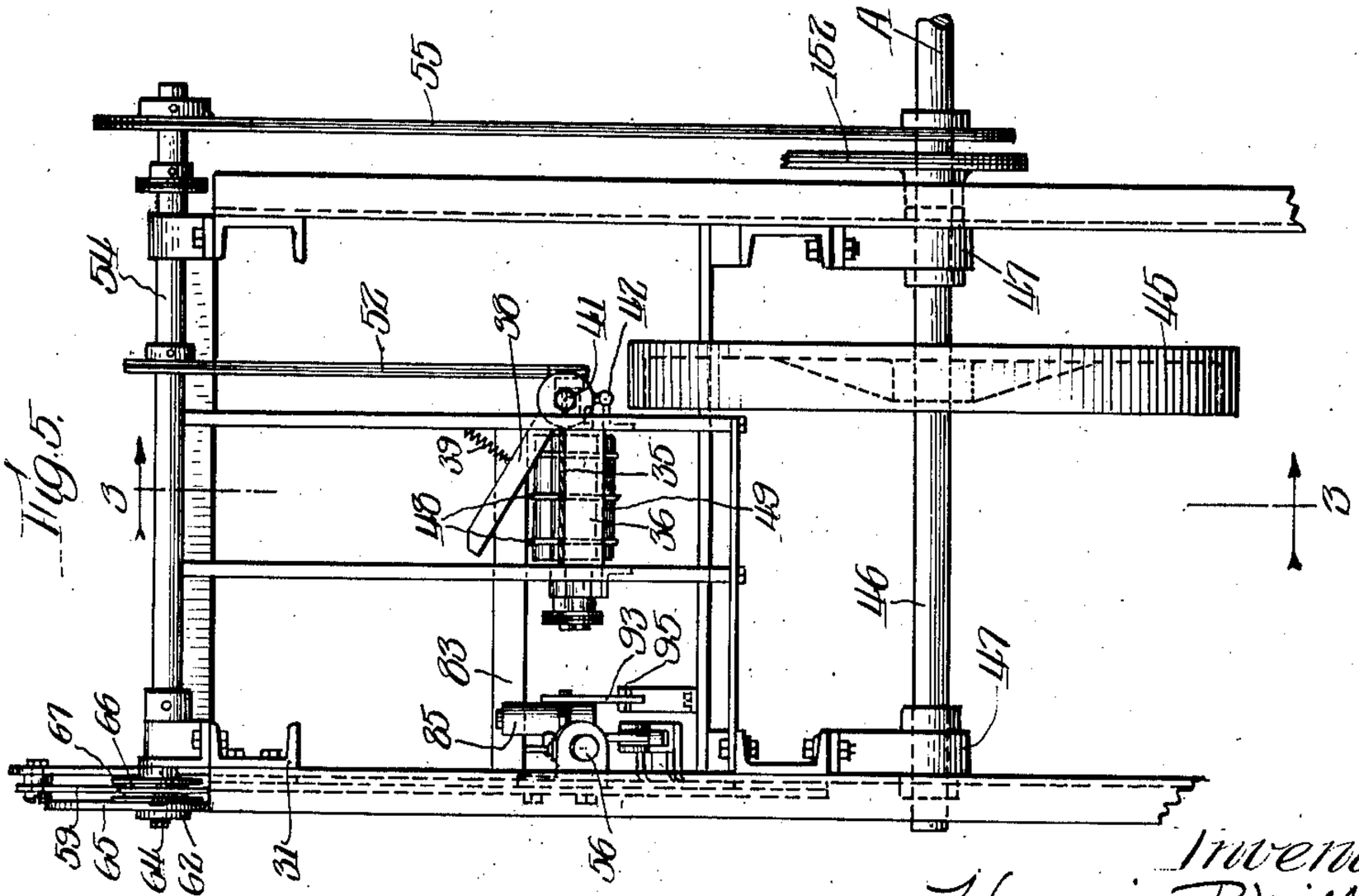


Fig. 5.



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WRAPPING MACHINE

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7 Sheets-Sheet 6

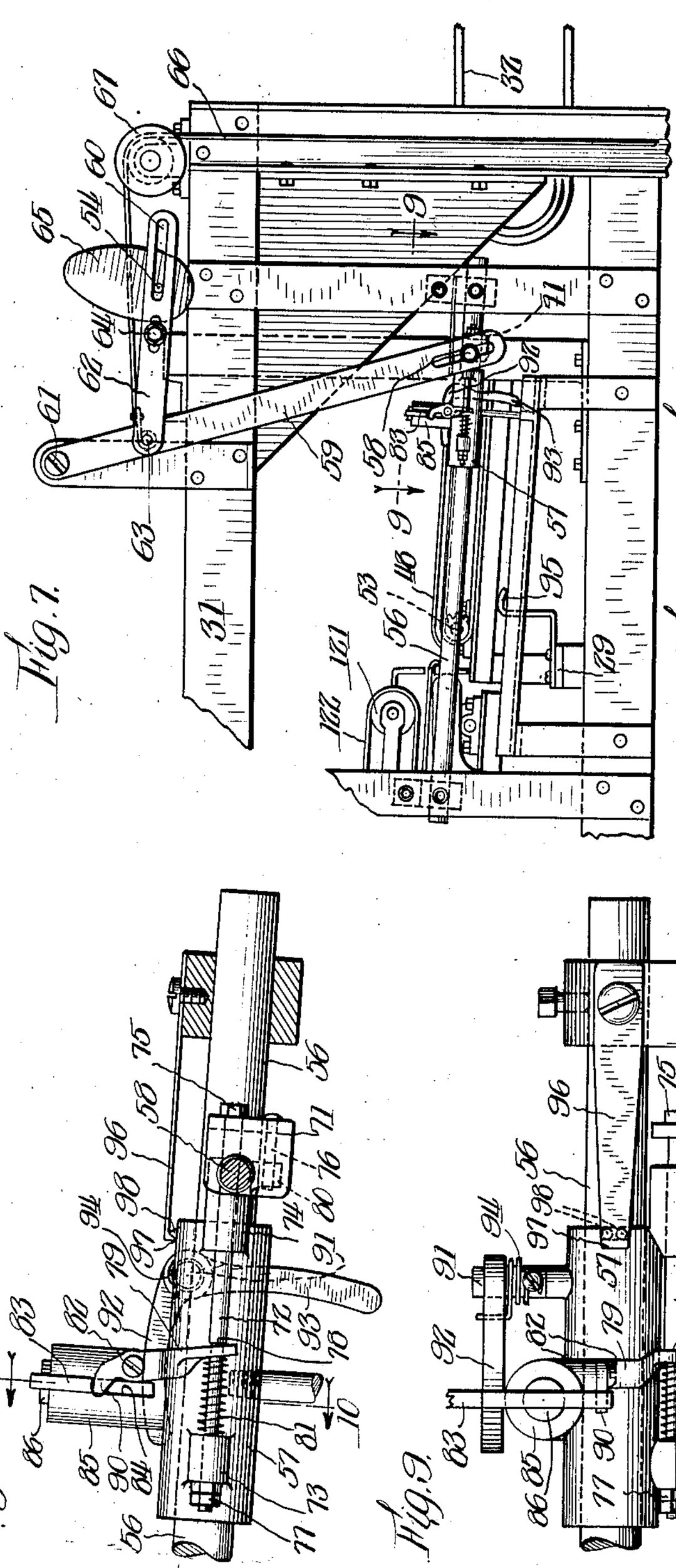

Fig. 7.

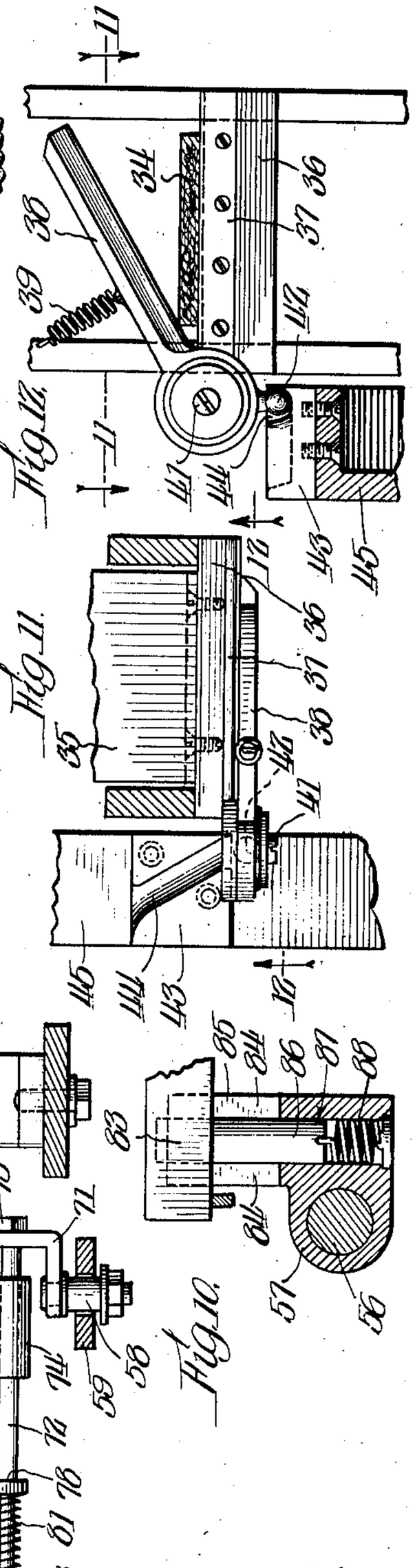

Fig. 12.

Fig. 11.

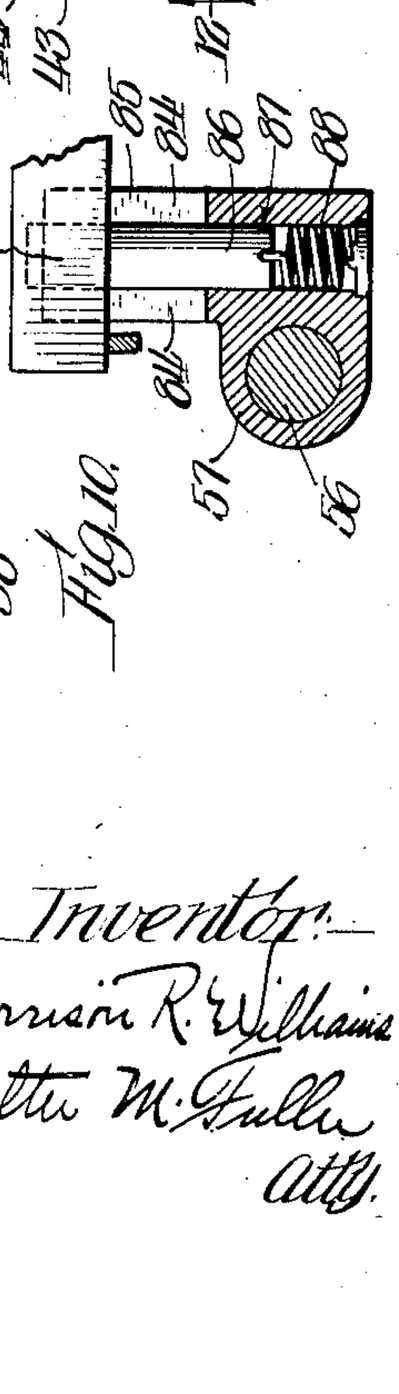

Fig. 10.

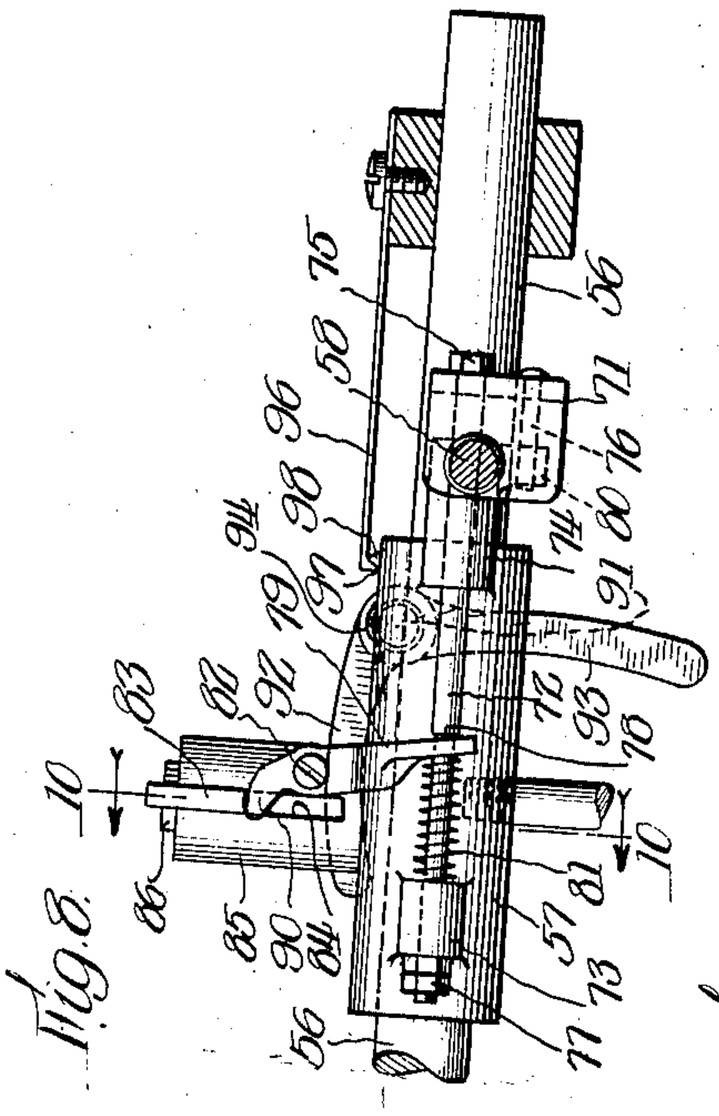

Fig. 8.

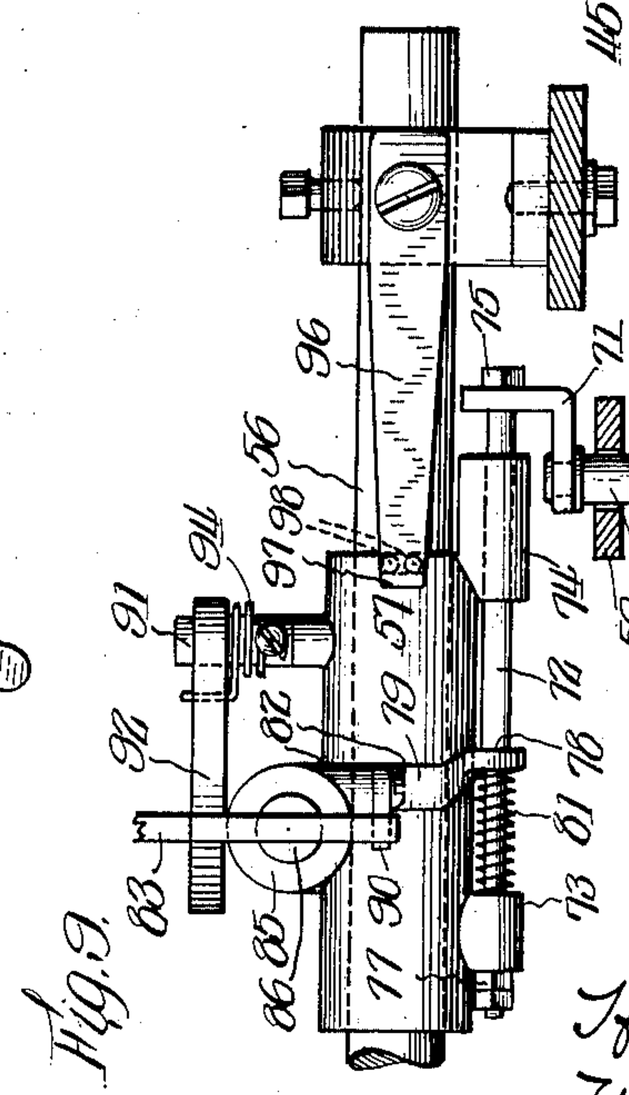

Fig. 9.

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WRAPPING MACHINE

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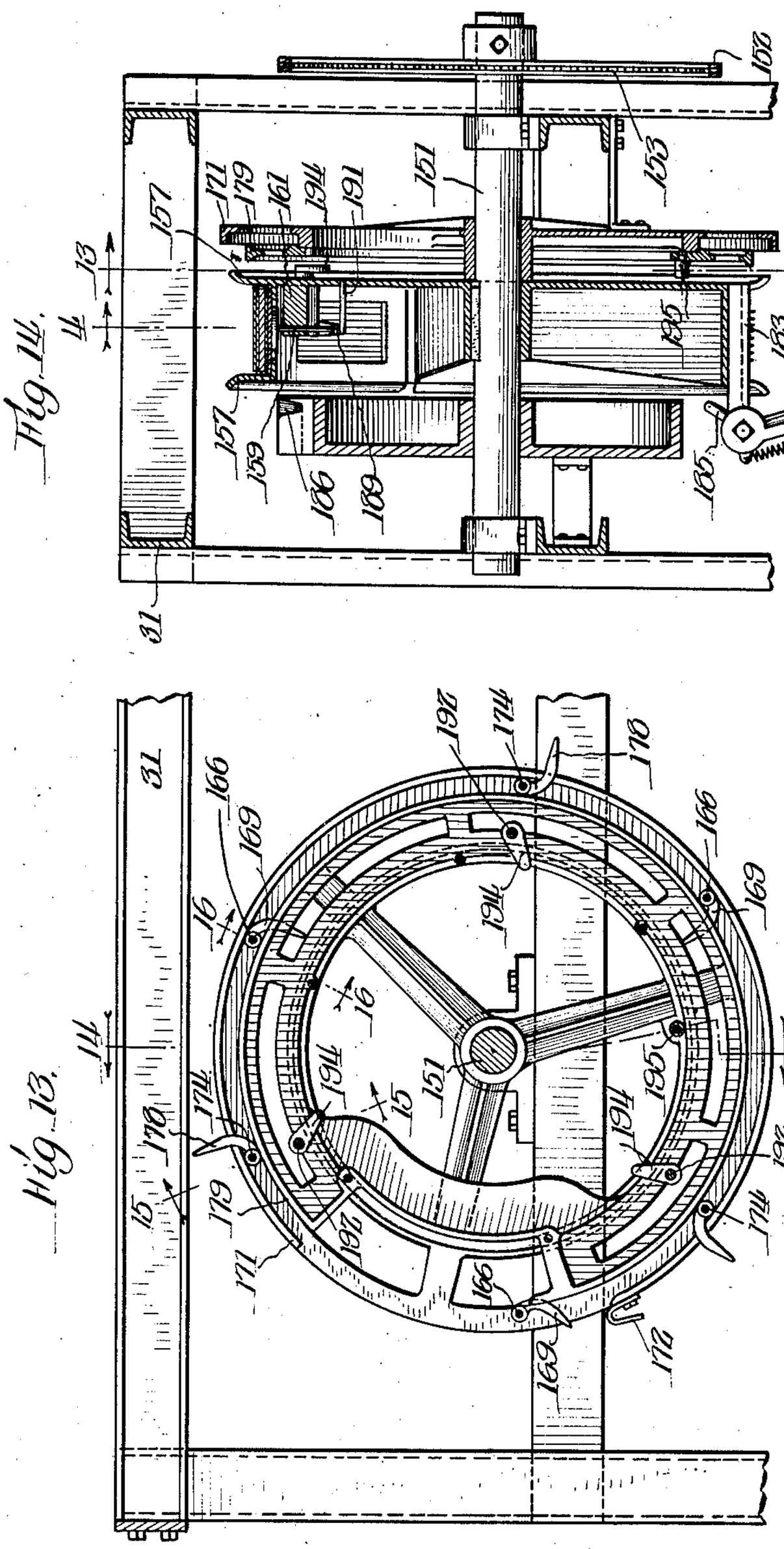

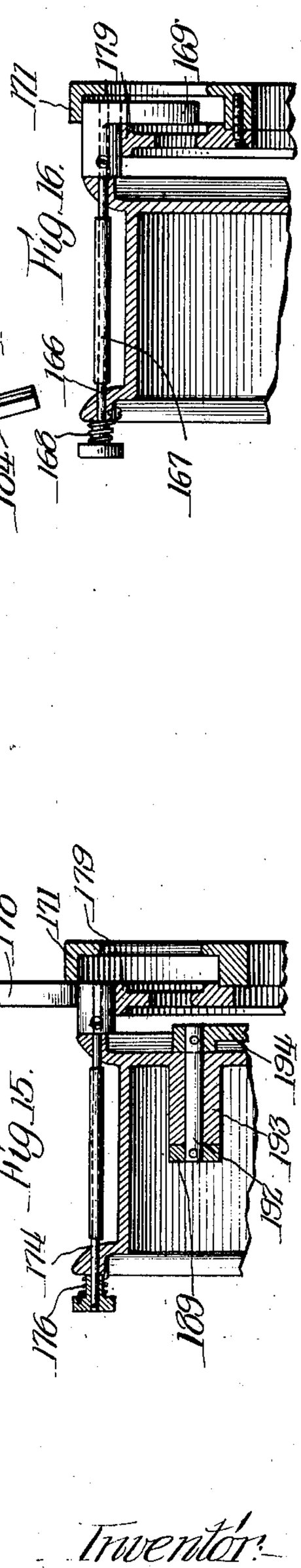

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Patented June 5, 1934

1,961,273

UNITED STATES PATENT OFFICE

1,961,273

WRAPPING MACHINE

Harrison R. Williams, Chicago, Ill.

Application March 29, 1926, Serial No. 98,050

27 Claims. (Cl. 223—15)

My invention pertains to features of novelty and advantage in machines for applying wrappers around bodies, but relates more particularly, yet not exclusively, to mechanisms of this character for folding or wrapping the gauze around the absorbent bodies of sanitary pads and the like.

The leading object or prime purpose of the invention is the provision of a machine of this type capable of satisfactorily performing the required work, which is simple in structure, which is composed of comparatively few parts, which operates with accuracy and precision, which is effective and efficient in the performance of its functions, which is unlikely to become deranged or injured in ordinary service, and which can be manufactured at relatively small cost.

In the accompanying drawings, forming a part of this specification, and throughout the several views of which like reference characters have been used to designate the same parts, a present desirable and preferred embodiment of the invention has been illustrated in detail and these drawings should be considered in connection with the following detailed description of the construction and its mode of operation.

In these drawings:

Figure 1 is a front elevation of the mechanism;

Figure 2 is an elevation of the reverse or back side of the machine;

Figure 3 is a fragmentary vertical, central, longitudinal section through the entrance portion of the machine on line 3—3 of Figure 5;

Figure 4 is a similar central vertical section through the other end part of the machine on line 4—4 of Figure 14;

Figure 5 is an elevation of the right-hand end of the machine as viewed in Figure 1;

Figure 6 is a vertical cross-section on line 6—6 of Figure 3;

Figure 7 is a fragmentary enlarged elevation of a portion of the machine at its entrance end;

Figure 8 is a still further enlarged part of the mechanism shown in Figure 7 and illustrates more especially the means for feeding the individual pads after they have been severed from the supply;

Figure 9 is a plan view of that portion of the mechanism depicted in Figure 8, or this Figure 9 may be considered as an enlarged horizontal section on line 9—9 of Figure 7;

Figure 10 is a fragmentary section on line 10—10 of Figure 8;

Figure 11 is a horizontal section on line 11—11 of Figure 12 and shows the pad-shearing mechanism;

Figure 12 is a section on line 12—12 of Figure 11;

Figure 13 is a vertical longitudinal section on line 13—13 of Figure 14 and illustrates the cam mechanism for actuating the gauze folders for wrapping the ends of the fabric over the pad;

Figure 14 is a vertical cross-section on line 14—14 of Figure 13, showing in section the wheel on which the gauze is folded and the associated cam mechanism;

Figure 15 is an enlarged fragmentary cross-section on line 15—15 of Figure 13;

Figure 16 is a similar section on line 16—16 of Figure 13;

Figure 17 is a plan view of the stationary folder by means of which the edge portions of the gauze are folded or wrapped over the pad;

Figures 18, 19 and 20 are vertical cross-sections on lines 18—18, 19—19 and 20—20 respectively of Figure 17.

Referring to these drawings, it will be perceived that the machine includes a main frame 31, the details of construction of which are quite immaterial so long as the framework performs its usual supporting functions.

At the entrance end of the machine, an endless belt conveyor 32 passing around a drum 33 feeds or advances the continuous pad strip 34 to the machine, this strip being of light, cottony, fluffy wood-pulp material or similar absorbent material.

A sheet-metal shelf or support 35 is mounted on the cross-bar 36 and covers the space between the conveyor 32 and such bar for supporting the incoming end of the pad strip 34 all as is clearly shown in Figure 3.

The machine includes a pair of shears of which the stationary element 37 is secured to the supporting cross-bar 36 (see Figures 3, 5, 11 and 12), the companion or co-operating, upper, movable, shear blade 38 being normally pulled up or elevated by a contractile coil-spring 39 secured thereto and to a portion of the framework (see Figure 12).

The shear-blade 38 is fulcrumed at 41 and such end of the blade has a circular enlargement carrying an outstanding ball or globular extension 42 adapted to co-operate with a cam 43 having an oblique cam groove 44, the cam being mounted in any approved manner on the rotary wheel 45.

The upper shear-blade is ordinarily held in elevated or open position as shown in Figure 12, but when the cam 43, during the revolution of the wheel 45 reaches such a position that the ball 42 enters the groove 44, the blade will be depressed

and cut off a section of the pad, all as will be readily understood.

Wheel 45, carrying the cam 43, is mounted on and fixed to a main transverse drive-shaft 46 rotatable in bearings 47, 47, as shown most clearly in Figure 5.

Inwardly of the machine beyond the cutters 37, 38, the mechanism includes an endless belt 48 extended around revoluble drums 49 and 51, the upper stretch of such belt constituting a conveyor for transporting the cut-off section of the pad (see Figure 3).

Drum or roller 51 is mounted on a shaft 53 and this is driven by a sprocket chain 52 co-operating with a sprocket-wheel on shaft 53 and a sprocket-wheel on an upper suitably-mounted rotatable cross-shaft 54, the latter being driven from the drive shaft 46 by a sprocket-chain 55 co-acting with sprocket-wheels on the two shafts 46 and 54.

In this way power is transmitted from the shaft 46 through the connecting means specified to the shaft 53 in order to actuate the endless conveyor 48 carrying the severed section 50 of the pad.

It is necessary to separate the severed pad sections longitudinally from one another in order that they may be properly covered and wrapped in the gauze or cheese-cloth, and in the mechanism presented, the following specified co-operating instrumentalities have been provided.

A stationary, slightly-inclined shaft 56 is mounted in or on the framework and longitudinally slidable on this is a member or carriage 57 having a pin and slot connection 58 with a lever 59 fulcrumed at 61 on the framework at its upper end.

A link 62 is fulcrumed to the lever 59 at 63 and it is slotted at 60 for the accommodation of a reduced-diameter portion of the shaft 54 which supports that portion of the link, the latter having also an adjustable roller 64 co-operating with the edge of a cam 65 on and rotatable with the shaft 54, such roller being always maintained in contact and co-active relation with the cam by reason of a cable 66 connected to the lever 59 and passing over a sheave 67, the lower end of the cable being supplied with a weight 68 as shown in Figure 1.

From this description, it will be readily understood that the rotation of the cam gives the lever 59 a quick forward movement, such lever being returned to original position by the action of the weight operating thereon through the cable 66.

The pin or bolt 58 forming part of the loose connection between the lever 59 and the member 57 carries a right-angle bracket 71 (Figures 8 and 9) fixed to the end of a slide rod 72 reciprocatory in spaced bearings 73 and 74 forming part of the member 57, this bracket 71 having a guide-pin 76 slidable in an extension 80 depending from the bearing 74.

A nut 75 on one end of rod 72 secures the bracket member 71 thereto and another nut 77 on the opposite end of the rod limits the movement of the latter to the right as the parts are viewed in Figures 8 and 9.

Rod 72 has an enlarged portion and a section of reduced diameter with a shoulder 78 between them bearing against a latch 79, the apertured lower end of which is held against the shoulder 78 by a coil expansion-spring 81 encircling the part of the rod of reduced diameter and bearing at one end against the member 73 and at its other end against the latch 79, all as is clearly depicted.

Latch 79 is fulcrumed at 82 and its toe or finger 90 is designed to come under a cross-bar 83 (Figures 3, 5, 8, 9 and 10) vertically slidable in opposite grooves 84, 84 in a bearing 85 upstanding from the member 57, such bar 83 being fitted in the upper end of a shaft 86 slidable in the opening 87 of the bearing 85 and spring-pulled downwardly by a coil contractile-spring 88, the bar 83 being arranged horizontally as indicated, particularly in Figure 3, just beyond the shears 37, 38.

On a lateral stud 91, a bell-crank lever 92—93 is fulcrumed and its normally-horizontal arm 92 has a tendency to swing upwardly under the action of a coil spring 94 operatively connected thereto as shown in Figure 9.

The part 92 of this bell-crank lever is positioned below the horizontal transverse bar 83 with which it co-operates in the manner to be described.

The depending part or tail 93 of this bell-crank lever, during its reciprocation, co-operates with a fixed cam or abutment 95 shown in Figure 7, such tail riding idly over such abutment when it travels to the left, but rocking the bell-crank lever upwardly when it travels to the right, the part 92 of such lever then elevating the bar 83 so that the catch 79—90 may rock under its to hold it in raised or elevated position.

In order to hold the member 57 and the parts associated therewith in proper position and against dislodgment until it is intended to move, the machine includes a leaf-spring 96 equipped with a bevelled dog 97 at its end which co-acts with a companion bevelled projection 98 on the casting 57.

When the lever 59 swings to the left as the parts are seen in Figure 7, the rod 72 will be moved in the same direction sliding in the bearings 73 and 74 until the bracket 71 strikes the end of the bearing 74 and after that the member 57 is carried along with the bracket.

During the initial movement of the bracket, that is to say, before the carriage 57 moves, the latter being restrained by the action of the catch 97, the dog 79 is released permitting the bar 83 to descend under the action of spring 88 and as soon as such descent is accomplished, the whole carriage and bar are slid along with the bracket 71 pressing against the end of bearing 74.

Thus it will be seen that during the first part of the movement of the bracket 71, the catch is released and thereafter the lowered bar is pushed along to feed the severed pad much more rapidly than the travel of conveyor 48.

That is to say, after the section of the pad has been cut off from the supply by the shears 37 and 38, and such severed part has been fed forwardly somewhat as shown in Figure 3, the bar 83 descends back of it and then feeds the cut-off section very rapidly forwardly to secure the proper space between that section and the next one which will be severed from the supply.

The strip of gauze or cheese-cloth 101 from the suitably supported supply roll or spool 102, and of substantially greater width than the strip of padding 34, as it leaves the roll 102 passes around guide-rollers 103 and 104 up on to the top of an endless conveyor 105 extending around drums or pulleys 106 and 107, the shaft of the former being driven from an upper shaft 109 by a sprocket-chain 108 and associated sprocket-wheels on the two shafts.

Shaft 109 in turn, is rotated from an upper crossshaft 112 by a sprocket-chain 111 and correlated sprocket-wheels on the two shafts.

A sprocket-chain 113 and companion sprocket-wheels on the two shafts 112 and 54 transmit

the power from the latter to the former so that the rotation of shaft 54 through the connecting means specified is carried to the drum 106 and the endless conveyor belt 105 on which the strip of gauze rests.

Shaft 112, as is more clearly shown in Figures 3 and 6, has a cam 114 on its end operating in a recess in the side of an upright shaft 115 arranged to slide substantially vertically in suitable bearings, the details of which need not be explained.

The lower end of shaft 115 carries a yoke or framework 116 which has a pair of upstanding guide-rods 117, 117 (Figure 6) slidable in holes in a bracket 118 fastened to the frame so as to hold the yoke 116 in proper angular relation during its up and down movements.

The frame or yoke 116 supplies bearings for the shafts of two rollers, 119 and 121, around which extends an endless metal or other belt 122 preferably provided on its outer face with small teeth or projections.

The shaft of drum or pulley 119 is driven by a sprocket-chain 123 and co-operating sprocket-wheels on the shaft of such drum and on a shaft 124 revoluble in suitable bearings and driven from shaft 109 by gearing 125 shown in Figure 6.

Another sprocket-chain 126 co-acting with sprocket-wheels on the shafts of the two drums 119 and 121 drives the element 121 from the shaft of the member 119 so that a very positive action of the two drums is secured as well as of the endless conveyor actuated thereby.

When the severed section of the pad is advanced by the movement of the bar 83, it is pushed forwardly on top of three parallel rods 131, 131, beneath the conveyor 122 and above the flat strip of gauze 101 on the conveyor 105.

The front ends of the rods are mounted on and supported by a cross-bar 132*a* (Figures 3 and 6) carried on the upper ends of two supporting and guide rods 132, 132 slidable in apertures in the spaced flanges 134 and 135 of a channel bar 130, the lower ends of the two rods, 132, 132 being connected together by a cross-bar 133 which also acts as a stop to limit the upward travel of the parallel rods 131 by coming into contact with the underside of the bar 129 on which the channel bar 130 is mounted.

The supporting bar 132*a* is pushed upwardly by an expansion coil spring 136 bearing on the flange 135 at its lower end and pressing at its other end on a rod or plunger 137 secured to the part 132*a* and extending downwardly through a hole in the flange 134.

It will be understood, therefore, that the supporting rods 131 are maintained in the position shown in Figure 3 by the action of spring 136 but that they are susceptible of being pushed down, under which circumstances the rods 132 would slide in their bearings and the spring 136 would be somewhat compressed.

To effect such descent of the bars or rods 131, the member 116 is supplied with a bent finger 138 (Figure 3) adapted during the descent of the conveyor 122 to engage the bar 132*a* and press the bars 131 down so as to permit contact between the pad carried by them and the layer of gauze beneath them so that thereafter the two may travel together, it being understood that the speed of the two conveyors 105 and 122 is approximately the same.

The continuous strip of gauze and the spaced pads thereon upon leaving the conveyor 105 pass on to the top of another endless conveyor 139 extended around drums or pulleys 141 and 142, the former being driven from the shaft of drum 106 by a sprocket-chain 143 and companion sprocket-wheels on the two shafts.

The outer surface of the endless conveyor 139 may have slight projections or points thereon if desired to secure firm contact and pulling action on the strip of gauze resting thereon.

This conveyor travels through the lower portion of a sheet-metal folder characterized as a whole 144 and which has deflecting side wings 145 and 146 which fold up the protruding side portions of the gauze and wrap them over on to the top face of the pad one on top of the other as shown in Figures 18, 19 and 20 in which the one side wing or section of the gauze has been characterized 147 and the opposite part denominated 148.

It will be understood, therefore, that as the product leaves the conveyor 139, the gauze will be folded over upon itself and at certain distances apart, sections of the pad will be within such folded fabric.

It now becomes necessary to sever the fabric between such pads and to fold the front and rear end portions of the gauze over on to the body of the pad and then discharge the finished product from the machine.

This severing and folding operation occurs on a wheel construction near the discharge end of the appliance and that portion of the mechanism will now be described.

A suitably journaled cross-shaft 151 is rotated by means of a sprocket-chain 152 co-operating with sprocket-wheel 153 on such shaft, an idler sprocket-wheel 154 and a sprocket-wheel 155 on the drive-shaft 46 heretofore mentioned.

Mounted fixedly on shaft 151 so as to revolve therewith, I provide a wheel 156 having outwardly-flaring side-walls 157, 157 around its periphery and between which the wheel has three recesses or cavities adapted to receive the pad-equipped portions of the longitudinally-folded gauze.

The bottom wall 158 of each such pocket comprises a plate mounted on the top of a rod or shaft 159 slidable radially in a bearing 161 and normally pulled inwardly to the bottom of the cavity by a pair of coil contractile springs 162, 162.

In order to keep the plate always in proper register with the cavity, it is supplied with a sliding guide-pin 163 extended through a hole in the bottom of the pocket.

This plate or wall 158 constitutes the slidable discharge means for delivering the finished product and the means for actuating it will be described hereinafter.

At one end of each such pocket or socket on the wheel there is a shorter wall 164 provided with a plurality of outstanding pins 165 and hinged at 166 there is a sheet-metal folder apertured to receive the pins, the sharp points of which project through the folder holes into the strip of gauze 101.

Shaft 166, to which the folder 167 is fastened, is equipped with a torsional spring 168 (see Figure 16) tending to rock the folder over on top of the pad in the adjacent pocket and the other end of shaft 166 has a dog 169 of the curved form shown in Figure 13, the dog specified riding on the inner surface of a stationary, mutilated, circumferential rim 171 which is omitted on the left-hand portion of the appliance as shown on the corresponding part of Figure 13, one end of such rim having secured thereto a bent guide

172 to assist in turning the dog back into position after the folder has swung over in response to the action of spring 168.

At the other end of each pocket or cavity, there is another wall 173 at an angle thereto and equipped with the pin points 165 to engage the gauze or fabric.

On a shaft 174 a similar perforated or apertured folder 175 is secured, its perforations or holes being for the same purpose of permitting the sharp pins to project through to engage the fabric on the outside of the folder.

Each such shaft 174 (Figure 15) is similarly equipped with a torsional spring 176 tending to rock the folder over on top of the pad in the pocket or recess and in like manner the opposite end of the shaft 174 is supplied with a curved dog 178 which co-acts with what might be aptly termed a stationary cam 179 which is cut away or omitted for a portion of the circle as shown in the left-hand part of Figure 13 to permit the folder to turn by freeing the dog from the holding action of the cam.

Of course the pads are so spaced in the wrapped or folded gauze that they will register accurately with the three pockets or sockets of this wheel as the fabric and such interfolded pads are wound on the wheel by the rotation of the latter.

To assist in applying the pad-equipped, lengthwise-folded gauze to the wheel on which it is wound as specified, a roller 181 presses on the top face thereof to assure its positive application to the projecting pins 165, the rotation of which, with the wheel, pulls the continuous strip along and winds it on the wheel.

Such roller is mounted on the lower end of a rock-arm 182 which may be weighted, if desired, to more efficiently perform its work.

The wheel, adjacent to each of its sections 164, carries a pair of shears 183, 184, similar to the shears 37, 38, already described, and when the ball or rounded end 185 of each such set of cutters coacts with a stationary grooved cam 186 (Figure 14), the shears close and cut the longitudinally-folded gauze between the pads, thus dividing the gauze into individual sections ready for folding over on to the top of the encased pad.

The cam is so positioned that the part of the gauze behind the shears will have become applied to the pin points before the severing occurs, so that the oncoming continuous strip of gauze will be drawn on to the wheel in a manner well understood.

The severing having taken place, then the folders work to fold over the front and rear sections of gauze on to the top of the pad by the mechanism already referred to.

When the pad reaches the lower part of the wheel during the revolution of the latter, its ejector plate 158 is operated to discharge the completely-wrapped pad 187 on to an endless delivery conveyor 188.

To accomplish this result, each rod 159 bears on an arm 189 which rests on a stop-pin 191, each such arm being fixedly mounted on a rock-shaft 192 oscillatory in a bearing 193 of the wheel and having a finger 194 on its protruding end to coact with a stationary roller 195 against which it is projected by the springs 162 previously mentioned (see Sigures 4, 13, 14, and 15).

This roller is so positioned that the ejector-plate will be in normal inoperative position during the gauze-folding action and will move to discharge the completed product on to the conveyor 188.

From the preceding, it will be understood that the pad and gauze materials are supplied to the machine uninterruptedly in continuous supply strips, that the pad strip is severed into separate pads which are longitudinally spaced apart and applied in that relation to the continuous gauze, that the latter is then folded longitudinally over the side edges of the pads, that the gauze between the pads is cut, that the front and rear parts of the gauze are folded endwise over on to each pad, and that the finished product is delivered from the machine, all of these operations taking place wholly automatically.

An important feature of the invention resides in the fact that the folders 167 and 175 are perforated, this construction greatly facilitating the folding action as due to the perforations, the air passes through the folding blade during the folding action, and thereby holds the gauze in place thereon. The greater the speed of operation of the folding blades, the greater is this effect. If the blades were not perforated, the gauze would tend to shift from off the blade with the result that an uneven fold would be produced.

The invention is susceptible of a variety of embodiments and is therefore not limited to the precise and exact mechanical details presented because these may be modified within comparatively wide limits without departure from the heart and essence of the invention as defined by the appended claims and without the sacrifice of any of the material or substantial benefits or advantages of the invention.

I claim:

1. In a wrapping machine, the combination of means to feed a continuous strip of wider cover material, means to feed a continuous strip of narrower pad material, means to sever said strip of pad material into individual pads, means to deposit said pads in lengthwise spaced relation on said strip of cover material, means to fold the longitudinal sections of said cover material over such pads, means to sever said strip of cover material between said pads, and means to fold the two ends of each such individual cover over on to its pad.

2. In a wrapping machine, the combination of means to feed a continuous strip of wider cover material, means to feed a continuous strip of narrower pad material, means to sever said strip of pad material into individual pads, means to deposit said pads in lengthwise spaced relation on said strip of cover material, stationary means to fold the longitudinal sections of said traveling cover material over such pads, means to sever said strip of cover material between such pads, and movable means to fold the two ends of each such individual cover over on to its pad.

3. In a wrapping machine, the combination of means to feed a continuous strip of wider cover material, means to feed a continuous strip of narrower pad material, means to sever said strip of pad material into individual pads, means to deposit said pads in lengthwise spaced relation on said strip of cover material, means to fold the longitudinal sections of said cover material in succession over such pads, means to sever said strip of cover material between said pads, hinged wings to fold the two ends of each such individual cover over on to its pad, and means to operate said wings in succession.

4. In a wrapping machine, the combination of means to feed a continuous strip of cover material, means to feed a continuous strip of pad material, means to sever said pad material strip into

individual pads, a support over said strip of cover material, means to feed said individual pads on to said support, and means to feed said pads from said support on to said cover material strip in lengthwise spaced relation.

5. In a wrapping machine, the combination of means to feed a continuous strip of cover material, means to feed a continuous strip of pad material, means to sever said pad material strip into individual pads, a support over said strip of cover material, means to depress said support toward said cover material strip, means to feed said individual pads on to said support, and means to feed said pads from said support on to said cover material strip in lengthwise spaced relation.

6. In a wrapping machine, the combination of means to feed a continuous strip of cover material, means to feed a continuous strip of pad material at a slower rate, means to sever said pad material strip into individual pads, a support over said strip of cover material, means to feed said individual pads on to said support at a rate of speed faster than that of the pad material strips, and means to feed said pads from said support on to and substantially at the speed of travel of said cover material strip in lengthwise spaced relation.

7. In a wrapping machine, the combination of means to feed a continuous strip of wider cover material, means to feed a continuous strip of narrower pad material at a slower rate, means to sever said pad material strip into individual pads, a support over said strip of cover material, means to feed said individual pads on to said support at a rate of speed faster than that of the pad material strip, means to depress said support toward said cover material strip, means to feed said pads from said support on to and substantially at the speed of travel of said cover material strip in lengthwise spaced relation, means to fold the longitudinal sections of said cover material strip in succession over such pads, means to sever said strip of cover material between said pads, and means to fold the two ends of each such individual cover over on to its pad.

8. In a wrapping machine, the combination of a wheel, means to rotate said wheel, means on said wheel to wind thereon continuously a strip of cover material having its longitudinal sections folded over lengthwise spaced pads, means on said wheel to sever the cover material between the spaced pads, means on said wheel to fold over the two ends of said cover material units on to its corresponding pad, and means to deliver the finished product from the wheel.

9. In a wrapping machine, the combination of a wheel, means to rotate said wheel, means on said wheel to wind thereon continuously a strip of cover material having its longitudinal sections folded over lengthwise spaced pads, means on said wheel to sever the cover material between the spaced pads, hinged wings on said wheel to fold over the two ends of said cover material units on to its corresponding pad, means to rock said wings, and means to deliver the finished product from the wheel.

10. In a wrapping machine, the combination of a wheel, means to rotate said wheel, pin points on said wheel to engage and wind thereon a strip of cover material having its longitudinal sections folded over lengthwise spaced pads, means to sever the cover material between the spaced pads, hinged wings on said wheel to fold over the two ends of said cover material units on to the corresponding pad, some at least of said wings having apertures to receive said pin points, and means to deliver the finished product from the wheel.

11. In a machine for wrapping objects with a porous wrapper material, means for folding said material over against the wrapped object, comprising a perforated folding blade and means for moving said blade through an angle of substantially 180° against the surface of said object so as to include said material between said object and said blade.

12. In a machine for wrapping objects with porous wrapping material, means for receiving the wrapped article, including an end portion thereof to be folded over against the body of said article, said receiving means comprising a hinged perforated blade receiving said end, and means for turning said blade about its hinge to fold said end against said body.

13. A wrapping machine for folding the ends of the wrapper lengthwise over the main body portion of a pad, comprising a rotating wheel, means to wind continuously thereon a folded strip of wrapping material completely enclosing lengthwise spaced pads, a cutting device carried by said wheel to sever the wrapping material between the spaced pads, and means to fold the two ends of said wrapping material lengthwise over the main body portion of said pad.

14. A wrapping machine for folding the ends of the wrapper lengthwise over the main body portion of a pad, comprising a rotating wheel, means to wind continuously thereon a folded strip of wrapping material completely enclosing lengthwise spaced pads, a cutting device carried and operable by the rotation of said wheel to sever the wrapping material between the spaced pads, and means to fold the two ends of said wrapping material lengthwise over the main body portion of said pad.

15. A wrapping machine for folding the ends of the wrapper lengthwise over the main body portion of a pad, comprising a rotating wheel, means to wind continuously thereon a folded strip of wrapping material completely enclosing lengthwise spaced pads, means to sever the wrapping material between the spaced pads, and means carried by said wheel to fold the two ends of said wrapping material lengthwise over the main body portion of said pad.

16. A wrapping machine for folding the ends of the wrapper lengthwise over the main body portion of a pad, comprising a rotating wheel, means to wind continuously thereon a folded strip of wrapping material completely enclosing lengthwise spaced pads, means to sever the wrapping material between the spaced pads, and means carried and operable by the rotation of said wheels to fold the two ends of said wrapping material lengthwise over the main body portion of said pad.

17. A wrapping machine for folding the ends of the wrapper lengthwise over the main body portion of a pad, comprising a rotating wheel, means to wind continuously thereon a folded strip of wrapping material completely enclosing lengthwise spaced pads, means carried by said wheel to sever the wrapping material between the spaced pads, and means carried by said wheel to fold the two ends of said wrapping material lengthwise over the main body portion of said pad.

18. A wrapping machine for folding the ends of the wrapper lengthwise over the main body portion of a pad, comprising a rotating wheel, means to wind continuously thereon a folded strip of wrapping material completely enclosing

lengthwise spaced pads, means carried and operable by the rotation of said wheel to sever the wrapping material between the spaced pads, and means carried and operable by the rotation of said wheel to fold the two ends of said wrapping material lengthwise over the main body portion of said pad.

19. A wrapping machine for folding the ends of the wrapper lengthwise over the main body portion of a pad, comprising a rotating wheel, pin points on said wheel to engage and to wind continuously thereon a folded strip of wrapping material completely enclosing lengthwise spaced pads, means to sever the wrapping material between the spaced pads, and means comprising hinged wings to fold the two ends of said wrapping material lengthwise over the main body portion of said pad.

20. A wrapping machine for folding the ends of the wrapper lengthwise over the main body portion of a pad, comprising a rotating wheel, means to wind continuously thereon a folded strip of wrapping material completely enclosing lengthwise spaced pads, means to sever the wrapping material between the spaced pads, and means comprising hinged plate-like wings movable through an angle of substantially 180° and operable by the rotation of the wheel to fold the two ends of said wrapping material lengthwise over the main body portion of said pad.

21. In a wrapping machine, the combination of a rotating wheel, means for continuously feeding to said wheel a continuous strip of covering material having longitudinal sections folded over lengthwise spaced pads, the periphery of said wheel having a plurality of tables to receive the pads, a hinged wing at each end of each of said tables, cutters carried by said wheel to sever the covering material between the spaced pads; and means operable by the rotation of the wheel to operate said cutters, and to move said wings to fold over the two ends of said cover material onto the corresponding unit.

22. In a wrapping machine the combination of a rotating wheel, means for continuously feeding to said wheel a continuous strip of gauze covering material having longitudinal sections folded over lengthwise spaced pads, the periphery of said wheel having a plurality of tables to receive the pads, a hinged perforated wing at each end of each of said tables, cutters carried by said wheel to sever the covering material between the spaced pads, and means operable by the rotation of the wheel to operate said cutters, and to move said wings to fold over the two ends of said cover material onto the corresponding unit.

23. In a sanitary napkin making machine, the combination of a rotating wheel, means for continuously feeding to said wheel a continuous strip of gauze covering material having longitudinal sections folded over lengthwise spaced pads, the periphery of said wheel having a plurality of tables to receive the pads, the peripheral portions disposed between said tables being adapted to support the covering material between the spaced pads and divided transversely into two portions, a perforated wing cooperating with each of said portions, said wing being hinged along the line adjacent the tables, said peripheral portions having pins projecting through said apertured wings and positively gripping the covering material between the pads, cutters carried by said wheel to sever the covering material between the spaced pads, and means operable by the rotation of the wheel to operate said cutters and to move said wings to fold over the two ends of said cover material onto the corresponding unit.

24. In a sanitary napkin making machine, the combination of a rotating wheel, means for continuously feeding to said wheel a continuous strip of gauze covering material having longitudinal sections folded over lengthwise spaced pads, the periphery of said wheel having a plurality of tables to receive the pads, the peripheral portions disposed between said tables being adapted to support the covering material between the spaced pads and divided transversely into two unequal portions, a perforated wing cooperating with each of said portions, said wing being hinged along the line adjacent the tables, said peripheral portions having pins projecting through said apertured wings and positively gripping the covering material between the pads, a roller pressing said strip against the wheel while the same is being wound thereon, cutters carried by said wheel to sever the covering material between the spaced pads, and means operable by the rotation of the wheel to operate said cutters, to move said wings to fold over the two ends of said cover material onto the corresponding unit, and to move said tables to eject the folded pad.

25. In a machine of the class described, the combination of a movable support for receiving and supporting a catamenial bandage having a pad portion and a wrapper therefor of gauze, said wrapper being of greater length than the length of the pad so as to form end flaps extending endwise from the opposite ends of the pad, said flaps being limp and of such length that, when unsupported, they droop of their own weight from the ends of the pad, and means associated with said movable support for folding said limp end flaps upward and inwardly over the top faces of the respectively adjacent end portions of the pad.

26. In a machine for making sanitary napkins, the combination of means for feeding a strip of cover material, means for feeding a strip of pad material, means for dividing said strip of pad material into individual pads of less width than the width of said strip of cover material, means for depositing said pads in longitudinally spaced relation on said strip of cover material intermediate the side edges of the latter, means for folding the side marginal portions of said cover material strip over said pads, means for severing said folded cover strip intermediate successive pads so as to form tabs of cover material extending endwise from each pad, and means for folding said tabs over the respective pads.

27. In a machine for making sanitary napkins, the combination of means for feeding a strip of cover material, means for feeding pad material in a continuous strip of less width than the width of said cover material strip, means for dividing said strip of pad material into individual pads of less width than of length and of less width than the width of said strip of cover material, means for depositing said pads in longitudinally spaced relation on said strip of cover material and intermediate the side edges of the latter, stationary means for folding the marginal side portions of said cover material strip over said pads as an incident to the travel of said cover material and pads, means for severing said folded cover strip intermediate successive pads so as to form tabs of cover material extending endwise from each pad, and means movable relative to the pads for folding said tabs over the respective pads.

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