

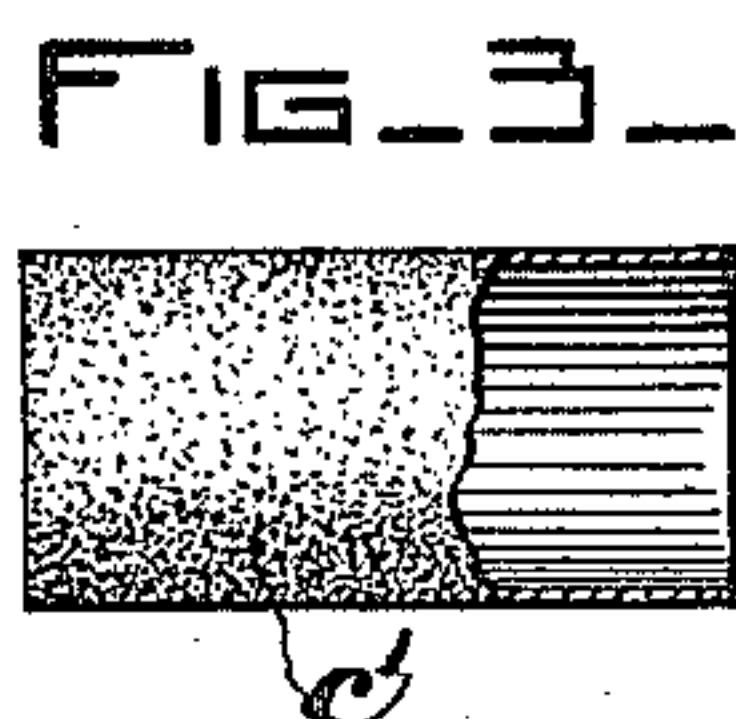
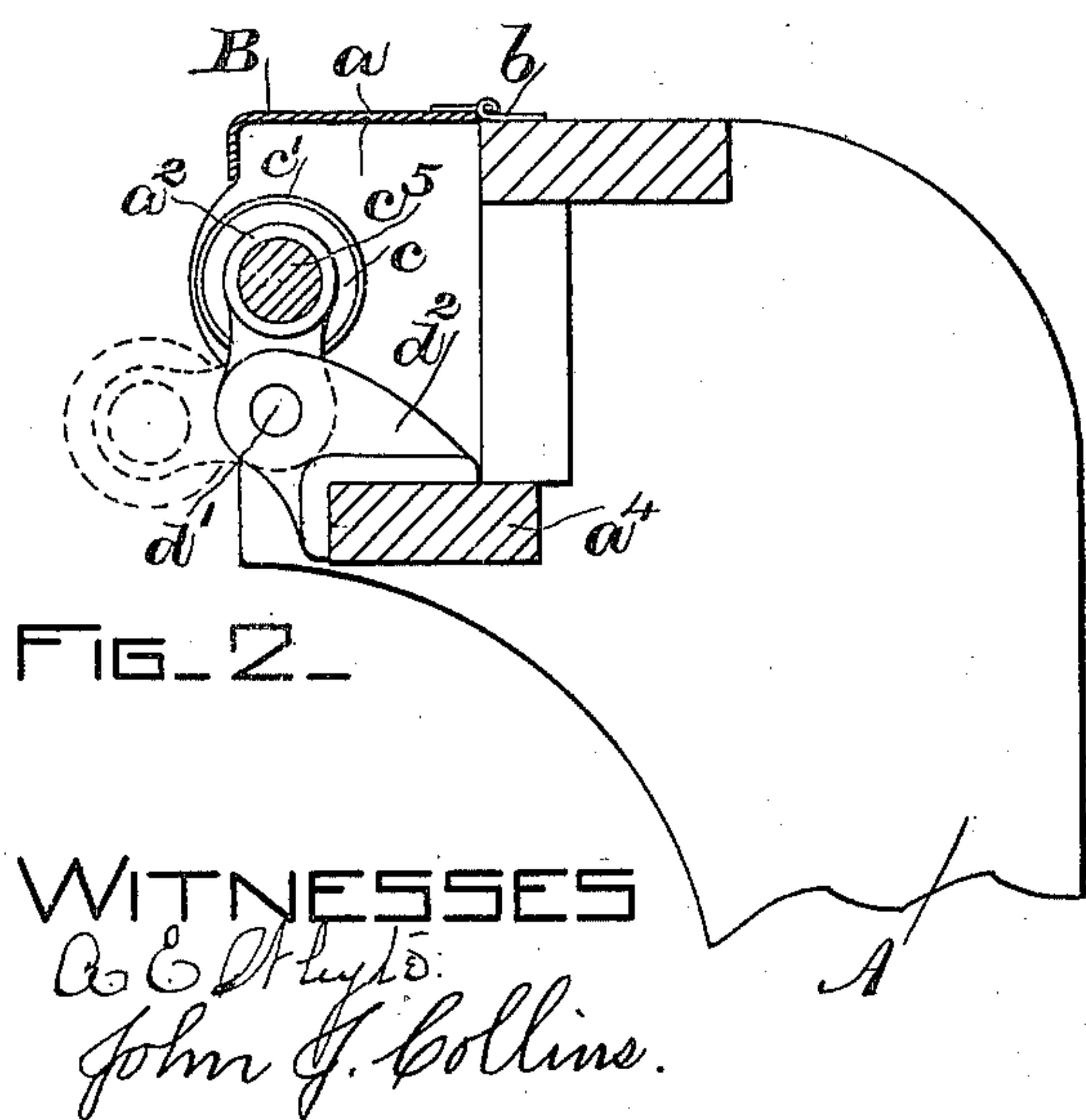
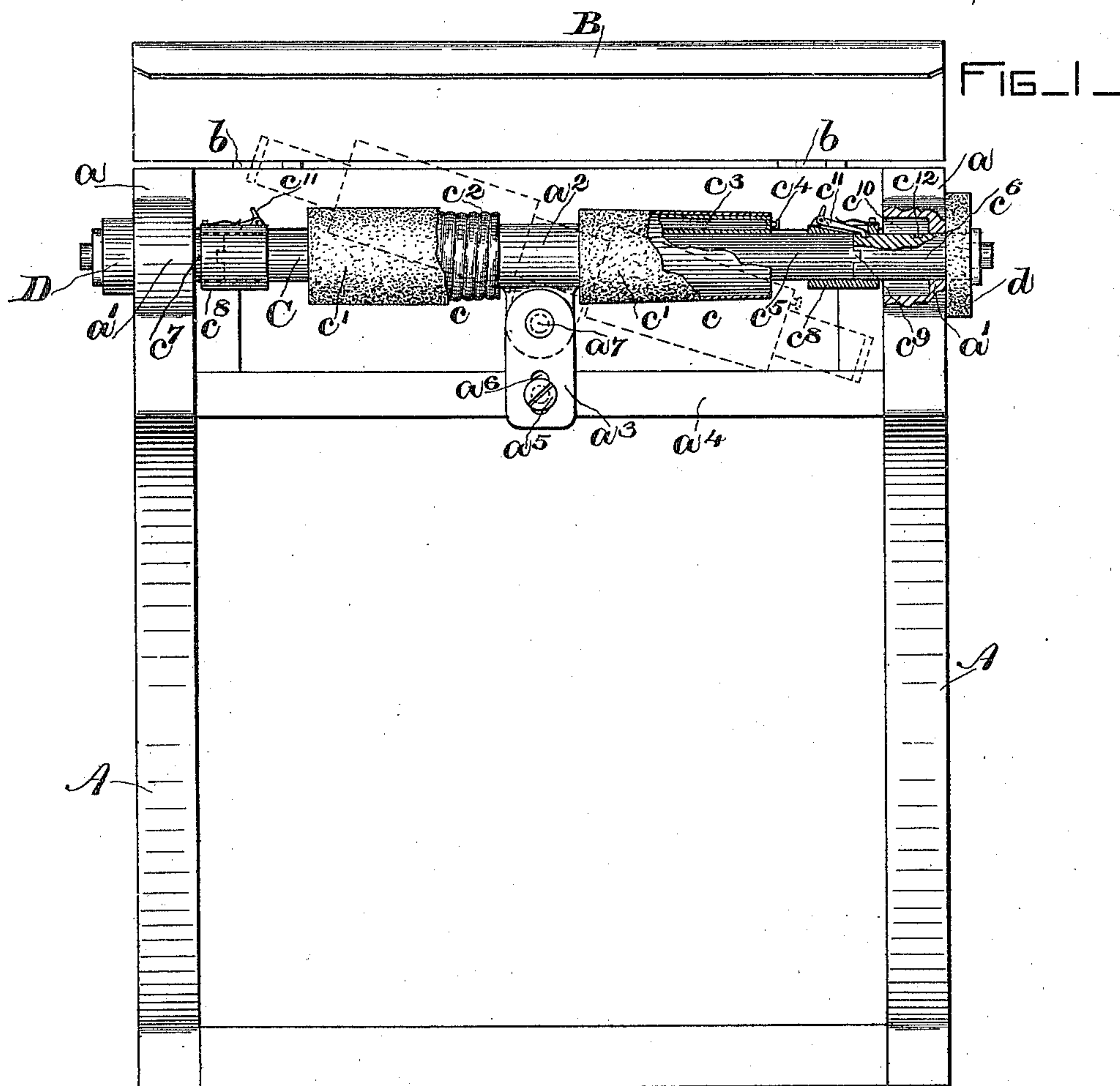
(No Model.)

J. H. RYDER.

BUFFING OR SANDPAPERING MACHINE.

No. 600,933.

Patented Mar. 22, 1898.



INVENTOR  
*Joshua H. Ryder,*  
 By his attorneys,  
*Phillips & Anderson*



# UNITED STATES PATENT OFFICE.

JOSHUA HATCH RYDER, OF BROCKTON, MASSACHUSETTS, ASSIGNOR OF  
ONE-HALF TO HARRY C. FISH, OF SAME PLACE.

## BUFFING OR SANDPAPERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 600,933, dated March 22, 1898.

Application filed July 2, 1897. Serial No. 643,198. (No model.)

*To all whom it may concern:*

Be it known that I, JOSHUA HATCH RYDER, a citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Buffing or Sandpapering Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to boot and shoe machinery, and more particularly to a machine for buffing or scouring the soles and heels of boots and shoes. These machines are commonly provided with a buffing-roll mounted upon a revolving shaft or arbor and having secured thereto some suitable abrasive material, such as sandpaper or emery-cloth, and they are arranged to be rapidly revolved, whereby the abrasive material is adapted to act upon or buff the surface of a sole or heel of a boot or shoe presented thereto.

The object of the present invention is to produce a machine of this character in which the buffing-roll carrier is so constructed that the sandpaper or other abrasive material may be quickly and easily applied thereto and readily removed when worn out and to so construct the buffing-rolls that an improved action of the abrasive material upon the object upon which it is acting will be secured.

To the above end the present invention consists of the devices and combination of devices which will be hereinafter set forth and claimed.

The present invention is illustrated in the accompanying drawings, in which—

Figure 1 shows a front elevation of a machine embodying the same. Fig. 2 shows a transverse vertical section of the upper part of the machine, showing a modification of the invention. Fig. 3 shows a tube of abrasive material which is designed to be used with my invention.

Similar letters of reference designate corresponding parts throughout the several views.

In the drawings, A represents a frame of suitable size and shape to support the working parts. At its upper end the frame A has

the forwardly-projecting arms *a*, as shown in Fig. 2.

B represents a cover or hood which is hinged to the top of frame A and *b* and which can be turned down in the position shown in Fig. 2, thereby forming a hood which facilitates the removal from the machine of the dust produced by the buffing-rolls which operate upon the sole of a boot or shoe.

In the arms *a* are formed bearings *a'*, in which is mounted to revolve an arbor or shaft C, said shaft also being supported centrally by a bearing *a''*, which is carried by a bracket *a'''*, adjustably mounted upon a cross-piece *a''''* of the frame A by means of a set-screw *a'''''* passing through a slot *a''''''* in the bracket *a'''*.

Upon the arbor or shaft C are fixedly secured the buffing-rolls *c*, which are preferably arranged upon opposite sides of the bearing *a''*. Upon each buffing-roll *c* is secured a buffing or abrasive surface *c'*, of emery-cloth, sandpaper, or any other abrasive material.

In order that the tube of abrasive material *c'* shall be frictionally held upon the rolls *c*, I preferably provide said rolls *c* with a corrugated or fluted cushion, as shown at *c''*, which may comprise a hollow tube wound spirally upon the shaft or arbor C and provided with a suitable valve whereby it may be inflated, or, if desired, said fluted cushion may be formed of a solid rubber or other cord wound upon the shaft or arbor and secured thereon in any suitable manner, or the cushion of the buffing-roll may be provided with a plain face, as shown at *c'''*, consisting of a hollow rubber cushion having a valve *c''''* at one end whereby it may be inflated, and the cushion *c'''* is preferably formed tapering from its inner to its outer end, as shown in the drawings, for a purpose hereinafter described.

In order that the abrasive material *c'* may be quickly applied to the rolls, said material is formed in the shape of a tube, the inner diameter of which is of such a size relative to the outer diameter of the buffing-rolls *c* that when placed on said rolls there will be a frictional contact between the inner surface of the tube of abrasive material and the outer surface of the buffing-rolls *c*. To provide for the ready removal of the tube of abrasive ma-



terial  $c'$  when worn out and the substitution of a new tube of abrasive material to the buffing-rolls  $c$ , I have made the shaft or arbor C in sections  $c^5$ ,  $c^6$ , and  $c^7$ , whereby the section  $c^5$ , that carries the buffing-rolls  $c$ , can be moved into and out of alinement with the sections  $c^6$  and  $c^7$ , and have provided suitable coupling devices  $c^8$ , whereby the sections of the shaft or arbor C may be suitably connected to rotate together when brought into alinement, as shown in full lines, Figs. 1 and 2. To secure the above-suggested result in the machine of the drawings, the section  $c^5$  of the shaft or arbor C is arranged to be moved into and out of alinement with the sections  $c^6$  and  $c^7$ , and for this purpose, as shown in Fig. 1 of the drawings, the bearing  $a^2$  is arranged to have a tilting motion upon the bracket  $a^3$ , it being fulcrumed at  $a^7$  to the bracket  $a^3$ , whereby it can be tilted or inclined with reference to the sections of the shaft or arbor  $c^6$  and  $c^7$ , as shown in dotted lines, Fig. 1. When in the position shown in dotted lines, the tube of abrasive material  $c'$  can be removed from the buffing-rolls  $c$  and a new abrasive tube placed on the buffing-rolls  $c$ , as will be apparent from an inspection of the drawings. When the abrasive material has been placed upon the buffing-rolls  $c$ , as suggested, the section  $c^5$  of the shaft or arbor C is brought into the position shown in full lines in Fig. 1 in alinement with the sections  $c^6$  and  $c^7$ , and the sections  $c^5$ ,  $c^6$ , and  $c^7$  are coupled together by the couplings  $c^8$ , whereby the sections will rotate together and impart a rotation to the buffing-rolls  $c$ , mounted upon the section  $c^5$ . The adjacent ends of the sections  $c^5$ ,  $c^6$ , and  $c^7$  are provided with a tongue-and-groove connection (indicated at  $c^9$ ) to insure the correct and positive coupling of the sections to secure rotation, and when coupled together the adjacent ends of the sections are arranged to be locked by the sliding couplings  $c^8$ , as hereinbefore suggested. These couplings  $c^8$  are arranged to slide along the shaft or arbor C and preferably toward and from the sides of the frame A along the sections  $c^6$   $c^7$ , suitable recesses  $c^{10}$  being formed in the bearings  $a$  on the sides of the frame A to receive the couplings  $c^8$ . When they are moved along the sections  $c^6$  and  $c^7$  to retain them in their inner and outer positions, they are preferably provided with a suitable latch, preferably a spring-controlled latch  $c^{11}$ , arranged to engage suitable apertures  $c^{12}$ , formed in the sections  $c^6$  and  $c^7$ . Upon the outer end of the section  $c^7$  is arranged a suitable driving-pulley D, whereby motion may be imparted to the shaft or arbor C to rotate the buffing-rolls  $c$ , and, if desired, a buffing-wheel  $d$  may be secured to the outer end of the section  $c^6$ , as clearly shown in Fig. 1. The above-described arrangement is such that when the section  $c^5$ ,  $c^6$ , and  $c^7$  of the shaft or arbor C are brought into alinement, as shown in full lines, and coupled together the sections are rotated in unison and rotate the buffing-rolls  $c$ . When

it is desired to remove and renew the abrasive material, the sections  $c^5$ ,  $c^6$ , and  $c^7$  of the shaft or arbor C are uncoupled and the sections  $c^5$  inclined in a position shown in dotted lines, Fig. 1, whereby the tube of abrasive material may be removed and replaced with a new tube of abrasive material.

In the modification shown in Fig. 2, instead of the section  $c^5$  of the shaft or arbor C being arranged to be inclined, as shown in Fig. 1, the bearing  $a^2$  is arranged to swing outwardly and downwardly, as shown in dotted lines, it being fulcrumed at  $d'$  to the bracket  $d^2$ , and thus bring the ends of the section  $c^5$  into and out of alinement with the sections  $c^6$  and  $c^7$ .

It will be obvious that instead of extending the section  $c^5$  of the shaft or arbor C upon opposite sides of the bearing  $a^2$  and providing it with two buffing-rolls said section  $c^5$  may extend in one direction only from the bearing  $a^2$  and be provided with one buffing-roll  $c$ , which section may be raised and lowered with reference to the section  $c^7$  for the removal of the abraded material, as hereinbefore set forth.

In the operation of my invention the sections of the shaft are moved relatively to each other so as to bring the said sections out of alinement with each other, and the tube of abrasive material which has become worn is removed and a new tube quickly slipped into position upon the buffing-roll, where it is frictionally held, as will be clear from the foregoing description, when the sections of the shaft or arbor are again brought into alinement and coupled ready for the operation of the machine.

By making the buffing-roll and tube of abrasive material tapering, as hereinbefore set forth, the tube can be more readily slipped over the roll and can be forced into close frictional contact with the surface of the said roll.

I desire to state that, so far as I am at present aware of the state of the art, it has never been proposed to provide a machine of this character with a buffing-roll mounted upon a sectional shaft or arbor arranged to be moved into and out of alinement with each other for the ready application of the abrasive material thereto, and I therefore do not consider the present invention as limited to the details of mechanism herein shown and described the construction and mode of operation of my invention.

I claim as novel and desire to protect by Letters Patent of the United States—

1. In a buffing-machine, the combination with a sectional shaft or arbor, of a buffing-roll mounted thereon, means to relatively move the sections of the shaft or arbor out of alinement with each other, and a tube of abrasive material arranged on the buffing-roll, substantially as described.

2. In a buffing-machine, the combination with a sectional shaft or arbor, of a buffing-roll carried by the shaft or arbor, means ar-



5 ranged to permit the sections of the shaft or arbor to be moved into and out of alinement with each other, suitable coupling devices arranged to couple the sections of the shaft or arbor, and means to rotate said shaft or arbor, substantially as described.

10 3. In a buffing-machine, the combination with a sectional shaft or arbor, of a plurality of buffing-rolls mounted upon one of the sections of said shaft or arbor, removable tubes of abrasive material mounted upon the buffing-rolls, means to permit the sections of the shaft or arbor to be moved into and out of alinement with each other, suitable coupling devices arranged to couple the sections of the shaft or arbor together, and means to rotate said sectional shaft or arbor, substantially as described.

20 4. In a buffing-machine, the combination with a sectional shaft or arbor, of a buffing-roll mounted on one section of said shaft or arbor and provided with a removable tube of abrasive material, means arranged to permit the section carrying the buffing-roll to be moved into and out of alinement with the other section, suitable coupling devices arranged to slide along the shaft or arbor to couple the sections together, and means to rotate said shaft or arbor, substantially as described.

30 5. In a buffing-machine, the combination

with a sectional shaft or arbor comprising end sections mounted in fixed bearings, and a tilting section mounted in a tilting bearing, of buffing-rolls mounted on said tilting section, and means to connect the sections of the shaft or arbor together, substantially as described. 35

6. In a buffing-machine, the combination with a sectional shaft or arbor comprising end sections mounted in fixed bearings, and a central section mounted in a tilting and vertically-adjustable bearing, of buffing-rolls carried by said central section and means to connect and disconnect the sections, substantially as described. 40 45

7. In a buffing-machine, the combination with a sectional shaft or arbor comprising a fixed section carrying a driving-pulley, and a section movable into and out of alinement with the fixed section, of a buffing-roll carried by the movable section, a tube of abrasive material arranged upon the buffing-roll, and means to connect and disconnect the sections of the shaft or arbor, substantially as described. 50 55

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

JOSHUA HATCH RYDER.

Witnesses:

HARRY C. FISH,  
WILLIAM E. PATCH.