

**905,093.**

3 SHEETS—SHEET 1.



At Test:  
H. G. Fletcher.  
M. P. Smith

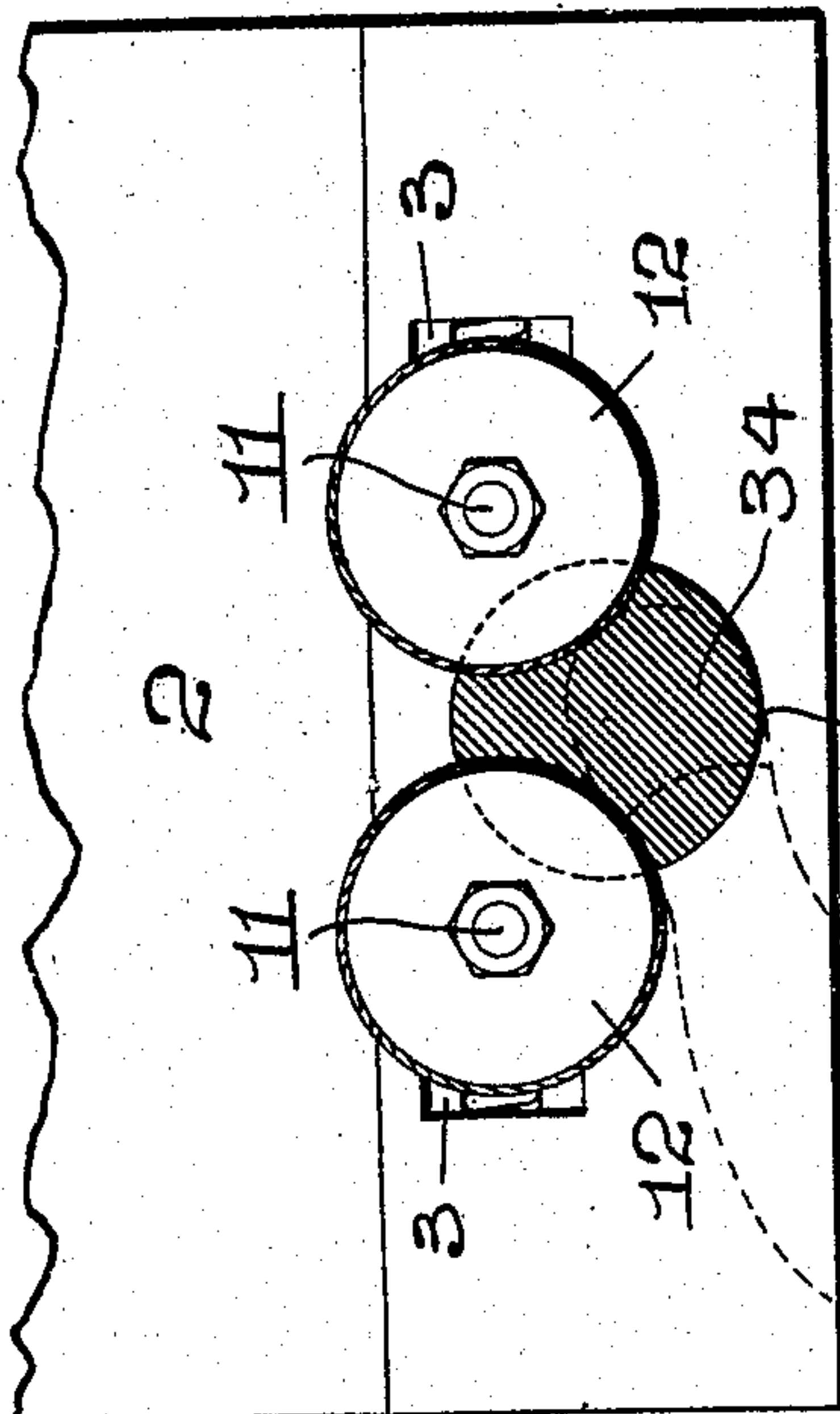
BY *Nigdon & Langan.*  
ATT'YS.

905,093.

J. O'CONNELL.  
HEEL BURNISHING MACHINE.  
APPLICATION FILED MAR. 28, 1906.

Patented Nov. 24, 1908.  
3 SHEETS—SHEET 2.

FIG. 3.

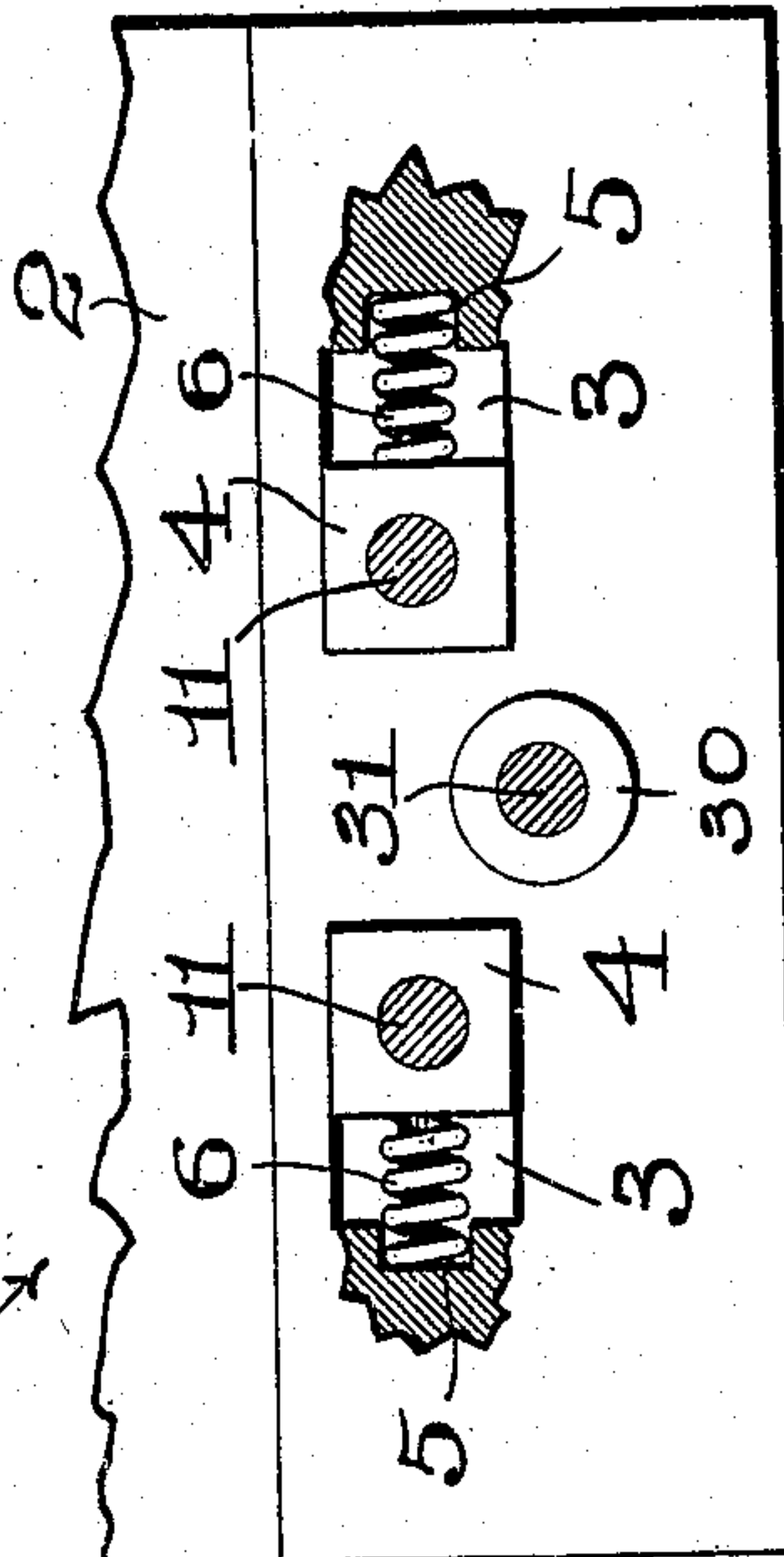


ATTEST.

*H. J. Fletcher*

*M. P. Smith*

FIG. 4.

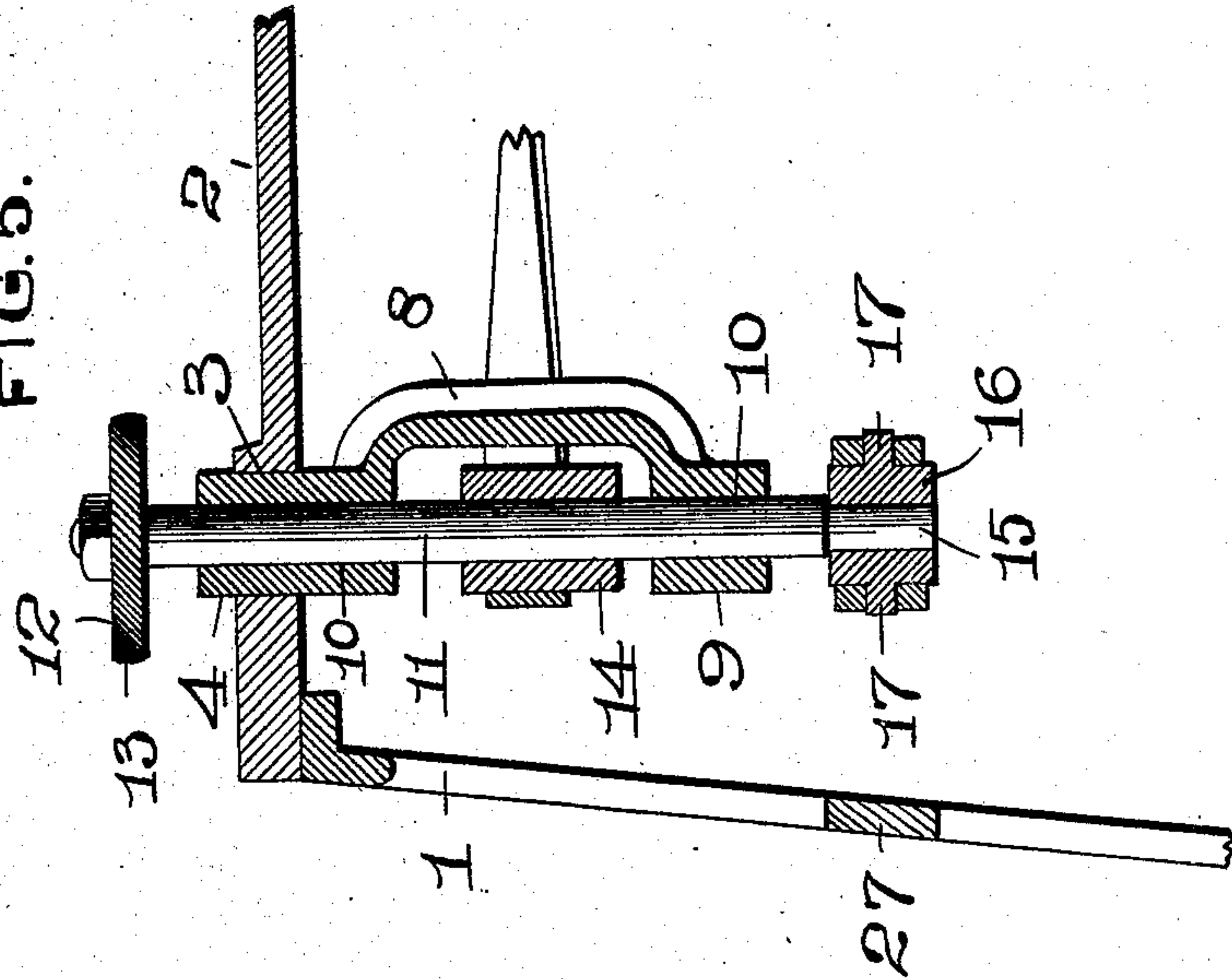


INVENTOR.

JOHN O'CONNELL.

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ATTY'S

FIG. 5.



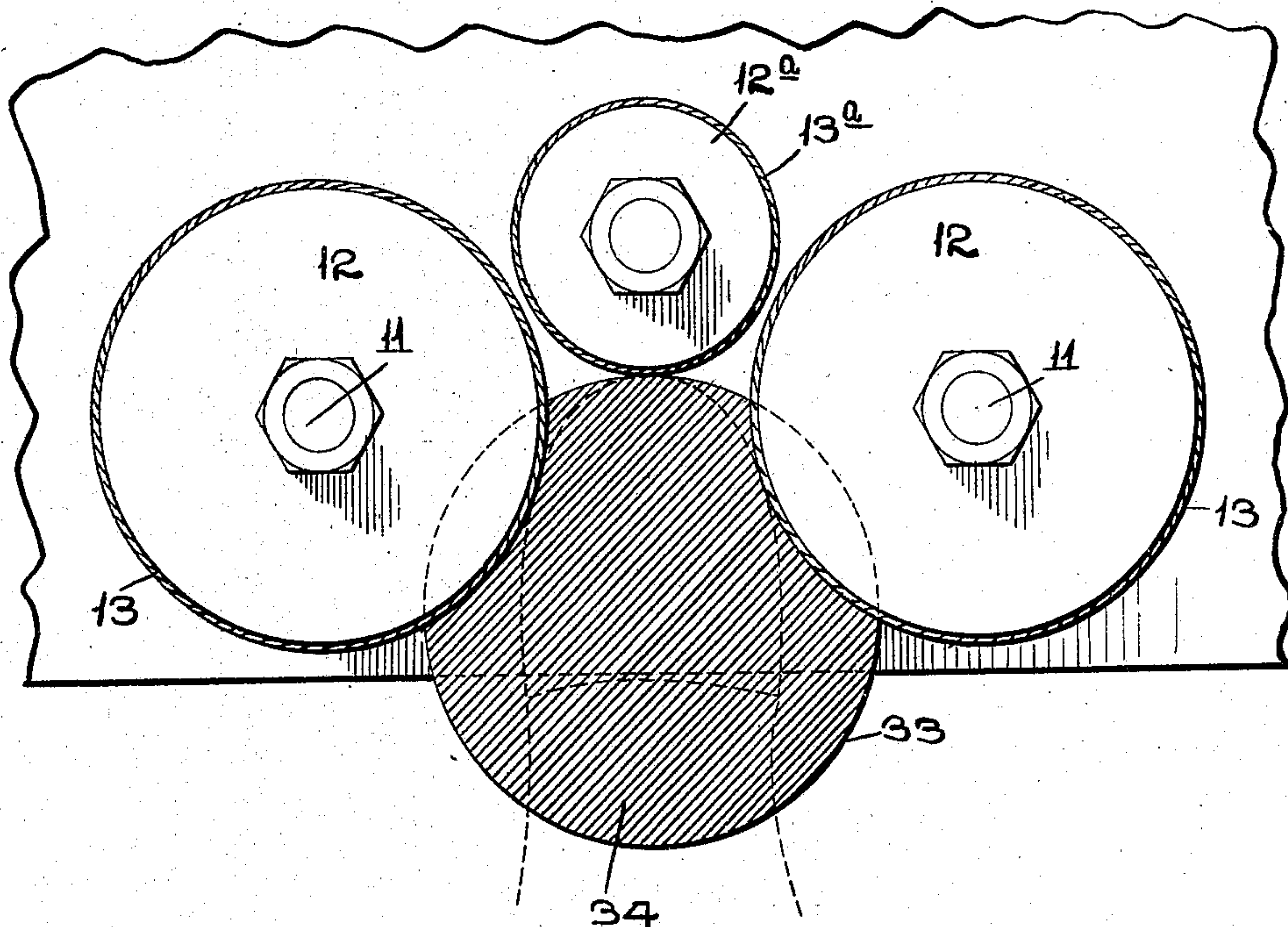


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3 SHEETS—SHEET 3.

FIG. 6.



ATTEST.

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# UNITED STATES PATENT OFFICE.

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

## HEEL-BURNISHING MACHINE.

No. 905,093.

Specification of Letters Patent.

Patented Nov. 24, 1908.

Application filed March 28, 1906. Serial No. 308,503.

*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 Heel-Burnishing 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 heel burnishing machine, and the object of my invention is to construct a machine by means of which the side surfaces and bottoms of shoe heels are simultaneously smoothed off and burnished.

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

Figure 1 is a front elevation of a heel burnishing machine of my improved construction, the upper portion thereof being in vertical section; Fig. 2 is a vertical section, taken on the line 2—2 of Fig. 1; Fig. 3 is a plan view of the front portion of the machine; Fig. 4 is a horizontal section taken on the line 4—4 of Fig. 1, and parts of the top of the machine frame being in section; Fig. 5 is a vertical section taken on the line 5—5 of Fig. 1; Fig. 6 is an enlarged plan view of a modified arrangement of the burnishing wheels of my improved machine.

Referring by numerals to the accompanying drawings: 1 designates the frame of my improved machine, in and upon which the operating parts are arranged, and 2 designates the top of the frame, which is horizontally disposed, and in the front portion of which is formed a pair of rectangular openings 3.

Arranged to move longitudinally in each opening 3 is a block 4, and seated in recesses formed at the outer ends of the openings 3 are expansive coil springs 6, the inner ends of which engage upon lugs 7, formed on the outer faces of the blocks 4. These springs 6 normally maintain the blocks 4 at the inner ends of the openings 3.

Formed integral with each block 4 and projecting downwardly from the rear side thereof is an arm 8, with the lower end of which is formed integral a bearing block 9,

and formed through each corresponding pair of blocks 4 and 9 are the vertically alined journal bearings 10, and arranged for operation therein are the vertical shafts 11.

Removably positioned on the upper end of each shaft 11 is a burnishing wheel 12, the periphery of which is preferably corrugated, as indicated by 13. Fixed on each shaft 11, between the blocks 4 and 9, is a small pulley 14. The lower end of each shaft 11 is slightly reduced in diameter, as indicated by 15, and said reduced lower end is journaled for rotation in a block 16, on the front and rear sides of which are formed the integral trunnions 17.

18 designates a transversely disposed shaft, which is arranged for rotation in suitable bearings 19, in the lower portion of the frame 1, and fixed on the center of said shaft is an eccentric 19<sup>a</sup>. A yoke 20 is positioned on this eccentric 19<sup>a</sup>, and extends upwardly therefrom.

21 designates a horizontally arranged block, the outer ends of which are bifurcated, and engage the trunnions 17 of the blocks 16. Formed integral with the center of this block 21, are the downwardly projecting ears 22, between which is pivotally held the upper end of the yoke 20.

Transversely arranged in the rear portion of the frame 1 is a driving shaft 23, and positioned adjacent one end thereof is a belt wheel 24. A small belt wheel 25 is fixed on the shaft 18 in alinement with said belt wheel 24, and, passing around the wheels 24 and 25 is a belt 26.

Extending across the front of the frame 1 is a cross piece 27, and bolted to the inner face thereof, and projecting inwardly, is a bracket 28, in the rear end of which is formed a bearing 29.

Formed in the top 2 of the frame, between the openings 3 therein and slightly in front of the same and in alinement with the bearing 29, is a bearing 30.

Arranged for rotation in the bearings 29 and 30 is a vertically disposed shaft 31, and fixed thereon is a small pulley 32.

Detachably fixed on the upper end of the shaft 31 is a burnishing wheel 33, which is so disposed as that its top surface is arranged in juxtaposition to the under sides of the burnishing wheels 12, and, the top surface of said wheel is preferably corrugated, as indicated by 34.



Transversely arranged in the upper portion of the frame 1 and to the rear of the shafts 11 and 31 is a pair of horizontally disposed shafts 35, on each of which are mounted three small pulleys, such as 36. Fixed upon the shaft 23, to the left of the belt wheel 24 are three similarly sized belt wheels 37. Passing around the central one of these belt wheels 37, over the central pair of pulleys 36, and forwardly around the pulley 32, is a belt 38, and passing around the outer pair of belt wheels 37, over the outer pairs of pulleys 36, and forwardly around the pulleys 14, are belts 39.

In the modification shown in Fig. 6, I arrange a small burnishing wheel 12<sup>a</sup>, in the same plane with and immediately to the rear of the burnishing wheels 12, which smaller wheel 12<sup>a</sup> has its periphery slightly corrugated, as indicated by 13<sup>a</sup>. This small burnishing wheel is driven in any suitable manner, and preferably rotates with the same peripheral speed as does the burnishing wheel 12.

The operation of my improved burnishing machine is as follows: The shaft 23 is driven in any suitable manner, and the rotary motion thereof is imparted to the shafts 11 and 31 by means of the belts 38 and 39, which pass around the corresponding pulleys 36, 14, and 32. In this manner, the shafts 11 and 31 are rotated at a high rate of speed, and, as a result, the burnishing wheels 12 and 33 are rotated. The burnishing wheels 12, in addition to rotating, reciprocate vertically, owing to the vertical motion of the shafts 31, which are actuated by the operation of the eccentric 19<sup>a</sup>, and its connections, which eccentric is rotated by the shaft 18 driven from the shaft 23 by means of the belt 26. The under side of the shoe heel to be burnished is positioned flat upon the top surface of the burnishing wheel 33, with the shoe held upright and to one side, as shown by dotted lines in Fig. 3. The operator then gradually moves the shoe from the left to the right and at the same time, bearing downwardly and rearwardly upon said shoe so as to cause the under side of the heel to forcibly engage the top surface of the wheel 33, and the sides of the heel to forcibly bear against the peripheries 13 of the polishing wheels 12. This pressure will naturally cause the wheels 12 to move apart a slight degree, this being possible owing to the arrangement of the blocks 4 in the slots 3, and the arrangement of the coil springs 6 behind said blocks. This movement of course is very slight, and does not affect the operation of the belts 39 on the pulleys 14. During this operation,

the burnishing wheels 12 are reciprocating vertically, and thus after the shoe heel has been shifted around from one position to another, the entire outer surface of said heel has been engaged and burnished by the peripheries of said burnishing wheels 12. The under side of the heel during this operation has been engaged by the top surface of the burnishing wheel 33, so that when the shoe is removed from the wheels, the entire under side and outer face of the heel is properly smoothed and burnished. For some classes of work, I find it advisable to make use of the third small burnishing wheel 12<sup>a</sup>, as seen in Fig. 6.

A machine of my improved construction is simple, inexpensive, operates with a small amount of power, and, by its use, much time and labor is saved in burnishing shoe heels.

The burnishing wheels are all preferably heated while in operation by suitably located small gas jets, (not shown.)

I claim:

1. In a machine of the class described, a frame, a pair of fixed bearings on the frame, a vertically disposed shaft arranged for rotation in said bearings, a burnishing wheel having a corrugated surface carried by the upper end of said shaft, laterally yielding bearings arranged in the frame adjacent the shaft, shafts arranged for rotation in said laterally yielding bearings, burnishing wheels carried by the upper ends of said last mentioned shafts, the edges of which burnishing wheels overlie the edge of the first mentioned burnishing wheel, means whereby all of the shafts are rotated, and means whereby the laterally yielding shafts are vertically reciprocated simultaneous with their rotation; substantially as specified.

2. In a machine of the class described, a frame, a horizontally disposed burnishing wheel arranged for rotation on the frame, the top surface of which wheel is corrugated, a pair of laterally moving wheels having corrugated edges overlying the edge of the first mentioned burnishing wheel, means whereby the first mentioned wheel is continuously rotated, means whereby the pair of laterally moving wheels are rotated, and means whereby said pair of laterally moving wheels are reciprocated at the same time they are rotated.

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

JOHN O'CONNELL.

Witnesses:

E. E. LONGAN,  
M. P. SMITH.