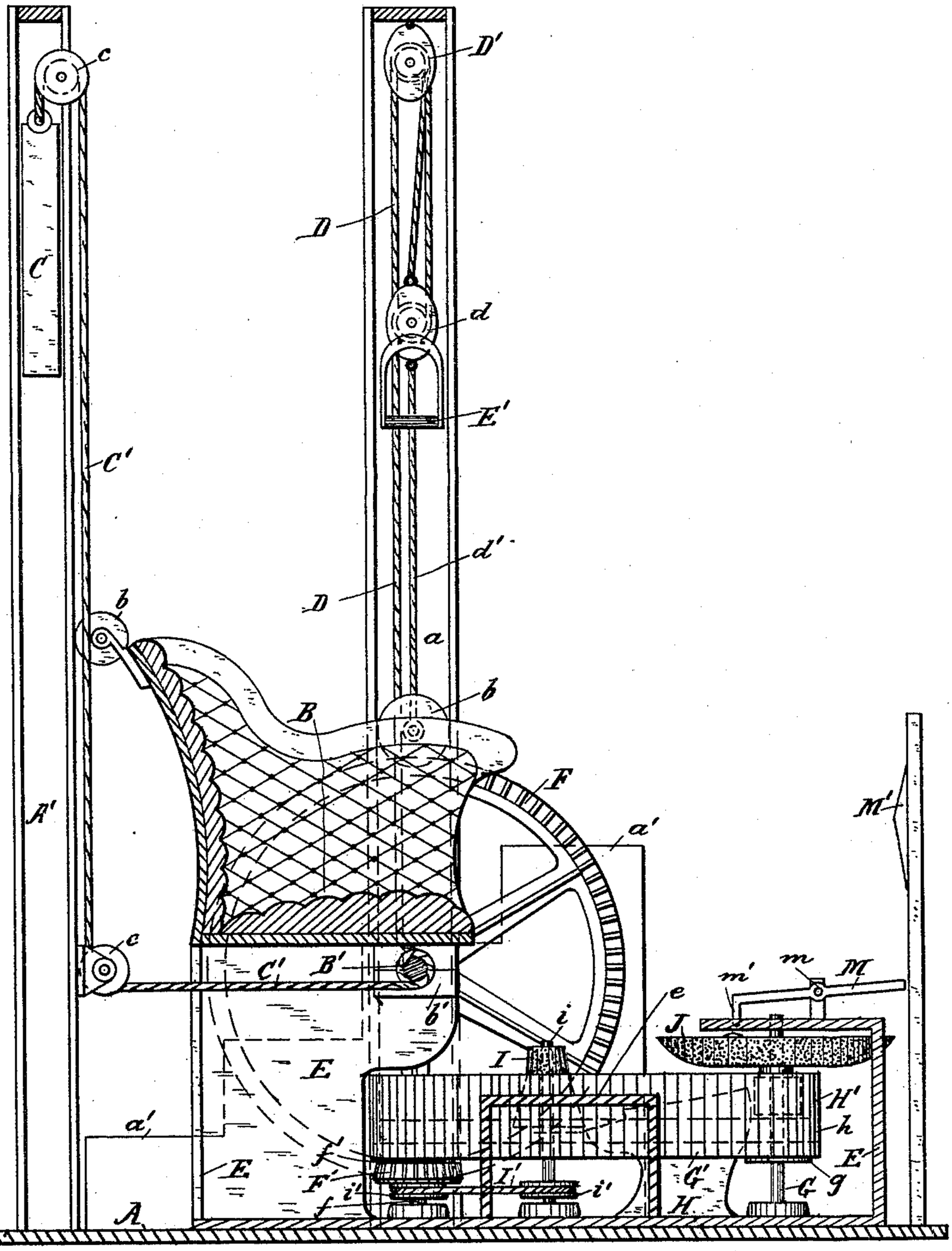
(No Model.) 3 Sheets—Sheet 1.

W. S. BADGER.

BOOT OR SHOE BLACKING AND BRUSHING MACHINE.

No. 432,008. Patented July 15, 1890.

Fig. 1.



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(No Model.) 3 Sheets—Sheet 2.

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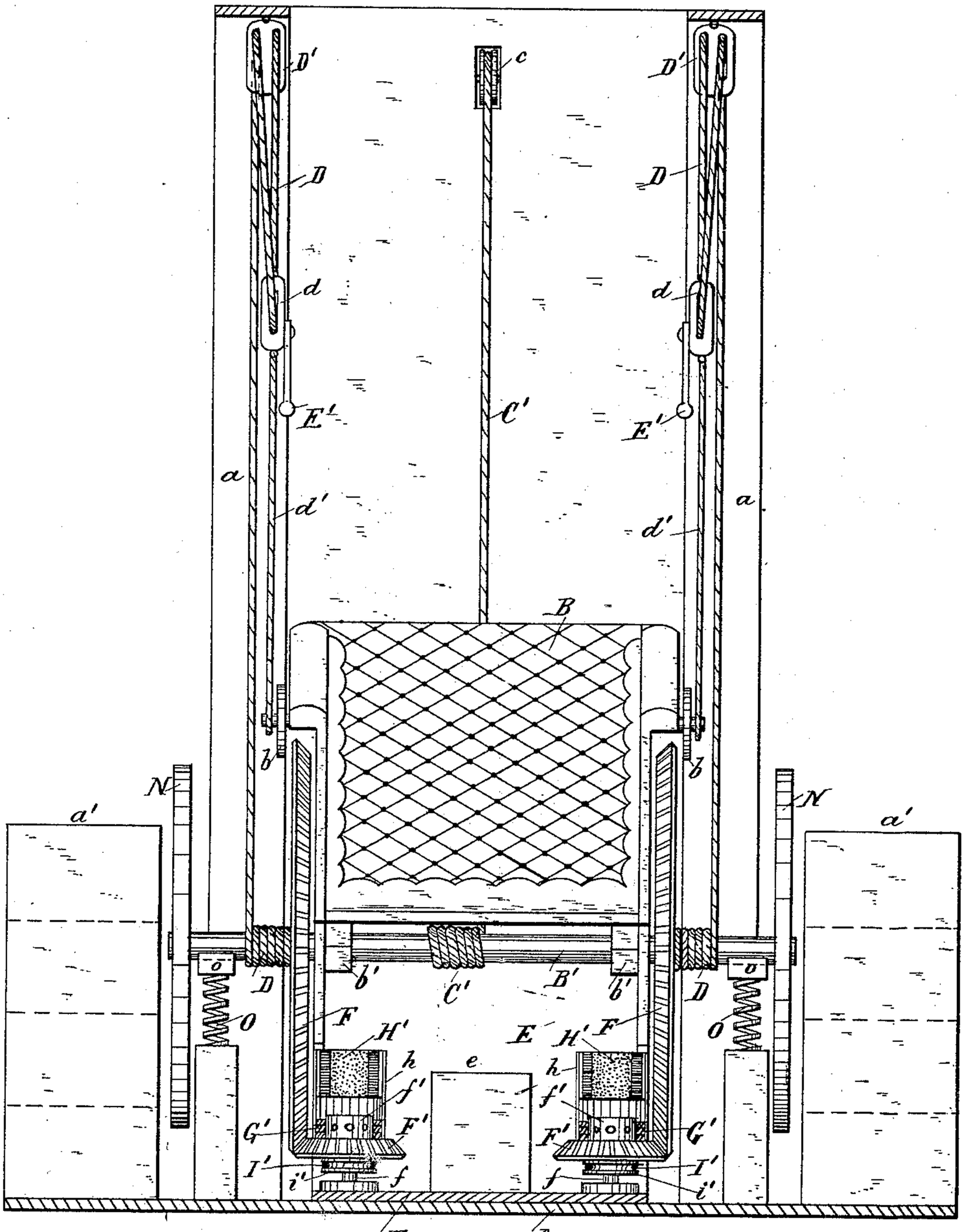
BOOT OR SHOE BLACKING AND BRUSHING MACHINE.

No. 432,008. Patented July 15, 1890.

Fig. 2.



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(No Model.) 3 Sheets—Sheet 3.

W. S. BADGER.

BOOT OR SHOE BLACKING AND BRUSHING MACHINE.

No. 432,008. Patented July 15, 1890.

Fig. 3.

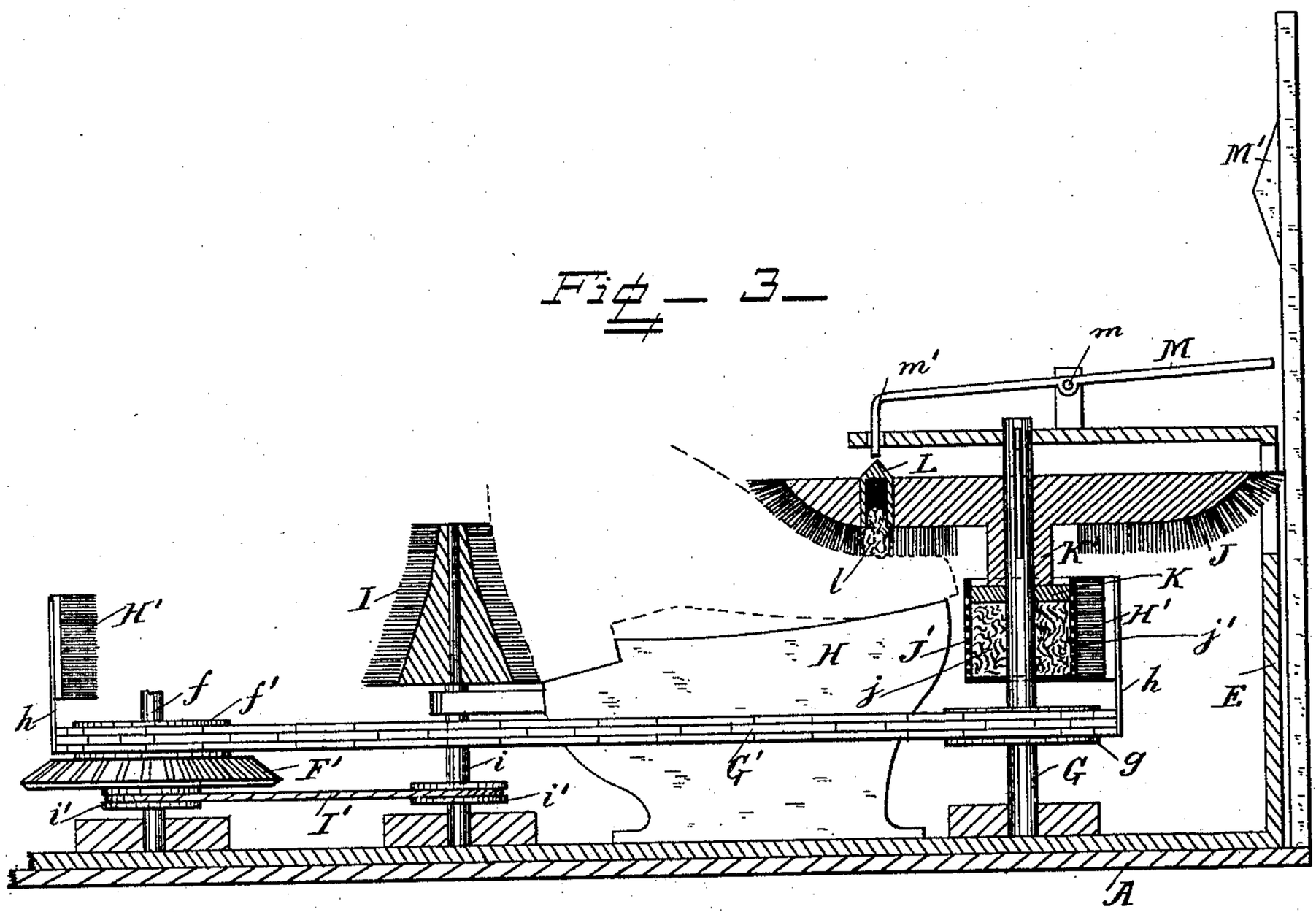
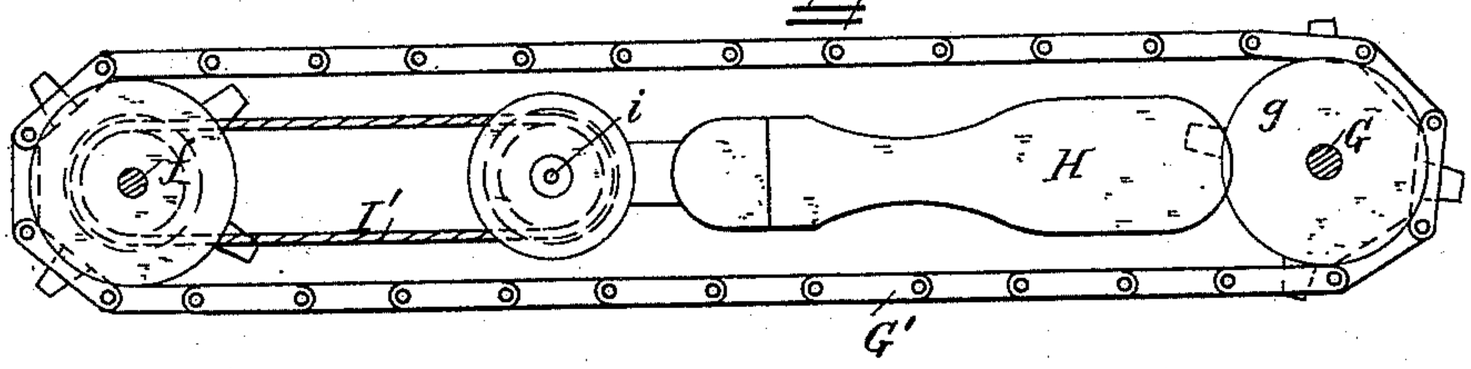


Fig. 4.



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UNITED STATES PATENT OFFICE.

WALTER S. BADGER, OF ST. JOSEPH, MISSOURI.

BOOT AND SHOE BLACKING AND BRUSHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 432,008, dated July 15, 1890.

Application filed September 23, 1889. Serial No. 324,851. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. BADGER, a citizen of the United States, residing at St. Joseph, in the county of Buchanan and State of Missouri, have invented certain new and useful Improvements in Shoe-Blacking 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.

This invention relates to blacking-machines; and it consists in the novel construction and combination of the parts, hereinafter fully described and claimed.

In the drawings, Figure 1 is a vertical section through the machine. Fig. 2 is a front view of the machine, partly in section. Fig. 3 is a longitudinal section through one of the blacking devices drawn to a larger scale; and Fig. 4 is a plan view of the foot-rest, drive-wheels, and drive-chain from above.

A is a foundation-plate, having rear uprights A′ and front uprights *a* secured to it, and provided with steps *a′* upon each side of the uprights.

B is a chair provided with guide-pulleys *b*, which bear against the uprights and permit the chair to have free vertical motion.

B′ is a shaft journaled in brackets *b′*, secured to the under side of the chair.

C is a heavy weight, which slides vertically between the uprights, and C′ is a cord, which is wound upon the shaft B′ and passes over guide-pulleys *c*, having its other end secured to said weight.

D are cords, which are wound upon the shaft B′ in the opposite direction from cord C′. These cords D pass through the stationary pulley-blocks D′, secured to the top of the front uprights, then through the moving pulley-blocks *d*, again through the pulley-blocks D′, and have their ends secured to the moving pulley-blocks *d*. The moving pulley-blocks *d* are connected to the chair by the cords *d′*.

E is a frame secured to the chair for carrying the brush-actuating mechanism, which moves vertically with the chair.

E′ are handles secured to the moving pulley-blocks. The weight is very heavy, and in its descent it causes the cord C′ to revolve the shaft B, thereby winding the cords D upon said shaft and raising the chair between the uprights. The chair is shown in its lowest position and about to be raised automatically by the weight. Any other equivalent means for raising the chair may be used. When the chair is at its highest position, the platform *e* of frame E comes about level with the top of the steps. Any one desiring to use the machine mounts the steps and sits down in the chair, first grasping the handles E′, which prevent the chair from descending. The feet being placed in proper position for the shoes to be blacked, the handles are let go and the weight of the person in the chair causes said chair to descend, raising the weight and revolving shaft B′, which actuates the blacking mechanism, which will hereinafter be fully described.

O are springs secured to uprights upon the foundation-plate, and *o* are brake-blocks, which bear against the shaft B′ just before the chair reaches its lowest point, so that both chair and revolving shaft are gradually brought to rest.

F are beveled-tooth wheels secured on shaft B′, which gear into the beveled tooth-pinions F′, which are secured on shafts *f*, journaled in brackets secured to the frame E.

N are fly-wheels also secured to shaft B′. G are shafts which are also journaled in frame E. The shafts *f* have chain-wheels *f′* secured to them, and the shafts G have similar chain-wheels *g*. G′ is a drive-chain, which passes around said wheels *f′* and *g*, thereby causing them to revolve simultaneously.

H are foot-rests secured to frame E, between the drive-chains. H′ are the side brushes, which are secured to the links of said drive-chains by handles *h*, formed of spring-steel, so that the brushes adapt themselves to the shoes. Only two of these brushes are shown in Fig. 3 for clearness. When the links of the drive-chain are of moderate length, a separate brush may be attached to each link, if long links are used more than one brush may be attached to each link, and if very short links are used the brushes may be attached to the chain at intervals as found convenient.

I are the heel-brushes, secured upon shafts *i*, which are journaled between the drive-chains. Cords I′ communicate the rotary

motion of shafts *f* to shafts *i*, both of said shafts being provided with drive-pulleys *i'* for said cords to pass around.

J are the toe-brushes splined upon shafts G, so that they may move vertically and adapt themselves to the shoes, against which they are pressed by their own weight.

J' are receptacles for blacking, secured upon shafts G, below the toe-brushes. The blacking is mixed with the cotton *j* or other absorbent material and placed in said receptacles, whence it oozes out through the perforations *j'*, in the sides of said receptacles, onto the side brushes H'.

K are heavy washers in the receptacles for compressing the absorbent material.

K' are bosses on toe-brushes J for further compressing the cotton.

L are daubers sliding vertically in pockets formed in the toe-brushes J. These daubers consist of hollow cups filled with blacking, and having sponges *l* at their lower ends, which sponges are consequently kept saturated with blacking. The tops of the daubers are beveled and project slightly above the backs of the toe-brushes.

M are levers pivoted to uprights upon the frame E by pins *m*, and M' are inclined projections supported from any convenient standard upon the foundation-plate or from the steps. The ends of the levers M are adapted to engage with these projections as the frame E descends, and the projections depress the bent ends *m'* of the levers so that the daubers strike against said ends and the blacking-sponges are pressed against the shoe-tops. The elasticity of the sponges raises the daubers as soon as they leave the ends of levers M. The projections M' are so located that the chair will descend for a certain distance before the levers M strike them, and the brushes clean the shoes from dirt during this portion of the descent of the chair.

The blacking is applied to the shoes while the levers are in contact with the projections, and the downward pressure of the bent ends of the levers upon the backs of the revolving toe-brush may also cause the bosses of the said toe-brushes to press out the blacking in receptacles J' onto the side brushes, if desired, as well as to operate the toe-daubers during that time. When the levers leave the projections, the shoes are polished by the brushes until the chair arrives at its lowest position, when the operation is complete.

I do not confine myself to the use of the blacking devices in combination with the vertically-movable chair, as these devices can be used separately.

What I claim is—

1. The combination, with the stationary uprights, of the chair sliding vertically between said uprights, a shaft journaled in bearings secured to the chair, intermediate driving mechanism connecting the chair and shaft, whereby the said shaft may be revolved by the vertical motion of said chair, and revoluble shoe-brushes operatively connected with said shaft, substantially as and for the purpose set forth.

2. The combination, with the stationary uprights, of the chair sliding vertically between said uprights, a shaft journaled in bearings secured to the chair, cords wound upon said shaft and connected to the uprights, a second cord wound upon said shaft in the reverse direction from the aforesaid cords, a mechanical device for pulling the second cord and thereby raising the chair, and revoluble shoe-brushes operatively connected to said shaft and operated by the motion of the chair, substantially as and for the purpose set forth.

3. The combination, with the stationary uprights, of the chair sliding vertically between them, a shaft journaled in bearings secured to the chair, the moving pulley-blocks connected to the chair, the stationary pulley-blocks secured to the uprights, the cords wound upon said shaft and passing through said pulley-blocks, a cord wound upon said shaft in the reverse direction from the aforesaid cords, the cord-guide pulleys, a mechanical device for pulling the cord, and thereby raising the chair, and revoluble shoe-brushes operatively connected to said shaft and operated by the vertical motion of the chair, substantially as and for the purpose set forth.

4. The combination, with the chair, of the revoluble shaft journaled in bearings secured to the chair, a beveled toothed wheel secured on said shaft, a beveled toothed pinion mounted on a vertical shaft and gearing into said bevel-wheel, and the revoluble side, heel, and toe shoe-brushes operatively connected to said vertical shaft, substantially as and for the purpose set forth.

5. The combination, with the foot-rest, of the drive-chain encircling said foot-rest, the revoluble vertical shafts provided with drive-wheels for said chain, and a series of side brushes provided with spring-handles connecting them to the drive-chain, substantially as and for the purpose set forth.

6. The combination, with the foot-rest, of the drive-chain encircling said foot-rest, the revoluble vertical shafts provided with drive-wheels for said chain, the toe-brush splined to one of said shafts, and the revoluble heel-brush mounted on a vertical shaft and also encircled by the said drive-chain, substantially as and for the purpose set forth.

7. The combination, with the side brushes, the drive-chain, the chain-wheels, and the vertical shafts for operating them, of a perforated receptacle for the brushes to bear against secured to one of said shafts and filled with absorbent material and blacking, and a washer for compressing said absorbent material in the receptacle, substantially as and for the purpose set forth.

8. The combination, with the revoluble toe-brush provided with a pocket, of the dauber sliding vertically in said pocket and provided with a beveled upper end, a pivoted lever

adapted to depress the dauber when the said beveled end strikes against it, and an inclined projection adapted to operate said lever at intervals, substantially as and for the purpose set forth.

9. The combination, with the vertically-movable chair and the revoluble shaft journaled under the chair, of the springs and the brake-blocks secured to the foundation, whereby both the rotary motion of the shaft and the vertical motion of the chair and shaft are retarded just before the chair reaches its lowest position, substantially as set forth.

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

WALTER S. BADGER.

Witnesses:
HERBERT W. T. JENNER,
CHARLES ARDERY.