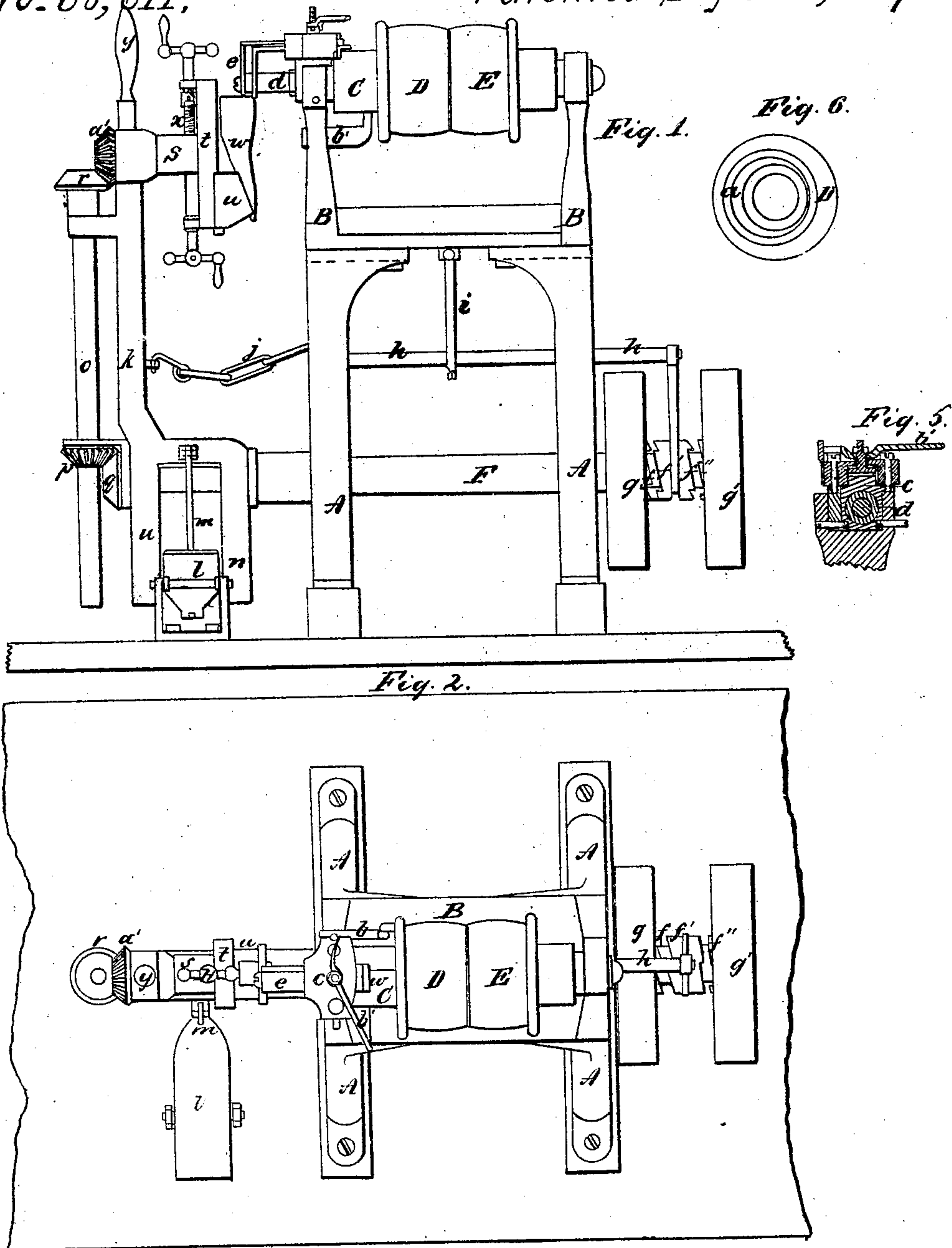


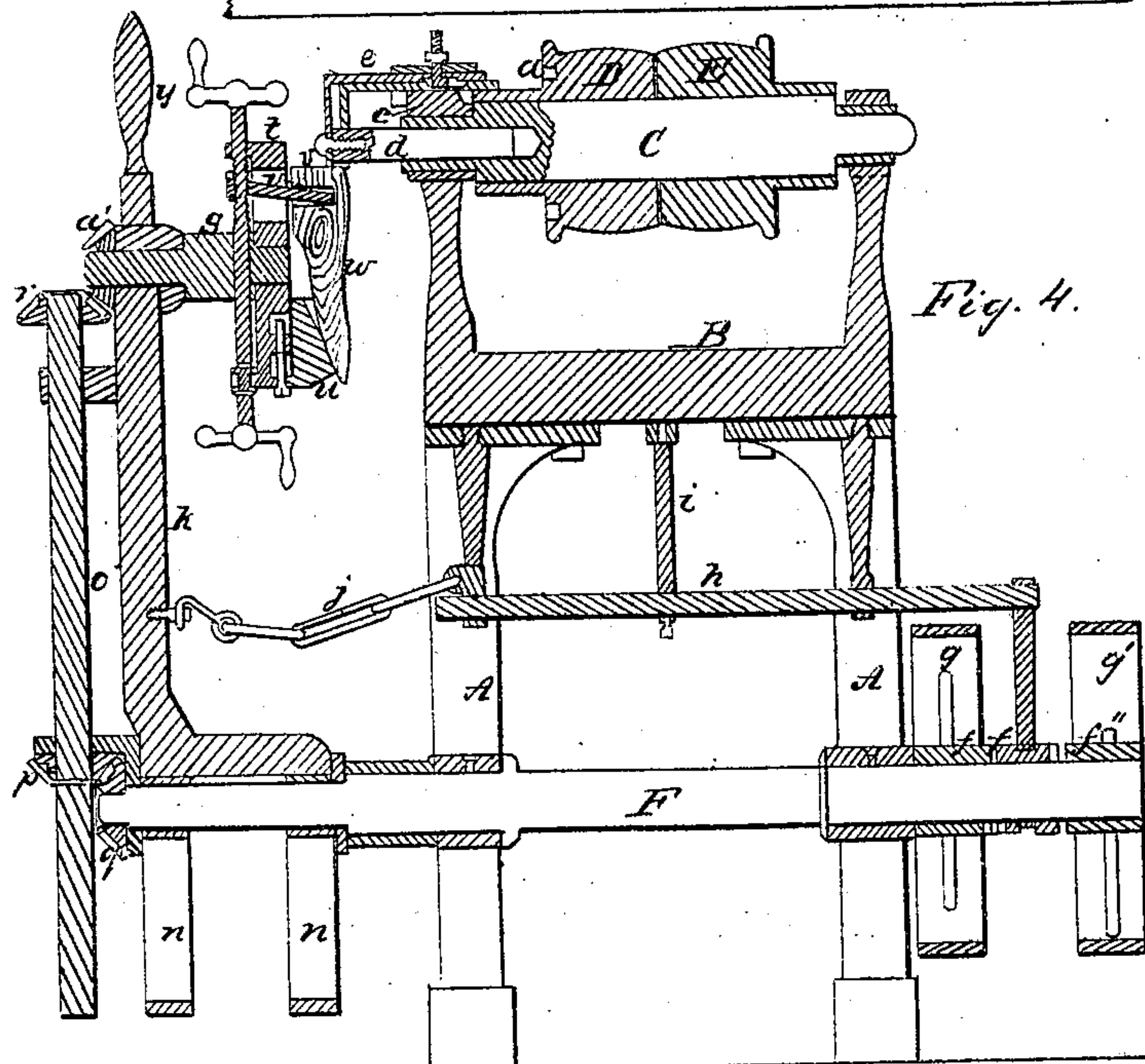
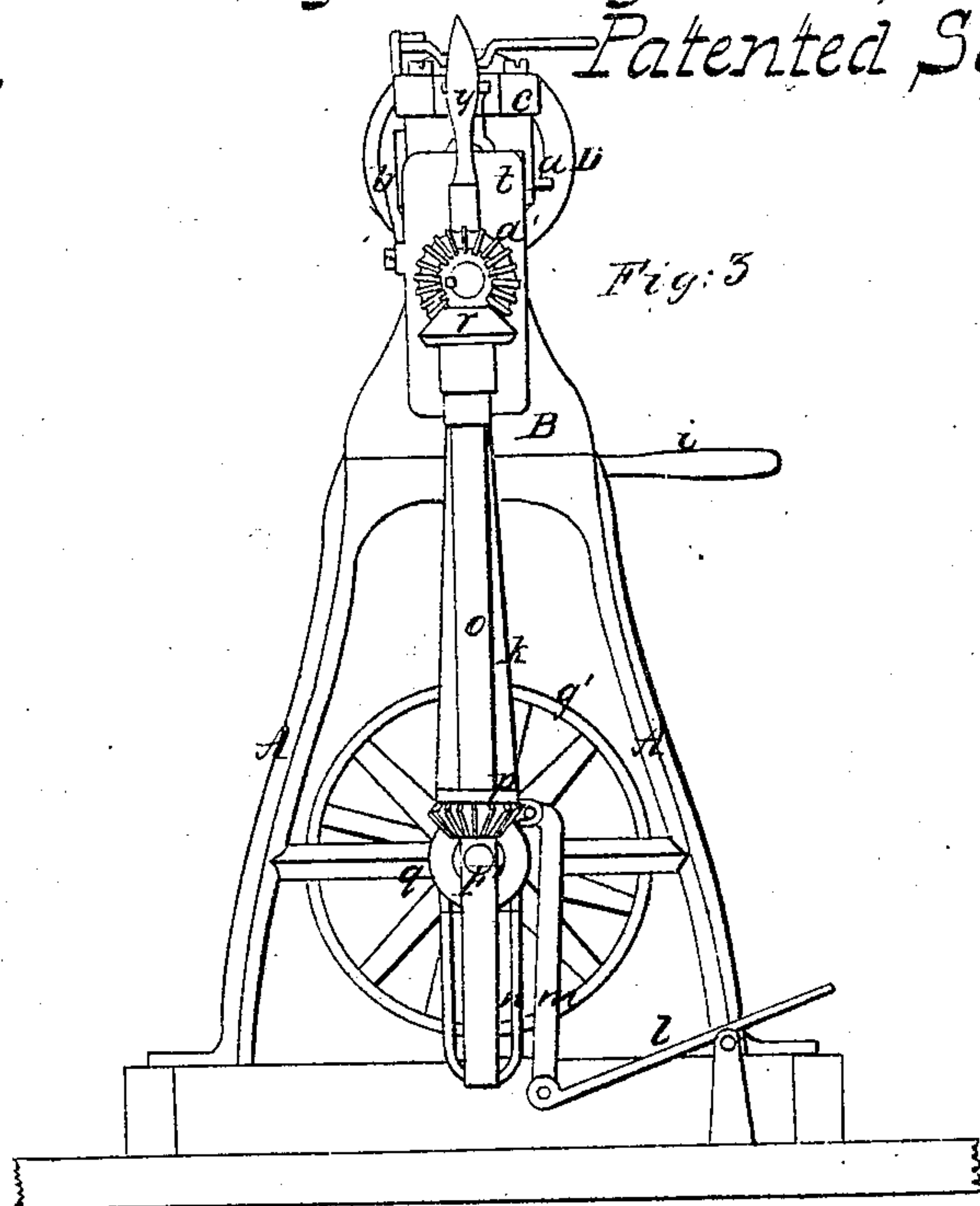
E. B. Cushing,
Machine for Burnishing the Edges of the
Soles of Boots & Shoes,
No. 68,611, Patented Sept. 10, 1867.



Witnesses.
H. B. Platts
S. F. Samuels

Inventor
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Machine for Burnishing the Edges of the
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Witnesses.
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United States Patent Office.

EMORY B. CUSHING, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND ALBERS R. CUSHING, OF SAME PLACE.

Letters Patent No. 68,611, dated September 10, 1867.

IMPROVED MACHINE FOR BURNISHING THE EDGES OF THE SOLES OF BOOTS AND SHOES.

The Schedule referred to in these Letters Patent and making part of the same.

TO WHOM IT MAY CONCERN:

Be it known that I, EMORY B. CUSHING, of Boston, in the county of Suffolk, and State of Massachusetts, have invented a new and useful Machine for Burnishing the Edges of the Soles of Boots and Shoes; and I hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification, of which—

Figure 1 is a side view of the machine.

Figure 2 is a top view of the machine.

Figure 3 is a front end view of the machine.

Figure 4 is a longitudinal section of the machine.

Figure 5 is a transverse section of the burnishing-tool and the sliding-box, &c.

Figure 6 is a front end view of the fast pulley, with its cam-groove, &c.

A represents the frame of the machine, supporting the head-stock B; C, its arbor; D, its fast pulley, and E its loose pulley; *a*, its cam-groove in the face of the pulley D; *b*, a bent arm, working in the groove *a*; *c*, a sliding-box of the arbor C; *b'*, a lever for operating the adjusting-slide *e*; *d*, the burnishing-tool; *e*, its adjusting-slide or gauge; *f f' f''*, the clutches; *g g'*, their pulleys; F, their shaft; *h*, a bent lever, working in the clutch *f'*; *i*, another bent lever, operating the lever *h*; *j*, a chain attached to the vibrating standard *k*; *l*, the treadle; *m*, its connecting-rod; *n n*, slotted arms of the standard *k*; *o*, its vertical shaft; *p*, its lower gear or scored wheel, operating against the elastic wheel *q* on the driving-shaft F; *r*, the elastic wheel on the upper end of the shaft *o*, working against the gear or scored wheel *d'*, fixed on the horizontal shaft *s*, supported by the upper part of the standard *k*; *t*, the cross-head, fixed to the other end of the shaft *s*, this cross-head carrying the sliding-rest *u*, dove-tailed to the cross-head *t*; *v*, the sliding-arm to enter the last *w*; *x*, the screw for regulating the rest *u* and sliding-arm *v*; *y*, the handle of the vibrating standard *k*.

In order that others may more fully understand the nature and use of my invention, and be enabled to manufacture the same, I will proceed to explain it.

Burnishing the edges of the soles of boots and shoes requires skill and much time. My invention performs this work with skill and rapidity, and I hereby explain the various parts of the machine and their uses, and the manner in which the burnishing is done.

By examining the accompanying drawings it will be perceived that A represents the framework, and supports the machine; that between the upper part of the framework or head-stock B B are two pulleys, the fast pulley D, and the loose pulley E; that the revolution of the fast pulley carries with it the arbor C and the burnishing-rod *d*; that at the end of the fast pulley D, next the arbor C, is a groove, in which plays the bent arm *b*, which is fastened to one of the sides of the head-stock; this groove is somewhat eccentric, (see fig. 6 in drawings,) so that, when the pulley revolves, the bent arm, sliding in the groove, causes a thrust or sliding motion back and forth, which nearly resembles the motion of the hand in burnishing; that above the arbor C is the sliding-box *c*; this sliding-box has within it the adjusting-slides or gauges *e*, and is operated by a lever, *b'*, which acts on the enclosed cam; that the burnisher *d* also is adjustable, and operates with the gauges, so that between the gauges the edge of the sole is held fast while it is being burnished. Figs. 1, 3, and 4 represent the standard *k*, and the various parts connected therewith. Motion is communicated to it by the shaft F, driven by the pulleys *g g'*; and this motion is further regulated by foot and hand motion upon the treadle *l* and the handle *y*. It will be perceived that the standard has two slotted arms *n n*, through which passes the shaft F, and that, by means of the treadle, the standard can be raised and lowered at pleasure, playing in these slotted arms. Outside of the standard is the shaft *o*, which is driven by gear or a scored wheel, operating against the elastic wheel at the end of the driving-shaft F. Instead of the elastic wheel, gear or a scored wheel may be used. The upper part of this shaft has on it an elastic band or gear or a scored wheel, connected with the gear or scored wheel *d'*, fixed on the horizontal shaft *s*, which is supported by the upper part of the standard *k*. The horizontal shaft has a cross-head, *t*, fixed at one end, carrying on it a sliding-rest, for the toe of the boot or shoe, dove-tailed to it. Fig. 4 shows the sliding-arm *v*, which enters the last *w*; and this is regulated by the screw *x*, which is held by the two arms of the cross-head *t* at each extremity. By

turning the screw in one direction it operates on the sliding-arm *v*, and the toe of the boot is brought tightly down upon the rest *u*, holding it firmly when ready for burnishing; but by turning the screw in the contrary direction the toe is loosened, and can be taken from the rest, &c. Figs. 1 and 4 show the chain *j*, fastened to the standard and the frame of the machine. This keeps the standard from falling too far to either side. Figs. 1 and 2 show the pulleys *g g'*, which give motion to the shaft *F*. *f f' f''*, also, are clutches, worked by a bent lever, *h*; and this lever is worked by another lever, *i*. When the lever *i* moves the clutch *f'* from the left to the right the clutch *f''* operates upon the pulley *g'*; and when the clutch *f'* is moved from the right to the left by the lever *h* the clutch *f* operates on the wheel *g*; and each running in the opposite direction the cross-head *t* carries the boot or shoe to be burnished in the one or the other direction, as desired.

Having thus described the various parts of the machine, it remains to show its operation. Suppose the lever *i* is at the left, causing the lever *h* to fasten the clutch *f'* upon the pulley *g*, and suppose the burnisher and gauge fastens upon the edge of the sole of the boot or shoe, near the heel upon the shank, the action of the shafts *F*, *o*, and *s* will cause the cross-head *t* to carry the boot or shoe from the heel around over the toe to the heel on the other side, from right to left, quickly performing the operation of burnishing. Loose the screw *x*, and take off the boot and put on another. Change the motion by carrying the lever *i* from left to right, which causes the clutch *f'* to fasten upon the pulley *g'*, and the opposite or return motion is effected, and the cross-head, carrying the boot, returns backward to the first position, burnishing from left to right. In this operation the workman keeps his foot upon the treadle, so that the boot is pressed up and lowered constantly under the burnisher, having one hand, also, upon the handle *y* of the vibrating standard to guide the work. To obtain the opposite motions from the pulleys *g g'* one pulley is moved by a cross-band, and the other by a straight band.

By the use of this machine several pairs of boots or shoes may be burnished while one pair is burnished by hand, thus gaining time and lessening expense. It is, therefore, of great practical utility, novel, and useful to the public.

I do not claim a heel-burnisher, but only a machine to burnish the edges of the soles.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. I claim the standard *k*, and the combination and arrangement of the machinery connected therewith, namely, the treadle *e*, the shafts *F*, *o*, and *s*, and their gearing, whereby the hand and foot movements are secured, so that the boot or shoe will follow the burnisher, substantially in the manner and for the purpose above set forth.

2. I claim the cross-head *t*, in combination with the screw *x*, the rest *u*, and the sliding-arm *v*, whereby any-sized boot or shoe is held, and also whereby the motion following the burnisher is secured, substantially in the manner and for the purpose above set forth.

3. I claim the combination and arrangement of the clutches *f f' f''* with pulleys *g g'*, whereby is secured the change motion of the cross-head, so that the boot or shoe can turn from one shank to the other, substantially in the manner and for the purpose above set forth.

4. I claim the combination and arrangement of the gauges or guides *e* to the burnishing-tool *d*, which do not revolve with the burnishing-tool, combined and in connection with the cam movements in the sliding-box *c*, whereby the guides are adjusted to the edges of the soles, substantially as set forth.

5. I claim the combination and arrangement of the cam-groove *a* and the bent arm *b*, working in the cam-groove in the face of the pulley *D*, whereby is secured the thrust or hand-like motion, substantially in the manner and for the purpose above set forth.

EMORY B. CUSHING.

Witnesses:

J. L. NEWTON,
A. R. CUSHING.