

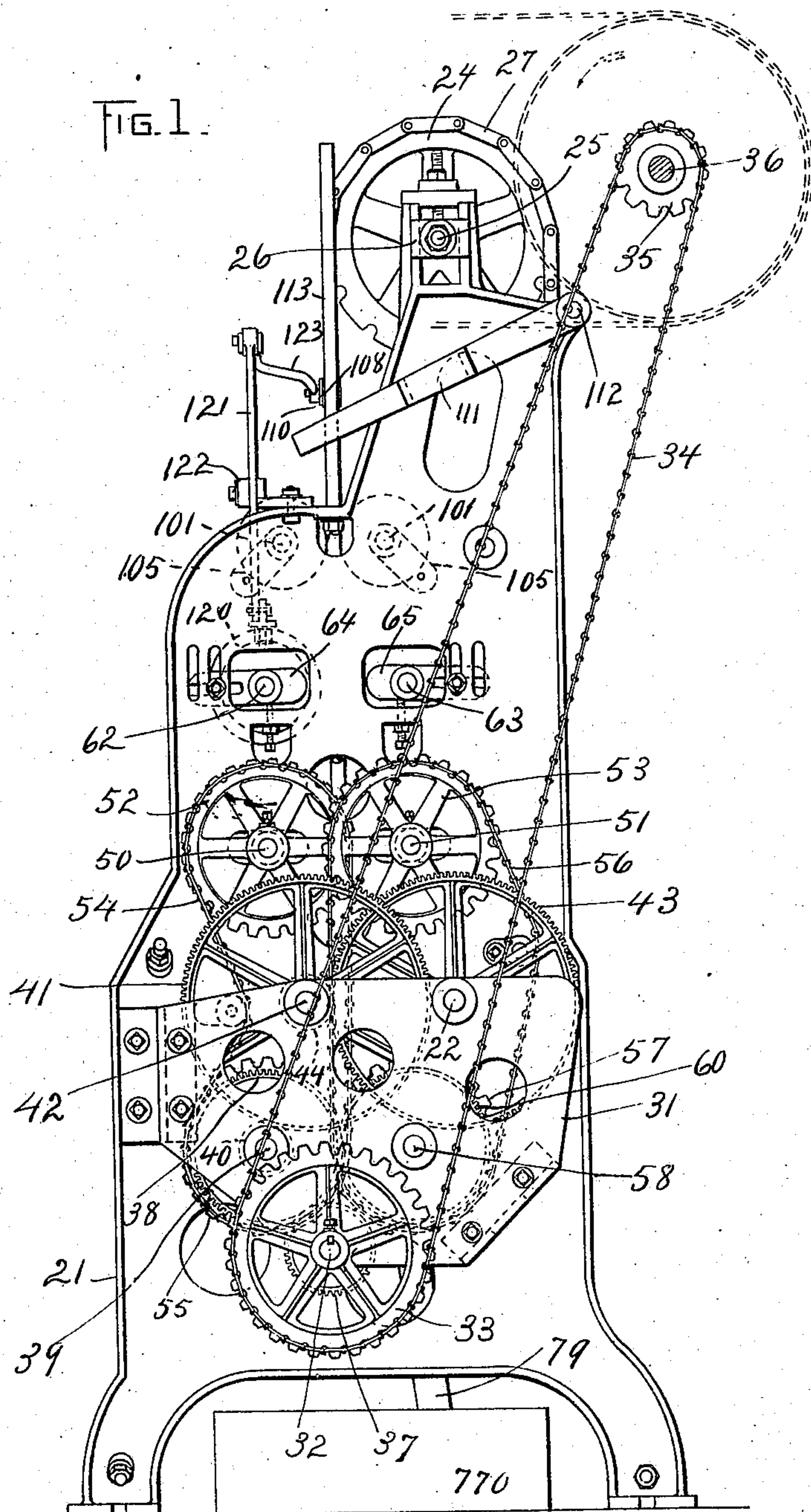
No. 854,855.

PATENTED MAY 28, 1907.

W. B. TURNER.
LEATHER DRESSING MACHINE.

APPLICATION FILED AUG. 26, 1902.

5 SHEETS—SHEET 1.



WITNESSES:

A. J. Harrison
George R. Pettit

INVENTOR:

William B. Turner
by Wright Brown & Quincy
his attys.

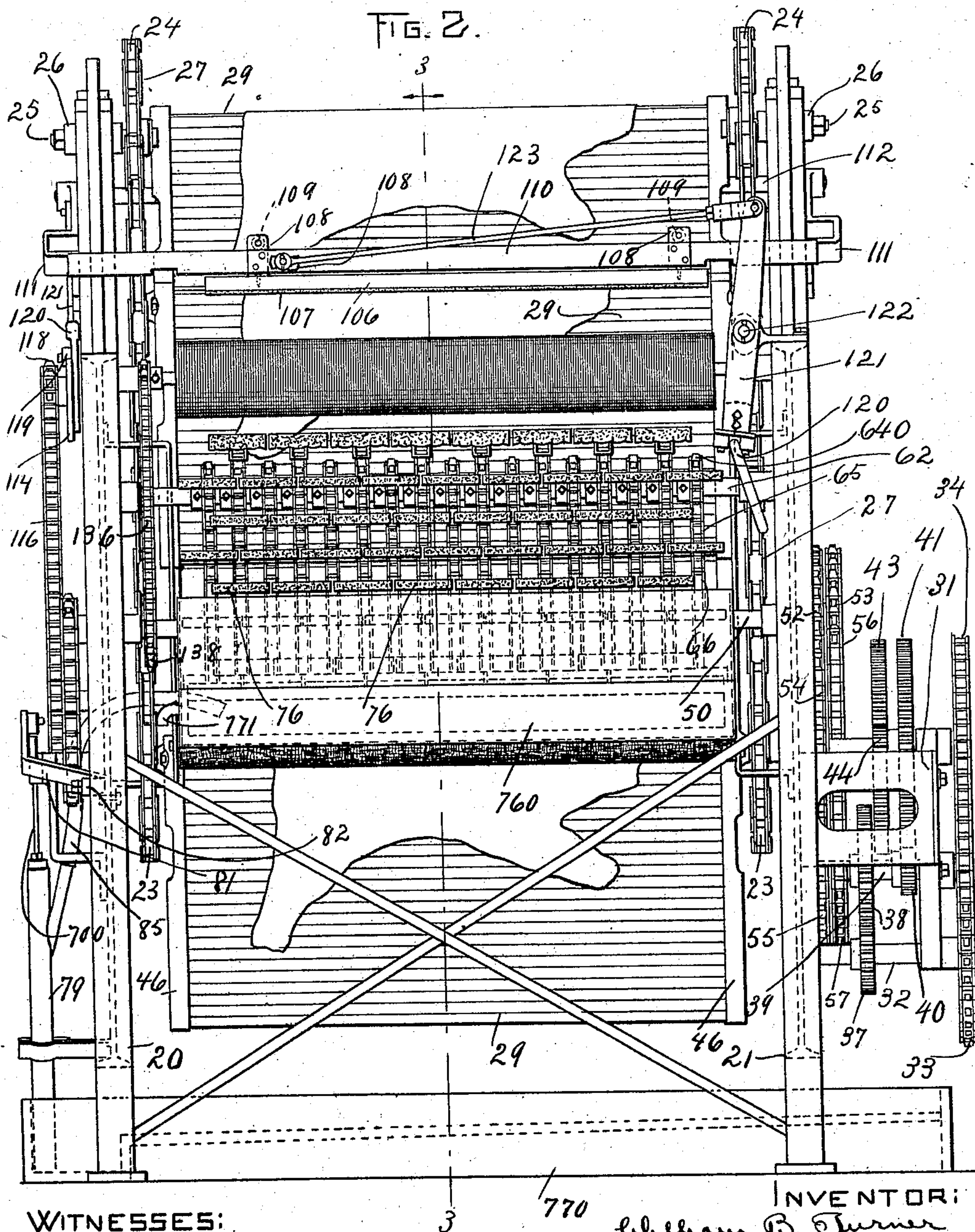
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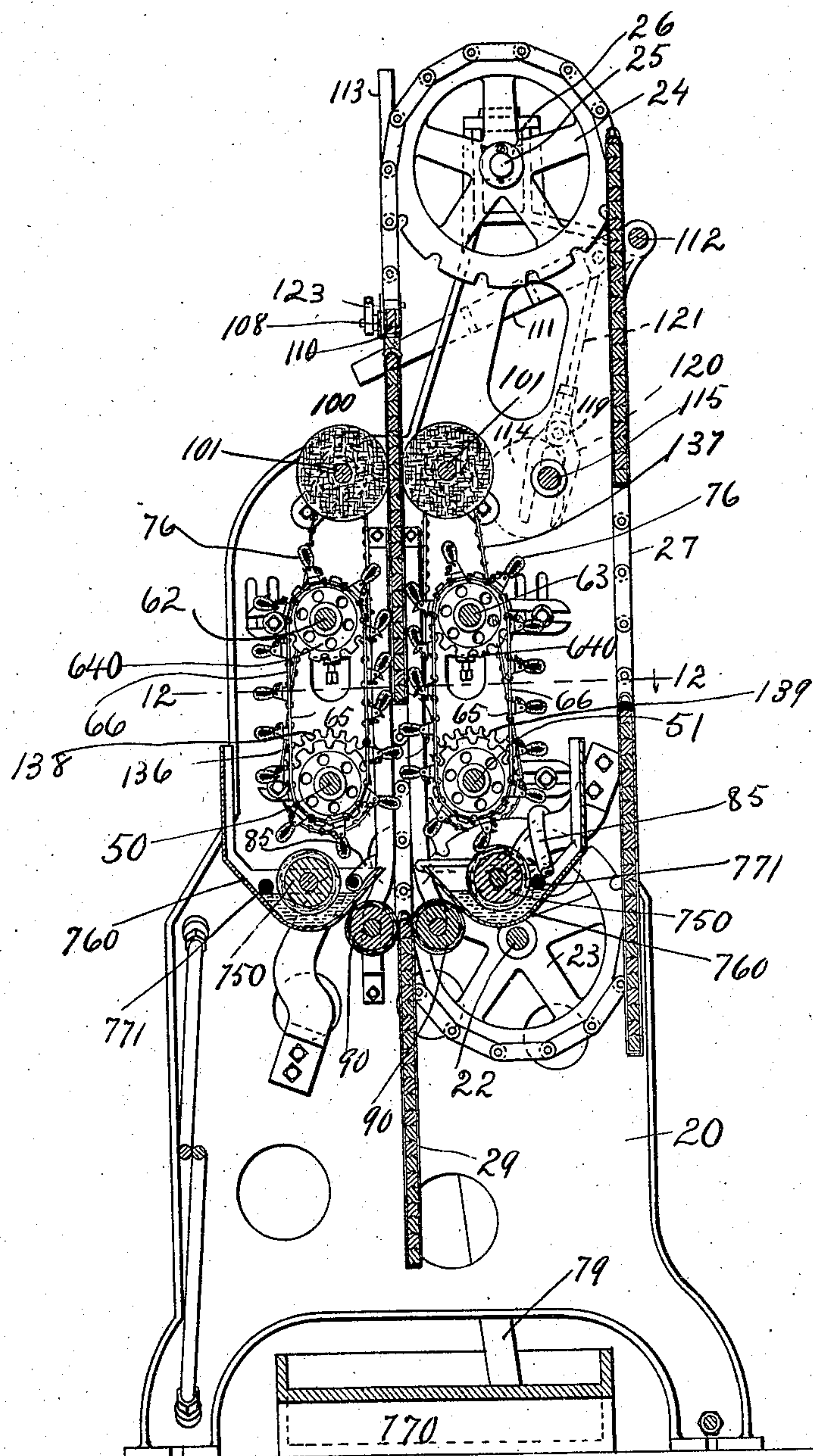
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5 SHEETS—SHEET 3.

FIG. 3.



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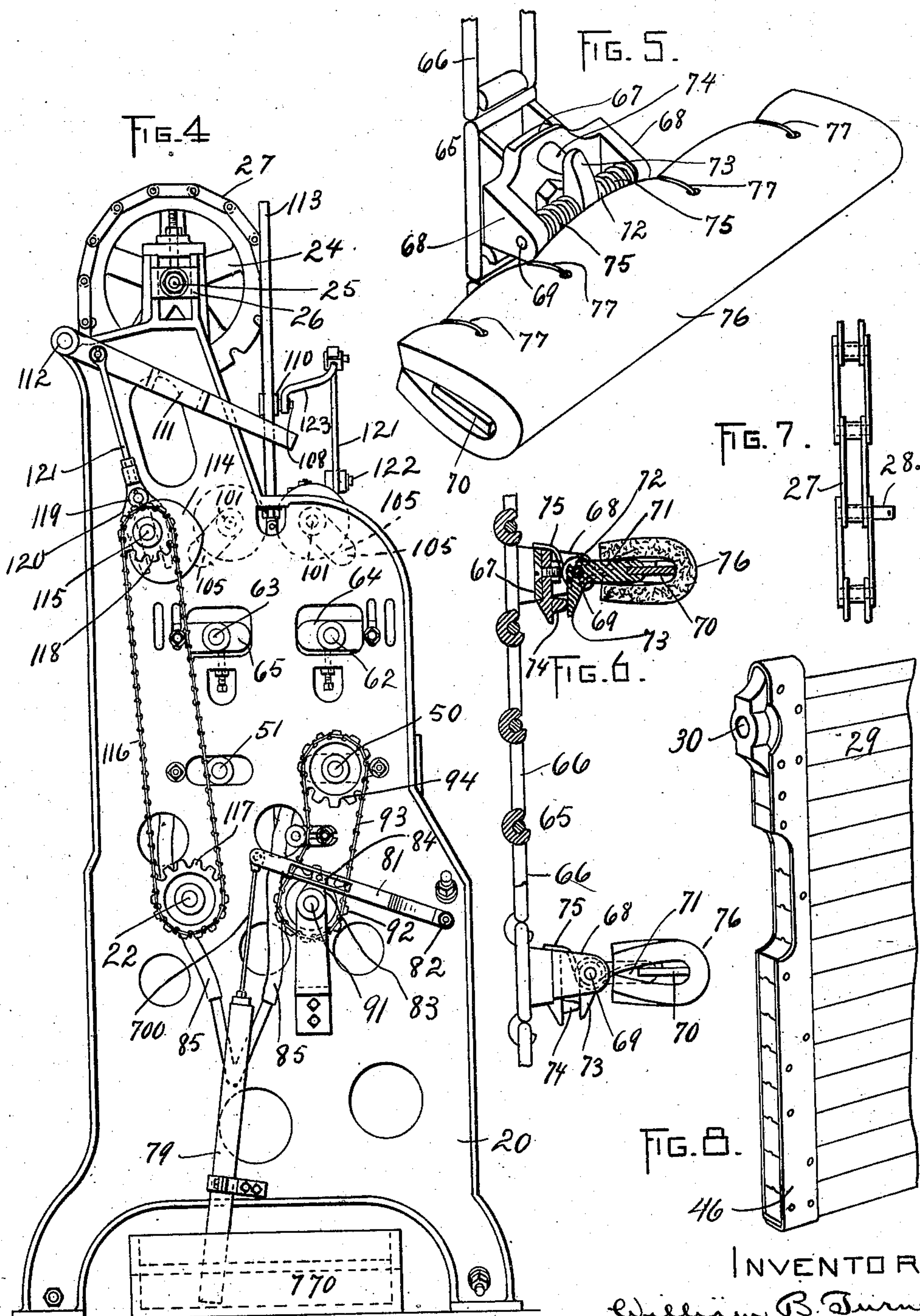
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WITNESSES:

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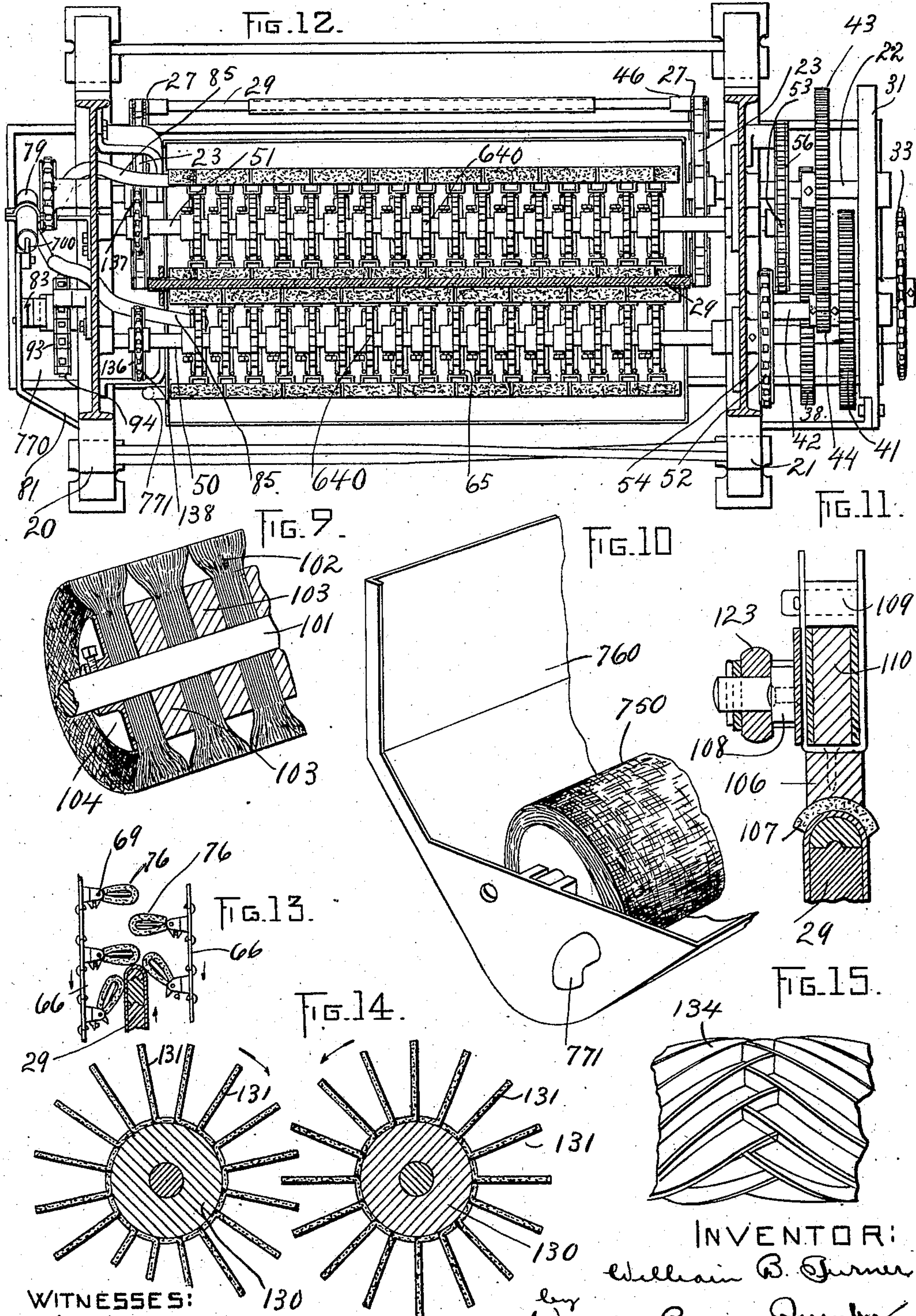
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5 SHEETS—SHEET 5.



WITNESSES:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

WILLIAM B. TURNER, OF MELROSE, MASSACHUSETTS, ASSIGNOR TO THE
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LEATHER-DRESSING MACHINE.

No. 854,855.

Specification of Letters Patent.

Patented May 28, 1907.

Application filed August 26, 1902. Serial No. 121,033.

To all whom it may concern:

Be it known that I, WILLIAM B. TURNER, of Melrose, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Leather Seasoning Machines, of which the following is a specification.

This invention has relation to machines for treating hides, skins and leather; and more particularly machines for applying seasoning thereto.

In the application of seasoning to hides, skins or leather, it is necessary first to coat or wet the skin with the liquid seasoning, and to then rub the seasoning well into the pores of the skin so as to completely fill the same, whereby when the skin is subsequently stretched in its manufacture into various articles of commerce it will not present a whitish or lighter tint or shade.

Those parts or members which rub the seasoning into the skin in the present embodiment of the invention, are soft and yielding, being shod with such material as felt or its equivalent, the members themselves being adapted to yield bodily to exert a proper degree of pressure on the work.

In carrying out the invention I employ a relatively flat table or support over the end of which the work, as I term the skin, hide or leather, may be folded so as to lie against both faces, and in combination therewith I use a plurality of working members such as referred to, adapted to engage and treat the work on both sides of the table. The table and the said members are movable one with relation to the other, whereby the said members successively engage and rub the skin from one end of the table to the other. Preferably a plurality of tables are employed, and are mounted upon an endless carrier so that they are brought in succession into operative relation to the working members. The working members themselves are likewise mounted upon endless carriers, there being such a number of them that their operative portions present, as it were, a working surface for treating and rubbing the work. The movement of the working members is in a direction opposite to that of the carrier for the table, there being located at a suitable point means for supplying each working member with seasoning material.

A variety of means may be afforded for effecting the treating or rubbing of the work lying upon the end of the table. Preferably this is accomplished by so arranging the two sets of working members that they overlap and project across the path of movement of the end of the table, whereby they first engage and treat that portion of the work which is on the end of the table, and subsequently those portions lying upon the sides of the table. For the purpose of giving the work a supplemental wiping or rubbing in case it be necessary with various kinds of skins, hides or leather, other working members are employed which operate upon the work after it has left the main working members. These supplemental members may likewise be formed in various ways. I may employ means which operate directly upon the work lying only on the end of the table, and devices for engaging those portions of the work on the sides of the table, or else in lieu thereof I may employ supplemental working devices or members which, like the main working members, not only rub and treat the work upon the sides of the table, but also that portion of the work which is on the end of the table.

On the accompanying drawings which illustrate one embodiment of the invention—Figure 1 represents a seasoning machine in end elevation. Fig. 2 represents a front elevation of the same. Fig. 3 represents a vertical section through the same on the line 3—3 of Fig. 2. Fig. 4 represents an elevation of the other end of the machine. Figs. 5 and 6 represent in detail one of the main working members and its carrier. Figs. 7 and 8 illustrate in detail one of the tables and one of the chains to which it is connected. Fig. 9 illustrates in detail one of the supplemental working members. Fig. 10 represents in perspective a portion of a distributing roll and its trough. Fig. 11 represents in section the supplemental member for treating only that portion of the work which is on the end of the table. Fig. 12 represents a section on the line 12—12 of Fig. 3. Fig. 13 illustrates the action of the main working members on the work. Fig. 14 represents a pair of supplemental working members for treating the work on the end of the table as well as on the sides thereof. Fig. 15 repre-

sents another form of members which may be employed for the same purpose.

The machine illustrated in the drawings is provided with a frame consisting of the end standards 20, 21 suitably connected by cross-braces or tie-rods. In the frame is journaled a shaft 22 equipped with sprocket wheels 23, 23. Similar sprocket-wheels 24, 24 are journaled on stud-shafts 25 mounted in adjustable boxes 26 on top of the machine, as shown in Figs. 2 and 3. On these sprocket-wheels is supported and driven an endless carrier consisting of two sprocket-chains 27. These chains are provided with inwardly projecting lugs 28, (see Fig. 7) to which are pivotally connected the tables or work-supports 29, the latter having on their sides near the upper ends, apertures 30 for the reception of said lugs. The tables hang loosely from the carriers and are raised and lowered as the carrier is moved. For the purpose of applying power to the shaft 22 the following mechanism is provided:—

Journaled in the standard 21 and in a bracket 31 secured thereto, there is a main power shaft 32 having a sprocket-wheel 33 driven by a sprocket-chain 34 from a sprocket 35 on a counter-shaft 36. The shaft 32 has a pinion 37 intermeshing with and driving a gear 38 secured to a shaft 39. The last-mentioned shaft also carries a pinion 40 intermeshing with and driving a large gear 41 on a third shaft 42. On the shaft 22 there is secured a large gear 43 intermeshing with and driven by a pinion 44 on the shaft 42. Through this train of gearing power is transmitted to the shaft 22 to effect its rotation and the consequent movement of the carrier and the tables. The direction of rotation of the shaft 22 is such that the tables move upward at the front of the machine and downward at the rear.

The tables may be formed in any suitable way. As illustrated, they are constructed of wood, having two flat sides and a rounded end. The main wooden body of each table is formed of a series of strips matched together and having their ends secured in metallic side-bars 46. The work is adapted to be folded over the table so that a portion will lie upon the rounded end as shown in Fig. 11 and the remainder will rest against the flat sides or faces thereof.

The main working members are mounted upon endless carriers which move in opposite directions. It will be observed from Fig. 3 that the sprocket-chains of which the carriers consist, are driven from parallel shafts 50, 51 having on their ends large sprocket-wheels 52, 53 respectively. The sprocket wheel 52 is driven by a sprocket-chain 54 from a sprocket-wheel 55 fast on the shaft 39. For the purpose of driving the sprocket-wheel 53 it is geared by means of a sprocket-chain 56 with a sprocket-wheel 57

fast on a shaft 58 in the same horizontal plane as the shaft 39. The said shaft 58 has, in addition, a gear wheel 60 intermeshing with and driven by a gear wheel 38 of the same size and having the same number of teeth, said last-mentioned gear being mounted upon the shaft 39. By means of this construction and arrangement the two shafts 50, 51, are rotated in opposite directions. Their journal boxes are adjustable toward and from each other to locate them nearer or farther from the endless carrier for the tables which passes midway between said shafts. Directly above the shafts 50, 51, are two additional shafts 62, 63, which are journaled in boxes 64, 65, adjustable both vertically and horizontally as indicated in Fig. 1. These four shafts, 50, 51, 62, 63, support and drive a plurality of sprocket-chains or endless carriers, each of which is equipped with a plurality of yielding working members. To this end, said shafts are equipped with a plurality of sprocket-wheels all indicated by the numeral 640. Stretched between each corresponding pair of sprocket-wheels 640, there is an endless carrier or chain 65 consisting of separable links 66. At regular intervals the links are formed with attachments comprising a cross-bar 67 and ears or lugs 68, 68, through which is passed a pin or pintle 69. On each pintle there is pivoted a working member consisting of a flat strip or blade 70 connected by an arm 71 with a hub 72 journaled on the pintle. The hub 72 has a finger 73 adapted to abut against a stop 74 on the cross-bar 67 of the attachment to the link, to limit the movement of the member in one direction. Springs 75 are coiled about the hub of each member, one end of each spring bearing against the cross-bar 67, the other bearing against the blade 70 to hold the finger 75 against the stop 74, and also to yield to permit the member to swing about its pivot. Each blade is covered with a thick layer of felt indicated at 76. The strips of felt are cut in rectangular form and are doubled over the working edge of the blade, being secured to the rear edge by wires 77 passed through holes therein, as best shown in Fig. 5. In this connection it may be stated that Fig. 5 illustrates the working member upside-down for the purpose of showing the finger 73 and the stop 74.

Upon reference to Figs. 3 and 13, it will be seen that the working members on one carrier overlap the similar members on the opposite carrier, so as to lie across the path of movement of the tables. It will be further observed from Fig. 2 that the working members in one horizontal line break joint with the members in the two adjacent lines, so that there will be no part of the work which is not treated.

From this description of the apparatus it will be apparent that as each table moves up-

wardly between the two sets of working members, the upper edge thereof will be successively engaged by the members which will yield, and in so yielding against the tension of their springs to the position of the lower member in Fig. 12, the operative surfaces of the members will apply the dressing to the work on the end of the table as well as to the work on the sides of the table, and that as the table moves upward and the members move downward the latter will thoroughly coat the work with the blacking or seasoning material and rub the dressing into the work so that it will become thoroughly impregnate thereby. Thus I am enabled to dispense with special appliances for treating the work upon the end of the table, in addition to the main working members. Said rolls are driven by sprocket-chains 137 passed around sprockets 138 139 on the shafts 51 50 respectively. They operate to rub the work, and also to remove the superfluous material from the skin. At the same time, they clean that portion of the support which is not covered by the skin.

Each member engages the work and rubs it with a long continuous drawing stroke from one end of the table to the other, being followed in quick succession by other members, so that by the time the table passes between the two sets of members, every portion of the exposed surface of the work has been thoroughly rubbed and coated with the dressing a number of times. The stroke of the members is rectilinear and as they are arranged on both sides of the table, they operate to securely hold the work thereon. The operative portions of the members, as they are in engagement with the work, form as it were, a yielding flat working surface which is highly efficient in accomplishing the proper treatment of the work, since it insures the rubbing of the work constantly for the greatest possible period of time.

For applying the dressing or seasoning to the main working members, I employ two rolls 750, 750 whose trunnions are loosely journaled in troughs or tanks 760 supported by the end standards 21, 22. The rolls rotate in the bath of seasoning or dressing which is fed into the troughs as will be explained, and said rolls are so located that their peripheries will be engaged by the working members as the latter travel past them. This impingement of the working members upon the rolls is sufficient to saturate them or properly supply them with the dressing, and also to cause the rolls to be rotated to carry up the dressing from the troughs to be taken up by the working members.

For the purpose of maintaining a constant supply of dressing in the troughs, or receptacles therefor, I locate below the mechanism a main supply-tank 770 which is large enough to receive such dressing or seasoning material

as may drip from the tables and the mechanism with which it comes in contact. This tank is of any suitable shape and may be formed of wood with a metallic lining, as somewhat conventionally illustrated.

A pump cylinder 79 is secured to the end standard 21 and has an inlet communicating with the tank. The pump piston is connected by a rod 700 with a lever 81 fulcrumed at 82 (see Fig. 4). A shaft 91 is journaled in suitable bearings in the outside of the end standard 21 and is driven by sprocket gearing, comprising the sprocket-wheel 92 thereon, the sprocket-chain 93, and the sprocket-wheel 94 on the shaft 50. The said shaft 91 carries a crank-arm 83 on its projecting end, and a block 84 on the end of the said arm is located in a slideway in the lever 81 so that as the shaft rotates the lever is reciprocated to actuate the piston in the cylinder 79. The outlet ports from the cylinder are connected by conduits or pipes 85, 85 with the troughs 760 so that the requisite quantity of dressing may be constantly supplied to said troughs from the tank 770. In this way no dressing is wasted, as that which drips from the machine is taken up and re-delivered to the troughs for the supply rolls. An overflow pipe 771 is provided for each trough to permit the escape of the surplus material.

It will of course be understood that at regular intervals an additional supply of dressing may be delivered to the tank 770.

For the purpose of steadying the tables or work supports as they are brought into working relation with the working members, and in order to securely hold the work against movement when it is first engaged by said working members, I employ the steadying rolls 90, 90, (see Fig. 3) which are journaled on suitable brackets attached to the inner walls of the said standards. The rolls are so located that the tables may pass between them; and they may be shod with such material as will grip the work against the table and hold it against movement relatively thereto.

In case it should be desired to additionally treat the work, I may employ supplemental working members. In Fig. 3 I have illustrated these supplemental devices as comprising members for treating those portions of the work which lie on the sides or faces of the table, and a separate member for treating that portion of the work which is on the end of the table. The first two devices consist of rolls indicated generally at 100. Each roll comprises an arbor or shaft 101 having alternate disks 102 of felt, cloth or other suitable substance, and spacers 103 either of wood or metal. The spacers and disks are all crowded or bound together by end sleeves 104 which may be rigidly attached to the arbors. Said arbors or shafts are themselves journaled in brackets indicated at 105 in

dotted lines in Fig. 4. These rolls are rapidly driven so as to wipe and rub the work by sprocket gearing from the shafts 50, 51. Said gearing comprises sprocket-chains 136, 137, and sprockets 138, 139 and 140, 141 respectively.

The member for operating on that portion of the work which is on the end of the table consists of a bar 106 shod with yielding material 107 as indicated in Figs. 2 and 11. The said bar is attached to hangers 108 having rollers 109 resting upon a transverse support 110. This support consists of a bar which rests loosely on the free ends of two arms 111 which are secured to a shaft 112 journaled in bearings at the top and rear of the machine as shown in Fig. 4. The member 110 is adapted to be lifted vertically, being guided in its vertical movement by upright guides 113. For the purpose of rocking the shaft 112 there is a cam 114 loosely journaled on a stud-shaft 115 and fast with a sprocket wheel 118 driven by a sprocket-chain 116 from a sprocket-wheel 117 on the end of shaft 22. A roller 119 rests against the cam and is journaled on a fork 120 connected by a rod 121 with one of the arms 111. The cam 114 is so formed that when the table in its upward movement has lifted the member 106 a predetermined distance, the arms 111 will be rocked upward by the cam to lift the member rapidly away from the table to permit the table to pass from under the member, as said tables are carried rearwardly by the chains passing around the sprocket-wheels 24. The cam then permits the member to drop to its original position where it will be again engaged by the next succeeding table. A reciprocatory movement is imparted to the said member 106 by means of a spiral or oscillating cam 120 on the shaft 62. This cam engages the end of a lever 121 fulcrumed at 122 and connected at its upper end by a rod 123 with the hanger 108 at the other side of the machine. The parts are sufficiently loosely connected to permit of a regular reciprocation of the member 106 as it rises, to cause it to properly rub, wipe or otherwise treat the work which is located on the end of the table. In lieu of these three working members, to wit,—the two rolls 100, 100, and the reciprocating member 106, I may employ two rolls such as indicated in Fig. 14. In this case the rolls consist of cylindrical bodies 130 having blades 131 formed of felt or other suitable yielding material. These blades on the two rolls overlap, so as to project across the path of movement of the table and they operate to engage and treat the work on the end of the table as well as on the sides or faces thereof. Preferably these rolls are driven so that their peripheries move in a direction opposite to the direction of movement of the tables at their point of contact therewith. In

Fig. 14 the strips or yielding blades are illustrated as parallel with the axes of the rolls, but if desired they may be located spirally upon the cylindrical bodies as indicated at 134 in Fig. 15.

I desire to have it fully understood that if convenient I may dispense with all of the working members save those which I have described as "main working members", and that on the other hand I may depend upon a series of rolls with overlapping blades such as shown in Figs. 14 and 15.

There are many other changes which I have contemplated in the machine without departing from the spirit and scope of the invention. In this connection I may here state that I have employed the word "seasoning" in no limited sense, as I desire to include within its meaning all forms of substance that may be applied to the work, either to effect a change in texture, gloss, appearance or color, or to otherwise affect the work either directly or indirectly.

Having thus explained the nature of the invention, and described a way of constructing and using the same, although without attempting to set forth all of the forms in which it may be made, or all of the modes of its use, I declare that what I claim is:—

1. A seasoning machine comprising two sets of working members, the operative portions of the members of each set forming a working surface or plane, a flat work support adapted to lie between said surfaces, means for effecting a relative movement of said support and said members, and means for supplying seasoning to said members.

2. A seasoning machine comprising a plurality of independently yielding cushioned members whose operative portions form a flat working surface or plane, a work-support, means for effecting a movement of said members relatively to said work support, and means for supplying seasoning to said members in succession.

3. A seasoning machine comprising a plurality of independently yielding cushioned members whose operative portions form a flat working surface or plane, an endless carrier for said members for bringing them in succession to form said working surface, a flat support for the work, and means for supplying seasoning to said members.

4. A seasoning machine comprising a plurality of independently yielding cushioned members whose operative portions form a flat working surface or plane, an endless carrier for said members for bringing them in succession to form said working surface, a flat support for the work, and seasoning-supply rolls on which said members may successively impinge.

5. A seasoning machine comprising two sets of working members, the operative portions of the members of each set forming a

flat working surface or plane, when acting on the work, a flat work support adapted to lie between said surfaces, means for effecting a relative movement of said support and said members, means for supplying seasoning to said members, and means for holding the work on said work-support.

6. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the flat sides thereof; two oppositely disposed sets of working members, each set consisting of a plurality of members whose operative portions form a flat working surface; and means for effecting a relative movement of said work support and said sets of working members; said instrumentalities being disposed and related whereby said members treat the work on the end and on the sides of the table.

7. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the flat sides thereof; two oppositely disposed sets of working members, each set consisting of a plurality of members whose operative portions form a flat working surface and primarily overlap the members of the opposite set; and means for effecting a relative movement of said work-support and said sets of members, whereby said members treat the entire exposed surface of the work.

8. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the flat sides thereof; two oppositely disposed sets of working members, each set consisting of a plurality of yielding blades adapted to swing on axes parallel to their operative edges and primarily overlapping the blades of the opposite set, and means for effecting a relative movement of said work-support and said sets of members, whereby said members treat the entire exposed surface of the work.

9. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the flat sides thereof; two oppositely disposed sets of working members, each set consisting of a plurality of cushion-shod yielding blades adapted to swing on axes parallel to their operative edges and primarily overlapping the blades of the opposite set; endless carriers for said members whereby they successively engage and treat the entire exposed surface of the work; and means for supplying seasoning to said members.

10. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the flat sides thereof; two oppositely disposed sets of working members, each set consisting of a plurality of cushion-shod yielding blades adapted to swing on axes parallel to their operative edges and primarily overlapping

the blades of the opposite set, the aligned members of each set breaking joint with the adjacent aligned members thereof; endless carriers for said members whereby they successively engage and treat the entire exposed surface of the work, and means for supplying seasoning to said members.

11. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the flat sides thereof; two oppositely disposed sets of working members, each set consisting of a plurality of blades, a series of parallel endless carriers, pivotal connections between said blades and said carriers, and means for effecting a relative movement of said work support and said sets of members.

12. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the sides or faces thereof, and means for treating the work lying on the end of the support, said means consisting of a continuously reciprocated member.

13. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the sides or faces thereof, and means for treating the work lying on the end of the support, said means consisting of a continuously reciprocated member movable longitudinally of said end.

14. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the sides or faces thereof, and means for treating the work lying on the end of the support, said means consisting of a continuously reciprocated member and a support for said member movable transversely of its direction of reciprocation.

15. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the sides or faces thereof, and means for treating the work lying on the end of the support, said means consisting of a continuously reciprocated member, and means for effecting the engagement and the disengagement of said member with the work.

16. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the sides or faces thereof, and means for treating the work lying on the end of the support, said means consisting of a member, and mechanism for causing said member to rub the work first in one direction and then in the other.

17. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the sides or faces thereof, rotary devices for engaging and treating the work on the faces of said support, and a reciprocatory member adapted to rub

the work first in one direction and then in the other for treating the work lying on the end of the support.

18. A working member for a seasoning
5 machine consisting of a blade and a strip of cushioning material secured to said blade and folded over the operative portion thereof.

19. A leather seasoning machine comprising a flat table adapted to receive the work, a
10 cushion-shod yielding member, and mechan-

ism for causing said member to engage the work with a continuous drawing stroke from one end of the table toward the other.

In testimony whereof I have affixed my signature, in presence of two witnesses.

WILLIAM B. TURNER.

Witnesses:

A. W. HARRISON,
C. C. STECHER.