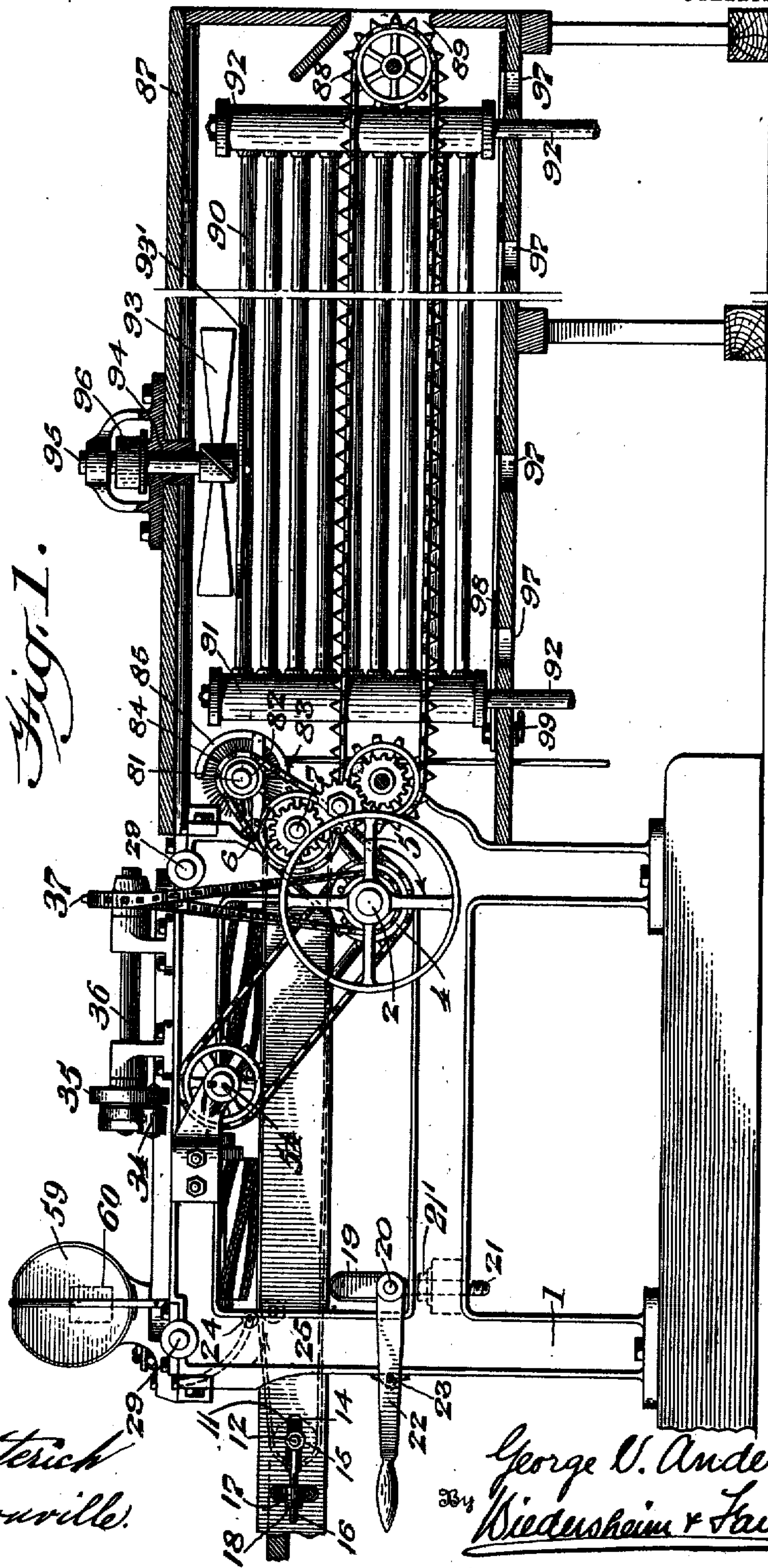


G. V. ANDERSON.
LEATHER WORKING MACHINE.
APPLICATION FILED JULY 29, 1908.

924,873.

Patented June 15, 1909.

4 SHEETS—SHEET 1.



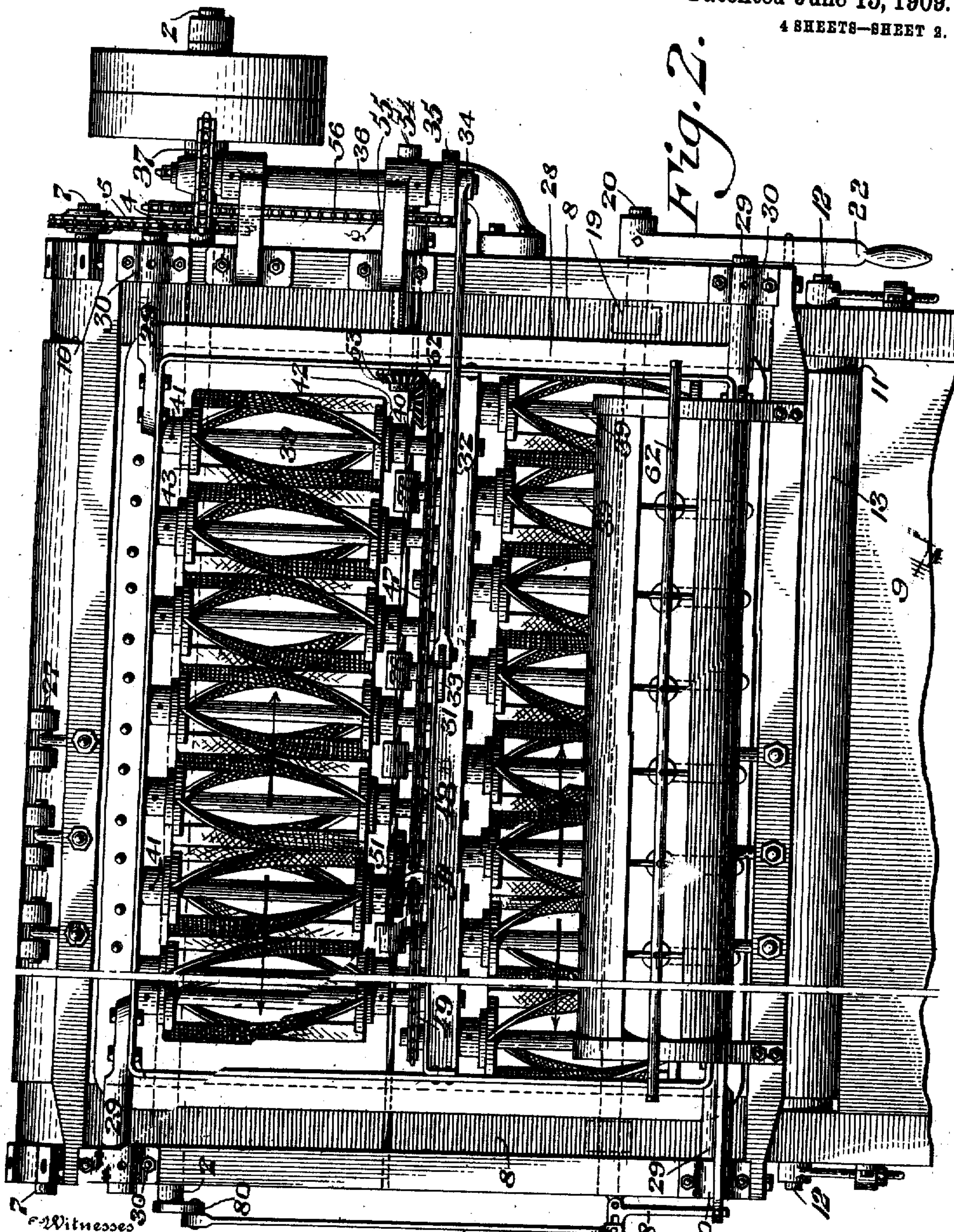
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4 SHEETS—SHEET 2.



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4 SHEETS—SHEET 3

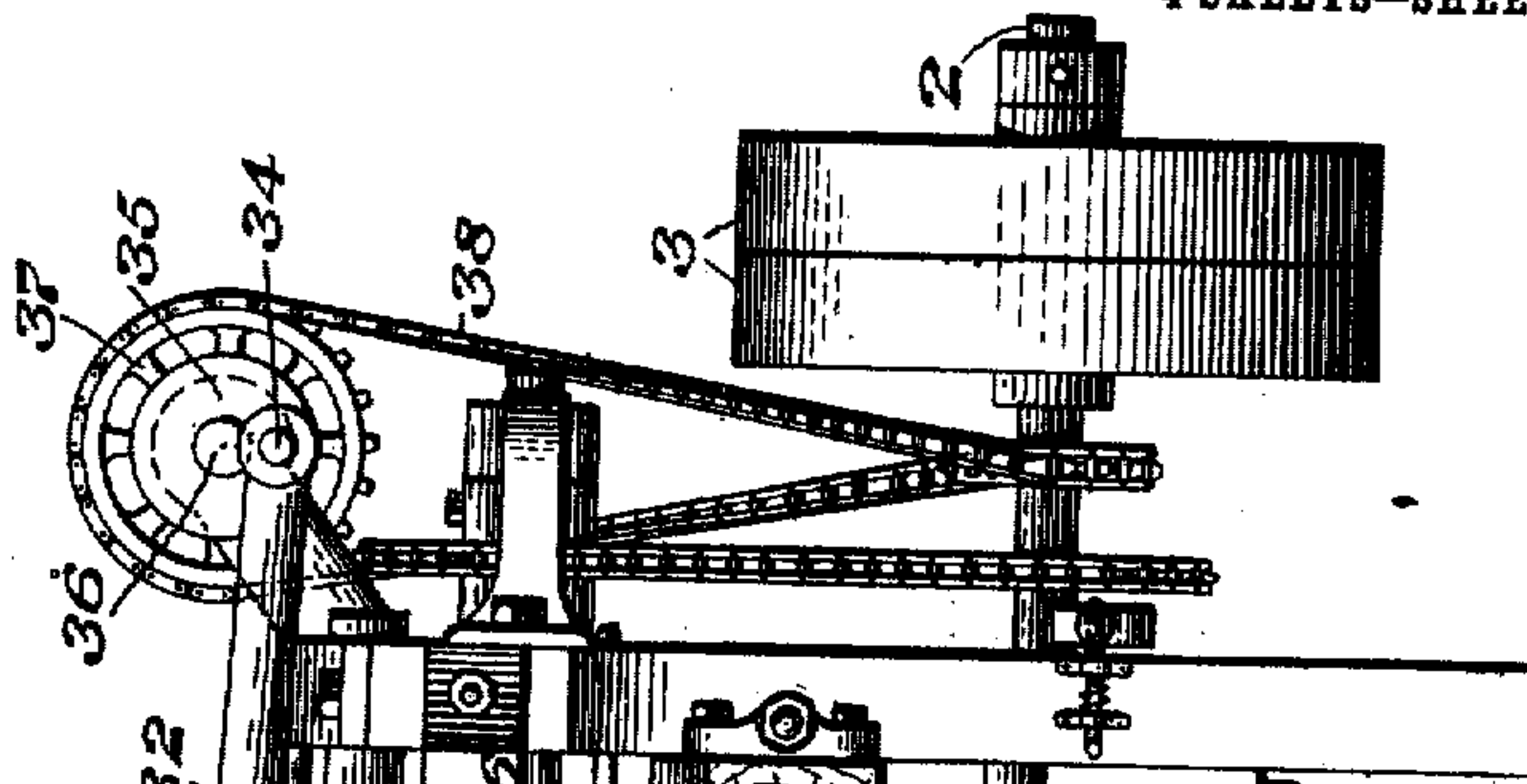
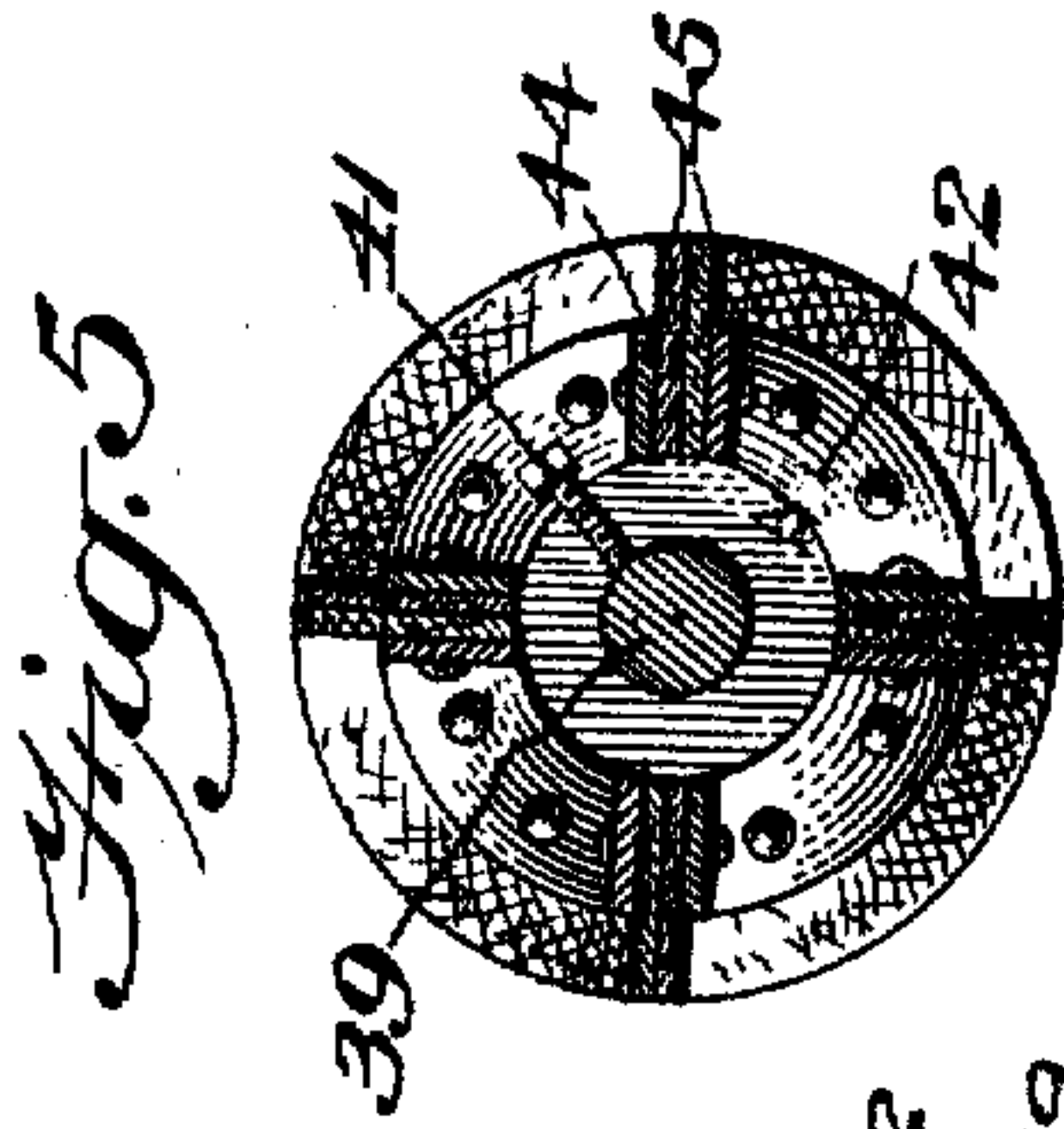
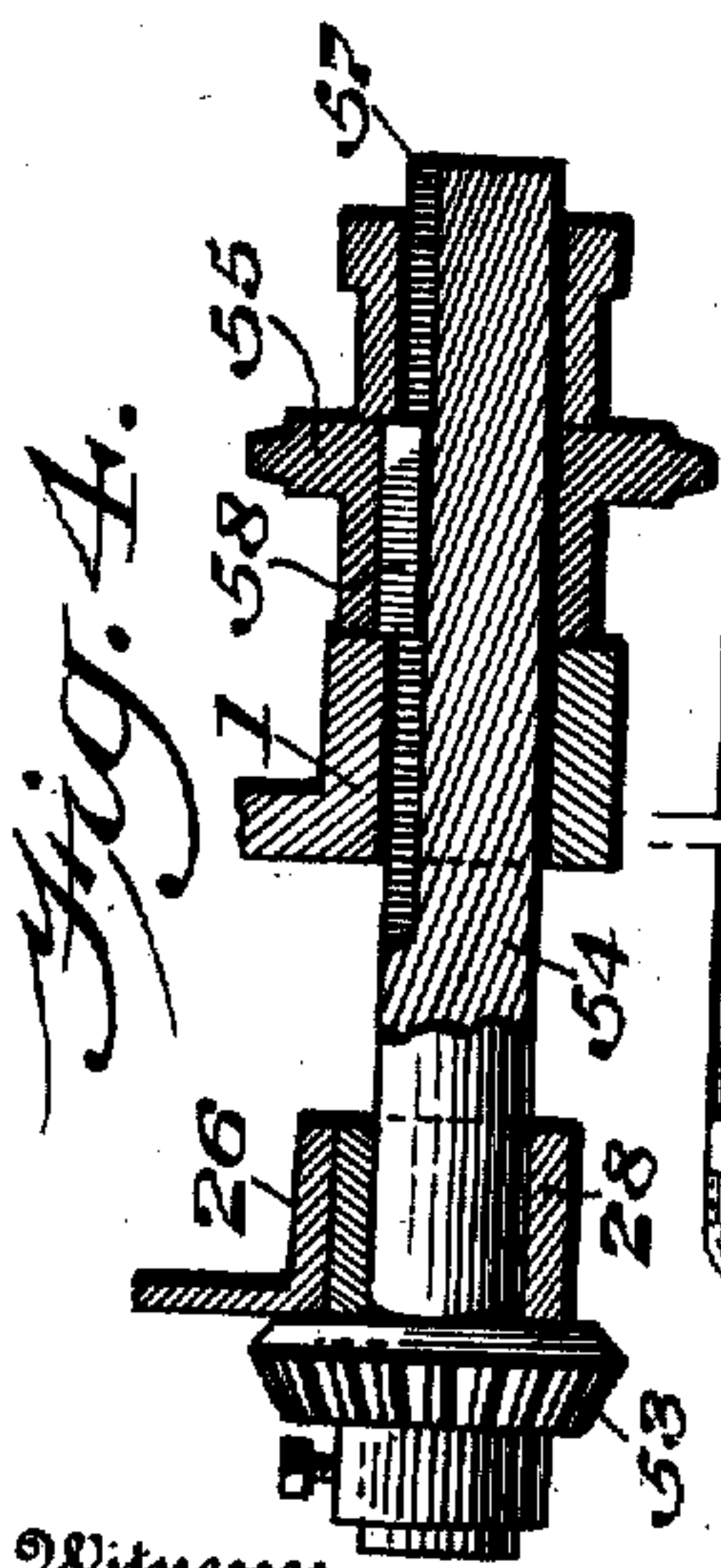


Fig. 3.



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4 SHEETS—SHEET 4.

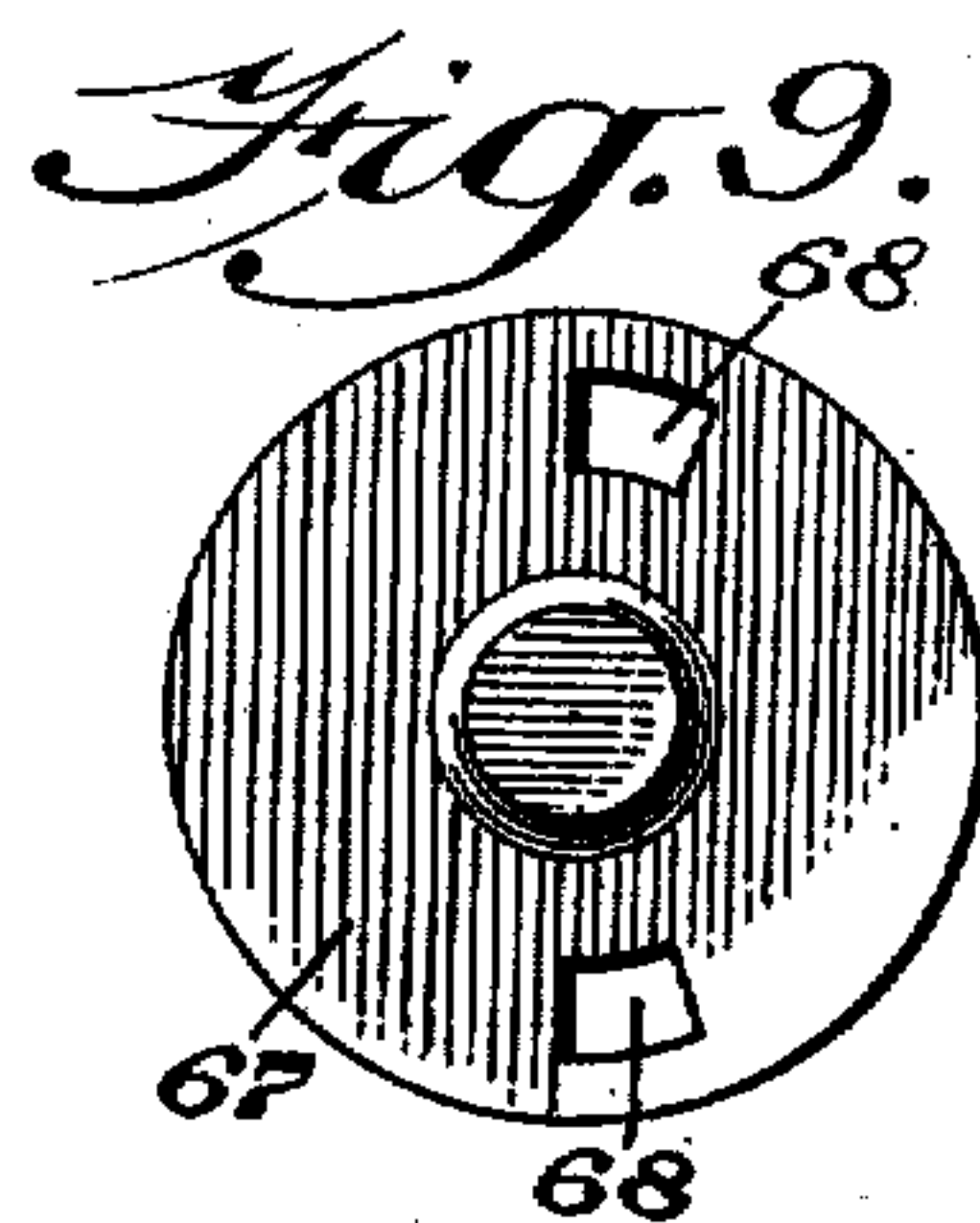
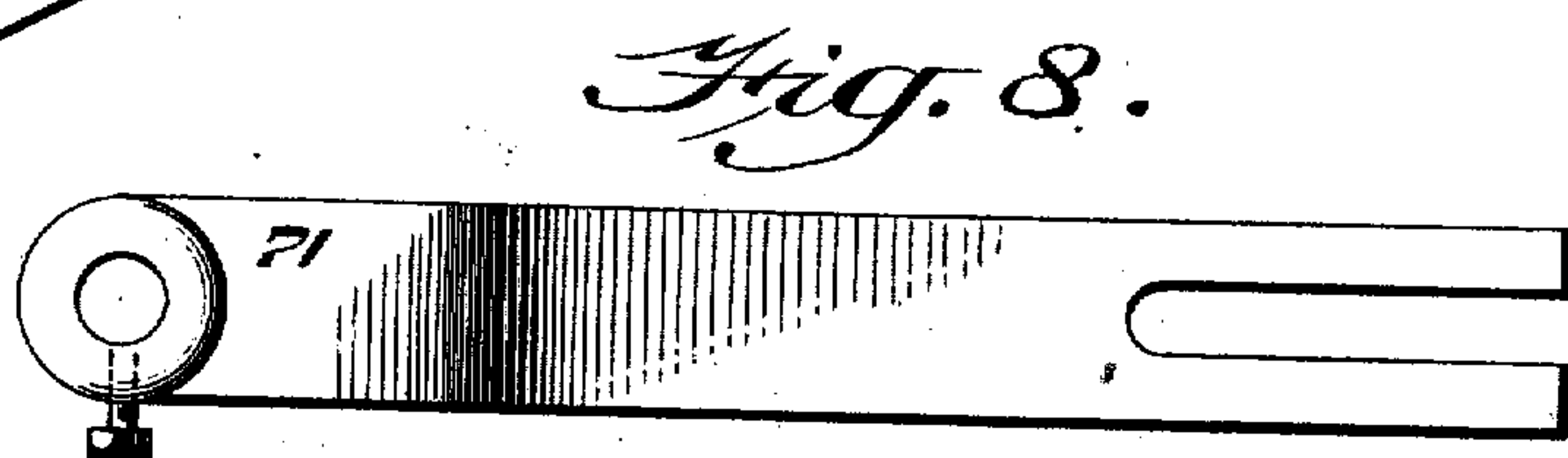
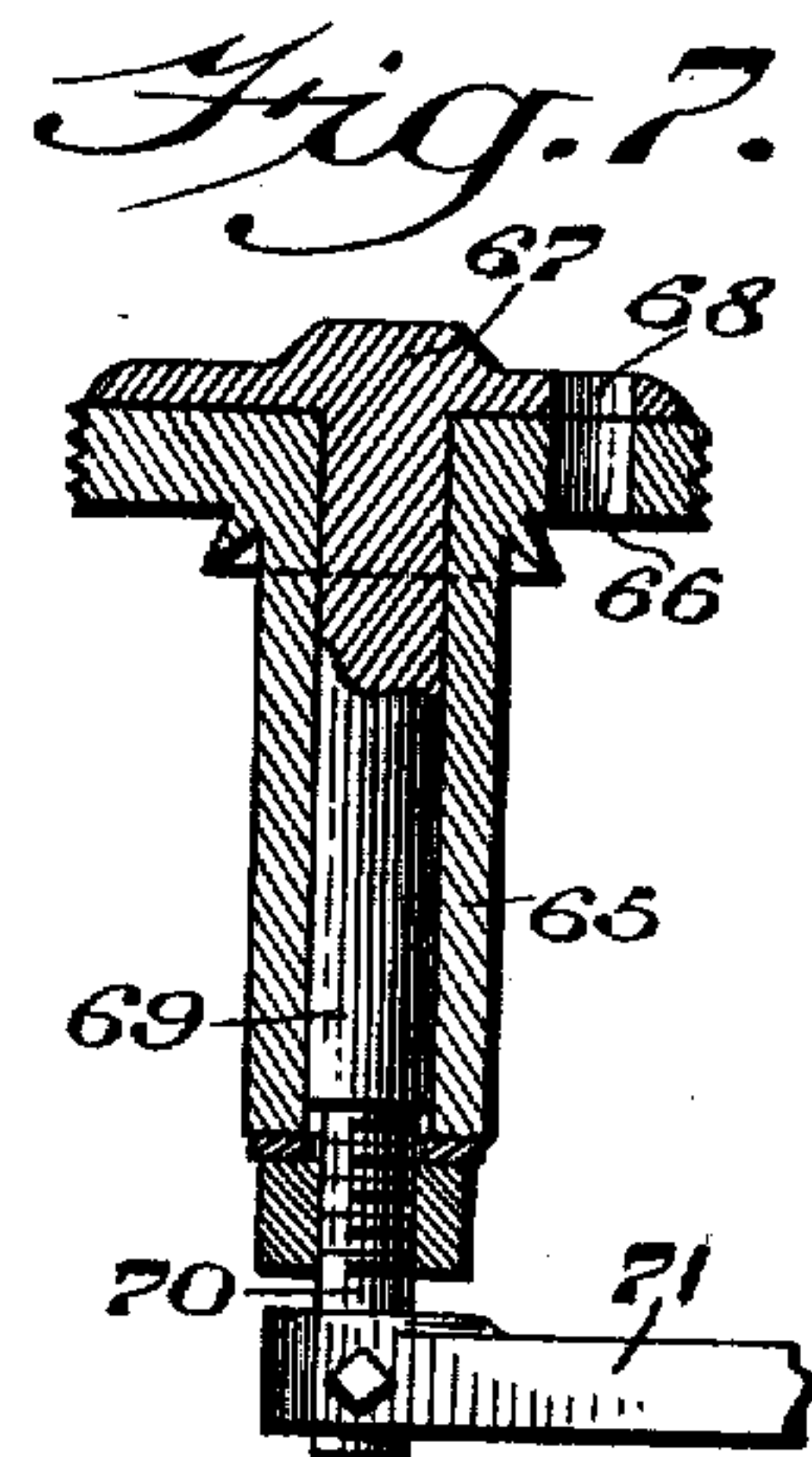
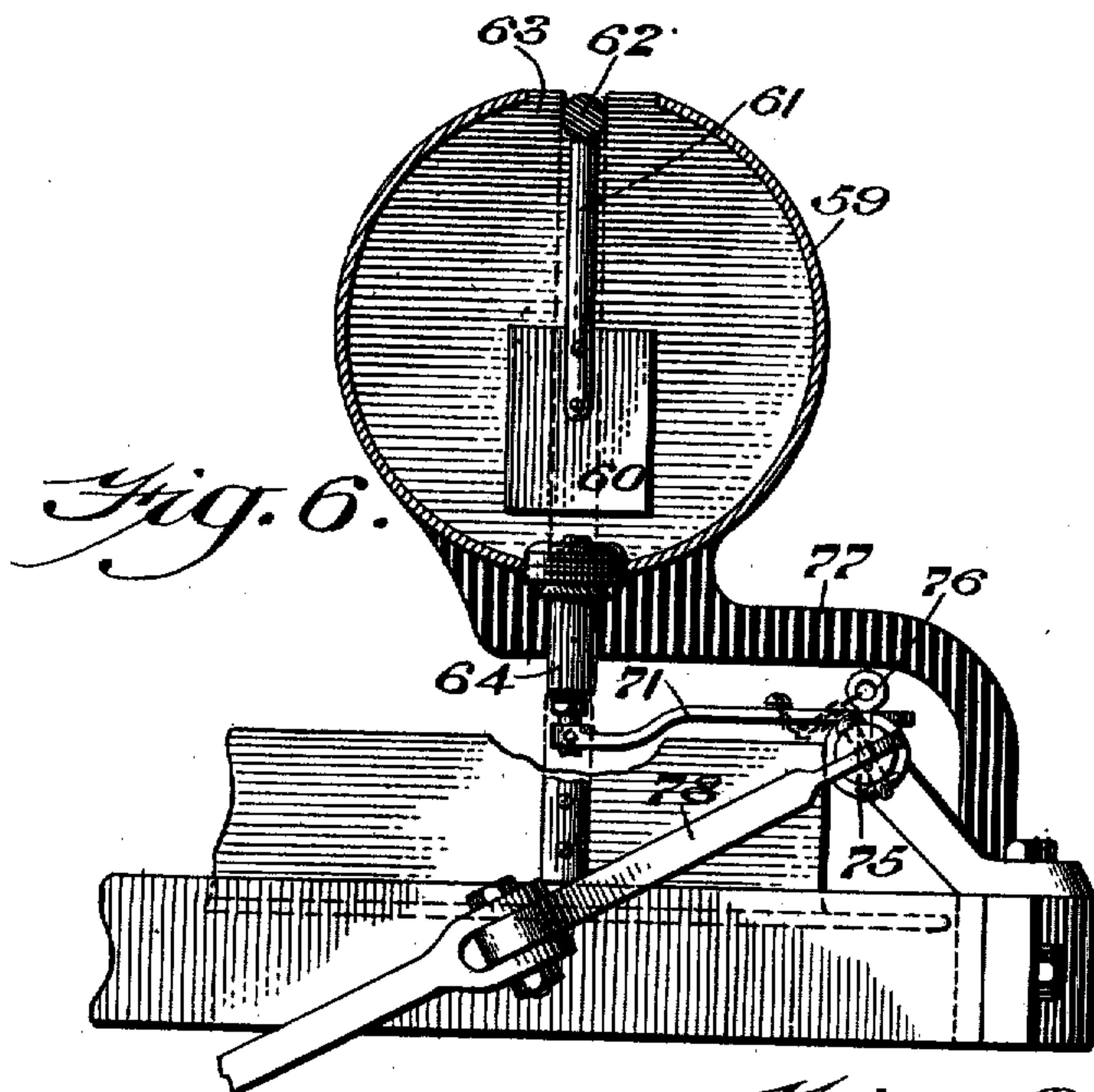


Fig. 11. Fig. 10.

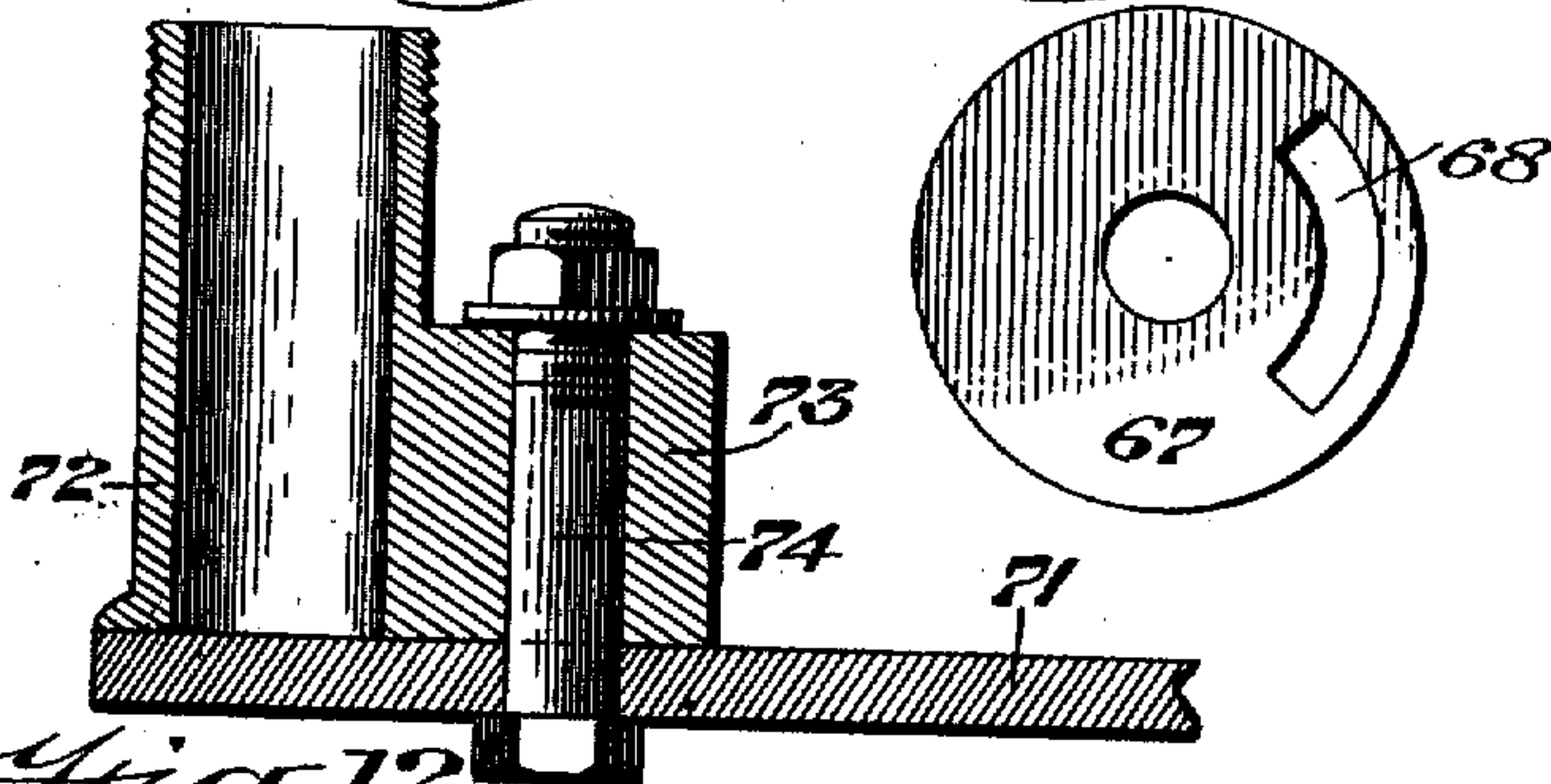
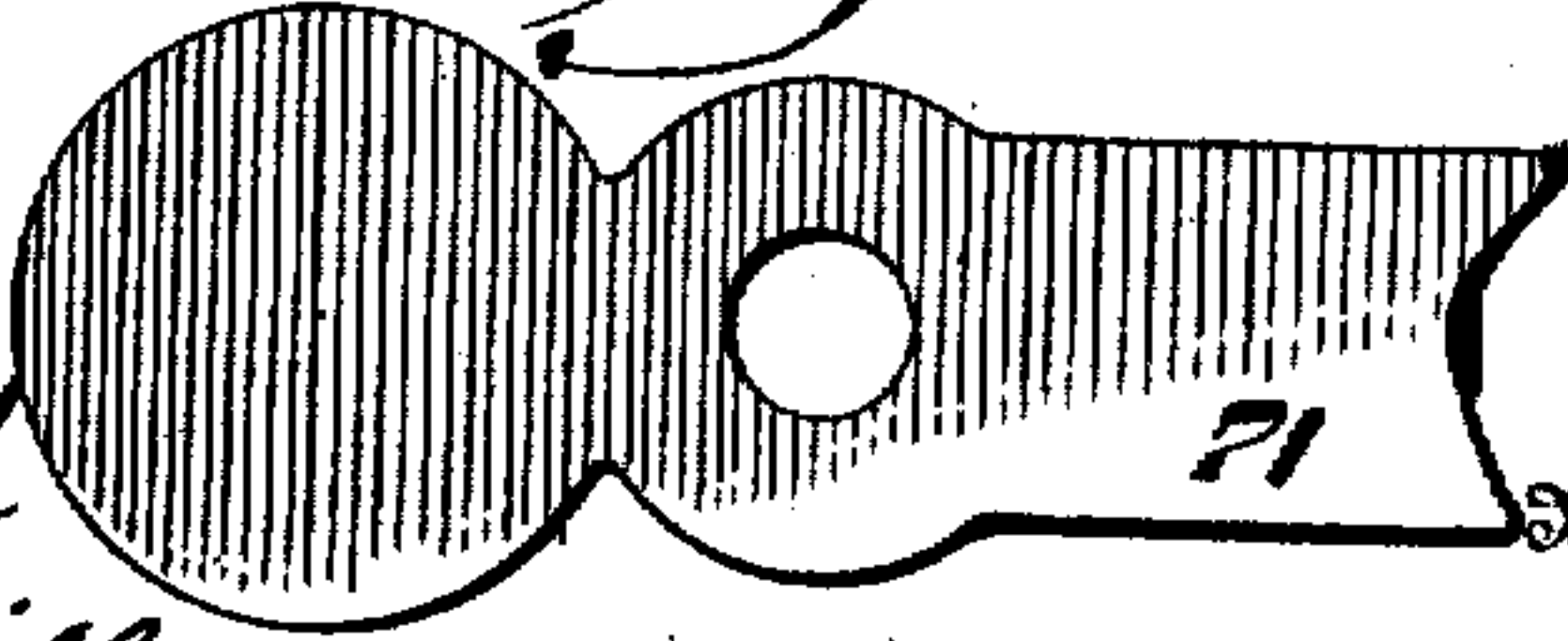


Fig. 12.



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UNITED STATES PATENT OFFICE.

GEORGE V. ANDERSON, OF WILMINGTON, DELAWARE, ASSIGNOR OF ONE-HALF TO F. F. SLOCOMB & COMPANY, INCORPORATED, OF WILMINGTON, DELAWARE, A CORPORATION OF DELAWARE.

LEATHER-WORKING MACHINE.

No. 924,873.

Specification of Letters Patent.

Patented June 15, 1909.

Application filed July 29, 1908. Serial No. 446,029.

To all whom it may concern:

Be it known that I, GEORGE V. ANDERSON, a citizen of the United States, residing in the city of Wilmington, county of New Castle, State of Delaware, have invented a new and useful Leather-Working Machine, of which the following is a specification.

This invention relates to seasoning and leather working machines of the type which are used for the spreading on and rubbing in of seasoning liquids, such as oils and the like liquid compositions necessary in the process of finishing leather.

It has for an object to provide a machine in which the seasoning liquid is applied to the skins, thoroughly worked, rubbed in and distributed uniformly and evenly over the entire surface so that there are no parts uncoated, or which are more heavily coated than others.

It has for a further object to provide means to maintain the skin stretched out during its passage through the machine so as to prevent any folds, which leave portions uncoated or uncolored.

It has for a still further object to provide a cleaning mechanism whereby a conveyer on which the skins are carried through the machine is kept free from all seasoning liquid in order that there may be no danger of the flesh side of the skins coming in contact with any of the coating material. It is well known that if the flesh side of the skins become splashed and coated in places with the seasoning liquid, the value of the skin is depreciated accordingly.

It further consists of a conveyer mechanism adapted to successively carry a plurality of skins into position to receive a quantity of seasoning liquid which is worked into them by a plurality of brush structures undergoing a movement simulating that of hand manipulation, during which the liquid is thoroughly rubbed in and spread very evenly over the surface of the skins and after which they are delivered to suitable drying mechanism, whereby the coating thus rubbed in is thoroughly dried.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

For the purpose of illustrating my invention, I have shown in the accompanying drawings one form thereof, which is at present preferred by me, since the same has been

found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described.

Figure 1 represents a side elevation of a machine embodying my invention. Fig. 2 represents a plan of a portion of the same. Fig. 3 represents an end elevation of the same. Fig. 4 represents a detail of the brush operating mechanism. Fig. 5 represents a section through one of the brushes. Fig. 6 represents the fluid supply operating means and a section through the fluid reservoir. Fig. 7 represents a section through one of the fluid supply valves. Fig. 8 represents a detail of the valve operating reservoir. Figs. 9 and 10 represent detached views of the valve disks. Fig. 11 represents a section of a modified form of valve mechanism. Fig. 12 represents a detail of the closure for the same.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings:—1 designates the frame of my novel leather working machine, the same supporting on suitable bearings, a driving shaft 2, which carries thereon operating pulleys 3 adapted to receive power from any suitable source. The shaft 2 also carries a sprocket wheel 4 affixed thereon and adapted to drive through the medium of a chain 5, a second sprocket 6 secured to a shaft 7 extending transversely of the machine and supported in bearings of the main frame 1. The shaft 7 forms a pivotal support for side members 8 extending longitudinally within the main frame 1 and being connected at their outer ends by a table 9, whereby a movable structure is formed and which carries a conveyer mechanism consisting of a roller 10 keyed to the shaft 7, a second roller 11 mounted on a shaft 12 extending transversely between the side frames 8 and over which rollers passes a conveyer bolster 13 of any suitable material. In the preferred form the shaft 12 is mounted in slots 14 on the side members 8 and is adjustably held by means of a collar 15 to which is secured a threaded rod 16, passing through a bracket 17 and fastened therein by means of a nut 18. Thus it will

be clear that as the sprocket 6 rotates the shaft 7, the conveyer bolster 13 will be rotated and tend to propel any articles located thereon through the machine. Should any adjustment of the bolster be necessary, due to its becoming too loose or too tight, the nuts 18 may be operated to move the shaft 12 farther from shaft 7 or closer thereto, as the case may be.

The side frames 8 and table 9 are supported at the free end by means of cams 19 fixedly mounted on a shaft 20 which is adapted, in the present instance, to be adjustably supported by eye bolts 21 threaded into the main frame 1. By means of the nuts 21' on the eye bolts the position of the cams relative to the side frames 8 may be changed as desired so as to bring the table 9 and bolster 13 into proper engagement with the brush structure, to be presently described.

22 designates a handle adapted to operate the shaft 20 and thereby swing the cams 19 to engage the side frames 8 and raise and lower the table 9, as desired. It will be noted that the stop means are provided to maintain the handle in normal position, which preferably consists of a pin 23 adapted to be inserted through the handle at a suitable point into the main frame 1.

24 designates a plurality of idle rollers suitably supported in close proximity to the upper surface of the conveyer bolster 13 and 25 designates a similar set of idle rollers on the opposite side of said conveyer bolster 13, but in substantial alinement with the upper rollers 19, whereby as the skin is passed over the bolster it will be held tightly and guided along the conveyer by these rollers.

It will be noted that the idle rollers 24 and 25 are positioned at some little distance above the surface of the roller 11 so that a slight incline will be given to this portion of the bolster leading from the table 9 to the operating parts of the machine.

26 designates another set of idle rollers positioned intermediate the length of the machine and serving a similar purpose, while 27 designates a still further set of rollers located at the exit end of the machine and tending to properly guide the skin as it leaves the conveyer bolster 13. Thus it will be apparent that as each strip of skin is placed on the table 9 and engaged by the conveyer, that it will be gripped by the guide rollers 24 and 25 and held tightly at all points and pass forward to the operating portion of the machine through which it moves and is maintained flat and properly positioned by the intermediate rollers 26 and as it emerges from this portion of the machine it is taken care of in a similar manner by the rollers 27 and delivered ready for the next operation.

28 designates a frame preferably supported above the conveyer bolster 13 and in the present instance is mounted for oscillating movement on the frame 1 by means of spindles 29 secured at convenient points and passing through brackets 30 affixed to the main frame 1. A bracing strut 31 is provided preferably at the center of this frame and, as here shown, has connected to it the operating mechanism producing the oscillating movement. This operating mechanism, in the present combination, consists of a rod 32 pivotally connected at one end to a lug 33, on the strut 31, and at the other end, fastened to a crank pin 34 of a driven wheel 35 mounted on a countershaft 36, which receives power from a sprocket wheel 37 and chain 38 operated from the main drive shaft 2. It will be clear that as the countershaft 36 is rotated the rod 32, through the crank connection, performs the function of a connecting rod and transmits a sliding movement to the frame 28, which thereupon oscillates above the conveyer belt in the desired manner. This frame 28 is provided with a support for a rubbing device, which serves to spread on and work in the leather seasoning mixture of oil or other liquid, and operates in connection with the oscillating of the frame to produce a movement over the surface of the skin simulating as closely as possible the ordinary hand method of applying such liquids. This mechanism is a very important feature in my invention, since heretofore machines for applying such seasoning have operated imperfectly, in that they have failed to work evenly over the surface of the skin and therefore certain portions receive a too heavy coating of the seasoning, while other portions either do not receive any or it is entirely too lightly applied. Furthermore, such means have failed to do more than apply an irregular coating of seasoning material and there has been no working and rubbing in, which has made the hand operating process heretofore the most successful and efficient one. In the preferred form this rubbing and spreading mechanism consists of a plurality of rotatable members, each comprising a spindle 39 carrying thereon at each end, a collar 40 secured, as desired, by the set screws 41 and having attached thereto a flange 42. This flange 42 is provided at suitable intervals, with slots 43, each adapted to receive the end of a brush body 44, to which are secured preferably a plurality of brushes 45, as here shown composed of some absorbent fabric, as felt or the like. These brush members are disposed between the flanges 42 of the collars and in the present instance are placed in staggered relation with respect to the slots 43, that is to say the body member 44 is secured at one end to a slot 43 of one of the flanges and at the other end to a

ment to the rod 75 and thereupon all of the valve rods 71 are moved to open the valve 66 to allow a flow of the seasoning material onto the brush rollers, under which the skin is then brought. The frame 28 containing these brush rollers 45 is now receiving an oscillating movement from the crank connection 32 and carrying the brush rollers back and forth in order to spread and rub in the coating of seasoning liquid. During the oscillation of the roller frame 28 the bevel gears 52 and 53 are in mesh and the chain drives 48 and 49 keep all of the rollers revolving, a portion in one direction from the center and another in the other direction from the center. The skin passes beneath all of these brush rollers and receives a thorough distribution of the seasoning material, which is manipulated back and forth until the liquid is finally thoroughly worked into the skin.

Of course it will be noted that the idle rollers 26 and 27 maintain the skin drawn flat and free from cracks and bends. It is apparent that during the reciprocating of the frame 28 that the bar 62 attached thereto is also reciprocated and thereby gives a sweeping movement to the mixing blades 60 in the seasoning liquid, which is thus kept thoroughly mixed and stirred up. As the skin leaves the series of rollers it passes through the final set of idle rollers, which deliver the skin to the brush roller 84 and are set so as to slightly retard the skin as it is delivered from the spreading rollers. It is now deposited upon a conveyer 88 and carried to the drying frame 87 through which it passes slowly and is subjected to currents of heated air and passes out completely dry. The actuating connections for these parts are of usual or suitable character well understood by those skilled in the art and therefore not necessary to be shown and described herein.

The conveyer 13 after having delivered the skin is generally more or less coated with seasoning liquid which has splashed or run off of the skin and therefore in order to properly dry and clean the same ready to receive another skin it is passed over the horizontally disposed brush roller 86 and wiped completely dry.

In so far as I am aware I am the first to provide a complete unitary structure for coating skins during the seasoning or like process, wherein the seasoning liquid is spread over the surface of the skin in a uniform and even manner and at the same time that the spreading operation is taking place it is subjected to a rubbing and working manipulation, which insures an effectual and efficient working in of the said liquid.

In so far as I am aware I am the first to provide a machine of the character above described in combination with a means for cleaning the conveyer and removing there-

from all splashes of seasoning material so that the flesh side of the skin never comes in contact with the liquid and is always deposited upon a clean brush surface.

It will now be apparent that I have devised a novel and useful construction which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description and while I have in the present instance shown and described the preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that the same is susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a machine of the character described, a conveyer, means for supplying a liquid to a skin on said conveyer, a frame adapted to be reciprocated adjacent said conveyer, and a plurality of rollers carried by said frame to spread a liquid over said skin.

2. In a machine of the character described, a conveyer, means for supplying a liquid to a skin on said conveyer, a frame reciprocating transversely of said conveyer, and a plurality of rollers carried by said frame for spreading said liquid on said skin.

3. In a machine of the character described, a conveyer, means for supplying a liquid to a skin on said conveyer, a frame adapted to be reciprocated adjacent said conveyer, and rollers on said frame for spreading a liquid on said skin each of said rollers comprising a plurality of contacting surfaces.

4. In a machine of the character described, a conveyer, means for supplying a liquid to a skin on said conveyer, a frame adapted to be reciprocated adjacent said conveyer, and a plurality of rollers carried by said frame for spreading said liquid in opposite directions on said skin.

5. In a machine of the character described, a conveyer, means for supplying a liquid to a skin on said conveyer, a frame adapted to be reciprocated adjacent said conveyer, a series of rollers rotatably mounted on said frame for spreading said liquid in opposite directions on said skin.

6. In a machine of the character described, a conveyer, means supplying liquid to a skin on said conveyer, a frame adapted to be reciprocated adjacent said conveyer, a series of rollers on said frame for spreading said liquid on said skin, and means to rotate said rollers.

7. In a machine of the character described, a conveyer, means for supplying liquid to a skin on said conveyer, a frame adapted to be reciprocated adjacent said conveyer, a plurality of series of rollers on said frame for

of this outlet valve, wherein the same functions are performed with a less number of parts and in which 72 designates a tubular member adapted to be screwed into the tank 59 and having extensions 73 thereon to which a bolt 74 pivotally secures the rocking arm 71, the end of which in this case is formed to completely close the opening, when it is in closed position, over the tubular member 72. The rock arms 71, in the present instance, are each detachably connected to a slide rod 75 by means of a pin 76 passing through an opening in the end of the arm 71, and into a corresponding opening in the part 75. These pins 76 are, in the preferred form, secured by a flexible connection 77 to each arm 71 so that there is no danger of their becoming lost or detached. Through the medium of such a connection for each valve, it will be apparent that any number of the valves may be connected for operation and just the right amount of fluid be drawn from the tank 59 and supplied to the skin.

78 designates a bell crank secured at one end to the rod 75 and at the other by means of an adjustable connection to a rod 79, to a crank arm 80 fixedly secured to the shaft 2. As the driving shaft 2 rotates movement will be transmitted through the connecting rod 79 to the bell crank 78 and produce an opening and closing of the sets of outlet valves, the adjustment of which is set so as to correctly time the opening of the liquid ports. The adjustment of the bell crank lever 78 allows also for a change of stroke of the arm 71, as desired.

81 designates a shaft suitably mounted for rotation adjacent the end of the conveyer bolster 13, the same being driven by means of the usual sprocket wheel 82, chain 83 from the main driving shaft 2. This shaft 81 carries thereon and has securely fastened thereto, a brush roller 84, the periphery of which is adapted to contact with the seasoned skin as it leaves the conveyer and thus give a final spreading and rubbing in of the liquid before the skin is passed to the next step in the process. A guard 85 partially incloses this brush 84 so as to prevent any waste of the seasoning liquid and which serves also as a collector for the same at the end of the conveyer. A second brush 86 is rotatably mounted on the main driving shaft 2 and in a position to engage the lower side of the conveyer on its return movement in order to clean the conveyer of any liquid which may have become improperly delivered or splashed thereon during the rubbing process. It is very essential that some such means be provided for drying the conveyer preparatory to receiving other skins, as it will be noted that the skins are placed on the conveyer with the flesh side contacting

remain thereon the effect upon this portion of the hide or skin is very deleterious.

87 designates a casing located in close proximity to the main frame 1 and having one end adjacent the delivery end of the conveyer 13. Suitably mounted within this casing is a conveyer chain 88 on which the seasoned skin is adapted to be deposited and carried through the casing 87 to an exit opening 89 therein. During the passing of the skin through this casing 87 it is subjected to the drying process, the same being accomplished, as here shown, by means of a series of pipes 90 secured to headers 91, whereby a radiator is formed which is adapted to receive steam through one or the other of the pipes 92, one of which of course operates as an exhaust pipe. A fan 93 is located preferably above the radiator and is suitably journaled in a bearing 94 in the casing 87, the shaft 95 of said fan having a driven pulley 96 thereon receiving power from any suitable source. This fan operates to circulate a supply of air over the steam pipes and into contact with the skin passing therethrough, which air is supplied through the ports 97 of the casing 87. These ports 97 are adapted to be regulated by a slide valve 98 operated by a crank 99, manually or mechanically, as preferred. It will be clear that by means of this slide valve the air supply may be regulated as desired and the temperature of the drying chamber may be controlled.

It will be noted that a plate 93' is positioned directly in the path of the air circulated from the fan so as to prevent direct contact of the dry air with the dampened skin passing through the drying chamber, by means of which the air throughout the chamber is uniformly distributed and the skin is much more quickly dried. It will be readily noted by those skilled in the art. that the quicker a skin is dried the more beneficial will be the seasoning operation, since the evaporation of the liquids comprising the seasoning composition when long drawn out, results in many of the essential elements necessary to a first grade skin being evaporated therewith.

The operation of the machine is as follows:—The skin to be treated is placed on the table 9, which of course has been properly adjusted by means of the handle lever 22 and the driving mechanism and is then moved into engagement with the conveyer bolster 13, which carries it up and into contact with the rollers 24. These rollers 24 co-operating with the rollers 25 firmly hold the skin against the bolster, thus preventing any crimping of the edge or bending, which would prevent proper passage through the spreading rollers. As the skin is leaving this set of rollers 24 the reciprocation of the connecting rod 79 imparts an oscillating move-

spreading liquid on said skin, and means to rotate said rollers.

8. In a machine of the character described, a conveyer, means for supplying liquid to a skin on said conveyer, a frame adapted to be reciprocated adjacent said conveyer, a series of rollers on said frame for spreading liquid on said skin in one direction, and a second series of rollers for spreading said liquid in the opposite direction, and means to rotate said rollers.

9. In a machine of the character described, a conveyer, a frame adapted to be reciprocated adjacent thereto, a plurality of rollers on said frame, a receptacle for supplying a liquid to a skin carried by said conveyer, a plurality of valves for controlling said supply, and means to open and close said valves.

10. In a machine of the character described, a conveyer, a frame adapted to be reciprocated adjacent thereto, means for supplying liquid to a skin on said conveyer, and means located at the exit end of said conveyer for drying said skin.

11. In a machine of the character described, a conveyer, a receptacle adjacent thereto for supplying a liquid to a plurality of skins successively carried by said conveyer, and means located at the exit end of said conveyer for drying said skin.

12. In a machine of the character described, a conveyer, a frame adapted to be reciprocated adjacent thereto, a receptacle for supplying liquid to a skin on said conveyer, and

means operated by said frame for stirring said liquid supply.

13. In a machine of the character described, a conveyer, a frame adapted to be reciprocated adjacent thereto, a receptacle for supplying liquid to a skin on said conveyer, and means operating synchronously with said frame for stirring said liquid supply.

14. In a machine of the character described, a conveyer, means for supplying a liquid to a skin on said conveyer, a frame adapted to be reciprocated adjacent said conveyer, a plurality of rotatable rollers carried by said frame, and means to cause a number of said rollers to rotate in one direction and the remainder of said rollers in the opposite direction, whereby said skin is evenly seasoned and maintained at all points in contact with said conveyer.

15. In a machine of the character described, a conveyer, means for supplying a liquid to a skin on said conveyer, a frame adapted to be reciprocated adjacent said conveyer, a plurality of rollers carried by said frame and mounted in parallel rows, and means to cause a number of said rollers to rotate in one direction and the remainder of said rollers in the opposite direction, whereby said skin is evenly seasoned and maintained at all points in contact with said conveyer.

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