(No Model.) 3 Sheets—Sheet 1.

F. D. RICH.

MACHINE FOR SLASHING INNER SOLES.

No. 438,643. Patented Oct. 21, 1890.

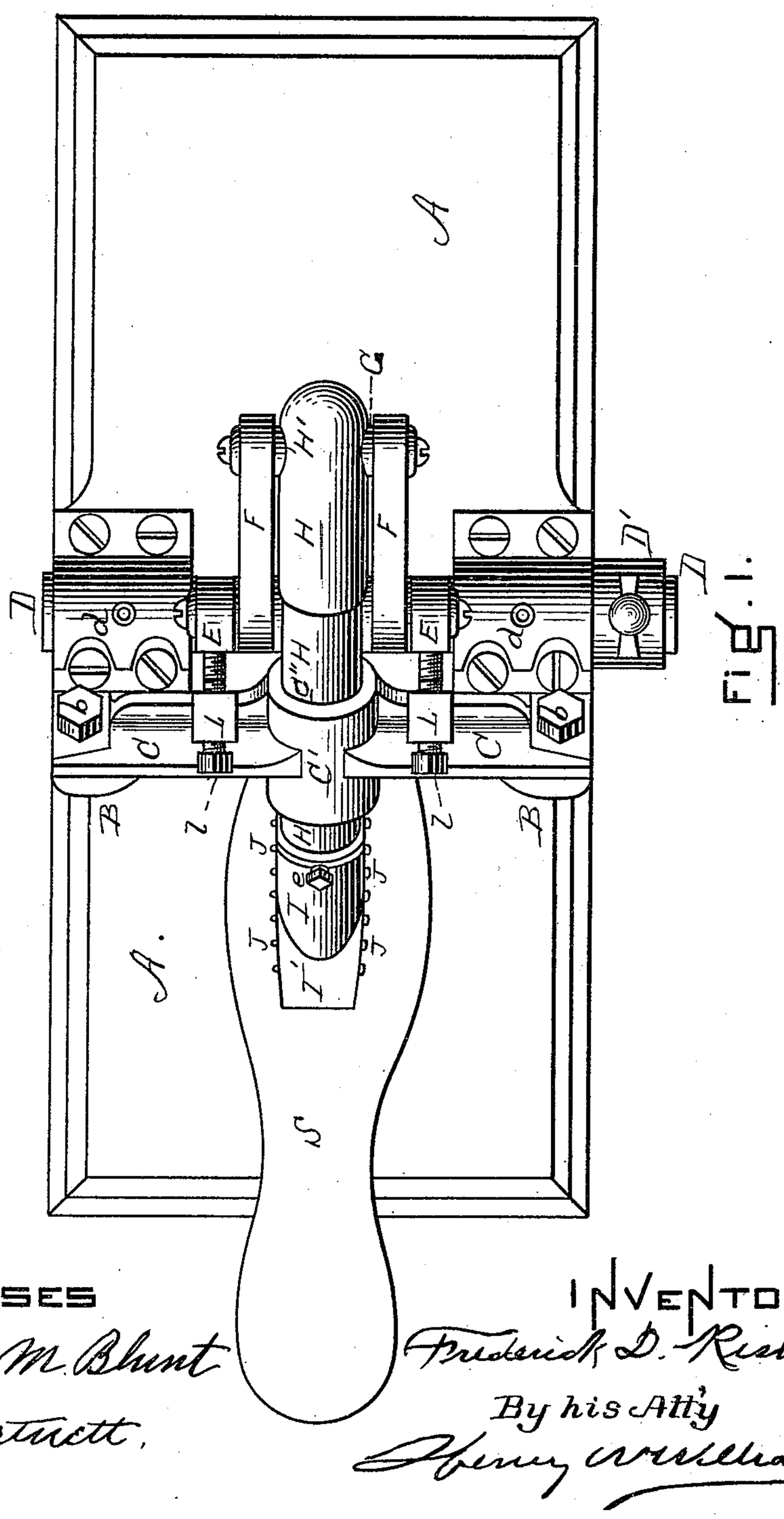

Fig. 1.

WITNESSES

Matthew M. Blunt

J. M. Hartnett.

INVENTOR

Frederick D. Rich

By his Atty

Henry A. Williams

(No Model.) 3 Sheets—Sheet 2.

F. D. RICH.

MACHINE FOR SLASHING INNER SOLES.

No. 438,643. Patented Oct. 21, 1890.

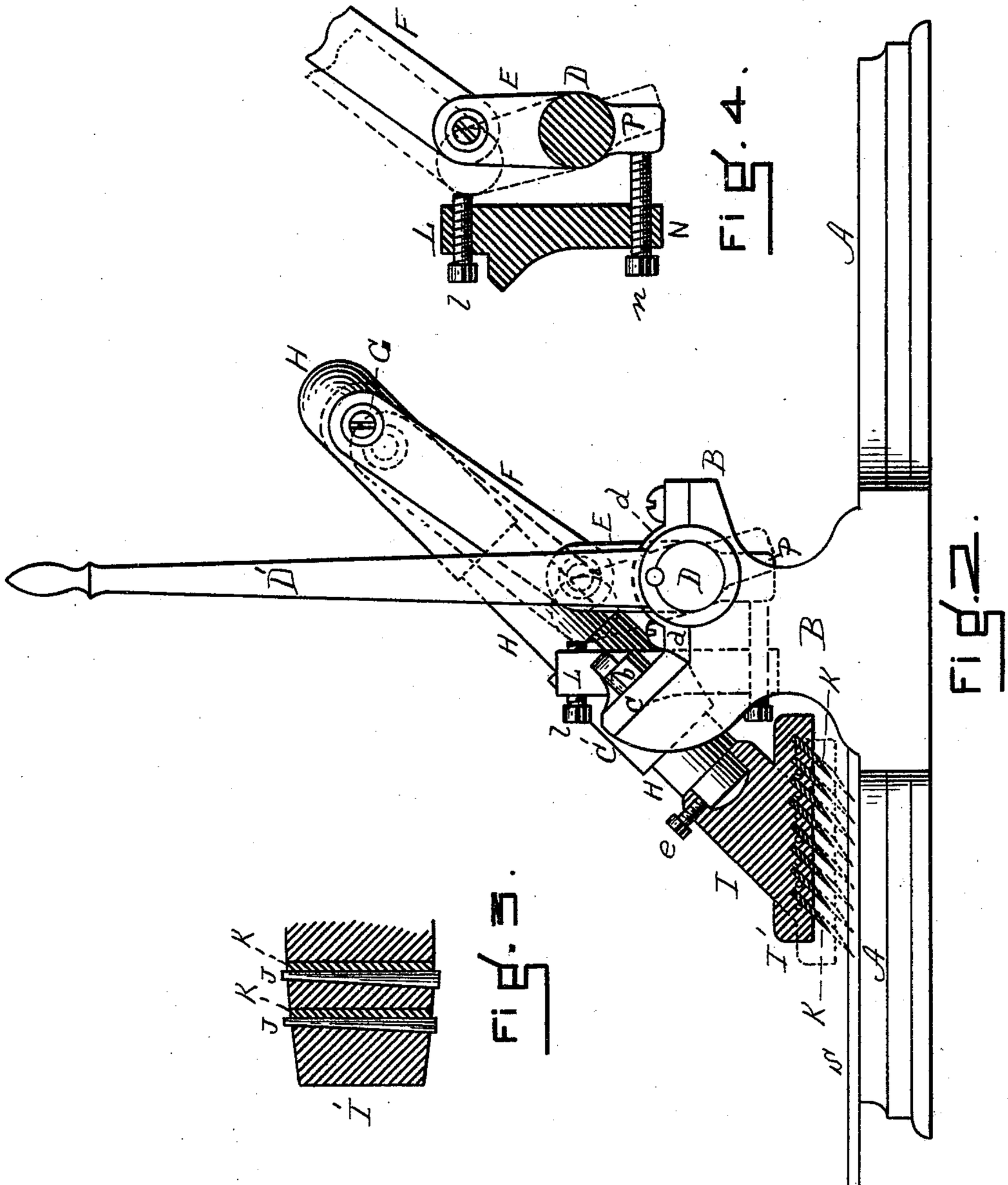

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

WITNESSES.

Matthew M Blunt.

J. M. Hartnett.

INVENTOR

Frederick D. Rich,

By his Atty.

Henry C. Williams

(No Model.) 3 Sheets—Sheet 3.

F. D. RICH.

MACHINE FOR SLASHING INNER SOLES.

No. 438,643. Patented Oct. 21, 1890.

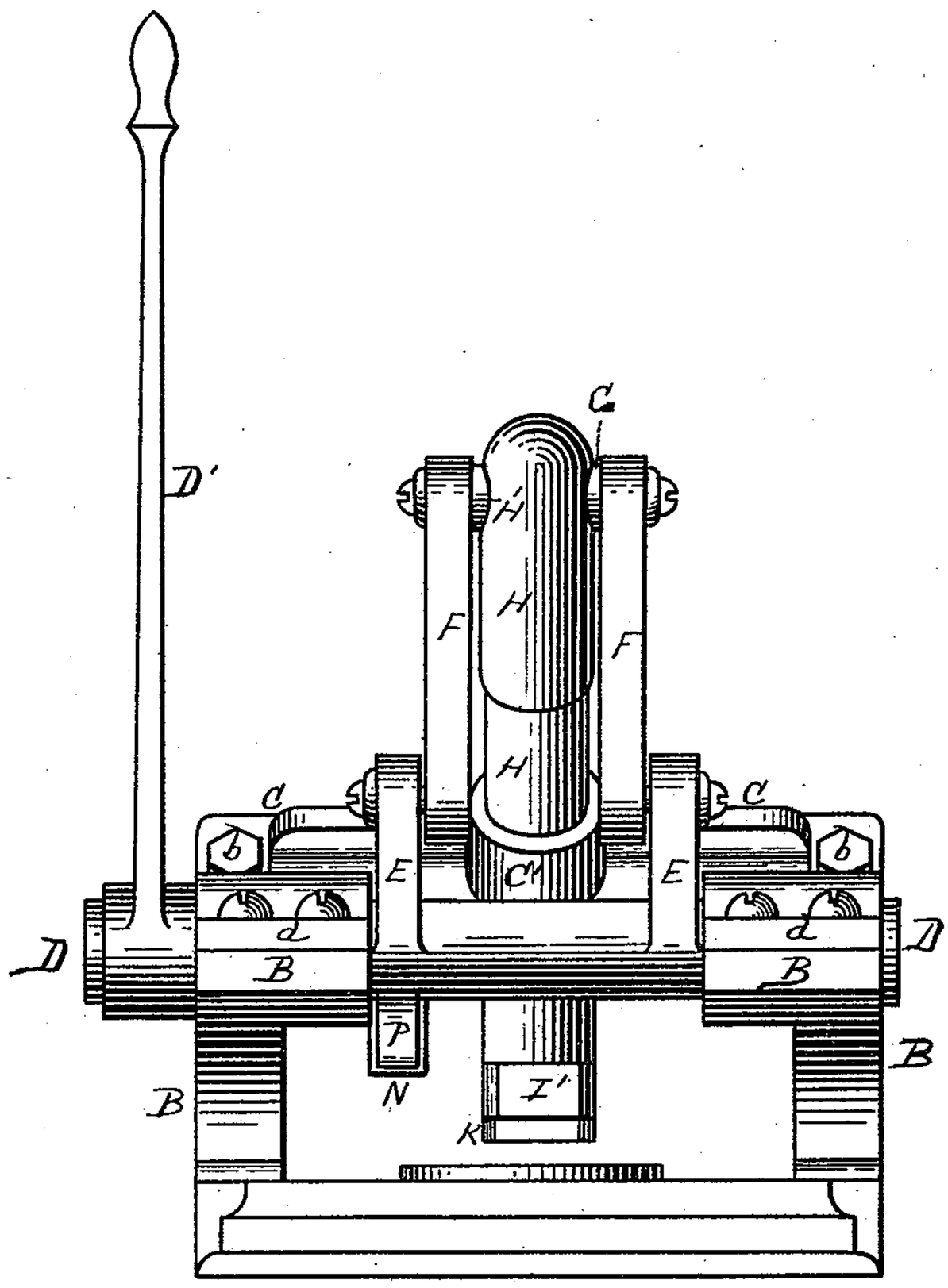

Fig. 5.

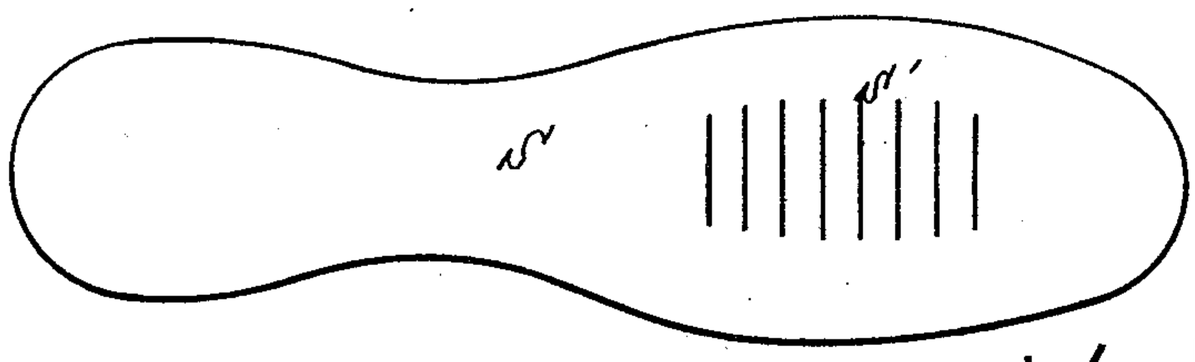

Fig. 6.

WITNESSES

Matthew M. Blunt.

J. M. Hartnett.

INVENTOR

Frederick D. Rich

By his Atty.

Henry C. Williams

UNITED STATES PATENT OFFICE.

FREDERICK D. RICH, OF SALISBURY, ASSIGNOR OF ONE-HALF TO NATHAN D. DODGE, OF NEWBURYPORT, MASSACHUSETTS.

MACHINE FOR SLASHING INNER SOLES.

SPECIFICATION forming part of Letters Patent No. 438,643, dated October 21, 1890.

Application filed July 28, 1890. Serial No. 360,170. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK D. RICH, of Salisbury, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Machines for Slashing Inner Soles of Boots and Shoes, of which the following is a specification.

This is a machine for rendering boot and shoe inner soles more flexible by making a series of slashes or incisions in the surface thereof. These cuts or incisions are made transversely and on a slant, whereby a greater depth of the cut may be obtained, and hence proportionately greater flexibility, and they are produced by a gang of reciprocating cutters or knives operated by a machine constructed substantially as below set forth, and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a machine embodying my invention. Fig. 2 is a side elevation of the same with the cutters and cutter-head in vertical section. Fig. 3 is an enlarged horizontal section, in detail, of a portion of the cutter-head, showing the method of securing the cutters in place. Fig. 4 is a sectional detail showing the mechanism for limiting the throw. Fig. 5 is a rear elevation of the machine. Fig. 6 is a plan of an inner sole rendered flexible by having been cut or slashed by this machine.

Similar letters of reference indicate like parts.

A represents a bed, preferably metallic, to which are bolted the uprights B B, which, with the cross-piece C, constitute the frame of the machine.

D is the driving or actuating shaft, supported in the frame by means of boxes *d* and operated by a hand-lever D′ or other means or power. Extending up from and integral with this shaft D are a pair of levers E E, to whose free ends are pivotally secured the lower ends of the links or bars F F, their upper ends being secured to the opposite ends of a horizontal rod G, which extends through a hole H′ in the upper end of the reciprocating cutter-bar or plunger H. This bar H lies and fits in an opening or hole C″, made at an angle of, say, forty-five degrees in the tubular central and guiding portion C′ of the cross-piece C.

I is the cutter-head, adjustably secured by a set-screw *e* or other suitable means to the lower end of the plunger H. The lower end or foot I′ of this cutter-head is grooved on its under side transversely to receive a gang of cutters K, said grooves and cutters being made and set on a line with the plunger, so that they are on a slant or angle of, say, forty-five degrees with the bed A. The knives are held in place removably by graduated pins or plugs J, Fig. 3, so that knives or cutters of various sizes may be employed.

In operation the sole S is placed in proper position beneath the cutter-head, whose position when raised is shown in Figs. 2 and 5. The lever D′ is swung forward, producing partial rotation of the shaft D, and the levers E on said shaft, by means of the links F, force down the plunger H, guided by the portion C′ of the cross-piece into the position shown in broken lines in Fig. 2, thus producing the slanting cuts or slashes S′ in the sole. Reversing the lever D′ of course raises the plunger into its former position. The movement or throw of the plunger (and knives) downward is adjustably limited by means of the set-screws *l* in the stops or projections L integral with the cross-bar C, said set-screws being struck by the levers E, (see Figs. 1, 2, and 4,) and the movement back is limited by the set-screw *n* in a downward stop or extension N of the cross-bar C, said set-screw being struck by the lug P, extending down from one of the levers E. (See Figs. 2, 4, and 5.)

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

The herein-described machine for rendering boot and shoe soles more flexible by cutting or slashing the surface thereof, comprising the shaft D, supported in the frame, the levers or cranks E, links F, and rod G, the plunger H, provided with the cutter-head I and gang of cutters K, and the guiding cross-piece C, provided with the central hole C″ for guiding the plunger, said plunger and cutters being set at a slant with the surface of the shoe-sole, whereby a series of slanting incisions or cuts are produced therein, substantially as described.

FREDERICK D. RICH.

Witnesses:
JOHN LEWIS,
JACOB SMITH.