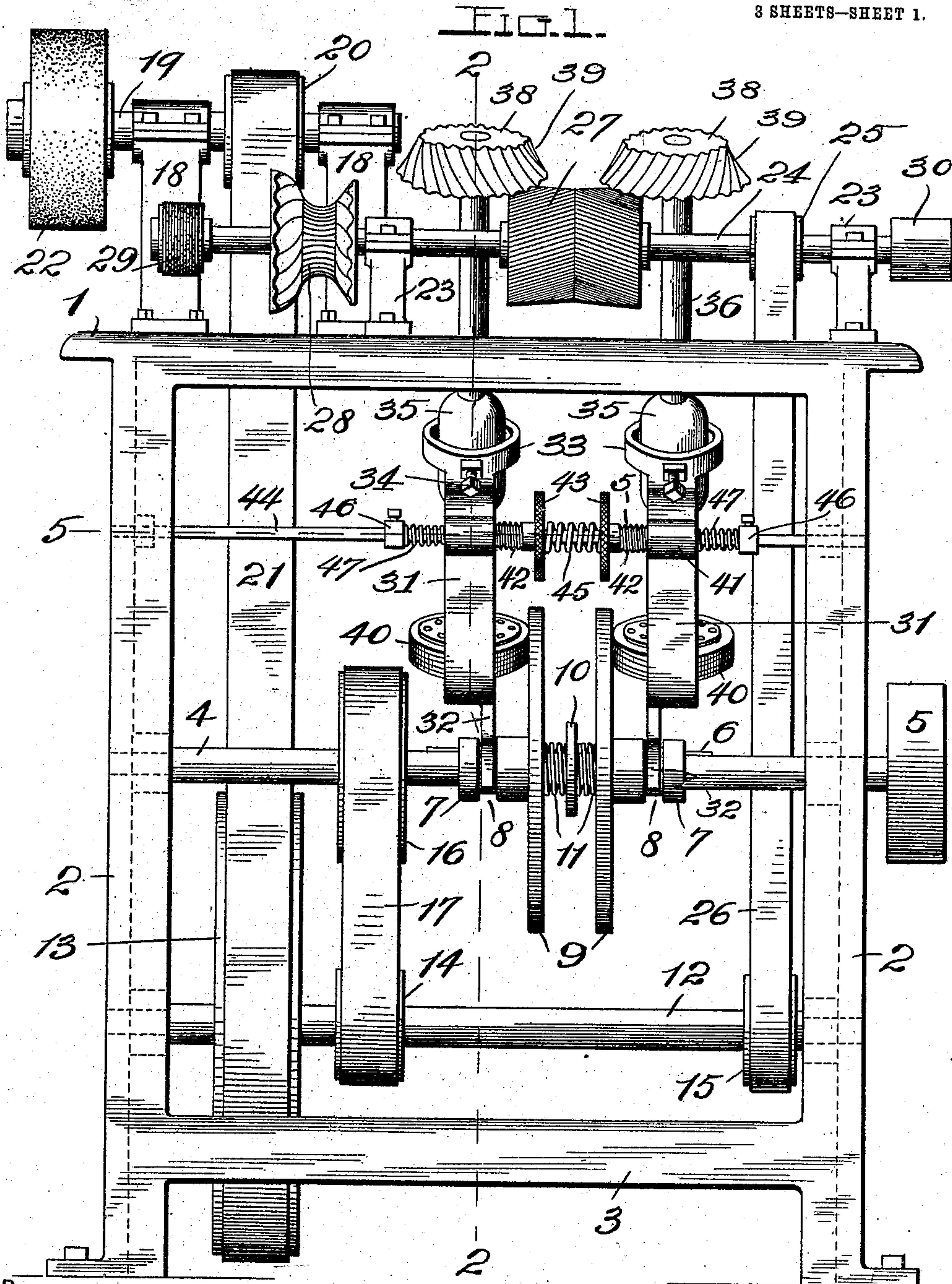


J. O'CONNELL.  
SHOE HEEL AND TOE BEATING UP MACHINE.  
APPLICATION FILED APR. 22, 1907.

905,094.

Patented Nov. 24, 1908.

3 SHEETS—SHEET 1.



ATTEST.  
*H. J. Fletcher.*  
*W. O. Smith.*

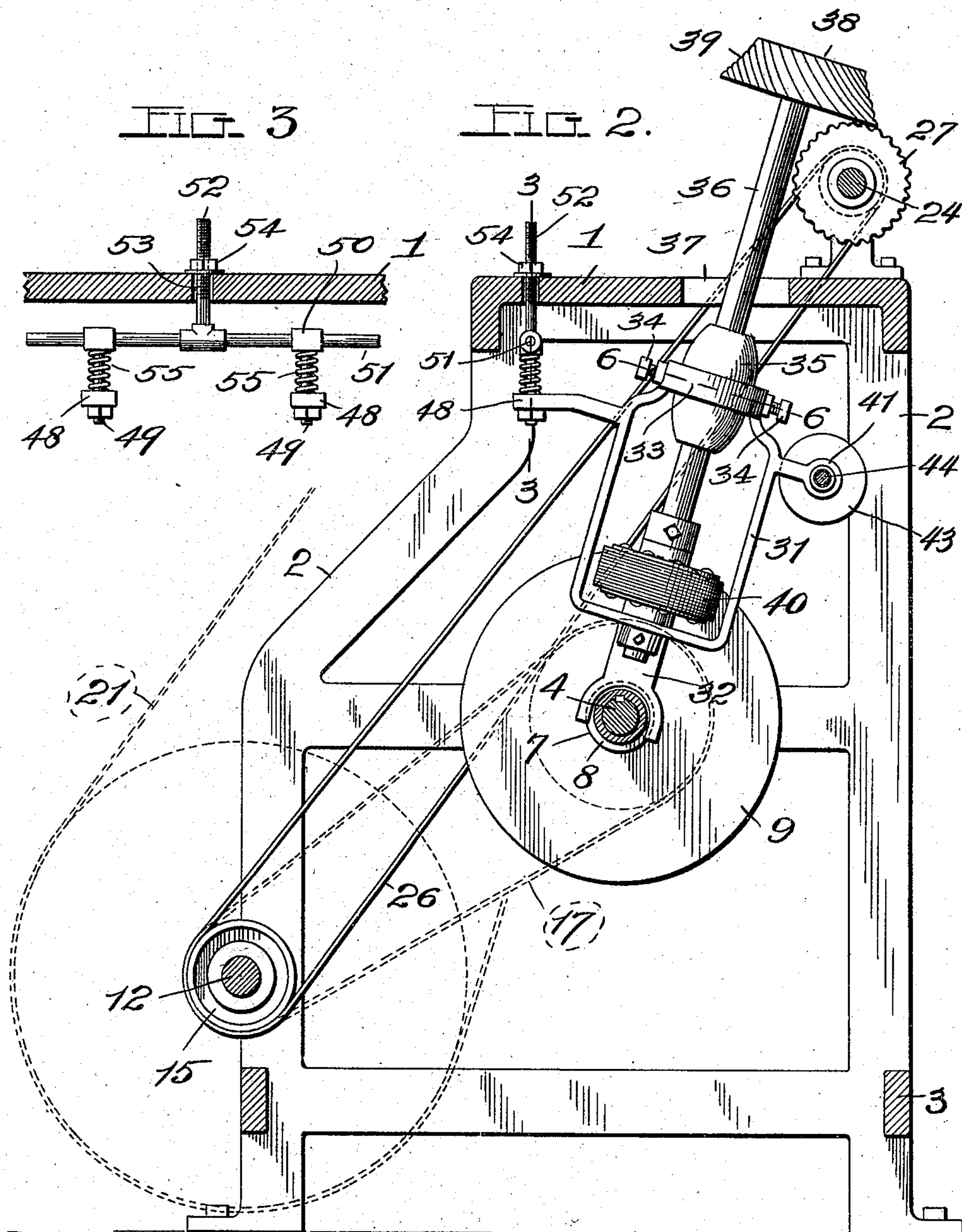
INVENTOR.  
*John O'Connell.*  
BY *Higdon & Longan.*  
ATTY'S.

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3 SHEETS—SHEET 2.



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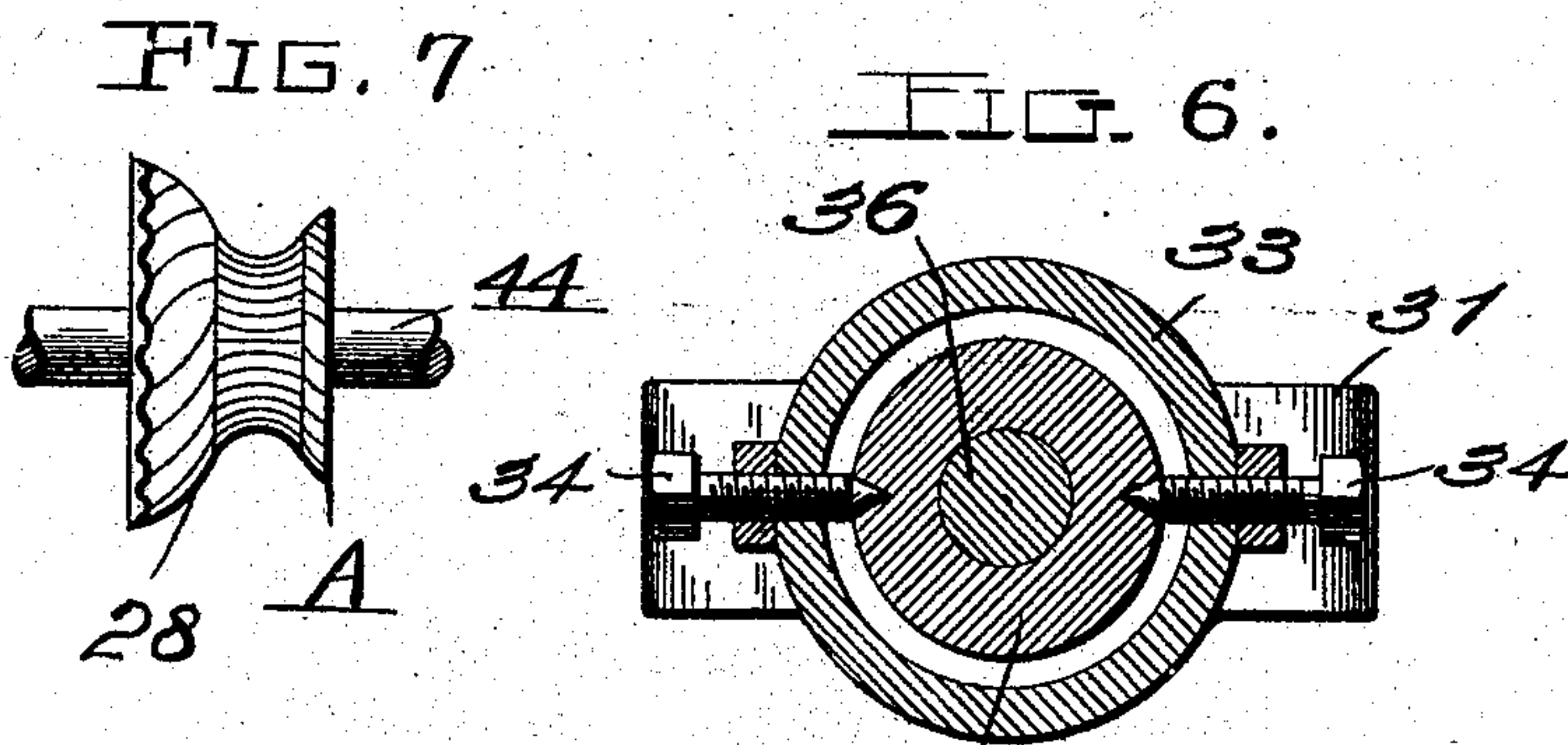
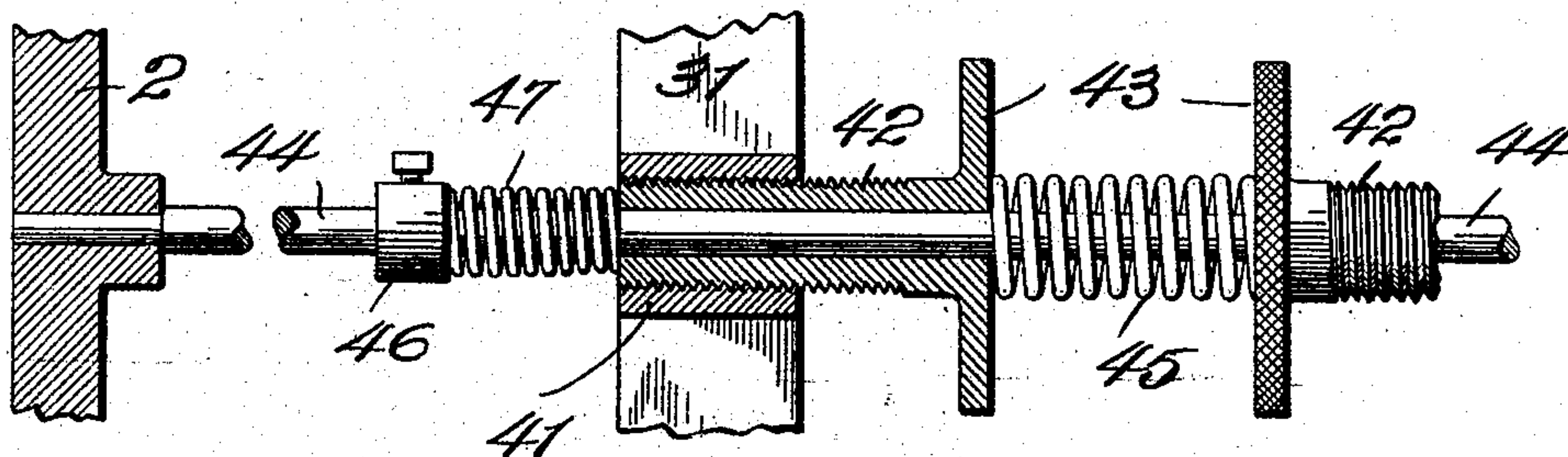
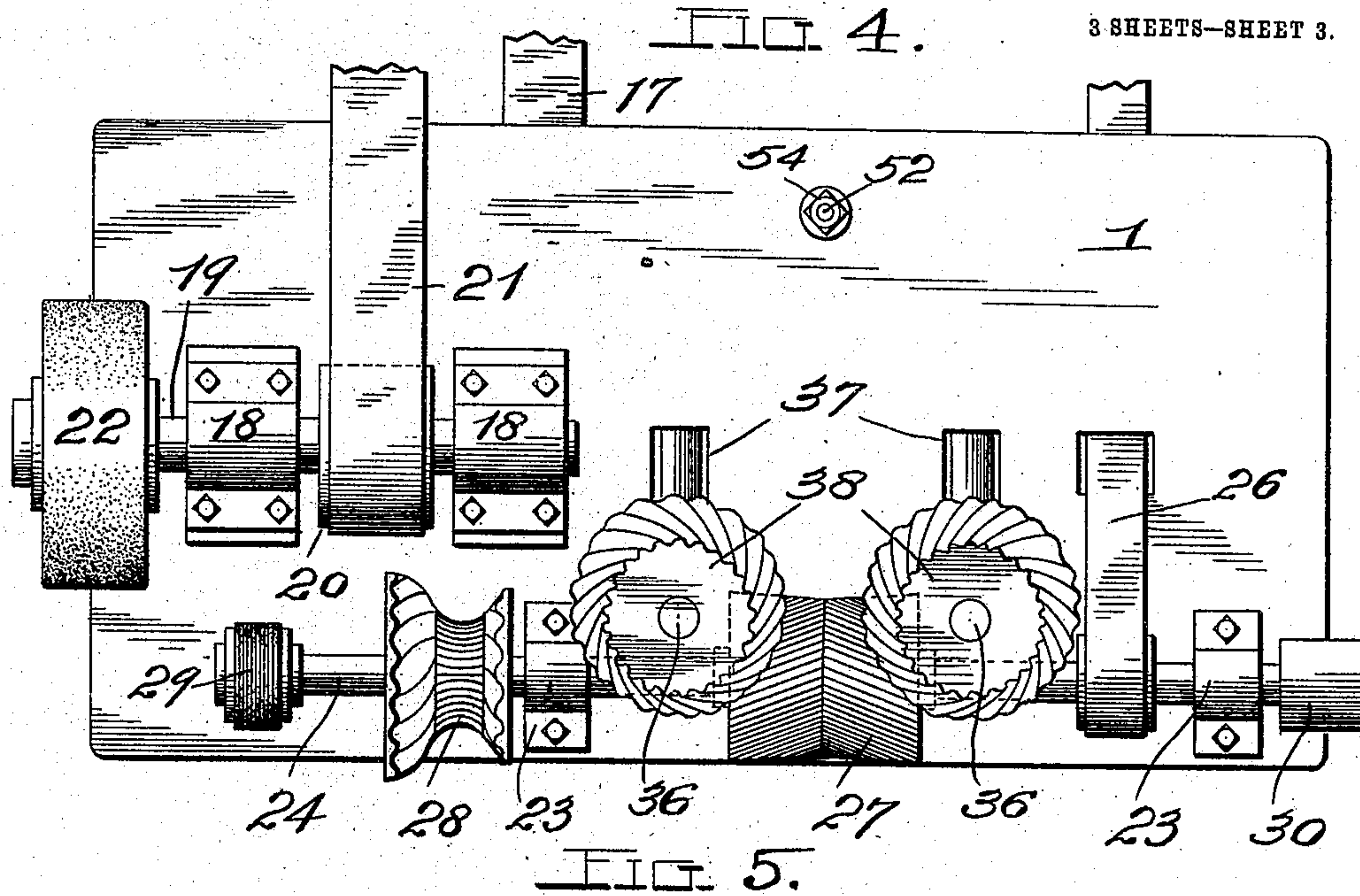


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3 SHEETS—SHEET 3.



ATTEST:  
L. J. Fletcher,  
M. P. Smith,

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John O'Connell,  
By Higdon & Longan,  
ATTY'S.



# UNITED STATES PATENT OFFICE.

JOHN O'CONNELL, OF ST. LOUIS, MISSOURI, ASSIGNOR OF FOUR-NINTHS TO MORRIS SALE,  
OF ST. LOUIS, MISSOURI.

## SHOE HEEL AND TOE BEATING-UP MACHINE.

No. 905,094.

Specification of Letters Patent.

Patented Nov. 24, 1908.

Application filed April 22, 1907. Serial No. 369,699.

*To all whom it may concern:*

Be it known that I, JOHN O'CONNELL, a citizen of the United States, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Shoe Heel and Toe Beating-Up Machines, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to a machine utilized for performing the beating up operation on the heel seats and toes of lasted shoes, and prior to the location of the sole and heel upon the shoe upper.

The object of my invention is to construct a simple, inexpensive, and compact machine, which may be operated with little power, and with which the beating up operation can be very quickly performed, and the work, when finished, will be in proper shape to receive the shoe heels and soles.

To the above purposes, my invention consists in certain novel features of construction and arrangement of parts, which will be hereinafter more fully set forth, pointed out in the claims, and illustrated in the accompanying drawings, in which:—

Figure 1 is a front elevation of a machine of my improved construction; Fig. 2 is a vertical section taken on the line 2—2 of Fig. 1; Fig. 3 is a vertical section taken on the line 3—3 of Fig. 2; Fig. 4 is a plan view of the main portion of the machine; Fig. 5 is an enlarged horizontal section taken on the line 5—5 of Fig. 1; Fig. 6 is an enlarged horizontal section taken on the line 6—6 of Fig. 2; Fig. 7 is an elevation of a sectional corrugated wheel I make use of in carrying out my invention.

Referring by numerals to the accompanying drawings:—1 designates the top or bed plate of the frame of the machine, which is supported by side frames 2, held together by cross pieces 3. Located in the approximate center of the frame so formed, and journaled for rotation in suitable bearings arranged in the side frames 2, is a horizontally disposed shaft 4, which is driven in any suitable manner; but preferably by means of a belt passing over a belt wheel 5 fixed on one end of said shaft.

Arranged to slide on keys 6 fixed to the shaft 4 is a pair of collars 7, which are pro-

vided with grooves 8; and formed integral with the inner ends of these collars are large friction disks 9. Fixed to the shaft 4, between the disks 9, is a small disk, or washer 10; and arranged on the shaft and interposed between said disk 10 and the disks 9 are expansive coil springs 11, which tend to force said disks 9 and the collars away from one another. Journaled for rotation in suitable bearings formed on the rear portions of the side frames 2 is a shaft 12, on which is fixed a large belt wheel 13 and small pulleys 14 and 15. Fixed on the shaft 4 is a pulley 16, which is in alinement with the pulley 14, and passing around said pulley is a belt 17, by means of which the shaft 12 is driven. Fixed on top of the plate 1, and on the left hand portion thereof, is a pair of standards 18, in the upper ends of which is journaled a shaft 19; and fixed thereon, between the standards 18 is a pulley 20, which is in alinement with the belt wheel 13, and passing around said pulley and belt wheel is a belt 21. One end of the shaft 19 extends beyond the outer one of the standards 18, and fixed on said extended end is an emery wheel 22, having a broad periphery.

Journaled in bearings 23, fixed on top of the plate 1, adjacent the front edge thereof, is a horizontally disposed shaft 24, on which is fixed a pulley 25, in alinement with the pulley 15; and passing around these alined pulleys is a belt 26, which imparts rotary motion from the shaft 12 to the shaft 24. Fixed on the shaft 24, midway between the bearings 23, is a wheel 27, having a corrugated surface; and fixed on the shaft 24, adjacent the left hand one of the standards 23, is a corrugated beating up wheel 28, made up of a plurality of sections, and fixed on the left hand end of the shaft 24 is a buffer wheel 29. Fixed on the right hand end of the shaft 24 is a burnishing or polishing wheel 30, having a perfectly smooth periphery. A pair of yokes 31 are vertically disposed between the top 1 of the machine and the shaft 4; and formed integral with the lower ends of said yokes are plates 32, the lower ends of which are bifurcated and engage in the grooves 8 formed in the collars 7; and formed integral with the upper end of each yoke is a ring 33.

Positioned in the rings 33 and held there by means of bearing screws 34, passing



through opposite sides of said rings, are vertically disposed bearings 35, in which are arranged for rotation vertically disposed shafts 36, the same passing through suitably arranged openings 37 formed in the top 1, and the upper ends of said shafts being provided with disks 38, having beveled corrugated peripheries 39; and the edges of which disks lie immediately over the ends of the corrugated wheel 27. Fixed on the lower portions of the shafts 36, within the yokes 31, are friction wheels 40, which bear directly upon the outer faces of the large friction disks 9. Formed integral with the yokes 31, and projecting forwardly therefrom, are the horizontally disposed sleeves 41, which are interiorly screw threaded, and in which are screw seated short tubes 42, provided on their inner ends with disks 43; and passing through the tubes 42 is a horizontally disposed rod 44, the ends of which are fixed in the side frames 2. Located upon the rod 44, between the disks 43, is an expansive coil spring 45, and fixed on the rod, outside each sleeve 41, is a collar 46, there being expansive coil springs 47 arranged on the rod 44 between each collar 46 and the end of the adjacent tube 42. Formed integral with the rear sides of the yokes 31 are the rearwardly projecting arms 48, in the rear ends of which are loosely arranged the lower ends of vertically disposed pins 49, the upper ends of which are provided with horizontally arranged tubular bearings 50, which are arranged to slide on a horizontal rod 51, with the center of which is formed integral a vertically disposed screw seated rod 52, which passes through a suitably formed opening 53 in the top 1, and being provided with an adjusting nut 54. Arranged on the pins 49, between the bearings 50 and the rear ends of the arms 48, are expansive coil springs 55.

When the shaft 4 is driven, the rotary motion thereof is transmitted to the shaft 12 by means of the belt 17, and in turn rotary motion is imparted to the shaft 19 carrying the emery wheel 22, by means of the belt 21; and rotary motion is also imparted to the shaft 24 and parts fixed thereon by means of the belt 26. The expansive coil springs 11 tend to force the large friction disks 9 apart, causing the outer faces of said disks to frictionally engage the peripheries of the friction wheels 40; and thus rotary motion is imparted to the shafts 36, on which said disks are mounted. Thus the corrugated wheel 27 and corrugated disks 38, operating immediately thereover, are rotated at a high rate of speed; and to perform the beating up operation, the toes and heel seats of the lasted shoes are alternately engaged on the surface of the wheel 27, and said lasted shoe is forced rearwardly so that the side edges thereof are engaged by the corrugated pe-

ripheries of the disks 38; and this operation very quickly and efficiently beats up and smooths out the toes and heel seats of the shoes. During this operation, the disks 38 will be forced apart to a slight degree, which action is possible owing to the sliding arrangement of the tubes 42 upon the rod 44, and this spreading action is resisted by the expansive coil springs 47.

The space between the disks 38 is adjusted by manipulating the disks 43, which action compresses the spring 45, or permits the same to expand, and the vertical position of said disks 38 is regulated by manipulating the nut 54, which action raises or lowers the arms 48 carried by the yokes 31. Should there be an excess of leather on the under side of the toe of the shoe, or upon the heel seat, which forms a bunch, not capable of being smoothed down in the beating up operation, said excess leather can be removed by engagement with the emery wheel 22, which rapidly cuts the leather, and thus very quickly brings the shoe into condition to be acted upon by the beating up wheel and disks. The toes of lasted shoes can be partially beaten up and smoothed out by engagement in the groove of the wheel 28; and where it is desired to beat up or polish the edges of shoe uppers which are attached to a welt sole, one of the sections of the wheel 28 is removed, and a narrow disk A, having a beveled edge, is substituted therefor; and which beveled edge engages the edge of the upper and the welt.

Certain portions of lasted shoes may be smoothed out by engagement with the wheel 30, having a smooth periphery, and the buffer wheel 29 may be utilized in polishing any portion of the surface of the upper which may have become marred or broken while being beaten up.

By my improved arrangement of the wheel 27 and disks 38, the under side of the edges of the heel seats and toes of lasted shoes is very rapidly and efficiently beaten up and made ready for the soles and heels, and much time and labor is thus saved in the manufacture of shoes.

The disks 38 are held in such a position as to yield readily to the forward and back movement imparted to the lasted shoe while being beaten up, and said disks can be readily adjusted both vertically and laterally, even while the machine is in operation.

I claim:—

1. In a machine of the class described, a frame, a wheel having a corrugated surface journaled for rotation on the frame, a pair of disks journaled for rotation on the frame, which disks have corrugated peripheries, and the edges thereof overlying the wheel, and means whereby the disks are vertically adjusted.

2. In a machine of the class described, a



frame, a shaft journaled in bearings on said frame, a corrugated wheel fixed on said shaft, a pair of laterally yielding bearings arranged in the frame, shafts arranged for rotation in said bearings, disks having corrugated peripheries fixed on the upper ends of said last mentioned shafts, the edges of which disks operate adjacent the ends of the corrugated wheel, and means whereby all of the shafts are simultaneously rotated.

3. In a machine of the class described, a frame, a shaft journaled in bearings on said frame, a corrugated wheel fixed on said shaft, a pair of laterally yielding bearings arranged in the frame, shafts arranged for rotation in said bearings, disks having corrugated peripheries fixed on the upper ends of said shafts, the edges of which disks operate adjacent the ends of the corrugated wheel, means whereby all of the shafts are simultaneously rotated, and means whereby the laterally yielding bearings are adjusted laterally and vertically.

4. In a machine of the class described, a frame, a wheel having a corrugated surface journaled for rotation on said frame, and a pair of disks journaled for rotation on the frame, which disks are provided with

corrugated peripheries, and the edges of which disks overlie the ends of the wheel. 30

5. In a machine of the class described, a frame, a wheel having a corrugated surface journaled for rotation on said frame, a pair of disks journaled for rotation on the frame, which disks are provided with corrugated peripheries, and the edges of which disks overlie the ends of the wheel, and means whereby the wheel and disks are simultaneously rotated. 35

6. In a machine of the class described, a frame, a wheel having a corrugated surface journaled for rotation on said frame, a pair of disks journaled for rotation on the frame, which disks are provided with corrugated peripheries, and the edges of which disks overlie the ends of the wheel, and means whereby the disks are adjusted laterally and vertically relative the wheel. 40 45

In testimony whereof, I have signed my name to this specification, in presence of two subscribing witnesses. 50

JOHN O'CONNELL.

Witnesses:

M. P. SMITH,  
E. L. WALLACE.