

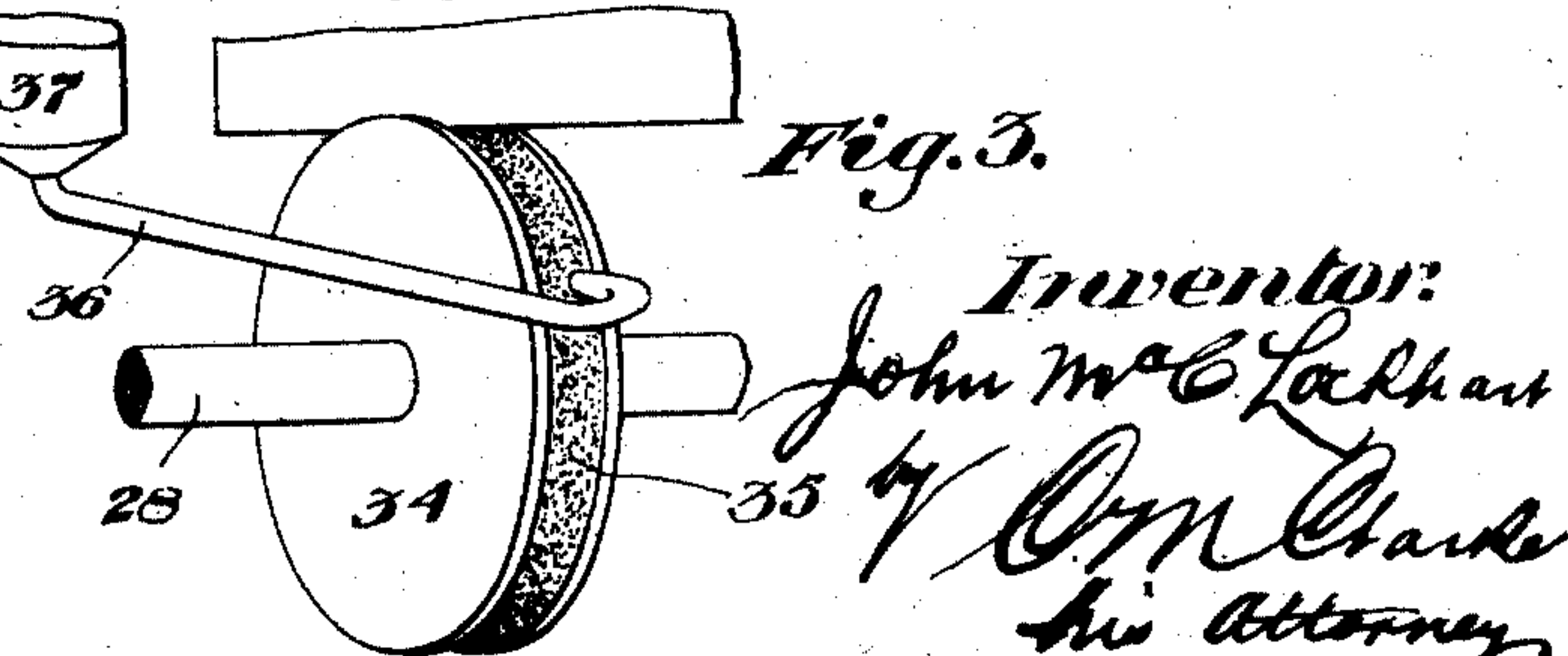
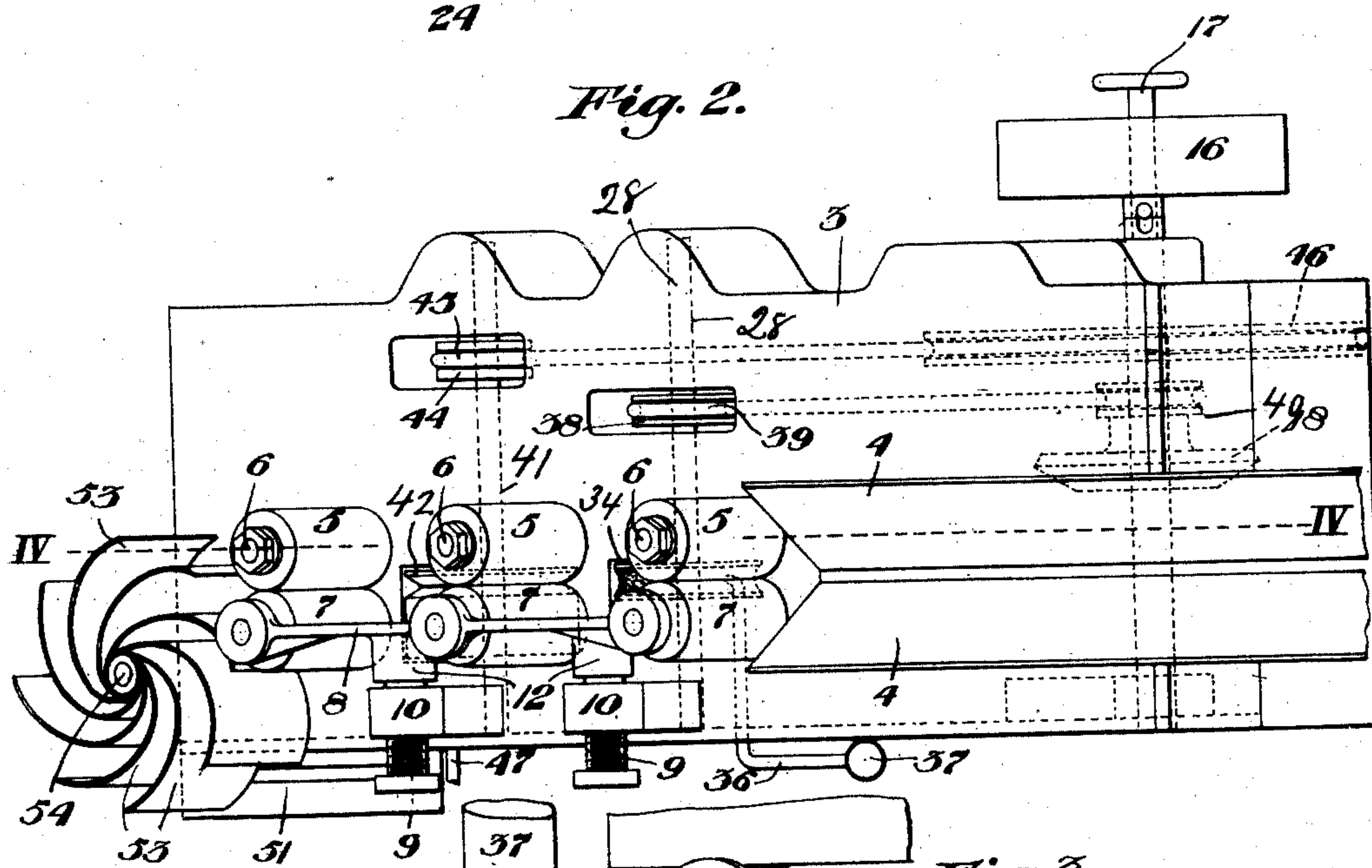
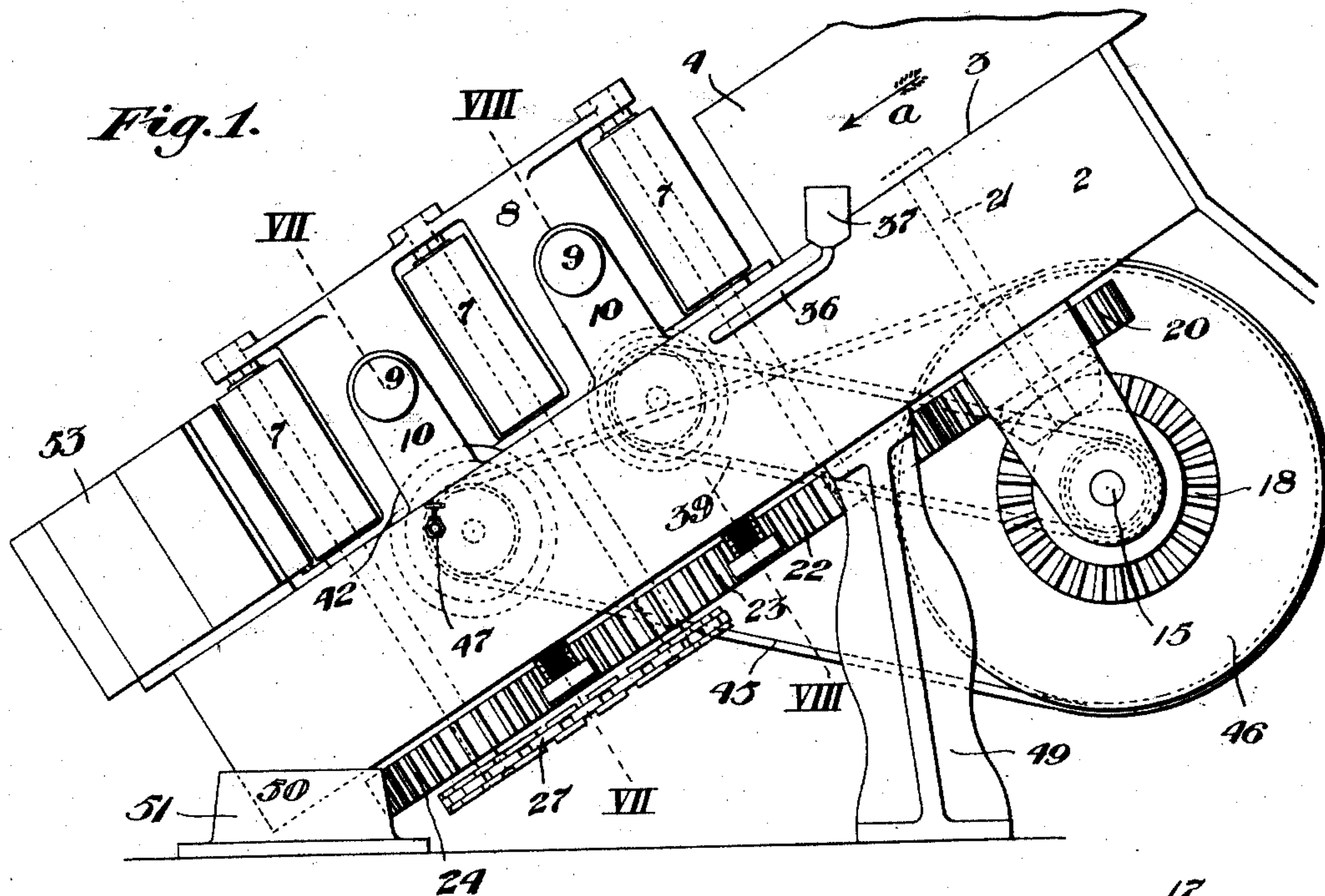
No. 864,851.

PATENTED SEPT. 3, 1907.

J. McC. LOCKHART.
IRONING MACHINE.

APPLICATION FILED DEC. 9, 1904.

3 SHEETS—SHEET 1.



Witnesses:

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3 SHEETS—SHEET 2.

Fig. 4.

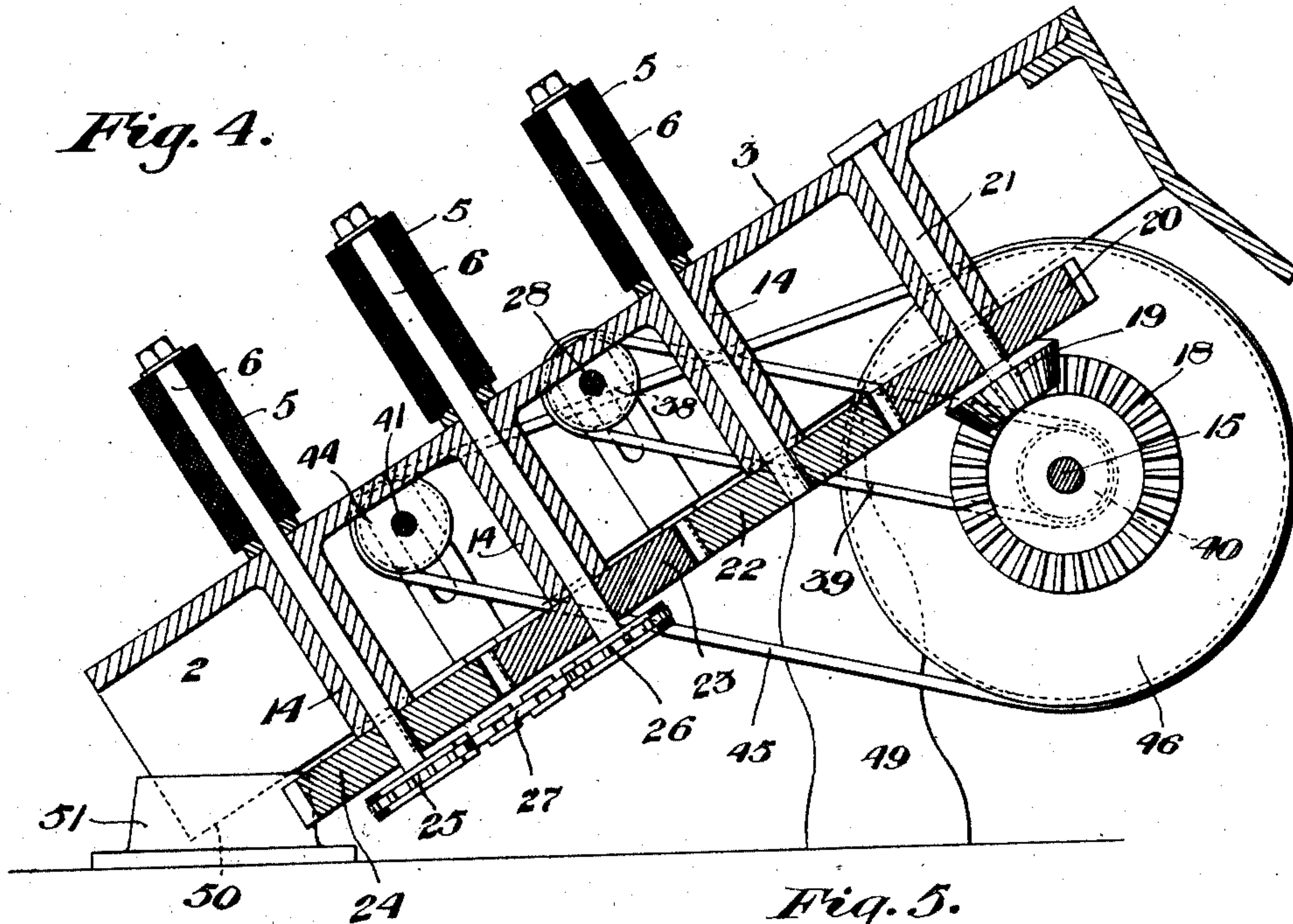


Fig. 5.

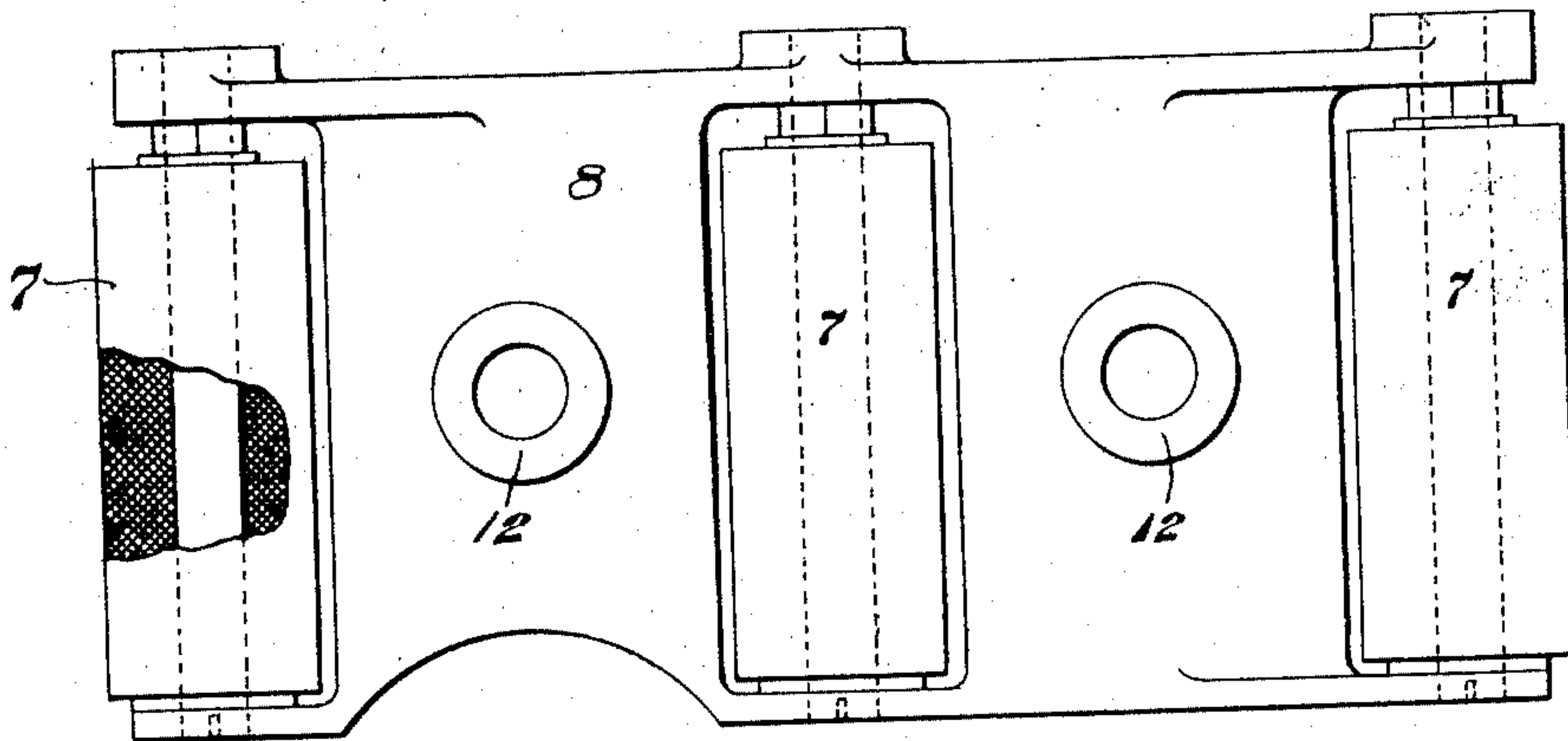
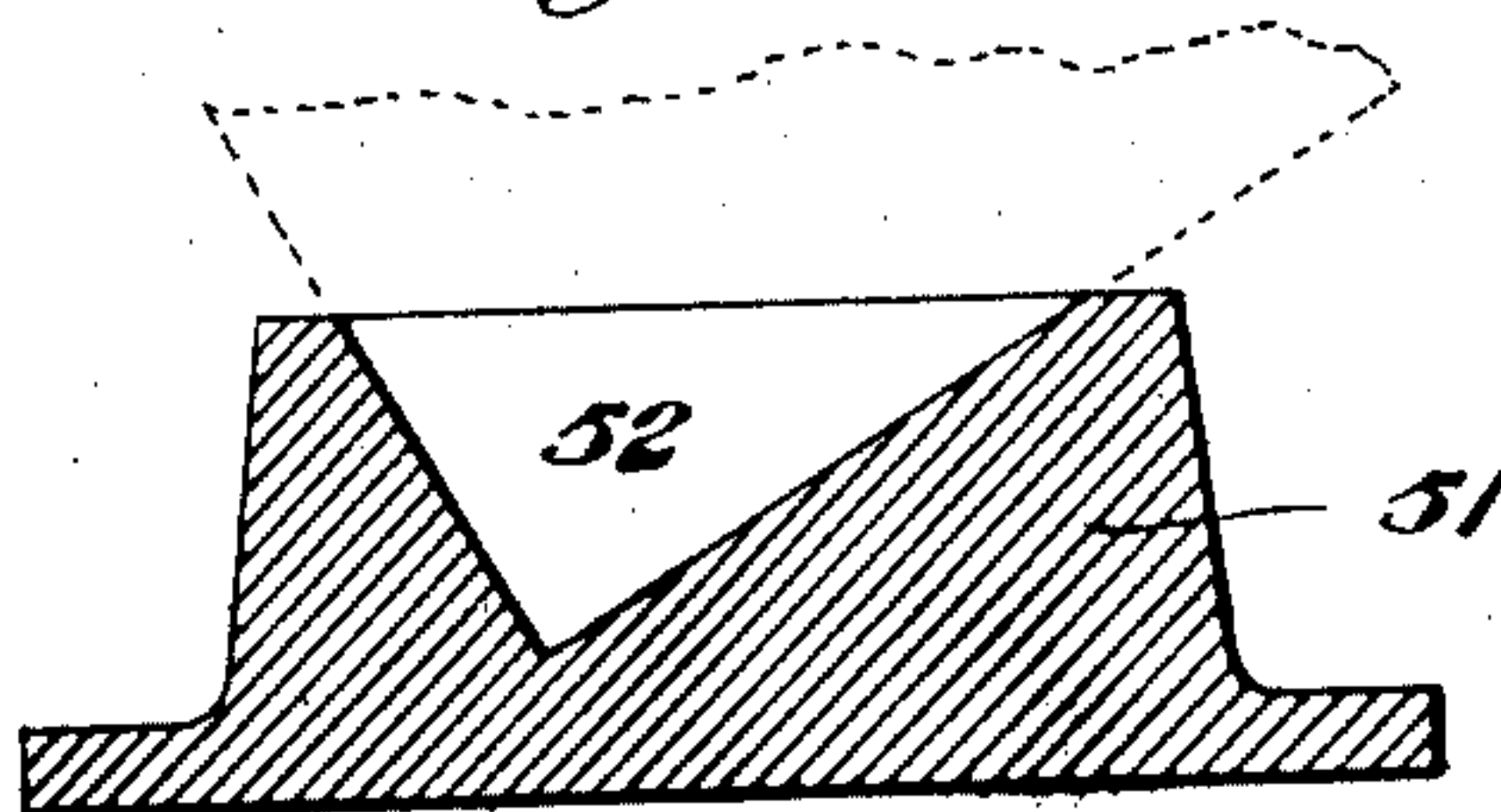


Fig. 6.



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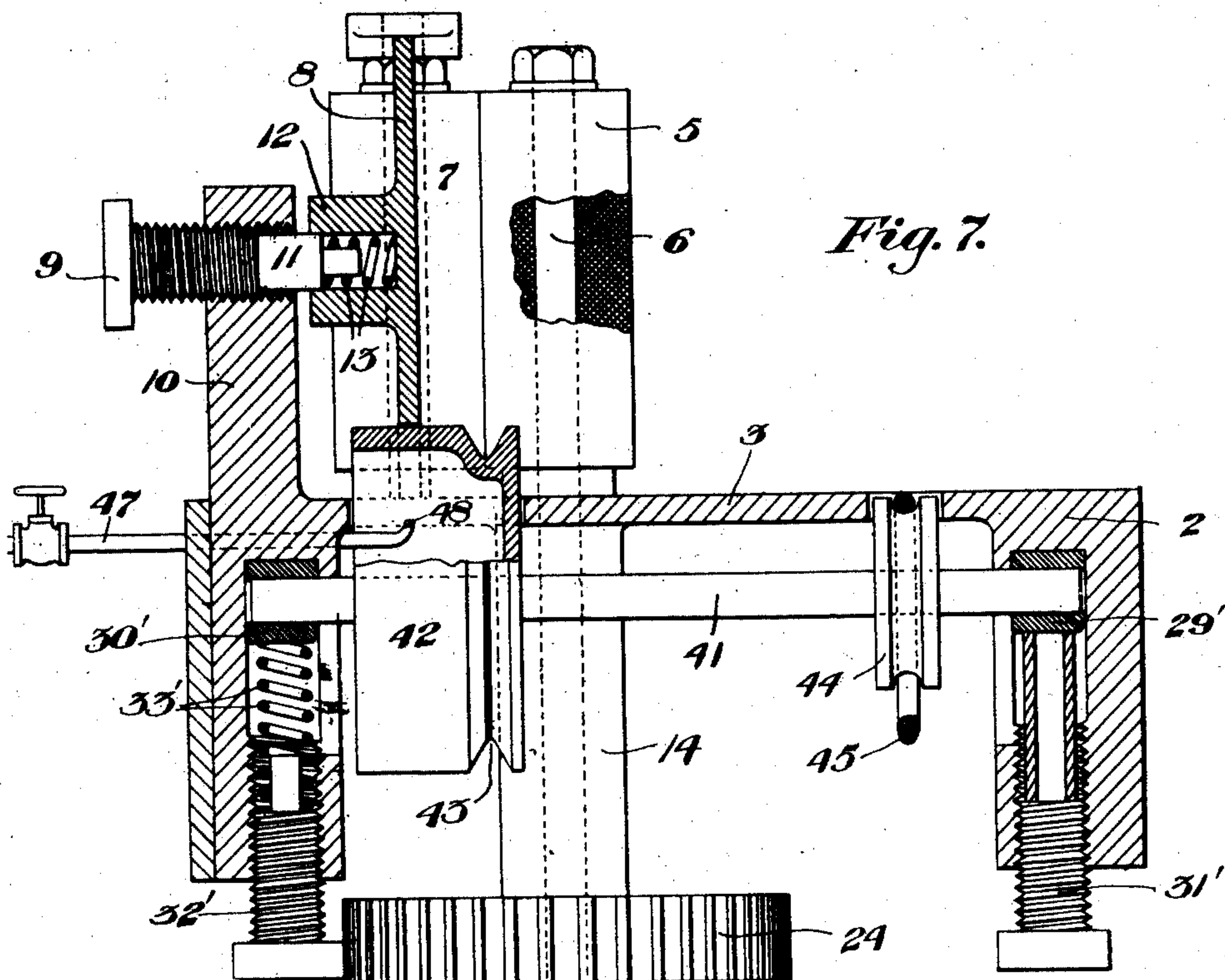


Fig. 7.

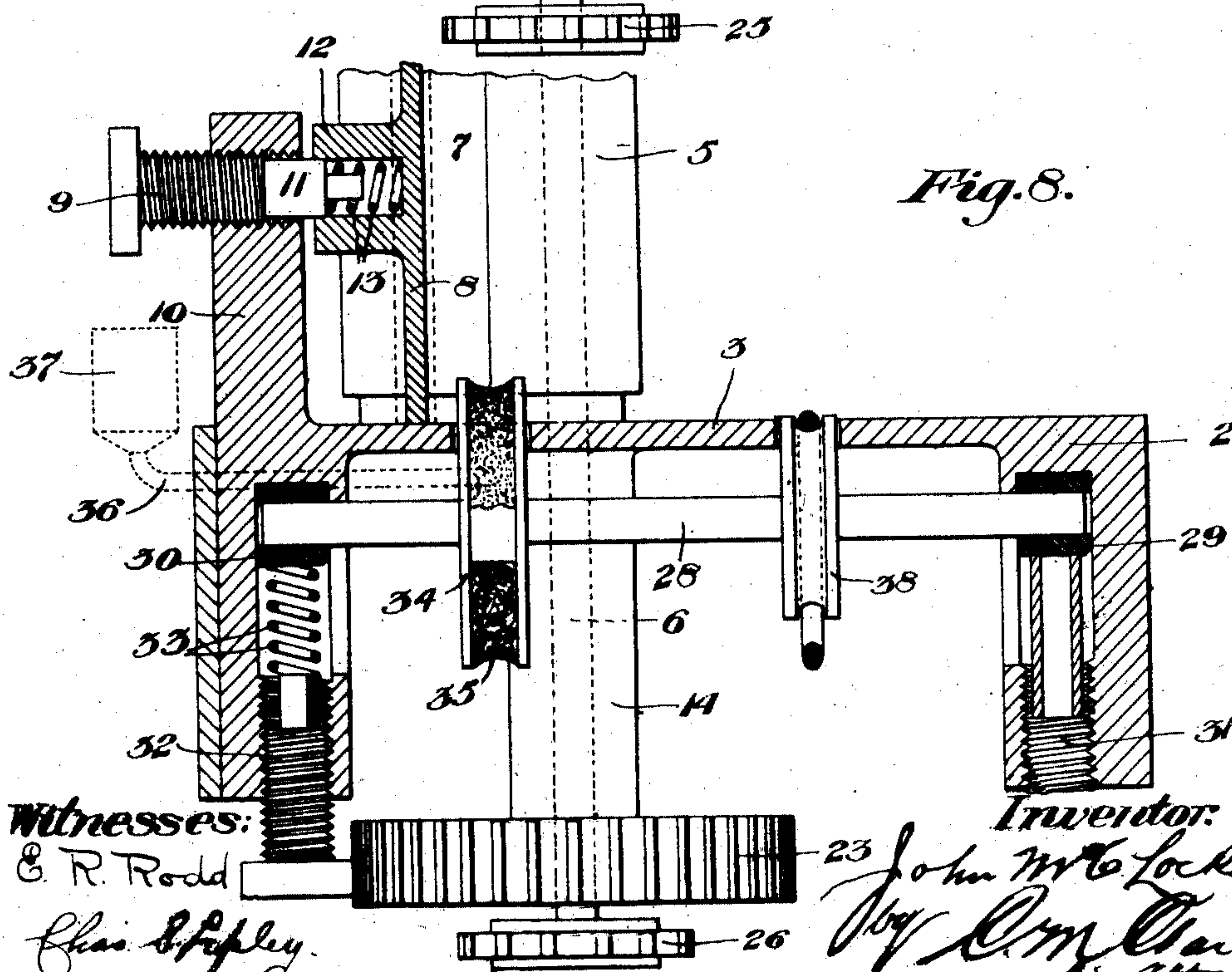


Fig. 8.

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UNITED STATES PATENT OFFICE.

JOHN McC. LOCKHART, OF PITTSBURG, PENNSYLVANIA.

IRONING-MACHINE.

No. 864,851.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed December 9, 1904. Serial No. 236,146.

To all whom it may concern:

Be it known that I, JOHN McC. LOCKHART, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Ironing-Machines, of which the following is a specification, reference being had therein to the accompanying drawing, forming part of the specification, in which—

Figure 1. is a view in side elevation of my improved laundry machine. Fig. 2. is a plan view thereof. Fig. 3. is a detail view of the moistening wheel and water supply. Fig. 4. is a longitudinal vertical section on the line IV. IV. of Fig. 2. Fig. 5. is a detail view in side elevation of the frame carrying the adjustable pressure rolls. Fig. 6. is a sectional detail view of one of the corner shoes. Fig. 7. is a cross sectional view on the line VII. VII. of Fig. 1. Fig. 8. is a similar view on the line VIII. VIII. of Fig. 1.

My invention refers to improvements in means for ironing linen, more especially collars or cuffs, and is particularly designed for the purpose of finishing the edges thereof so as to produce a smooth finished surface.

The invention comprises an inclined table provided with means for feeding the article to be operated upon into engagement with under moistening and edging rolls respectively; means for supporting and adjusting these devices; means for driving the various parts; means for curling or shaping the finished article, together with various other features of improvement and details of construction as shall be more fully hereinafter described.

Referring now to the drawings, 2 represents the main frame of the apparatus constituting a table having an inclined top 3 down which the cuffs or other articles are introduced in the direction of the arrow *a*, a guide-way being preferably provided consisting of flaring sides 4, 4, having an intervening space adapted to receive a single article and to guide it in alinement with and toward the feeding rollers. These feeding rollers consist of a series of driven rollers 5, preferably three in number, rotatably mounted upon suitable supporting studs or pins 6 projecting up from the main table, while a corresponding series of laterally adjustable rollers 7 are mounted in a carrying frame 8 and held thereby in operative engagement with the fixed rollers 5, as clearly shown in Fig. 2. The frame 8, shown in detail in Fig. 5, consists of a skeleton plate in which the various rollers are journaled on suitable pins, the frame being carried on the inner ends of temper screws 9 threaded into vertical bearings 10 extending upwardly from the side of the main frame. The inwardly projecting ends 11 of temper screws 9 engage within a bearing hub 12 projecting backwardly from frame 8, an intervening cushioning spring 13 being provided so that by adjustment of the temper screw inward pres-

sure of the frame and also of the rollers 7 carried thereby may be very delicately adjusted. As thus arranged rollers 7 bear with the required pressure against rollers 5. Rollers 5 as stated are fixed upon their pins or spindles 6 which extend downwardly through suitable bearings 14 in the frame and are all driven by suitable gearing in one direction.

15 is a main power shaft driven by pulley 16, a coupling clutch 17 being preferably provided so that the machine may be driven at will from a constantly running belt and from shaft 15 through bevel gears 18, 19, motion is communicated to pinion 20 secured upon a carrying spindle or stud 21. Pinion 20 meshes into a corresponding pinion 22 on the lower end of spindle 6 of the first roller 5 and communicates motion through a loosely mounted idler pinion 23 on the next adjacent shaft 6, to pinion 24 keyed to the last shaft 6, which shaft also carries a sprocket wheel 25. A similar sprocket wheel 26 is secured to the lower end of the intermediate shaft 6 and motion is communicated thereto from sprocket wheel 25 by chain 27. By this means it will be seen that all of the rollers 5 are driven in the same direction at uniform speed.

28 is a horizontally disposed spindle mounted transversely of the frame underneath its upper face in bearings 29 and 30, the bearing 29 being fixed but vertically adjustable by means of a temper screw 31 while bearing 30 is also vertically adjustable by temper screw 32, but is also capable of an independent vertical movement by means of an intervening cushion spring 33, as clearly shown in Fig. 8. Mounted upon shaft 28 is a moistening wheel 34 projecting up through a slot in the table in alinement with the line of travel of the article to be treated and provided with an absorbent substance 35 as wool or other suitable material adapted to be charged with water through a pipe 36 leading from a reservoir 37. The shaft 28 and wheel 34 are slowly rotated by means of a grooved wheel 38, belt or cord 39 and driving wheel 40 mounted on main shaft 15. The peripheral travel of wheel 34 corresponds to the rate of travel of the cuff or other article, thereby insuring operative contact and absorption.

41 is a similar transverse shaft mounted in similar bearings 29' and 30' with corresponding supporting and cushioning elements 31' 32' and 33', provided with an edging roll 42, likewise projecting up from underneath through an opening in the plate and provided with a V shaped groove 43 similarly in alinement with the line of travel of the article, and adapted to receive its edge. The V groove 43 is polished having a smooth finishing surface, and the wheel normally extends slightly above the normal position of the lower edge of the article. The edging wheel 42 is driven at comparatively high speed through driving wheel 44, belt or cord 45 and wheel 46, also mounted on the main shaft 15.

As the cuff or other article is introduced between the

feeding rollers 5 and 7 it is carried inwardly and its lower edge will be brought into contact with the V groove of the edging wheel which, rotating at the high speed, will iron it and give it the desired finish and 5 polish.

For the purpose of heating wheel 42, gas is introduced into its interior through a pipe 47 terminating in a burner 48, by which means it may be maintained at the desired temperature. The edging wheel may 10 also be heated by electricity or any other suitable means.

For the purpose of insuring a solid bearing for the machine it is provided at one end with rigid pedestals or legs 49 while the lower corners of the frame 50, 15 preferably square, fit into receiving shoes 51 which are provided with suitable sockets 52 and merely rest upon the surface of a table or other suitable support upon which the machine is mounted. I have provided means for curving or shaping the ironed 20 article automatically as it emerges from the last pair of feeding rolls, consisting in a vane wheel 53 composed of a series of spirally diverging vanes having a central portion rotatably mounted upon a bearing spindle 54 rigidly set in the base of the machine. 25 This vane wheel is so located with relation to the last pair of feed rolls 5 and 7 that the cuff or other article emerging therefrom will automatically engage one of the vanes and rotate the wheel, which by its rotation will impart a curve or bend to the article, which will 30 spring outwardly therefrom when released by the rolls and fall into a basket or other receptacle.

The operation of the apparatus will be understood from the foregoing description. The feeding rollers carry the article along into contact with the moisten- 35 ing and edging rolls respectively, positively holding it in engagement therewith and against their upward pressure without slipping upwardly, and this positive gripping or hold upon the article is an important and valuable feature of the invention, inasmuch as it 40 insures an unvarying regular pressure upon the edge. As described, this pressure may be regulated to a nicety by the adjusting mechanism while the cushioning supports for the bearings insure against undue pressure or any tendency to excessive compression 45 of the edge. The driving mechanism of the apparatus is such as to insure continuous, positive operation; the moistening of the wheel 34 is continuously provided for as is also the heating of the edging roll; while the various other features of the apparatus are simple 50 in construction, strong and durable, not liable to get out of order and capable of performing their functions in a highly efficient manner. The machine is capable of very rapid operation and large output, the work is of the highest finish and regularity, it does not injure 55 the linen, nor unnecessarily moisten the edge, while not requiring any especial skill or attention on the part of the operator.

Various changes and modifications may be made in the design, proportions or other details by the 60 skilled mechanic but all such changes and variations are to be considered as within the scope of the following claims.

What I claim is:

1. In an ironing machine, the combination of a base 65 provided with clearance openings, a vertically adjustable

wheel provided with a moistening periphery extending upwardly through one of said openings, a resilient mounting for said wheel and means for rotating the wheel, an edging wheel in alinement therewith provided with a V shaped peripheral groove extending similarly upward through the 70 base, means for actuating said edging wheel, a series of vertically arranged feeding rollers extending above the base at one side of the line of feed defined by the peripheries of said moistening and edging wheels, an oppositely 75 arranged laterally adjustable series of similar feeding rollers, and gearing for simultaneously actuating all the rollers of one of said series of feeding rollers, substantially as set forth.

2. In an ironing machine, the combination with a base provided with clearance openings, a wheel provided with a moistening periphery and an edging wheel provided with a V shaped peripheral groove, each of said wheels extending upwardly through said openings in the base, a supporting shaft for each of said wheels, adjustable bearings 80 for each of said shafts and resilient mountings for said bearings, means for actuating each of said shafts and wheels, a series of vertically arranged feeding rollers extending perpendicularly beyond the base, a series of similar contacting companion rollers and a carrying frame 85 therefor, means for adjusting said frame and rollers to vary the pressure of said contacting rollers toward the first named rollers, and gearing for simultaneously actuating all the rollers of one of said sets of feeding rollers, substantially as set forth. 90

3. In an ironing machine, the combination with a base 95 provided with clearance openings, a wheel provided with a moistening periphery and an edging wheel in alinement therewith provided with a V shaped peripheral groove, each of said wheels extending upwardly through the openings in said base, a supporting shaft for each of said 100 wheels, adjustable bearings for each of said shafts, resilient mountings for said bearings, means for actuating each of said shafts and wheels, a series of vertically arranged feeding rollers extending perpendicularly beyond the base, a series of contacting companion rollers and a 105 carrying frame therefor, means for adjusting the said frame to vary the pressure of said contacting rollers towards the first named rollers, gearing for simultaneously actuating all the rollers of one set of said feeding rollers, and guiding flaring sides mounted upon the base in ad- 110 vance of the feeding rollers and arranged to direct the articles to be treated toward said rollers, substantially as set forth.

4. In an ironing machine, the combination of a base provided with clearance openings, a moistening wheel provided with an inserted peripheral absorbent material, an edging wheel provided with a V shaped peripheral groove, independent shafts for said wheels, means for adjusting the shafts and wheels with relation to the base of the machine, a resilient depressible support for the bearing of 120 each shaft at one end thereof, a series of driven feed rollers extending perpendicularly above the machine base and in suitable relation to the peripheries of said wheels, a series of similar adjustable contacting rollers, with means for driving the moistening wheel, edging wheel and said 125 feeding rollers, simultaneously, substantially as set forth.

5. In an ironing machine, the combination with a flat base provided with edge treating wheels extending upwardly therethrough, of a vertically arranged series of positively driven feeding rollers, and a corresponding series of bearing rollers with a supporting removable frame 130 therefor, and a resilient backing for said rollers, the meeting peripheries of both series of said rollers being arranged in feeding alinement with the edge treating wheels, substantially as set forth. 135

6. In apparatus of the class described, the combination of a main base having an inclined surface, a series of feeding rollers mounted thereon, a moistening wheel and an edging wheel extending from beneath into the path of travel of the article to be carried by the feeding rollers, 140 and means for actuating the feeding rollers, moistening wheel and edging wheel, with a rotatable vane wheel arranged to receive the article from the feeding rollers, substantially as set forth.

7. In an ironing machine, the combination of a frame 145

having an inclined flat base provided with clearance openings, an edging wheel and a moistening wheel in peripheral alinement extending upwardly through said openings, positively driven shafts carrying said wheels and mounted in adjustable bearings, the bearings at one end of each of said shafts being provided with a resilient backing, a series of positively driven feed rollers extending upwardly at right angles to said inclined base, a corresponding series of similar bearing rollers adapted to make contact therewith along the line of feed and in alinement with the edges of said edge treating wheels, a removable frame carrying said bearing rollers, and means for providing a cushion backing therefor and for adjusting the pressure to said frame and rollers, with guiding flaring sides mounted upon the base in advance of the feeding rollers, and arranged to guide the articles to be treated toward said feeding rollers, substantially as set forth.

8. In a machine of the class described, the combination with the base provided with an edging wheel and a moistening wheel, and series of driven vertically arranged feed rollers extending perpendicularly beyond the base and arranged in alinement with each other at one side of the line of feed; of a corresponding series of contacting rollers, a carrying frame therefor provided with cushioning springs, adjusting screws arranged to exert pressure against said cushioning springs and plate, and threaded bearings for said screws extending upwardly from the base, substantially as set forth.

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

JOHN McC. LOCKHART.

Witnesses:

C. M. CLARKE,
R. H. McLARN.