

(No Model.)

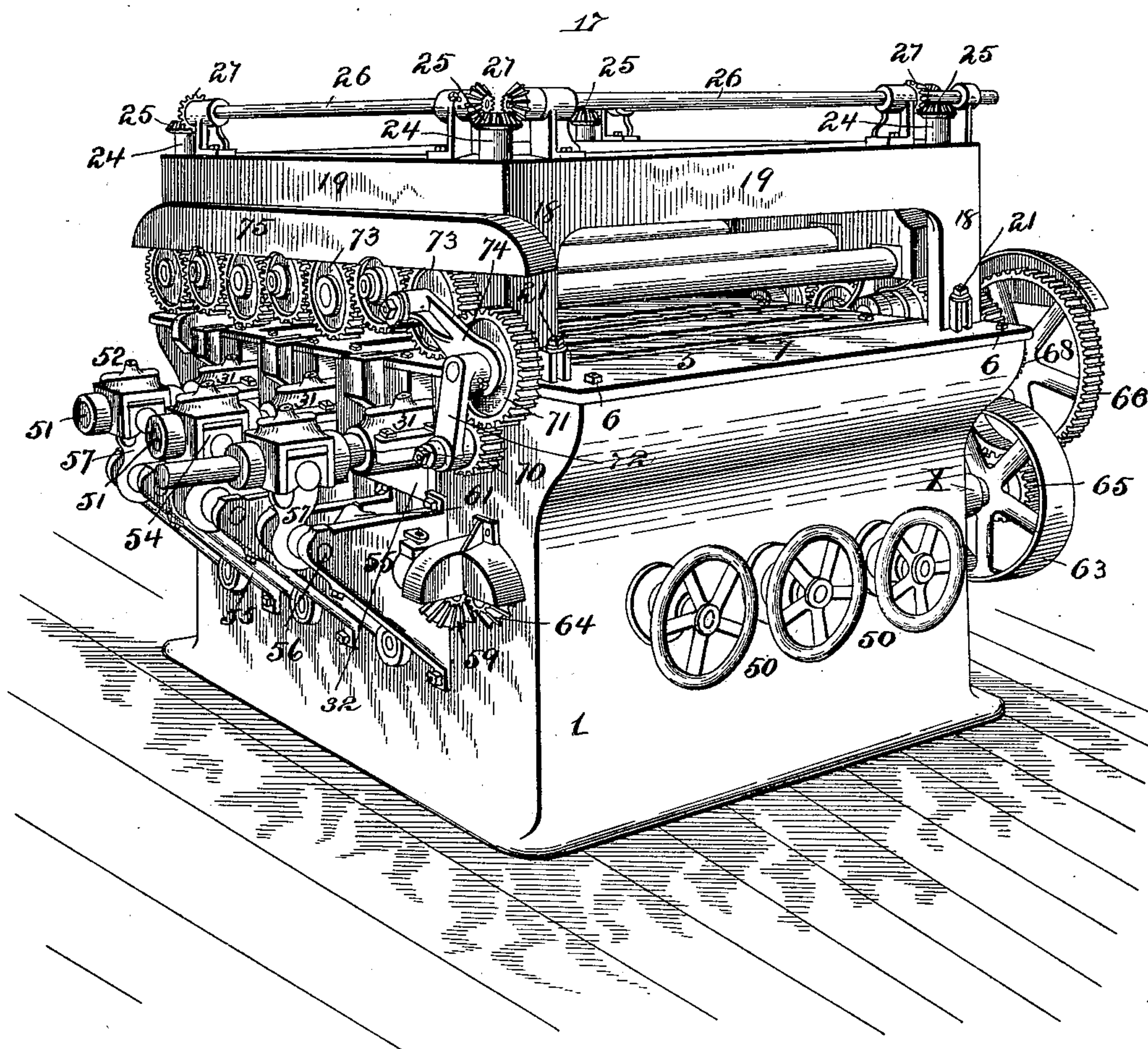
5 Sheets—Sheet 1.

O. H. YOUNG.  
WOOD POLISHING MACHINE.

No. 592,679.

Patented Oct. 26, 1897.

*Fig. 1.*



*Witnesses:*

*J. B. McGirr.*  
*J. F. Bluman*

*Inventor.*

*Oliver H. Young*  
*by Francis L. Ayer*  
*Attorney*

(No Model.)

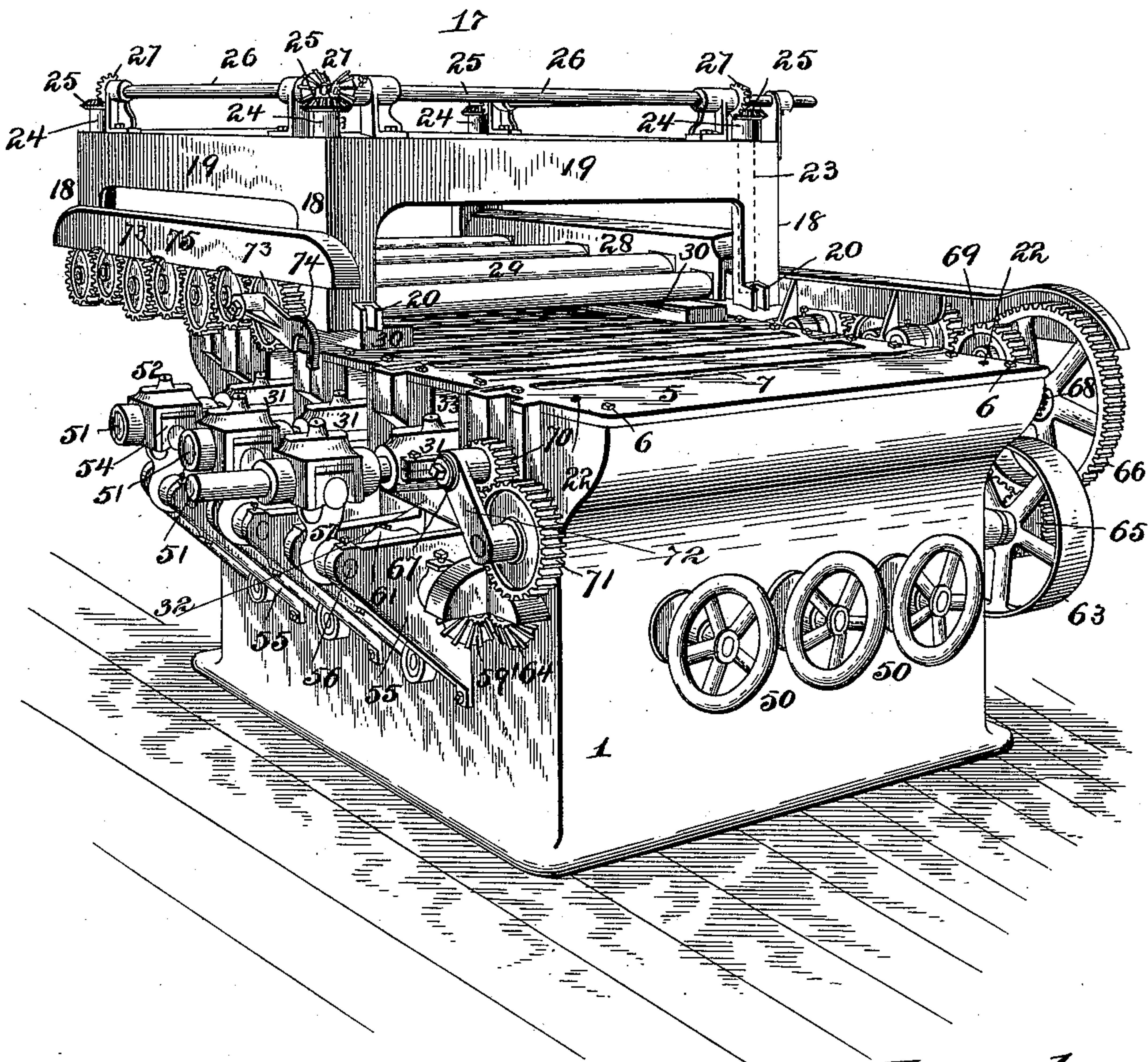
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O. H. YOUNG.  
WOOD POLISHING MACHINE.

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*Fig. 2.*



*Witnesses:*

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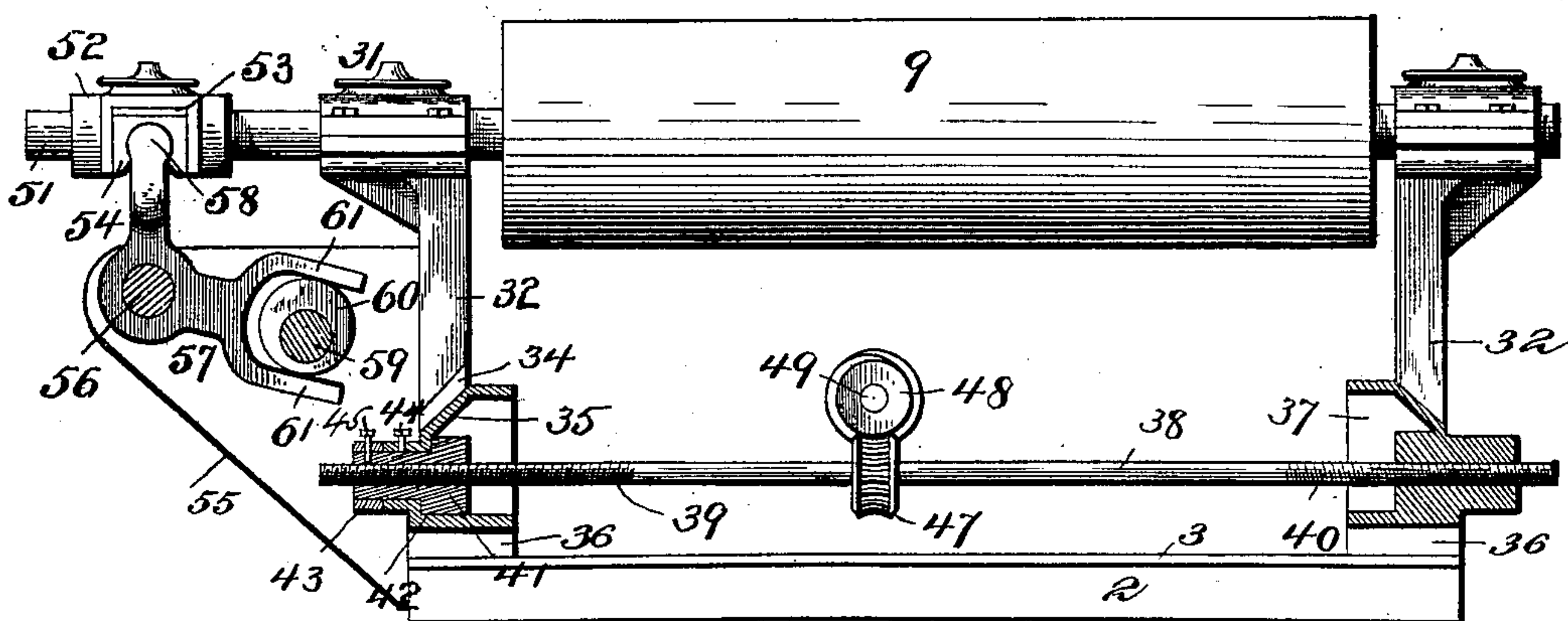
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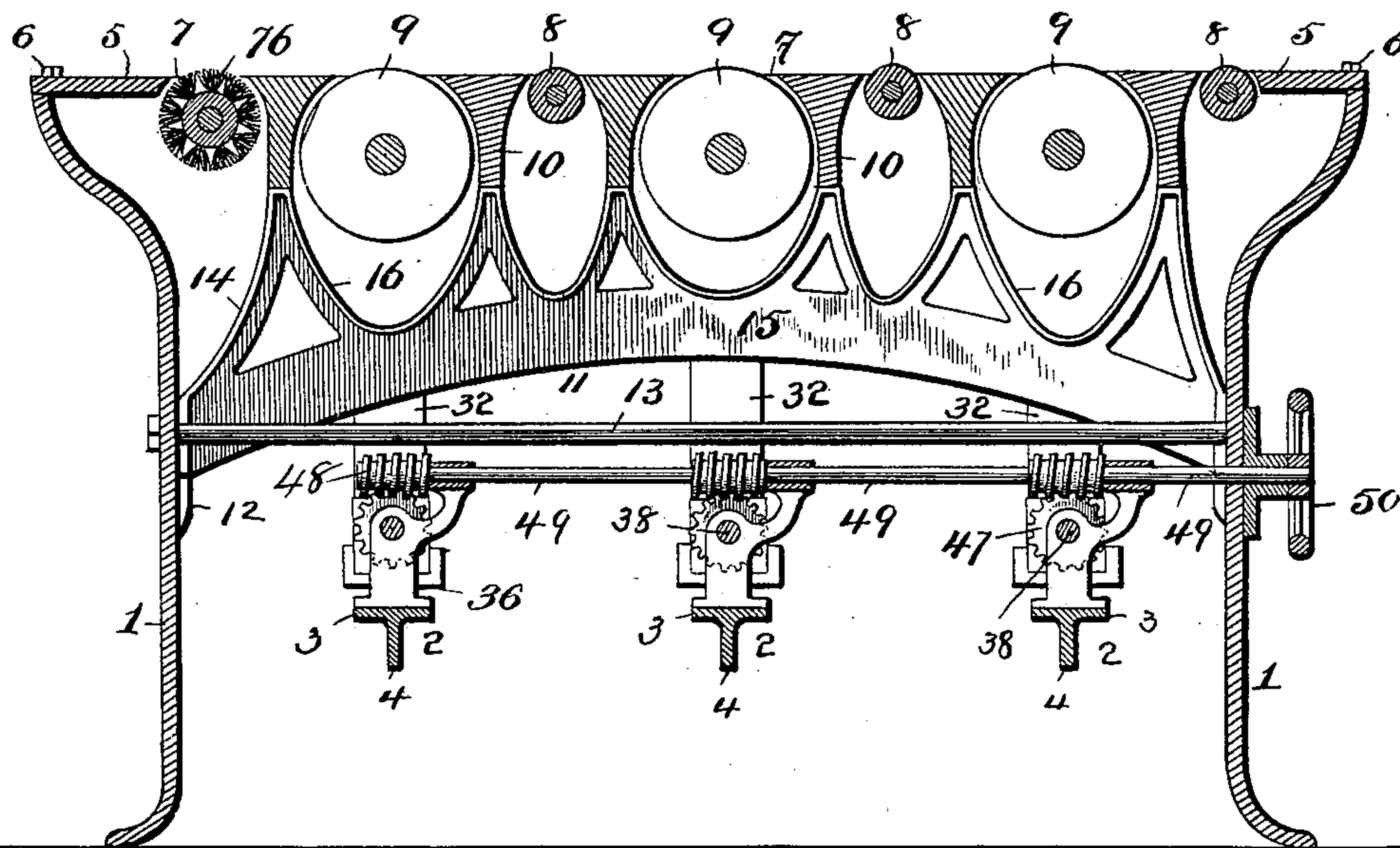
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Patented Oct. 26, 1897.

*Fig. 3.*

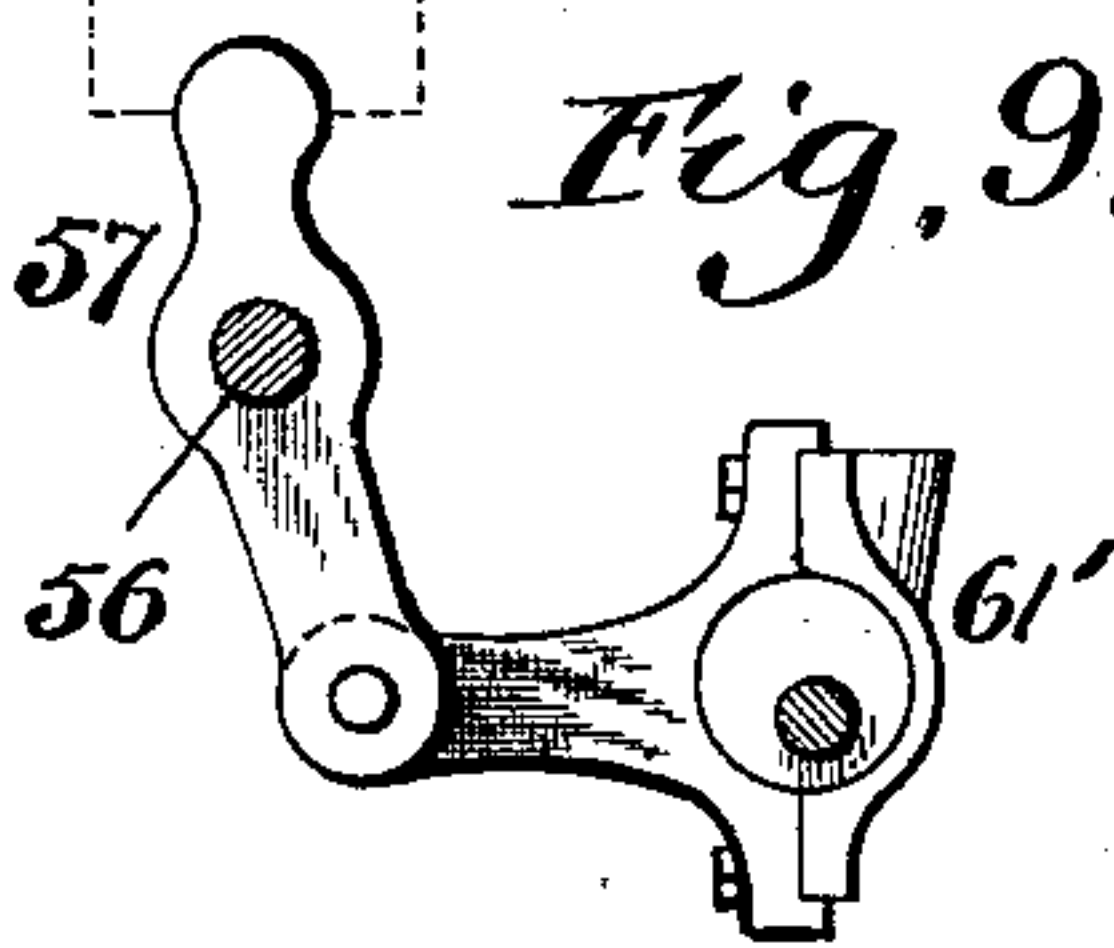


*Fig. 4.*



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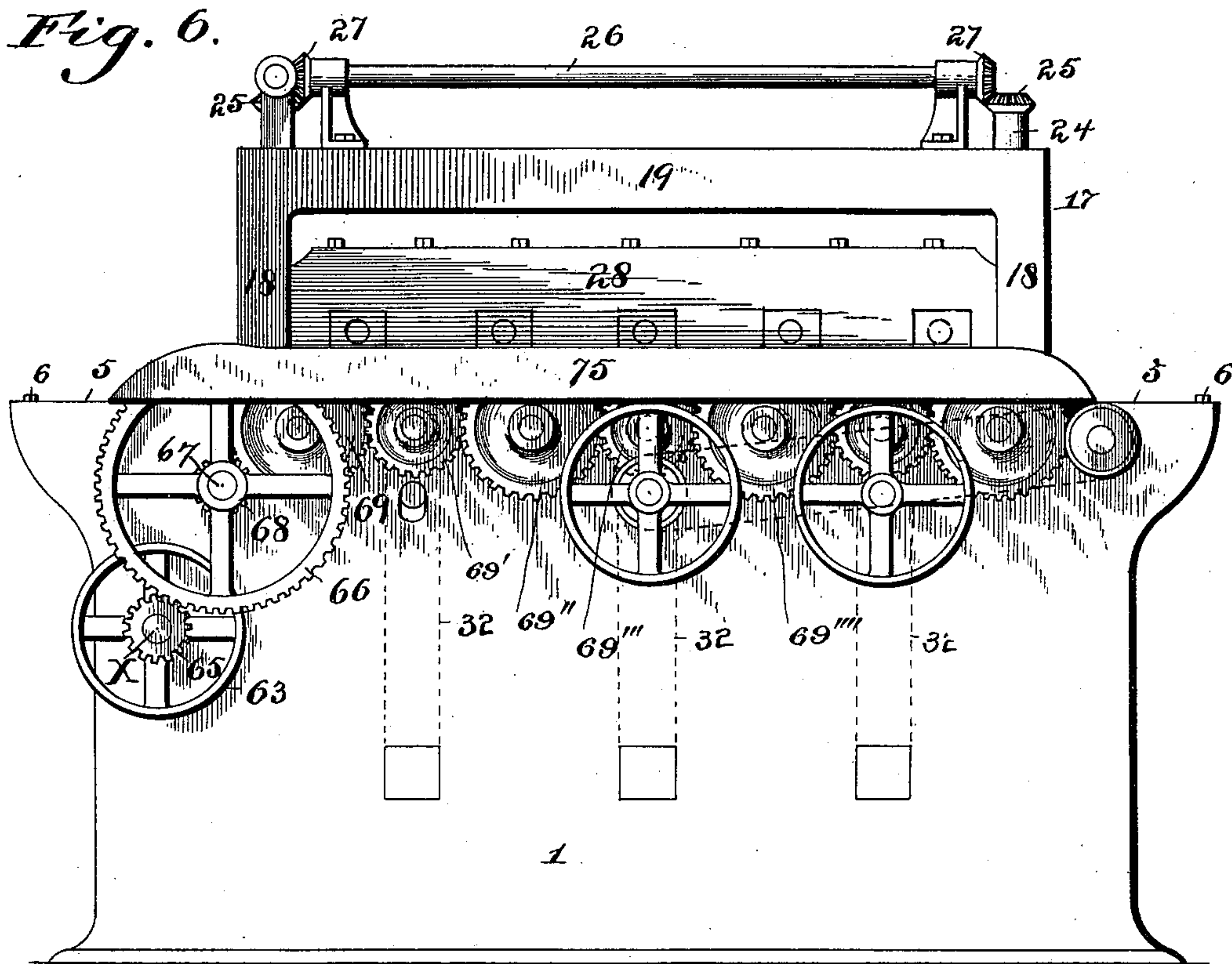
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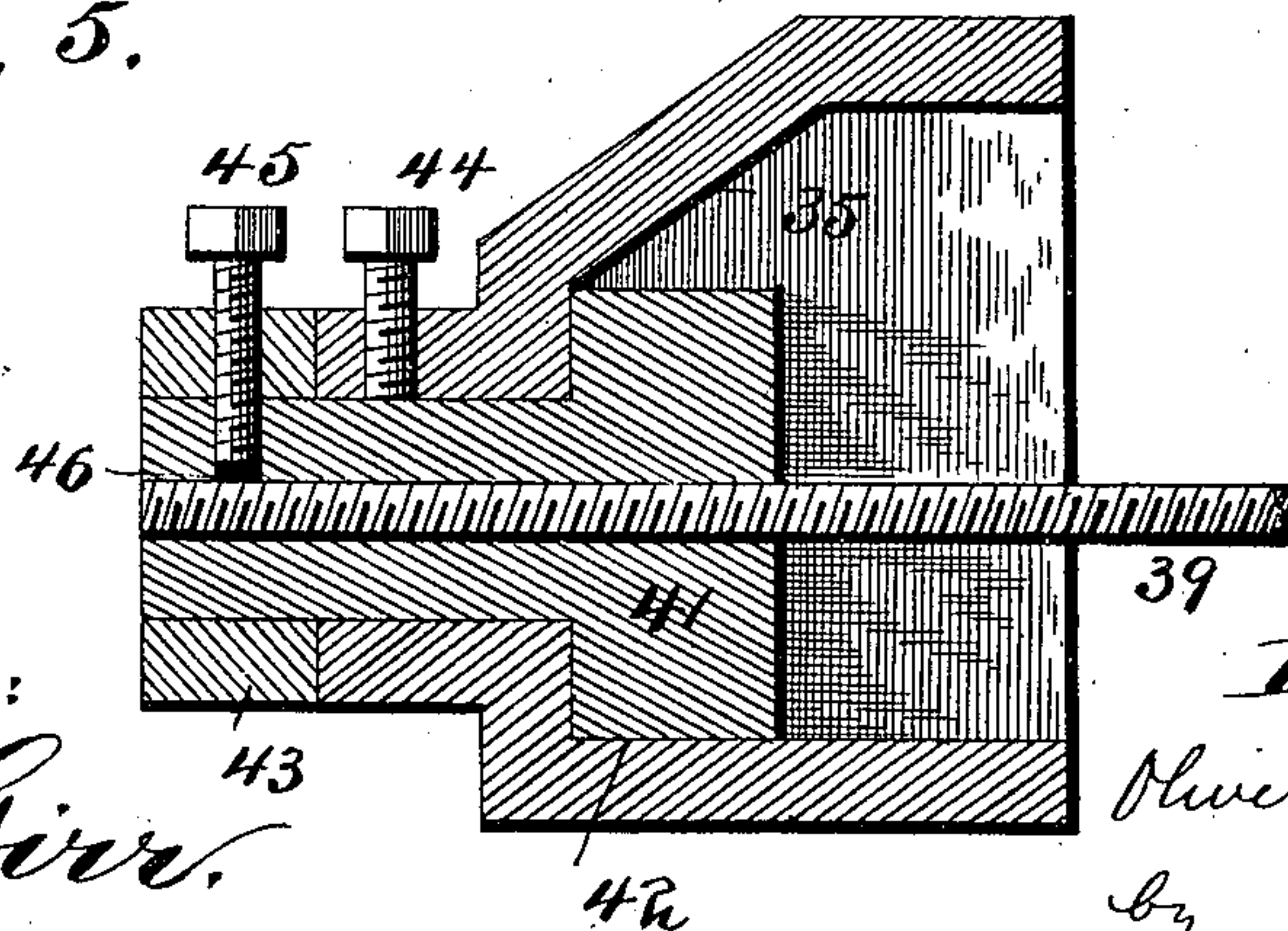
O. H. YOUNG.  
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*Fig. 5.*



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(No Model.)

5 Sheets—Sheet 5.

O. H. YOUNG.  
WOOD POLISHING MACHINE.

No. 592,679.

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Fig. 7.

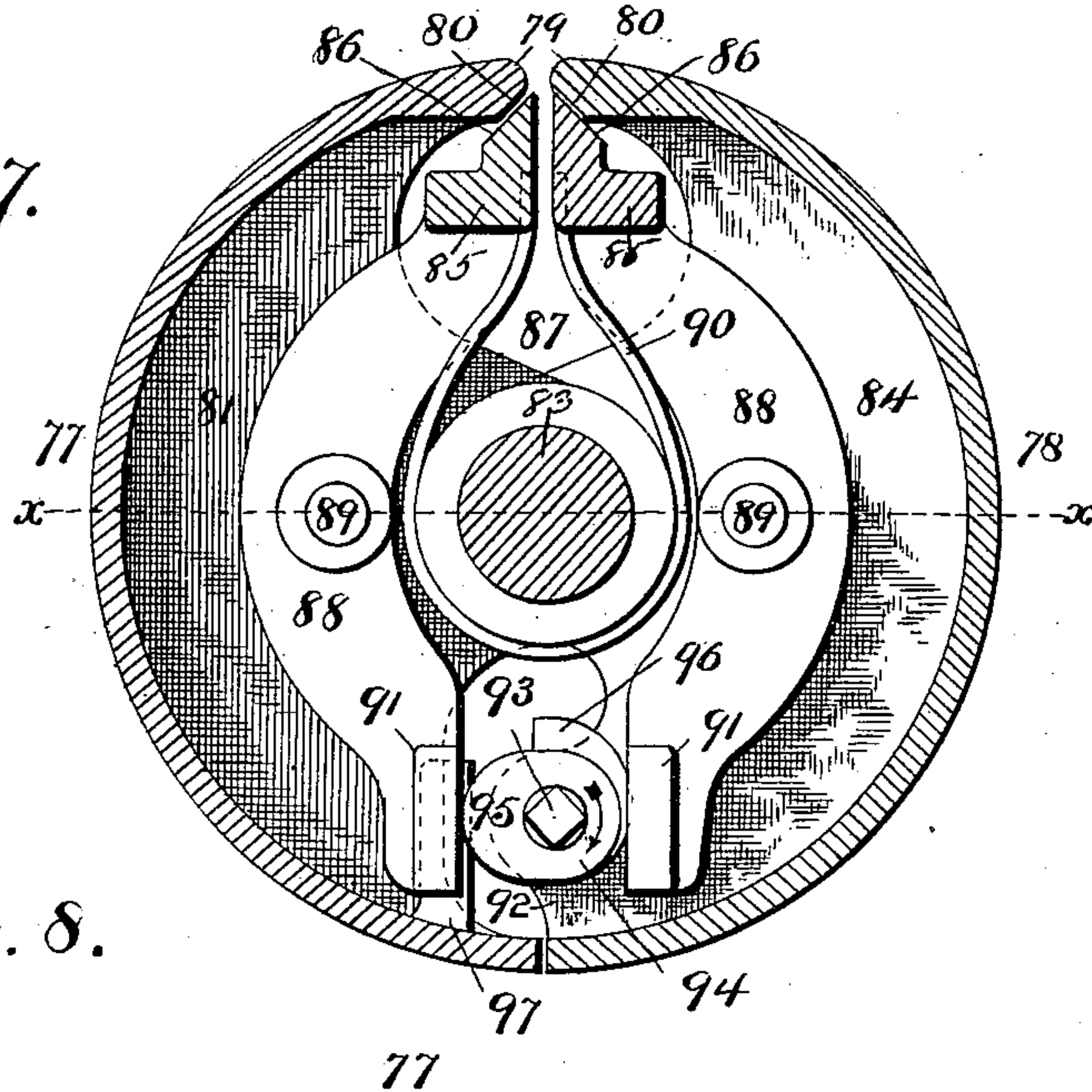
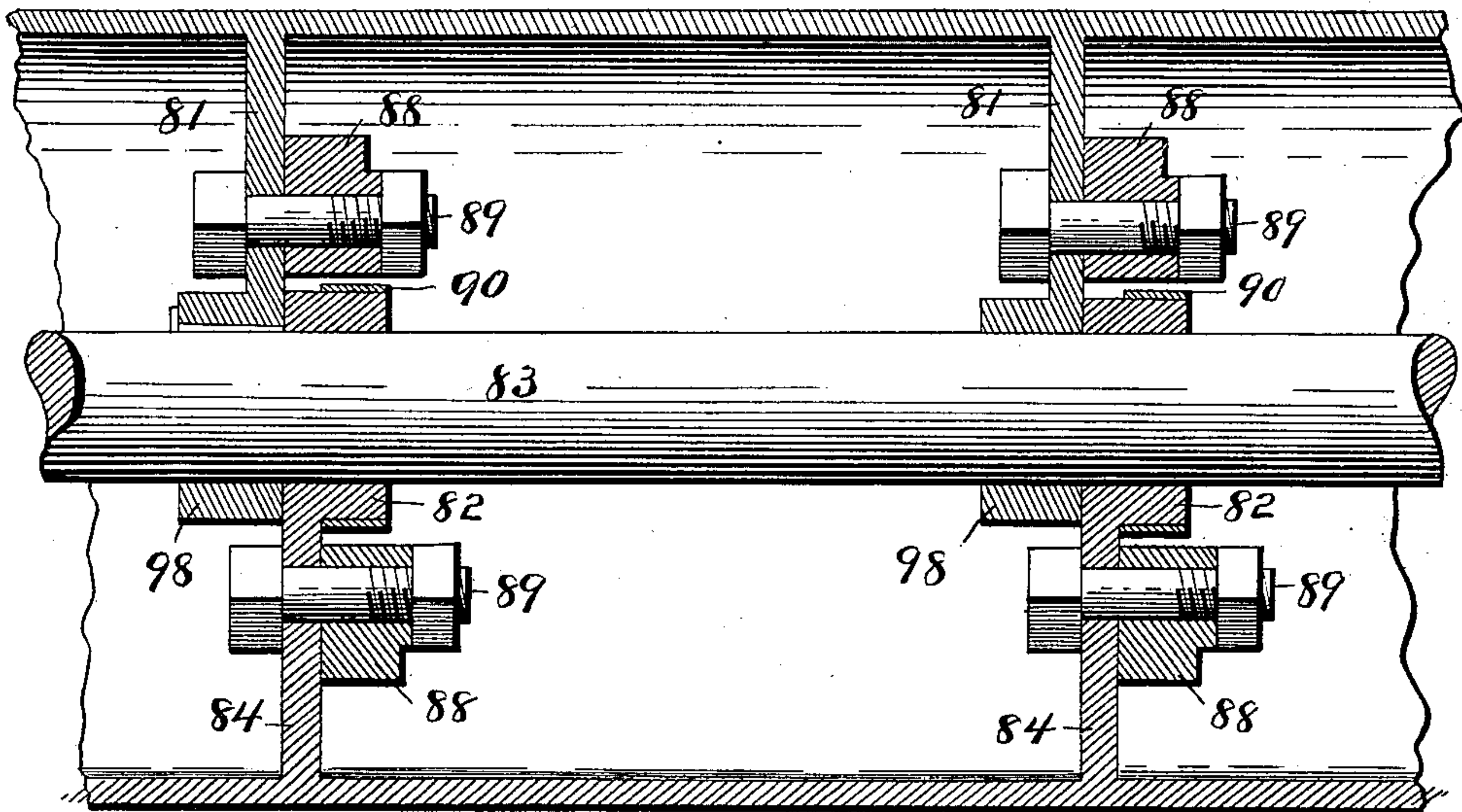


Fig. 8.

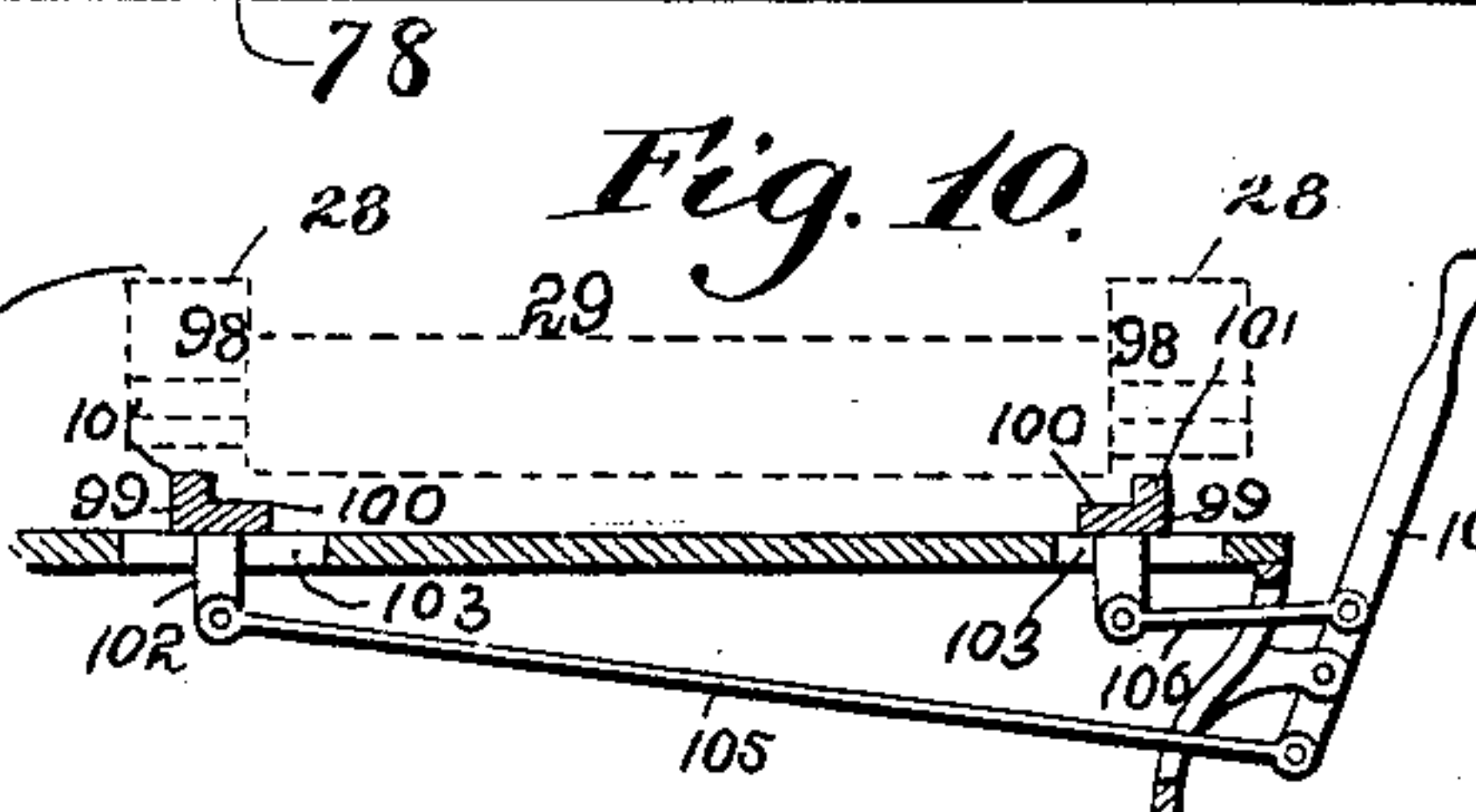


Witnesses:

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Fig. 10.



Inventor.

Oliver H. Young

by

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Attorney



# UNITED STATES PATENT OFFICE.

OLIVER H. YOUNG, OF WILLIAMSPORT, PENNSYLVANIA.

## WOOD-POLISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 592,679, dated October 26, 1897.

Application filed February 5, 1895. Serial No. 537,403. (No model.)

*To all whom it may concern:*

Be it known that I, OLIVER H. YOUNG, a citizen of the United States, residing at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Wood-Polishing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in that class of wood-polishing machines in which one or more polishing-rolls covered with sandpaper are used, the work being moved laterally with respect to and in contact with such sand-rolls by means of upper and lower feed-rolls. In practical use it becomes necessary to renew the sandpaper on the sand-rolls, such renewals being more frequent when the machine is in constant use and the surfaces to be polished are uneven or rough. So far as I am aware, in all polishing-machines of the character referred to preceding this invention when it is necessary to renew the surfaces of the sand-rolls the upper feed-rolls are elevated as far as possible, so as to allow the operator to work thereunder to accomplish this purpose; but this is objectionable, since considerable time is required to elevate the upper feed-rolls to the extent of their limit, and the position of the workman is generally such that the sand-rolls cannot be renewed with a great degree of facility.

In my improved machines I provide means whereby the frame carrying the upper feed-rolls may be moved laterally with respect to the sand-rolls, so as to expose the latter, whereby the surface of the sand-rolls may be renewed with the greatest facility and accuracy. One of the objects of my invention, therefore, is to provide means of this or substantially the same character whereby the sand-rolls can be readily exposed for the purpose of renewing their surfaces in an easy and accurate manner or for removing the rolls from the machine.

Another objection to the present forms of machines of this character is that the bed-plate being provided with a recess for each sand-roll and each lower feed-roll, such recess extending entirely through the same, is

much weakened thereby and is liable to be depressed slightly when the edge of the work enters between each of the upper and lower feed-rolls. Since the adjustment of the sand-rolls is such that the depth of cut of such sand-rolls is generally not greater than the thickness of an ordinary sheet of paper, any tendency of the bed-plate to be depressed, even to the most minute degree, would tend to seriously affect the proper working of the machine, either to injure the work or to tear the sandpaper from the sand-rolls. The advantage, therefore, of providing a bed-plate that is absolutely immovable will be apparent. This is accomplished in my machine by making use of a supporting truss or arch beneath the bed-plate, as I shall further explain. Since the depth of cut of the sand-rolls, as before explained, is very slight, it follows that some means must be devised by which the relative position of the sand-rolls with respect to the work can be adjusted with the greatest delicacy. I have invented an improved adjusting device for this purpose which I shall presently set out and claim and which is of such a delicate construction that several turns of the adjusting-wheel of each roller will not elevate or depress the sand-rolls to a greater extent than the thickness of an ordinary sheet of paper. At the same time the sand-rolls are supported with the utmost rigidity, so that there can be no tendency of the rolls to be thrown out of adjustment under the pressure of the work.

I shall also claim various other improvements which I have made in these machines and which will more fully appear from the following description and the claims subjoined thereto.

For a better comprehension of my invention attention is directed to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view of my improved machine in an operative condition, except that the driving-pulley of the sand-rolls is removed for the purpose of better illustration. Fig. 2 is a similar view of the machine with the frame carrying the feed-rolls partly moved to one side to expose the sand-rolls; Fig. 3, a sectional view illustrating the adjusting device for the sand-rolls and the mech-



anism for reciprocating such sand-rolls; Fig. 4, a longitudinal sectional view of the machine with the upper frame and upper feed-rollers removed; Fig. 5, an enlarged sectional view of the adjusting mechanism at one side of the sand-rolls for rectifying incorrect adjustments thereof; Fig. 6, an elevation of my improved machine viewing the same from one side; Fig. 7, an enlarged sectional view of one of the sand-drums, illustrating the mechanism for attaching the sandpaper thereto; Fig. 8, a section on the line X X of Fig. 7; Fig. 9, a detached view showing a slightly-modified arrangement of the parts for effecting the lateral movements of the sand-rolls; Fig. 10, an elevation, partly in section, showing a pair of permanent tracks with which the upper feed-rolls may engage when it is desired to move the said rolls toward one end of the machine for the purpose of renewing the sandpaper or for other purposes, and illustrating also mechanism for simultaneously moving said tracks beneath and away from said rolls when the rolls are elevated above said tracks.

In all the above views corresponding parts are designated by the same letters and figures of reference.

1 is the main frame of the machine, made of the general hollow rectangular shape shown and which may be conveniently cast in one piece.

2 2 are struts or girders cast with the main frame, each of said girders consisting, preferably, of a main portion 3 and a web 4.

5 is the bed-plate of the machine, bolted to the top of the frame 1 by bolts 6. This bed-plate is provided with longitudinal recesses 7 therein to receive the lower feed-rolls 8 and the sand-rolls 9. The bed-plate 5 is also provided with downwardly-extending webs or ribs 10, which partially inclose the sand-rolls 9, as shown.

11 is a supporting arch or truss extending lengthwise of the machine immediately below the webs or ribs 10 of the bed-plate 5. This supporting-arch 11 rests on lugs 12, cast within the main frame 1.

13 is a tie-rod extending longitudinally across the frame through the lower part of the arch 11 and of the usual construction. The arch 11 preferably consists of a body 14, provided with a web 15, and extending up from the body 14 of the arch 11 are supporting-blocks 16, which support the webs or ribs 10 of the bed-plate 5 and thereby offer a very firm and rigid support to the bed-plate. The lower feed-rolls 8 of the machine work in bearing-boxes which are perfectly rigid, so that the position of these lower feed-rolls does not change with respect to the bed-plate 5.

17 is a movable upper part of the machine, consisting, preferably, of supporting-standards 18 and the heavy horizontal braces 19. The standards 18 are provided with lugs or ears 20 thereon, through which a bolt 21 extends and engages through the bed-plate 5 into the main frame of the machine, so that

the upper movable part 17 will thereby be held firmly in position. Instead of securing the frame 17 to the main base of the machine by means of bolts 21, as explained, other means may be employed for this purpose.

23 23 are heavy screws shown in dotted lines in Fig. 2 and provided with collars 24 at their upper ends, which collars bear on the top of the upper frame 17, thereby holding the screws 23 in place. The said collars 24 each carry a miter-wheel 25. These miter-wheels 25 are all simultaneously operated by rods 26, carrying miter-wheels 27, as heretofore, whereby the four screws 23 will be operated simultaneously. Each of the supporting-standards 18 of the upper frame 17 is made angular in cross-section, and the screws 23 work in the recesses thus formed. These screws 23 engage with the ends of heavy supporting-blocks 28, which supporting-blocks 28 carry the upper feed-rolls 29. The bearing-boxes of these upper feed-rolls 29 are held in position in the blocks 28 in any suitable way, and said boxes are adapted to be normally pressed downward by means of springs or rubber buffers, as heretofore. By making use of the upper frame 17, carrying upper feed-rolls adjustable therein, I can move such feed-rolls to one side, so as to expose the sand-rolls for any purpose desired in the following way: A block or strip of wood 30, Fig. 2, is inserted beneath the upper feed-rolls 29 and to each side of the sand-rolls 9. The bolts 21 are now removed, so as to free the upper frame 17 from the main frame 1. The rods 26 are now operated so as to force the upper feed-rolls 29 downward against the blocks 30, and since such blocks will offer a rigid obstruction to this downward movement of the upper feed-rolls it follows that the upper frame 17 will be elevated until it is supported on the blocks 30 on the upper feed-rolls 29. Being thus supported, the frame 17, carrying the upper feed-rolls, can be moved to one side by means of a crank on the end upper feed-roll, and thereby one or more of the sand-rolls will be exposed for the purpose of renewing the sandpaper thereon or for any other purpose desired.

If it is not desired to move the frame 17 so far to one side as to expose all three of the sand-rolls, it is obvious that it may be moved first to expose two of the sand-rolls, and then, when these sand-rolls have been attended to, it may be moved to the other side, so as to expose the third sand-roll. I consider this feature a very important one in my invention and in the art, since it enables me to reach the sand-rolls in a very short time and without the necessity of working in the narrow space afforded between the upper and lower feed-rolls as is now the case.

Each of the sand-rolls 9 is supported in bearing-boxes 31, said bearing-boxes being in turn supported by heavy standards 32. The frame A of the machine is cut away at 33, as shown in Figs. 1 and 2, to accommo-



date the bearing-boxes 31 of the sand-rolls. At the lower end of each standard 32 is an inclined block or head 34, (see Fig. 3,) its lower surface being made perfectly true. At the left-hand side of the machine the inclined block 34 rests on an inclined wedge 35, which is supported on a grooved way 36 at the end of the strut or girder 2. The inclined wedge 35 is preferably cored out, so as to be as light possible. The inclined block 34 at the other side of the machine rests on a hollow inclined wedge 37, which also rests in a similar grooved way 36 at the other side of the girder 2. Extending across the machine from side to side directly under each sand-roll is a shaft 38, having a right-hand screw 39 engaging with the inclined wedge 35 and with a left-hand screw 40 at the other side, but which does not engage with the inclined wedge 37. Referring to Fig. 5, the details of construction at this side of the machine will be readily understood. The threads 39 of the shaft 38 engage with a threaded plug 41, which extends through the end of the wedge 35, being provided with a head 42, which keeps the plug 41 in place. Another collar 43 at the end of the plug prevents the same from moving laterally within the inclined wedge 35. 44 is a set-screw passing through the wedge 35 and engaging with the threaded plug 41, and 45 is another set-screw passing through the collar 43 and engaging with the threaded end 39 of the shaft 38. In practice it is desirable to insert a small piece of soft metal 46, such as copper, between the set-screw 45 and the threads 39, so as not to injure the threads. Each of the shafts 38 is provided thereon with a worm-wheel 47, with which a worm 48 engages. These worms 48 are operated from worm-shafts 49, provided at their outer ends with hand-wheels 50, which are mounted on the outside of the machine.

The sand-rolls may be adjusted by this improved adjusting device in the following way: It being supposed that the sand-roll is in its proper horizontal position, but that it should be raised or lowered slightly, the set-screw 44 is tightened so that the threaded plug 41 will not turn, and the set-screw 45 is loosened so as to allow the shaft 38 to turn with respect to the plug. One of the hand-wheels, corresponding to the sand-roll which is to be adjusted, is now turned to the right or to the left, as may be required, and this movement will operate one of the worms 48. This worm-wheel will turn and partially rotate the shaft 38 and the threads 39 and tend to cause the wedges 35 and 37 to slightly approach to or to recede from each other, the wedge 37 in this case being moved by reason of the fact that the threaded plug 41 is practically integral therewith. Since a full revolution of one of the hand-wheels 50 will move the corresponding worm-wheel 47 to the extent of only one tooth, and since this slight movement of the shaft 38 is much reduced by reason of the

threads 39 and 40, it follows that the adjusting mechanism which I have described is of extreme delicacy, and in practice I have found that, as before stated, several revolutions of the hand-wheel 50 will not elevate or depress the sand-rolls to a greater extent than the thickness of an ordinary sheet of paper. If it should be found that from any cause one end of the sand-roll is on a higher plane than the other end and it becomes necessary to true this sand-roll, it can be done in this way: The set-screw 44 is loosened and the set-screw 45 is tightened on the threads 39, so that the threaded plug 41 will rotate with the shaft 38. Therefore when the adjusting device is raised or lowered that end of the sand-roll will be raised or lowered, the other end remaining stationary, as will be understood.

In this machine, as in all polishing-machines of this character, it becomes necessary to reciprocate the sand-rolls for reasons that need not be explained here. The mechanism which I have illustrated for this purpose is similar in most respects to the most approved devices now on the market, and I therefore make no claim to the same.

The shafts 51 of the sand-rolls are extended out to one side of the machine, as shown in Figs. 1, 2, and 3, and they carry pillow-blocks 52. In each side of each pillow-block is cut a groove or recess 53, in which works a block 54.

55 are angular brackets which extend out from this side of the machine, being either attached thereto by bolts or being cast therewith, and mounted in these brackets on shafts 56 are angle-levers 57, the upper ends of which angle-levers 57 are bifurcated, as shown; each bifurcated portion being provided, as shown, with a cylindrical knuckle or head 58, engaging the blocks 54 before referred to.

59 is a shaft working on the side of the machine within the brackets 55 and provided between each two brackets with an eccentric 60.

61 are fingers on the horizontal arm of each angle-lever 57, which fingers extend above and below the eccentric 60. It will be seen that when the shaft 59 is rotated, carrying the eccentric 60 with it, the angle-levers 57 will be slightly oscillated back and forth, carrying the pillow-blocks 52, and thereby reciprocating the sand-rolls. Since the knuckles 58 of the angle-levers 57 work almost directly in a plane with the shafts 51 of the sand-rolls, there is no tendency of this reciprocating device to move the sand-rolls out of their normal horizontal plane, as is now the case with several of these machines on the market. By making use of blocks 54, in which these knuckles 58 work, the journals of the sand-roll may be worn more or less without requiring any attention to the levers. In the arrangement of parts shown in Fig. 10 substantially the same elements are made use of, except that instead of the fingers 61 being used ordinary eccentric-straps 61', mounted on the eccentric-shafts, and the angle-levers 57 are



made in two parts pivoted together, the horizontal portion thereof being connected with said eccentric-straps.

So far as the arrangement of gears for operating the sand-rolls and feed-rolls is concerned I do not lay any particular stress thereon, since any desired arrangement may be adapted. The arrangement shown, however, is a convenient one.

Power is applied to a pulley 63, mounted near one end of a driving-shaft X, which is carried in journal-boxes in the main frame 1, in front of and preferably in line with the eccentric-shaft 59. Keyed to the shaft X on the other side of the machine from the pulley 63 is a miter-gear 64, which meshes with a miter-gear 59', fast to the eccentric-shaft for driving the latter. Keyed to the shaft X outside of the pulley 63 is a pinion 65, which meshes with a gear-wheel 66, fast to a counter-shaft 67, mounted in journal-boxes in the main frame 1.

68 is a pinion keyed to the counter-shaft 67 and meshing with and driving a gear-wheel 69, keyed to the shaft of the first feed-roll or that nearest the front of the machine. The gear-wheel 69 meshes with an idle gear-wheel 69', which in turn drives a gear-wheel 69'' on the shaft of the second feed-roll. The latter gear-wheel, through an idler 69''', drives a gear-wheel 69'''' on the shaft of the third feed-roll. The fourth feed-roll is driven through an idler in the same way from the gear-wheel 69''''.

The sand-rolls are preferably driven by separate belts, since they reciprocate, and I therefore show a pulley-wheel on the shafts of the middle and back sand-roll at one side of the machine in Fig. 6 for this purpose. The forward sand-roll may be provided with a driving-pulley at the other side of the machine, and its shaft is therefore extended for this purpose, as shown in Fig. 2.

Keyed to the shaft 67 on the other side of the machine from the pinion 68 is a gear-wheel 70, with which a gear-wheel 71 engages, the latter being carried by a swinging arm 72, mounted on the shaft 67, as shown in Figs. 1 and 2. This gear-wheel 71 is carried by a swinging arm 72, mounted on the shaft 67 of the gear 70. When the parts are in operative position, the gear-wheel 71 is brought up into engagement with the first of train of gears 73, which operate the upper feed-rolls, being held in this position by a heavy hook 74, mounted on the shaft of the first of said gears.

Ordinary metallic guards 75 may be used, in connection with the gears 69 and 73, for protecting the same from dust. Although not necessary, it is generally advisable to make use of a rotary brush 76, operated by a belt from a suitable pulley on one of the sand-rolls and adapted to brush or wipe the fine dust from the work as it leaves the sand-roll, the upper surface of said brush projecting through the bed-plate from one thirty-second to one-sixteenth of an inch.

In machines of this character, as before

stated, it becomes necessary to replenish the sandpaper on the sand-rolls quite often, according to the amount of work done or to the hardness of the material to be polished, and mechanism must be provided by which the sandpaper may be held in place on the sand-rolls and yet be capable of being removed therefrom. This mechanism, first of all, must be simple in construction and must be such that the sandpaper will be held firmly in place, since the tendency of the work, of course, will be to tear it off. It is also necessary that the sandpaper should be placed tightly on the rolls, so that there can be no danger of creases forming therein, and it is also necessary that the means provided for this purpose should allow the paper to be quickly and accurately placed in position or removed from the roll by an ordinary workman. The mechanism which I have invented and which is illustrated accomplishes these objects. The sand-roll illustrated is composed of two sections 77 and 78. These sections at their upper ends are slightly enlarged, as at 79, being rounded at their upper corners, so as not to tear the paper, and being provided with the inclined surfaces 80, which are to be perfectly true and against which the ends of the paper are held. The semicylindrical section 77 of the sand-roll is supported on webs 81, two or more of such webs being used. The webs 81 are formed integral with short hubs 98, through which the shaft 83 extends. The other semicylindrical section 78 of the sand-roll is supported by webs 84, which are arranged alternately with the webs 81 of the section 77, the webs 84 of the section 78 also being formed integral with the hubs 82, corresponding to the hubs 98 and which are also mounted on the shaft 83, so that the drum will revolve with the shaft 83. It is necessary that either the hubs 98 of the section 77 or the hubs 82 of the section 78 should be keyed to this shaft, since it is necessary that one section should move on the shaft 83 with respect to the other, as I shall presently point out.

S5 S5 are gripping-jaws mounted within the sand-roll and provided with inclined faces 86, which are adapted to engage with and clamp the paper against the surface 80. The gripping-jaws 85 extend through so much of the length of the interior of the sand-drum as will be necessary to effectively clamp the sandpaper in place. The webs 81 and 84 are cut away, as at 87, to accommodate the gripping-jaws 85. These gripping-jaws 85 are carried by levers 88, pivoted at 89 to the webs 81 and 84. A heavy spring 90 extends around either of the hubs on the shaft 83 at proper intervals and engages with the gripping-jaws 85 and tends to hold the same normally in engagement with the surfaces 80. Each lever 88 is provided at its lower end with a flat lug 91 of the proper width—say one-half inch. The webs 84 of the section 78 of the sand-roll are provided with extensions 92 thereon, in which



a shaft 93 is mounted, the end of said shaft extending out through one end of the drum and being made rectangular, so as to be operated by a key or wrench. Mounted upon the shaft 93 are as many cams 94 as there are levers 88, said cams being located between the lugs 91 at the lower end of said levers. These cams 94 are each provided with a cam-surface 95, which extends outward, as shown, in line with the lugs 91, and are also provided with a cam-surface 96, which gradually increases in depth, as shown, and which is arranged so as to clear the lugs 91, but to engage with a lug 97, extending up from the section 77 of the drum. The sandpaper is applied to this sand-roll and is held thereon in the following way: The parts being in the position shown, one end of the paper is inserted in the space between the gripping-jaw 85 and the surface 80 of the section 77, said jaw being open, owing to the fact that the cam portion 95 is in engagement with the lug portion 91 on that side of the roll. The shaft 93 is now given a partial turn in the direction of the arrow, so the cam will engage with the lug 91 on the other side of the roll, and the jaw 85 will be retracted from the surface 80 of the section 78, the jaw 85, engaging with the section 77, being closed by the spring 90, as will be understood. The sand roll is now revolved until the paper has been completely wound around the same, when the free end of the paper is inserted between the open jaw 86 and the lug 80 of the section 78, being drawn as tightly as possible around the periphery of the roll. The shaft 93 is now turned until the cam 95 has been thrown out of engagement from the lug 91 on the right-hand side, whereupon the spring 90 will cause the jaw 85 to firmly grasp the ends of the sandpaper. The said jaws may be serrated to offer a better grip on the paper, but this is not necessary. The shaft 93 is now turned slightly, so that the cam 96 will engage with the lug 97 of the section 77 and in this way the lower part of the sections 77 and 78 will be moved slightly apart, the upper open ends thereof being approached slightly together, so that the sandpaper thereon can be tightened to the desired extent. To remove the paper, the operations just described are reversed.

In the above description and in the drawings the sand-roll is referred to and shown as being composed of two parts. This construction is adopted in order that after the two ends of the paper have been clamped the clamps or fastening devices can be approached more or less together to thereby stretch the paper tightly over the roll, as explained; but in order to effect this stretching of the paper in this way—namely, by bringing the two clamping devices more or less together after clamping the paper—it is not absolutely necessary to make the roll of two parts, it being only necessary to mount the clamping de-

vices or elements, which are movable, toward and away from each other. Therefore, as I believe I am the first to provide a sand-roll of this general character, I shall not limit all my claims thereto to a sand-roll made in two parts.

In Fig. 10 I show a modification in the means for moving the upper feed-rolls toward one end of the machine for the purpose of renewing the sand-rolls. With this modification the supporting-blocks 28 are used, and the bearing-boxes of the upper feed-rolls 29 are carried thereby, as before described. The said upper feed-rolls are cut away at 98, as shown, to form a space beneath the same adjacent to the blocks 28. 99 is a metallic track mounted on the bed-plate of the machine adjacent to each block 28 and provided with a bearing portion 100 and with a guide 101. Each track is provided at each end and at intermediate portions, if necessary, with depending lugs 102, which extend below the bed-plate, said lugs working in slots 103, formed in the bed-plate. Pivoted to one side of the machine in line with each of the lugs 102 is a lever 104, the lower end of which extends a short distance below its pivoted point. A rod 105 connects the lower end of this lever 104 with the lug 102 on the opposite side of the machine, and a shorter rod 106 connects the lug 102 on the same side of the machine to said lever at a point thereon a short distance above the pivoted point. The tracks 99, arranged parallel with the blocks 28, are extended far enough from the end of the machine to allow the upper frame thereof carrying the upper feed-rolls to be moved thereon to expose all of the sand-rolls. In making use of this modified construction the upper feed-rolls are first elevated and then the lever 104 is operated to bring the bearing portions 100 of the tracks beneath the said upper feed-rolls. These rolls are then moved downward to engage with said bearing portions, thereby elevating the upper framework, after which the entire upper frame with the upper feed-rolls may be moved on the tracks to uncover the sand-rolls.

Having now described my invention, what I claim as new therein, and desire to secure by Letters Patent, is as follows:

1. In a wood-polishing machine, the combination with a base 1, carrying polishing-rolls of upper feed-rolls mounted in a frame which is movable laterally with respect to said polishing-rolls, and tracks normally out of engagement with said upper feed-rolls, but movable into such engagement, substantially as and for the purpose described.

2. In a wood-polishing machine, the combination with a base 1, carrying polishing-rolls of a frame 17, carrying upper feed-rolls, tracks mounted on said base, and mechanism for simultaneously moving said tracks toward or away from said upper feed-rolls, substantially as and for the purpose described.



3. In a wood-polishing machine, the combination of a base, sand-rolls mounted in said base in journals 31, standards 32 for said journals inclined at their lower ends, a shaft 38 screw-threaded at both ends and engaging with a wedge 37, supporting one of said standards and a screw-threaded sleeve engaging with the other end of said shaft and mounted within a wedge 35 for supporting the other of said standards, and a set-screw 44 extending through said wedge 35, and engaging with said sleeve 41, substantially as described.

4. In a wood-polishing machine, the combination of a base, sand-rolls mounted in said base in journals 31, standards 32 for said journals inclined at their lower ends, a shaft 38 screw-threaded at both ends and engaging with a wedge 37 supporting one of said standards and a screw-threaded sleeve engaging with the other end of said shaft and mounted within an inclined wedge 35 supporting the other of said standards, and a set-screw 44 engaging with one end of said sleeve 41, a collar at one end of said sleeve and a set-screw passing through said collar and said sleeve and engaging with the shaft, substantially as described.

5. An improved sand-roll for wood-polishing machines, having a longitudinal slot or opening in its periphery, and provided adjacent thereto at one side with a fastening device for one end of the paper, and at the other side with a fastening device for the other end of the paper, the two fastening devices being constructed and arranged to approach each other to take up slack in the paper substantially as described.

6. An improved sand-roll for wood-polishing machines having a longitudinal slot or opening in one side, a fastening device on one side of said slot or opening and a take-up movable toward and from said fastening device and provided with a fastening device for the opposite end or edge of the paper, substantially as described.

7. In an improved sand-roll for wood-polishing machines, the combination of the semicylindrical sections 77 and 78, carried on a shaft 83 and capable of moving thereon with

respect to each other, and a gripping-jaw 85 on each section, substantially as described.

8. In an improved sand-roll for polishing machines, the combination of the semicylindrical sections 77 and 78 mounted on a shaft 83, a gripping-jaw 85 on each section and mechanism for moving said sections 77 and 78 with respect to each other, substantially as described.

9. In an improved sand-roll for wood-polishing machines, the combination of the semicylindrical sections 77 and 78, webs 81 and 84 supporting said sections, hubs 82 and 98 connected with the said webs 81 and 84 respectively and a gripping-jaw on each section, substantially as described.

10. In an improved sand-roll for wood-polishing machines, the combination of the semicylindrical sections 77 and 78, a gripping-jaw 85 for each section, a lever 88 carrying each of said gripping-jaws and a cam 94 between said levers, substantially as described.

11. In an improved sand-roll for wood-polishing machines, the combination of the semicylindrical sections 77 and 78, the gripping-jaws 85, 85, the levers 88, 88 the spring 90, for normally keeping said gripping-jaws closed and a cam 94 for opening said gripping-jaws successively, substantially as described.

12. In an improved sand-roll for wood-polishing machines, the combination of the semicylindrical sections 77 and 78, the gripping-jaws 85, 85 the levers 88, 88 carrying said gripping-jaws, the spring 90 normally closing said gripping-jaws, the cam 94 for opening said gripping-jaws, successively, the lug 97 on one of said semicylindrical sections and the cam 96 connected with the cam 94 and adapted to engage with the said section 77, whereby the said semicylindrical sections will be moved with respect to each other substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

OLIVER H. YOUNG.

Witnesses:

T. H. HAMMOND,  
CHAS. A. QUIGGLE.