

No. 755,031.

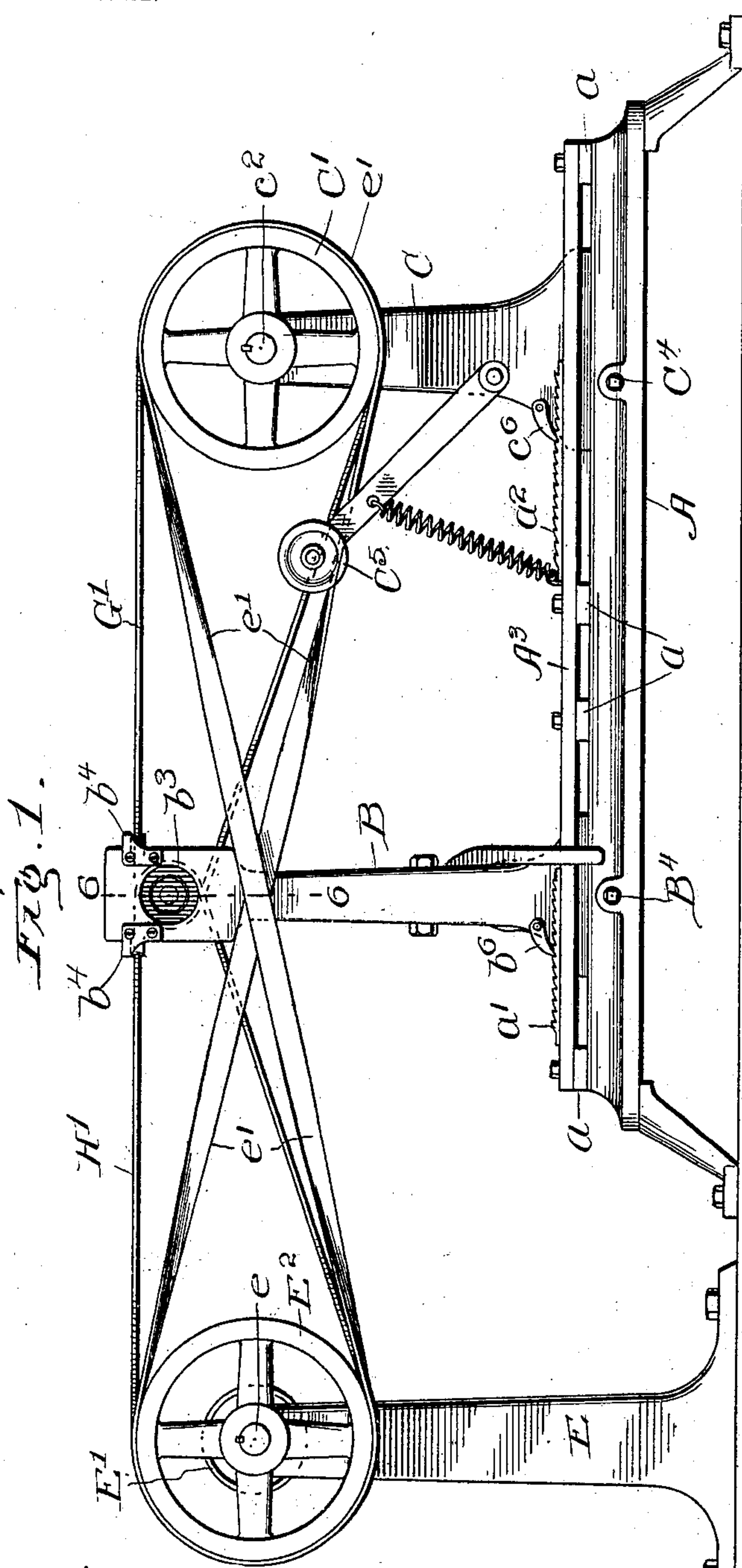
PATENTED MAR. 22, 1904.

L. E. MILLER & C. J. BARRY.
POLISHING AND BUFFING MACHINE.

APPLICATION FILED JUNE 20, 1903.

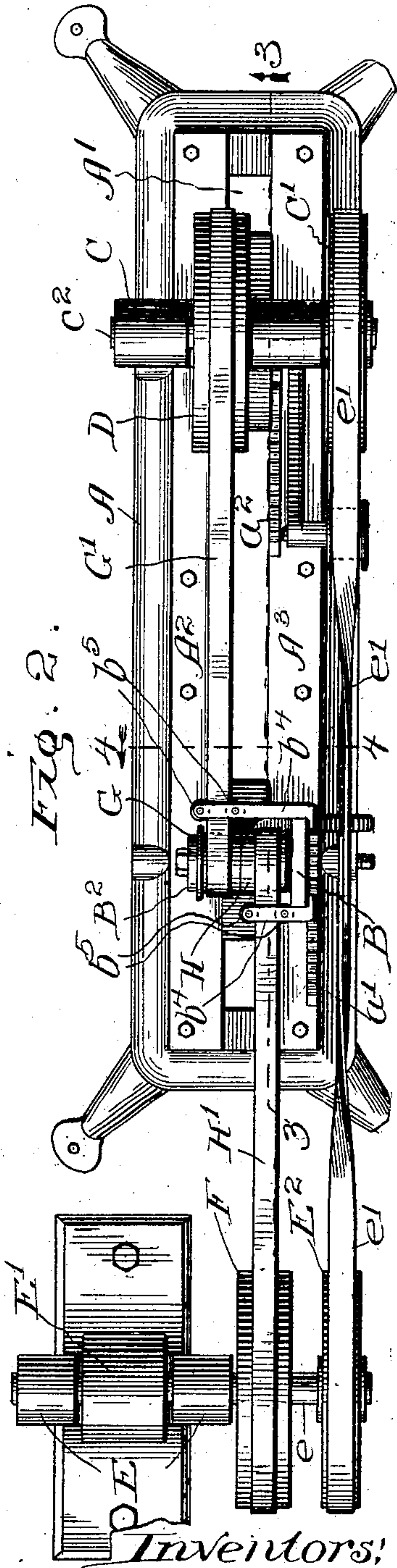
NO MODEL.

2 SHEETS--SHEET 1.



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2 SHEETS—SHEET 2.

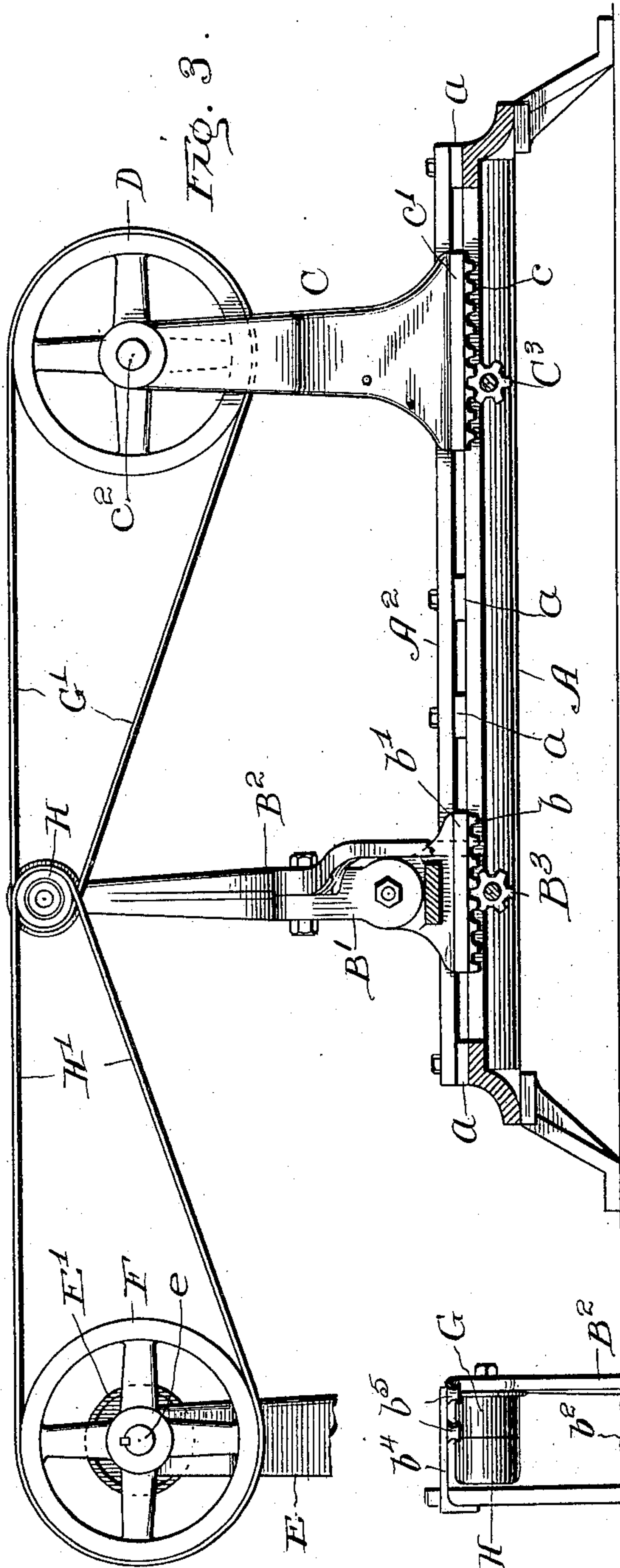


Fig. 3.

Fig. 6.

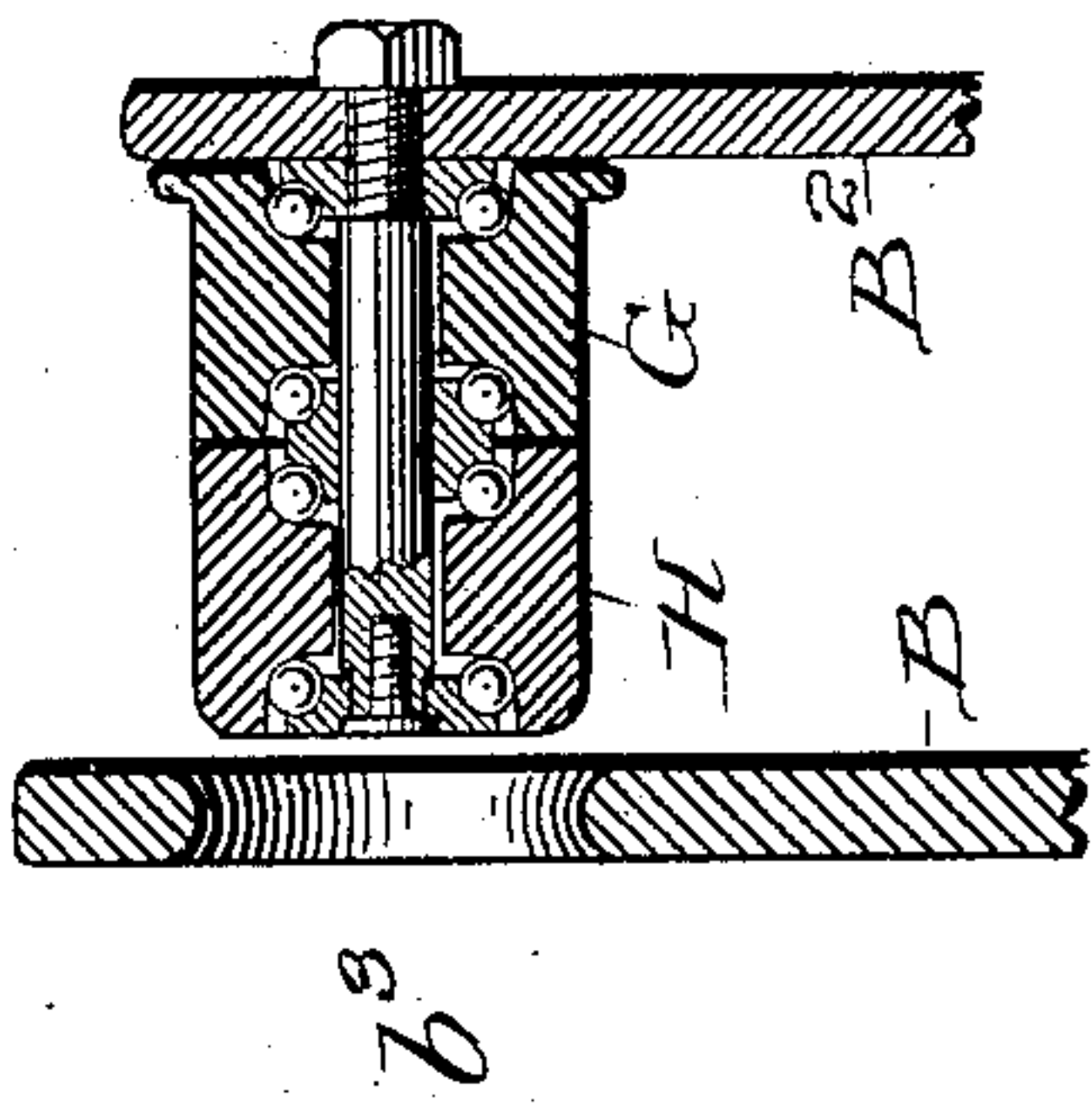


Fig. 5.

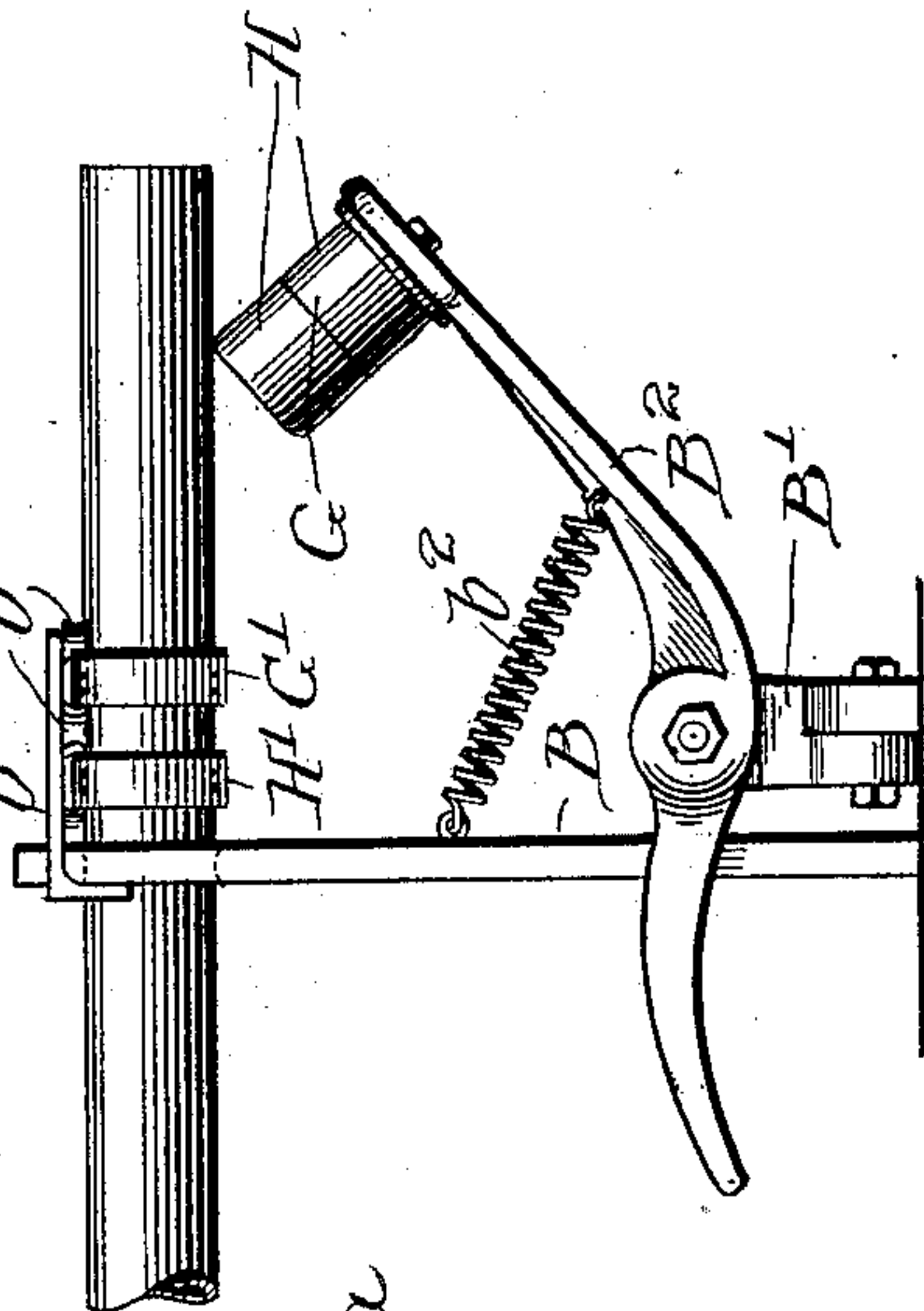
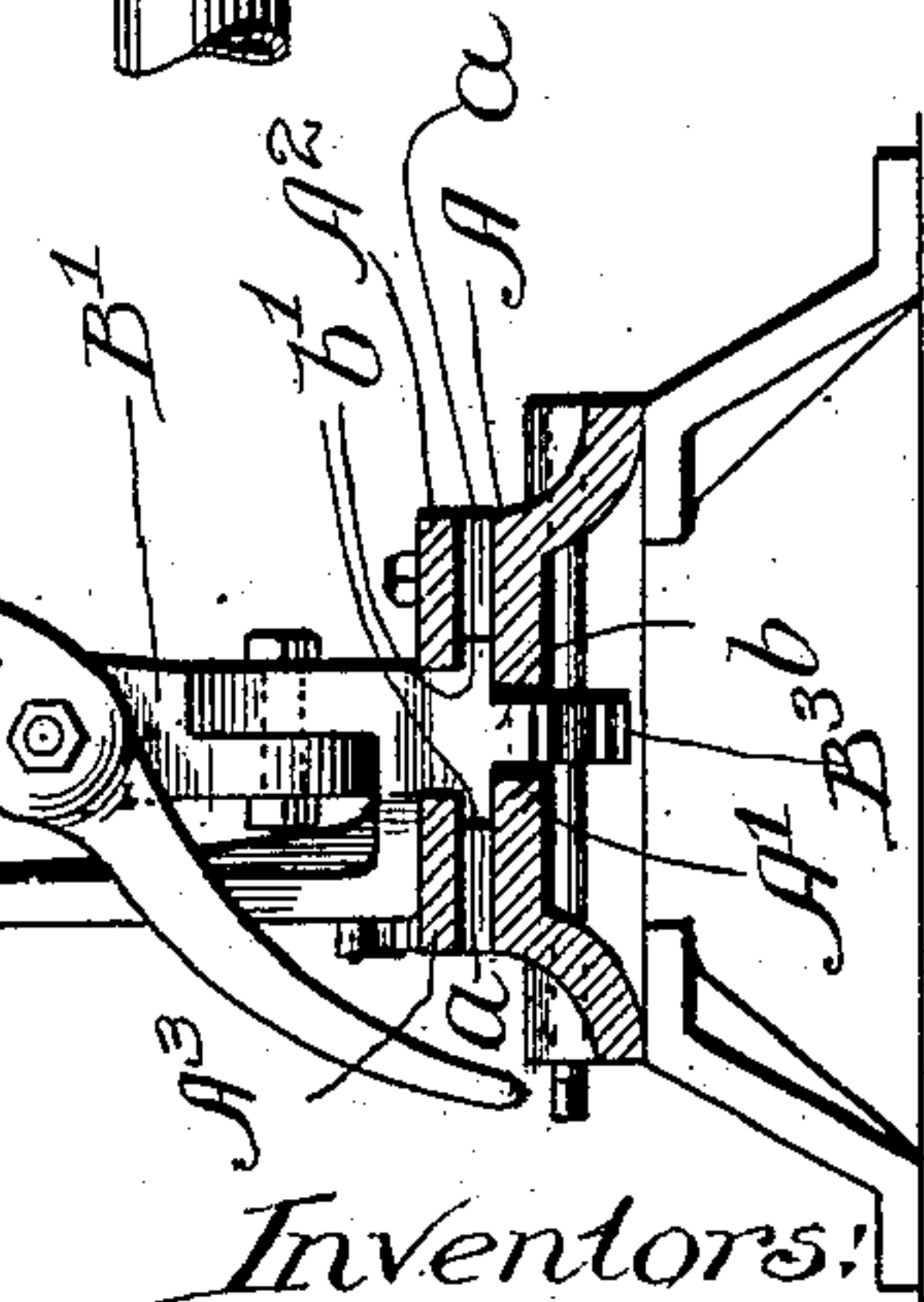


Fig. 4.



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UNITED STATES PATENT OFFICE.

LAWRENCE E. MILLER AND CORNELIUS J. BARRY, OF CHICAGO, ILLINOIS.

POLISHING AND BUFFING MACHINE.

SPECIFICATION forming part of Letters Patent No. 755,031, dated March 22, 1904.

Application filed June 20, 1903. Serial No. 162,319. (No model.)

To all whom it may concern:

Be it known that we, LAWRENCE E. MILLER and CORNELIUS J. BARRY, citizens of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Polishing and Buffing Machines, of which the following is a specification.

Our invention relates to certain new and useful improvements in polishing and buffing machines; and its object is to produce a device of this class especially for use in buffing tubes and bars and the like.

To this and certain minor ends our invention consists in certain novel features of construction, which are clearly illustrated in the accompanying drawings and described in the specification.

In the aforesaid drawings, Figure 1 is a side elevation of our improved device. Fig. 2 is a plan thereof. Fig. 3 is a section in the line 3 3 of Fig. 2 looking in the direction of the arrow. Fig. 4 is a section in the line 4 4 of Fig. 2 looking in the direction of the arrow. Fig. 5 is a view of the parts shown in the upper portion of Fig. 4, showing the device in use; and Fig. 6 is a section in the line 6 6 of Fig. 1.

Referring now to the drawings, A is the base of our machine. This base is made in any suitable form, preferably of cast metal, and contains a longitudinal slot A'. Upon the base A rest two standards B and C, which have downwardly-projecting portions b c, respectively, these downwardly-projecting portions running in the slot A' of the base A. The construction of the bases of these two standards is substantially similar and will be fully understood by reference to Fig. 4, which shows the base of the standard B. These standards, it will be noted, have laterally-projecting ribs b' c' immediately above the downwardly-projecting portions b c, which ribs run between the base A and guide-plates A² A³, which are bolted to the base A and held at the proper vertical distance above said bases by blocks a.

In the upper end of the standard C is journaled a shaft c², which bears two pulleys D and C'. To the left of the base A is a standard E, bolted or otherwise secured to the floor,

in the upper end of which standard is journaled a shaft e, which bears three pulleys E', E², and F. Power is applied to the shaft e through the pulley E', and the shaft c² is driven from the shaft e by a belt e', which runs over the pulley E² and the pulley C', the belt being twisted, as is shown in the drawings, so that the two pulleys run in opposite directions.

To the lower part of the standard B is pivoted a link B', rotatable in a vertical plane in the length of the machine, and to the upper end of this link is pivoted an arm B², rotatable in planes at right angles to the plane of the link B'. This arm is normally held toward the front of the machine by a spring b², which position is shown in Fig. 4. To the upper end of the arm b² is secured a shaft, upon which are two pulleys G H, preferably mounted on ball-bearings, as shown in Fig. 6. The standard B, it will be seen, is carried up slightly above the end of the arm B² and is provided near its end with a perforation b³, which is normally concentric with the pulley H. A belt G', preferably coated on its inside with a suitable polishing or grinding material, is run from the pulley D over and around the pulley G, and a similar belt H' is run from the pulley F about the pulley H.

The general operation of this device can now be well understood and will be explained. Certain of the mechanical features of the machine are hereinafter described; but these features pertain to the adjustment of the device rather than to its general operation. As heretofore stated, the primary object of this device is to polish rods and tubing. When such an article is to be polished, one end thereof is pushed through the perforation b³ in the upper end of the standard B, and this perforation serves as the guide and support for the tubing. The end of the tube then comes in contact with the pulley H and pushes it away from the standard, the tube following after it and passing inside the loop of the belt H'. As the arm B² is pushed still farther backward the tube enters the loop of the belt G', so that all sides of the tube are brought into contact with one or the other of the buffing-surfaces. The tube is pushed through the machine, the

arm swinging toward the position shown in Fig. 5, entirely out of the way of the tube. When one length of tube has passed through the machine, a second length can be pushed on after it without withdrawing the first, and this operation can be kept up indefinitely, one tube being put in after another. When it is desired to stop the operation of the machine, the last tube is drawn back through the perforation in the standard B, the arm B² following after it, and the pulleys G H, under the influence of the spring b³, are returned to their ordinary positions within the loops of the belts. The pulley H is made slightly rounded or beveled at the end to make its return to position within the belt-loops easy and certain.

Two arms b⁴ b⁴ are secured to the upper end of the standard B, and these arms bear pulleys b⁵, which guide the belts G' and H'.

Two ratchet-bars a' a² are secured to the guide-plate A³, and pawls b⁶ c⁶ are secured to the standards B and C, respectively, the ratchets being arranged in each case to prevent the standards from moving toward the standard E. These ratchets are particularly useful in setting up and adjusting the machine. The downwardly-projecting portions b and c on the standards B and C, respectively, are provided, as will be seen in the drawings, with racks, and pinions B³ C³, journaled in the frame, engage therewith. These pinions are mounted upon shafts which terminate in squared ends B⁴ C⁴, suitable for the attachment of a crank or other similar device.

The operation of setting up and adjusting a machine of this type will now be described. The bolt which pivots the link B' to the standard B is first loosened to permit the link to rotate freely in a vertical plane running lengthwise of the machine. The pinion C³ is then rotated so as to move the standard C to the right until the buffing-belts G' and H' are at the proper tension. Inasmuch as the pulleys G and H are free to move longitudinally of the machine, the tension on these two belts will be equal and opposite. When the proper tension upon the belts is attained, it will be maintained, because the pawl c⁶ will hold the standard C in the proper position and not permit it to move back toward the left. The standard B is then moved to the right or left, as the case may be, by rotating the pinion B³ until the perforation b³ is in line with the pulleys G and H. The bolt running through the link B' is then tightened up, so that the arm B² stays in the same vertical plane.

Inasmuch as the position of the standard C is only determined by the lengths of the buffing-belts, some means has to be provided for regulating the length of the belt e'. This is done by an idler C⁵, which is shown in the drawings.

We realize that considerable variations are possible in the details of this construction

without departing from the spirit of the invention, and we therefore do not intend to limit ourselves to the specific form herein shown and described, except as pointed out in the claims.

We claim as new and desire to secure by Letters Patent—

1. In a device of the class described, the combination with two driven pulleys, of two idler-pulleys mounted in line with each other upon a longitudinally-movable shaft, and a buffer-belt running from each of said driven pulleys over said idler-pulleys.

2. In a device of the class described, the combination with two driven pulleys, of two idler-pulleys mounted upon a longitudinally-movable shaft, a guide in line with said pulleys, and buffer-belts running from each of said driven pulleys over said idler-pulleys.

3. In a polishing-machine, the combination with a suitable driving-pulley and a polishing-belt driven by said pulley, of an idler-pulley over which said belt runs, and suitable means for supporting said idler-pulley and permitting it to move longitudinally to permit the article to be polished to take its place in contact with the belt.

4. In a device of the class described, the combination with two driven pulleys, of two idler-pulleys mounted upon a yielding longitudinally-movable shaft, buffing-belts running from said driven pulleys over said idler-pulleys, and a guide in line with said idler-pulleys, said pulleys being normally spring-pressed toward said guide.

5. In a device of the class described, the combination with two driven pulleys, of two idler-pulleys mounted upon a longitudinally-movable shaft, buffing-belts running from said driven pulleys over said idler-pulleys, and suitable guide-pulleys for maintaining the proper position of said buffing-belts.

6. In a device of the class described, the combination with two driven pulleys, of a pivoted spring-pressed arm, rotatable in a plane at right angles to the planes of said driven pulleys, two idler-pulleys journaled upon the end of said arm and normally parallel to said driven pulleys, and suitable buffing-belts running over said idler-pulleys.

7. In a device of the class described, the combination with two driven pulleys, of a pivoted spring-pressed arm, rotatable in a plane at right angles to the planes of said driven pulleys, two idler-pulleys journaled upon the end of said arm and normally parallel to said driven pulleys, suitable buffing-belts running over said idler-pulleys, the idler-pulley farthest removed from said arm being tapered to permit it to return to position after being removed from the belts.

8. In a device of the class described, the combination with a suitable base, of two standards bearing shafts, one of said shafts being suit-

ably driven, means of connection between said first shaft and said second shaft, whereby said second shaft is driven by said first shaft, pulleys upon each of said shafts and driven there-
 5 with, a third standard intermediate said first two standards, a longitudinally-movable shaft journaled thereon, two idler-pulleys upon said last-named shaft, and buffer-belts passing about said idler-pulleys from said driven pul-
 10 leys.

9. In a device of the class described, the combination with a suitable base, of two standards, shafts mounted therein, means for synchronizing the rotation of said shafts and for driv-
 15 ing one of them, and pulleys upon each of said shafts and driven thereby, of a third standard having a suitable guide, a longitudinally-movable shaft in line with said guide, two idler-pulleys upon said longitudinally-movable shaft, and buffer-belts running from said
 20 driven pulleys over said idler-pulleys.

10. In a device of the class described, the combination with a suitable base, of two stand-
 25 ards, shafts therein, means for synchronizing the movements of said shafts, and for driving one of them and pulleys upon each of said shafts and driven thereby, of a third standard having a suitable guide, an arm pivoted there-
 30 to to swing in a vertical plane parallel to said shafts, a shaft secured to the end of said arm, two idler-pulleys journaled upon said shaft and belts running from said driven pulleys and about said idler-pulleys.

11. In a device of the class described, the
 35 combination with a suitable base, a fixed standard, a movable standard mounted on said base and movable longitudinally of the same, and shafts bearing pulleys and journaled in each of said standards, of a movable standard
 40 mounted between said first two standards, and bearing a longitudinally-movable shaft, idler-pulleys upon each of said shafts, and belts running from said first-named pulleys to the idler-pulleys.

12. In a device of the class described, the
 45 combination with a suitable base, a fixed standard, a movable standard mounted on said base and movable longitudinally of the same, and shafts bearing pulleys and journaled in each of said standards, of a second movable stand-
 50 ard bearing a longitudinally-movable shaft, idler-pulleys upon the last-named shaft, belts running from said first-named pulleys to the idler-pulleys, and means for fixing the position
 55 of said first movable standard.

13. In a device of the class described, the combination with a suitable base, a fixed stand-
 60 ard, a movable standard mounted on said base and movable longitudinally of the same, and shafts bearing pulleys and journaled in each of said standards, of a second movable stand-
 ard bearing a longitudinally-movable shaft, idler-pulleys upon said longitudinally-mov-

able shaft, belts running from said first-named pulleys to the idler-pulleys, a ratchet-bar on
 65 said base, and a pawl on said first movable standard, adapted to fix the position of the same.

14. In a device of the class described, the combination with a suitable base, a fixed stand-
 70 ard, a movable standard mounted on said base and movable longitudinally of the same, and shafts bearing pulleys and journaled in each of said standards, of a second movable stand-
 75 ard bearing a longitudinally-movable shaft, idler-pulleys upon said longitudinally-movable shaft, belts running from said first-named pulleys to the idler-pulleys, and means for moving each of said standards.

15. In a device of the class described, the
 80 combination with a suitable base, a fixed standard, a movable standard mounted on said base and movable longitudinally of the same, and shafts bearing pulleys and journaled in each of said standards, of a second movable stand-
 85 ard bearing a longitudinally-movable shaft, idler-pulleys upon each of said shafts, belts running from said first-named pulleys to the idler-pulleys, rack-bars on said standards, and pinions mounted on said base adapted to move
 90 said standards longitudinally of said base.

16. In a device of the class described, the combination with a suitable base and two driven pulleys journaled thereon, the distance between said pulleys being variable, of a suit-
 95 able standard mounted upon said base and between said pulleys, a link pivoted to said standard and rotatable in the plane of said pulleys, an arm pivoted to said link and rota-
 100 table in planes at right angles to the plane of said pulleys, a shaft secured to the end of said arm, a spring for holding said arm in a position where said shaft is parallel to the axis of
 105 said pulleys, idler-pulleys upon said shaft, and belts running from said driven pulleys over said idler-pulleys.

17. In a device of the class described, the combination with a suitable base and two driven pulleys, the distance between said pul-
 110 leys being variable, of a suitable standard mounted upon said base and between said pulleys, a link pivoted to said standard and rotatable in the plane of said pulleys, an arm pivoted to said link and rotatable in planes at
 115 right angles to the plane of said pulleys, a shaft secured to the end of said arm, a spring for holding said arm in a position where said shaft is parallel to the axis of said planes, idler-pulleys upon said shaft, belts running
 120 from said first-named pulleys over said idler-pulleys, and a guide in line with said idler-pulleys.

18. In a polishing-machine, the combination with a polishing-belt and means for driving
 125 the same, of an idler-pulley over which said belt runs, a guide substantially in line with

and at one end of the idler-pulley, and supporting devices for the pulley, movable longitudinally therewith to permit the article to be polished to be thrust through the guide and
5 take the place of the idler-pulley.

In witness whereof we have signed the above application for Letters Patent at Chicago, in

the county of Cook and State of Illinois, this
13th day of June, A. D. 1903.

LAWRENCE E. MILLER.
CORNELIUS J. BARRY.

Witnesses:

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S. BLISS.