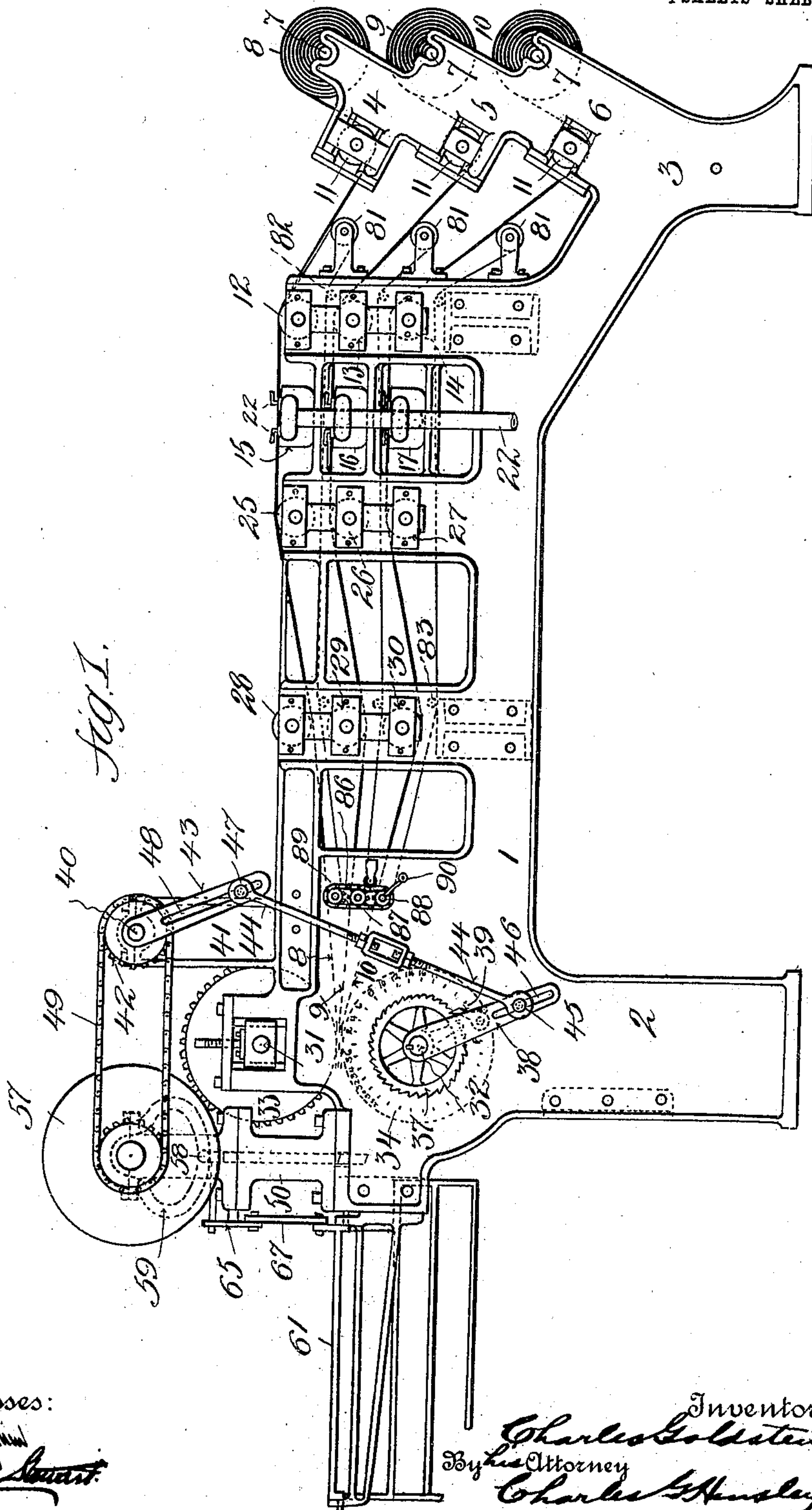


C. GOLDSTEIN.
CLOTH MACHINE.

APPLICATION FILED FEB. 19, 1908.

917,049.

Patented Apr. 6, 1909.
4 SHEETS—SHEET 1.



Witnesses:
W. H. H. H. H.
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Inventor
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By *his* Attorney
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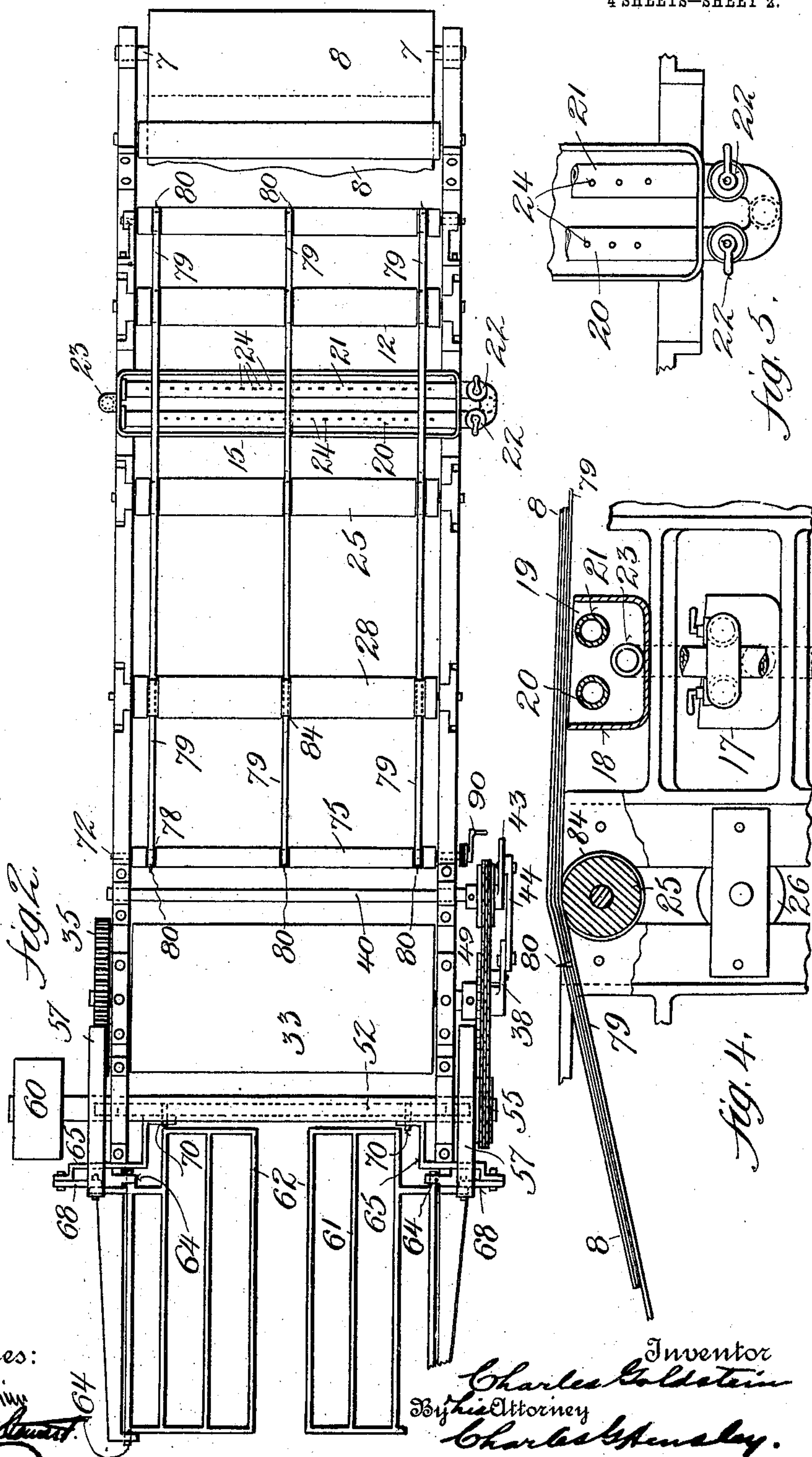
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4 SHEETS—SHEET 2.



Witnesses:

J. M. Benjamin
 Pres. Am. Board

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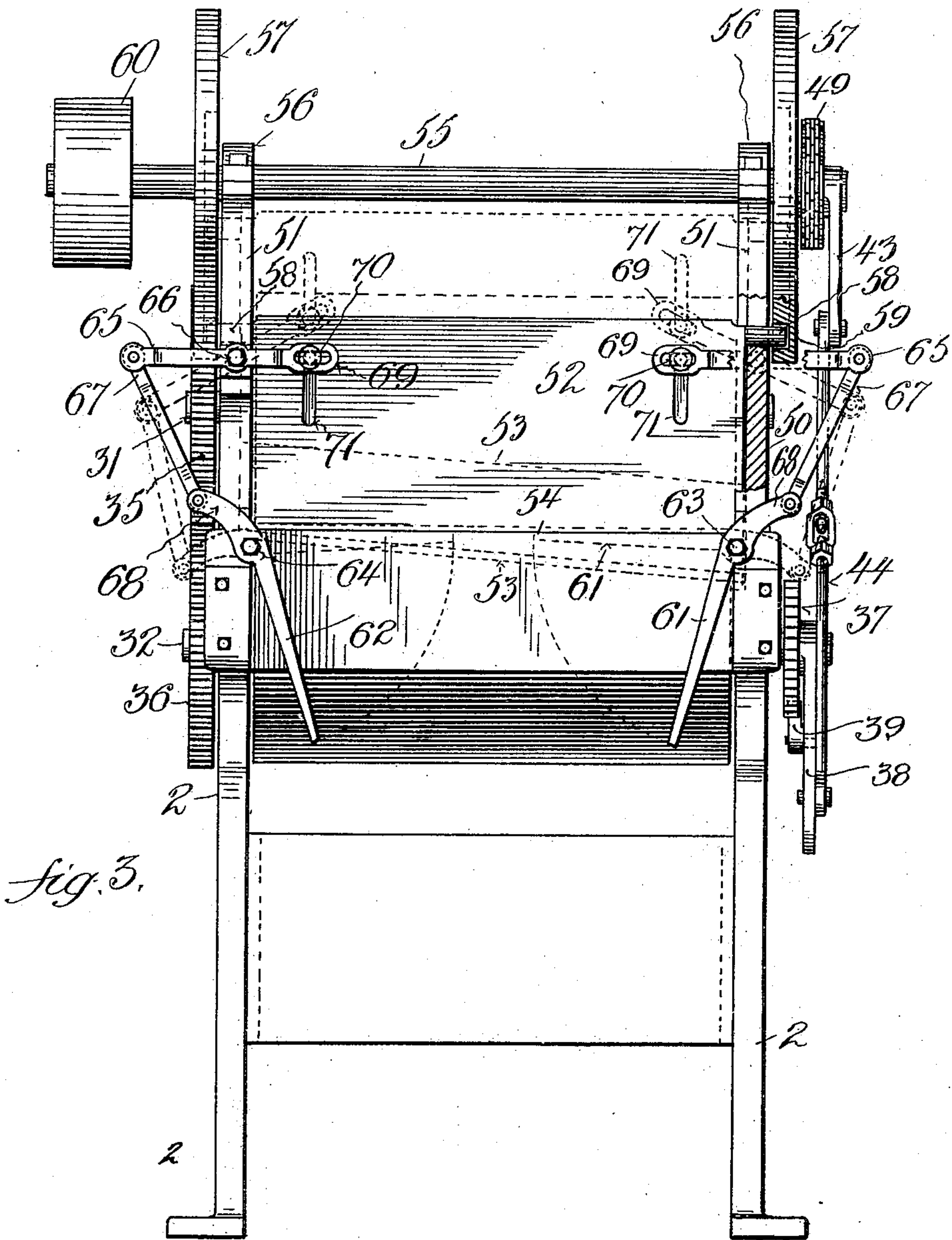
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4 SHEETS—SHEET 3.



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4 SHEETS—SHEET 4.

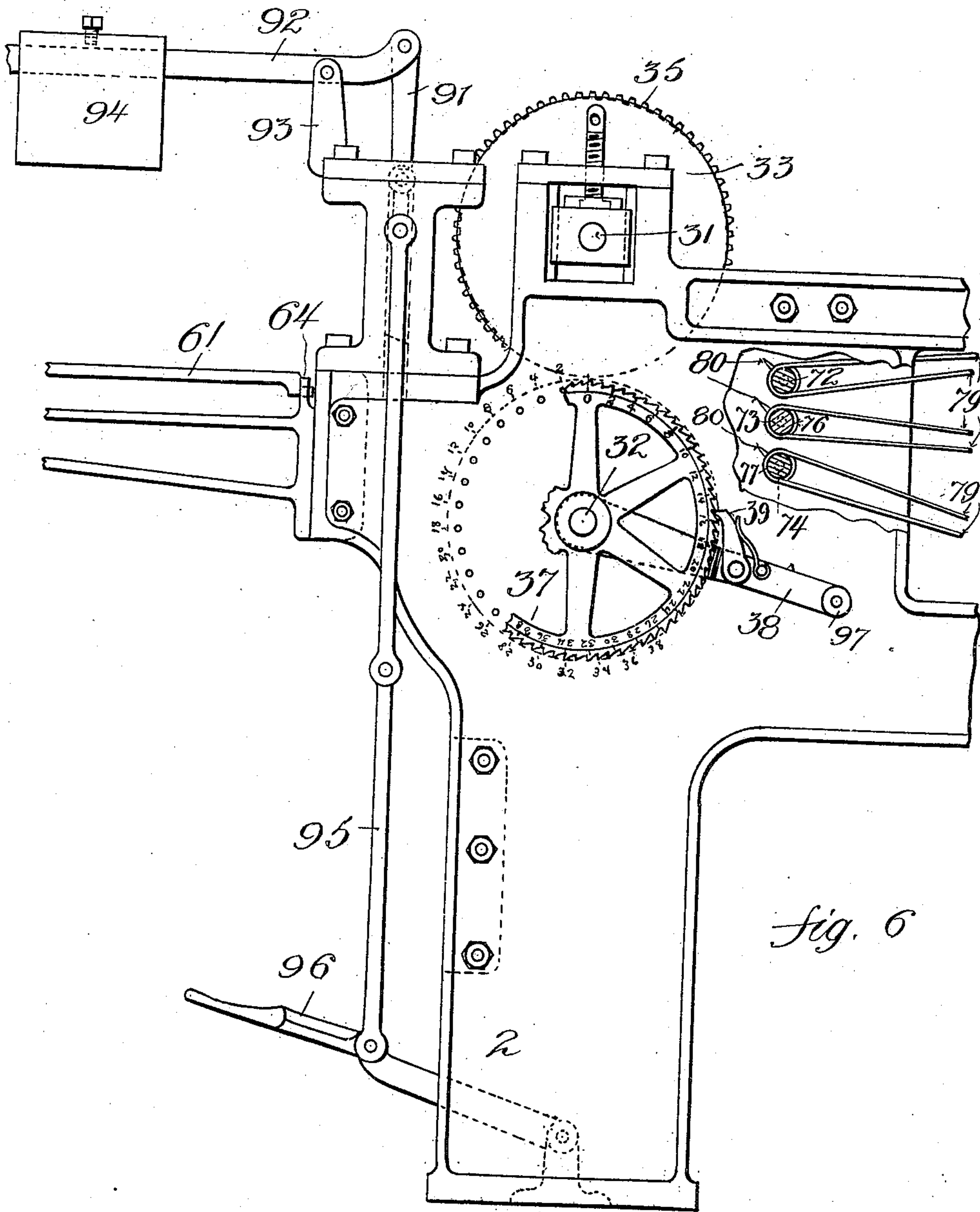


fig. 6

Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES GOLDSTEIN, OF NEW YORK, N. Y.

CLOTH-MACHINE.

No. 917,049.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed February 19, 1908. Serial No. 416,683.

To all whom it may concern:

Be it known that I, CHARLES GOLDSTEIN, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Cloth-Machines, of which the following is a specification.

My improved machine is especially adapted for use in hat manufacturing, where it is desired to cut the buckram or other stiff material which constitutes the foundation of the hat, more especially women's hats, into lengths desirable for covering hat frames.

The object of my machine is to cut the material into desired lengths and is adjustable so that the material may be cut into any length desired, according to the size of the hat frame to be covered.

Heretofore it has been customary to cut the material by hand with shears and throw it in heaps and when the material is thus cut, owing to its nature, it curls up and much time is spent in straightening it out ready for use. This, together with the cutting consumes a great deal of time and makes the handling of the material expensive. With my improved machine the material is first moistened and then passed to a cutting knife where it is cut into lengths suitable for use. The adjustment of the cutting mechanism is such that the material may be cut into any desired length and many pieces of the same length may be cut. Before the material passes to the knife, it passes over rollers which bend it in a reverse direction to that which it was in when it was on the roll as it came from the manufacturer. By thus wetting and reversely bending the material before cutting it the severed pieces when they come from the machine will be flat, ready for use and will require no handling for the purpose of taking out the curl.

A further object of my invention is to provide a suitable means for carrying the first end of the material from the supply roll to the feeding or measuring rollers.

It will be obvious that by turning off the water supply the material may be run through dry, which is desirable in some cases.

I have shown means whereby the machine may be operated either by hand and foot or by power such as steam or electricity.

A detailed description of one embodiment of my invention will appear hereinafter.

In the drawings forming a part of this application, Figure 1 is a side elevation of my improved machine, Fig. 2 is a plan view thereof, Fig. 3 is an end elevation thereof, Fig. 4 is a sectional view showing the tanks in which the material is moistened, Fig. 5 is a plan view thereof, and Fig. 6 is a side elevation of a portion of the machine showing modifications incorporated for using hand and foot power.

The material is furnished in rolls and in order to be used it is necessary to cut it into various lengths ranging, generally from a quarter of a yard to a yard in length, and as the material is of a very stiff nature and has been rolled some time it will curl when cut, and the handling will be difficult. It is, however, possible to run off material to any extent and other than the amounts stated above, and the parts of the machine may be adjusted accordingly. Aside from this the cutting itself is slow owing to the curling tendencies of the material. It is for these reasons that I pass the material through a moistening device before it is cut.

The machine consists primarily of a frame suitable for supporting the various working parts of the machine. In the present instance the frame consists of a bed supported upon suitable standards 2 and 3 at the ends, and this bed together with its component parts forms the foundation of the machine. At the right end of the machine as shown in Fig. 1 I have formed suitable supports 4, 5, and 6 for a plurality of rolls 8, 9 and 10 of the material to be cut, the rolls being superimposed one above the other.

It is to be understood that in my machine several rolls of material may be moistened and cut simultaneously and though it might be possible to moisten the several pieces of material in the same moistening tank I prefer to run the separate pieces of material through separate tanks so that the moistening will be sufficient and rapid. After the materials from the several rolls have passed through their separate tanks they are brought together so as to pass through the feed or measuring rollers together. When the material comes from the several rolls it passes under the respective rollers 11 which bend it in a reverse direction to that in

which it was bent or curled on the supply rolls or let offs. This will, to a certain extent overcome the curling tendency of the material the same as if done by hand, but it is not ordinarily enough to straighten the material so as to make it suitable for use. I therefore pass the material 8 from the top roll over an idler 12 and then into a tank 15 where it is moistened as it passes through. While the material is passing through the tank water is thrown on it from the two feed pipes 20 and 21 which have discharge apertures 24 at the top where the material comes, and water is supplied to the pipes through the inlets 22. The tank itself consists of a trough like member 18 which preferably has an inclined upper edge 19, and the water which falls into the tank from the pipes is led off through an outlet 23. The material 9 and 10 which is contained on the first and second rollers is passed respectively over the rollers or idlers 13 and 14 the same as the first described piece and through their independent tanks 16 and 17 which are similar in every respect to the first tank 15. The inlet 22 and the outlet 23 are common to all the tanks. By passing the several pieces of material through individual tanks it may be moved rapidly and still be properly moistened. As the several pieces of material leave the moistening tanks they pass over idlers 25, 26 and 27 respectively and then over other idlers 28, 29 and 30 from which they travel to the feeding and cutting mechanism.

As a means for feeding the material to the cutting knife in predetermined lengths so that a certain amount of material will be cut from each piece and so that the amount thus cut may be altered to suit the requirements I provide the following. Secured upon shafts 31 and 32, which are journaled in the frame of the machine beyond the tanks and before the knife, are parallel rollers 33 and 34 placed one above the other, with their peripheries very close so as to grip the material between. The shaft of the upper roller I have made movable vertically so that the upper roller will be pressed down on the lower one by its weight, as will be seen in Fig. 1. The several pieces of material 8, 9 and 10 pass from the rollers or idlers 28, 29 and 30 between the rollers 33 and 34 and by moving these rollers a predetermined amount the material from each feed roll will be drawn forward so that the knife will sever a like amount from each. The rollers 33 and 34 are geared together at one end by the gears 35 and 36 so that they move in unison and the same in extent. The shaft 32 of the roller 34, in the form shown in Fig. 1, is provided with a ratchet 37 and with an arm or crank 38, which latter has a pawl 39 that engages in one direction with the ratchet. Mounted on a shaft

40 which is supported by a bracket 41 on the upper part of the machine frame, is a sprocket wheel 42 and also a crank 43 which latter is connected with the crank 38 by a pitman 44. The pitman is connected at its lower end by an adjustable pin 45 which may be adjusted along the slot 46 in the crank 38 and its upper end is connected to the crank 43 by a similar pin 47 which may be adjusted along the slot 48 in the crank 43. In this manner the relative movement of the crank 38 by the crank 43 may be adjusted. When power is applied to the shaft 40 through the chain 49, and sprocket 42 the crank 43 will oscillate the crank 38 and the latter through the pawl and ratchet engagement will revolve the lower roller 34, and as was explained, the extent of the revolution will depend on the adjustment of the pitman. As the lower roller is connected to the upper by the gears 35 and 36 the movement of the lower one will be transmitted to the upper one and the material, in the present illustration three thicknesses, will be drawn from the three supply rolls or let offs and will be moved forward sufficiently for the knife to cut off the desired quantity from each piece of material.

Forward of the feed or measuring rollers, I provide a knife which is constructed and operated as follows. Upright supports 50 of the frame are provided with guiding grooves 51 and between the guides or supports 50 and in the grooves 51 is a reciprocating knife 52 which preferably has its lower or cutting edge 53 slanting to produce a shearing action on the material as it passes from the feed rollers 33 and 34 over the plate 54. A shaft 55 is journaled at 56 to the uprights 50 of the frame and exterior of these uprights and on the shaft 55 I provide two disk cams 57 which are alike and have cam grooves 59 in which the two pins or bowls 58 on the opposite upper edges of the knife engage. In this way the revolving of the cams with the shaft 55 will reciprocate the knife and cut the material at each movement. Any power may be applied to the shaft through the pulley 60. It will be noted that the two rollers 33 and 34 and the knife 52 are sufficiently wide to take the widest material that is likely to be used in the machine.

When the material is presented under the knife blade it rests on a platform which supports it during the cutting and this platform is so constructed that when the knife completes its cutting it will automatically throw off the material and in the machine which I have illustrated the platform is operated by the knife blade. The platform consists of two members 61 and 62 which when in proper position are on a line with the material as it travels between the knife edges, and these members are hinged at 63 and 64

respectively to the frame of the machine so that they may be swung downwardly and discharge the severed pieces of material therefrom. I prefer to make the platform
 5 in two parts and hinge them as shown because I believe it will better suffice to discharge the material as it is cut. For dropping the platform members I provide a lever action which is connected to the knife
 10 so as to work in unison therewith. It consists of a lever 65 which is fulcrumed to the upright 50 of the frame and a link 67 connects the lever 65 with a projecting arm 68 on the platform member, the link being ful-
 15 crumed respectively thereto. The inner end of the lever 65 is provided with a loop 69 in which a pin or bowl 70 slidably engages and which is carried by the loop. The bowl
 20 70 engages in an elongated slot 71 in the knife blade 52. It will be noted that each member of the platform is provided with the lever mechanism just described and a description of the one will suffice for both.

As it would consume considerable time to
 25 bring the material from the let off rolls to the feed rollers by hand each time new rolls of material are put on the machine I have provided a very novel and simple means for quickly accomplishing this and it is such
 30 that the ends of the several pieces of material may be passed over their respective idlers and through their tanks simultaneously and bring the ends to the feed rollers together. This consists of the following.
 35 Mounted on the frame of the machine at a point near where the rollers 33 and 34 come in contact I provide the three rollers 75, 76 and 77 which are on respective shafts 72,
 40 73 and 74. These rollers are provided with grooves 78, which, in the present showing are three in number, one at each end and one in the middle of the roller. The three
 45 rollers are alike and are so disposed that their top comes just below the paths of the respective pieces of material. Each of the rollers is provided with bands 79 and these
 50 are provided with pins 80 which engage in the material to carry it along. The bands 79 are continuous and pass over the idlers
 55 81 and 82 and into grooves 84 in the several idlers which conduct the material. The ends of the shafts on which the rollers are provided each have a sprocket 87 and 88 and 89
 (see Fig. 1) and a chain 86 travels over the
 60 three sprockets, so that the three rollers are geared together. A crank 90 is provided on one of the shafts, and by turning the crank all three rollers are moved in unison.

The operation of my machine is as follows. The rolls of material, in the present
 60 showing three, are placed on the supporting members of the frame, at the end of the machine and their ends are passed around the several rollers or idlers 11, which bend the
 65 material in the reverse direction to that in

which it had been previously bent. The handle or crank 90 is turned until the pins 80 on the bands 79 are brought to the end of the machine where the rollers 11 are and the material is engaged on the pins 80. It is
 70 preferable to engage the pins in the material beyond the end a distance equal to the distance of the rollers 75 etc. from the feed rollers. The material from the upper roll
 75 will be placed on the three bands of the upper set, the next piece will be engaged on the pins of the second set and the third on the third set. The crank 90 is then turned and the pins on the bands 79 are all moved
 80 forward together, carrying their respective pieces of material. The upper set of bands will carry the upper piece of material around its idlers, through its tank and finally to a position ready for entry
 85 between the feed rollers. In like manner the second and third sets of bands will take their pieces of material around their idlers and through their tanks and bring them all up to the feed rollers together. As
 90 the feed rollers grip the material the pins 80 pass out of the material and the material is fed on by the feed rollers. The bands then remain idle until the next rolls of material
 95 are placed in the machine. The revolving of the crank 43 will oscillate the crank 38 and as the pawl 39 engages the ratchet 37 the feed rollers will feed the three pieces of material under the knife blade and the knife
 100 is timed to cut at the proper moment to cut off the material fed by the rollers. When the material is fed to the knife the platform
 105 is up and remains so until the knife completes its cutting, when the extremity of the slot 71 will have engaged the pin or bowl 70, rocking it downwardly to the position shown
 110 in full lines in Fig. 3, when the levers will rock the platform members on their hinges and drop the material off. The return of the knife returns the platform. As was explained the adjustment of the pitman con-
 115 nection with the two cranks will determine the extent of movement of the feed rollers and in this way govern the feed of material at each operation.

As it is not always possible to provide
 115 power for the machine I have shown in Fig. 6 a modification of the previously described device by which hand and foot power may be utilized for the operation of the device. In this form the knife is held in its upward
 120 position by a lever 92 which is connected by a link 91 therewith, and supported upon a bracket 93. The weight 94 on the end of this lever holds the knife upwardly. When
 125 it is desired to cut the material a foot lever 96 is pressed and through the bar 95 connected with the knife the latter will be forced down to cut the material against the action of the weighted lever. In this use of
 130 the device the crank 38 is provided with a

handle 97 which is turned by hand to operate the feed rollers. In this case the teeth of the ratchet may be numbered and by engaging the pawl in the tooth numbered to correspond to the number of inches the material is to be fed the crank is turned until the pawl comes to an upright position, when the knife is operated to cut the material. To feed again the crank is returned to engage with another tooth on the ratchet.

Otherwise than here described the machine for hand and foot operation is the same as for power.

Having described my invention what I claim is:

1. In a machine of the class described, a cutting device comprising a movable blade, a shaft having a cam adapted to operate said blade, a plurality of rollers for feeding material to the cutting device and means for operating said rollers comprising a crank adapted to move a roller in one direction and a member adapted to be revolved from said shaft and a pitman connected with said crank.

2. In a machine of the class described, a cutting device embodying a movable blade, means for feeding material to the cutting device and a hinged platform for supporting the free end of the material during the cutting and a lever rocked by said blade and adapted to rock said platform to discharge the material therefrom.

3. In a machine of the class described, a cutting device embodying a movable blade, means for feeding material to the cutting device and a hinged platform for supporting the free end of the material during the cutting, a rocking lever having a pin engaging in a slot in the said blade and having an engagement whereby it will rock said platform, said blade being adapted to move said platform after the material has been severed by the blade.

4. In a machine of the class described, a let off and a cutting device, a feeding device for feeding material to the cutting device and a continuous movable means for carrying the end of the material from the let off to the feeding device.

5. In a machine of the class described, a let off and a cutting device, a feeding device for feeding material from the let off to the cutting device and means, embodying

a continuous band, adapted to support the free end of the material and withdraw it from the let off to the said feeding device.

6. In a machine of the class described, a cutting device and means for feeding material thereto, a plurality of let offs, and means for bringing the ends of the material from the let offs to the feeding means comprising a continuous band for the several pieces of material and traveling over rollers and near the path to be occupied by the pieces of material, said bands being adapted to carry the several ends of the material to the feeding means and means for moving said bands in unison.

7. In a machine of the class described, a let off, a cutting device and means for feeding material to the cutting device, means for moistening the material during its travel between the let off and feeding means and means, comprising a continuous band, adapted to carry the end of the material from the let off to the moistening device and feeding device.

8. In a machine of the class described, a let off and a cutting device, means for feeding the material to the cutting device and means for carrying the end of the material from the let off to said feeding device comprising a continuous idle band having means for engaging the material and means whereby said band may be propelled.

9. In a machine of the class described, a let off and a feed device, rollers for guiding the material between the let off and feed device having a groove, and means for carrying the material from the let off to the feed device comprising a continuous band traveling in said roller groove and having means for engaging the material.

10. In a machine of the class described, a plurality of let offs, a feeding device for feeding the material, a plurality of moistening means and means for carrying the ends of the material from the several let offs, independently to the several moistening means and to the feeding device, comprising continuous bands having means for engaging the material.

Signed this 17th day of February, 1908.

CHAS. GOLDSTEIN.

Witnesses:

EDWARD D. C. SPERRY,
SHELDON A. DU PIET.