J. KIMBALL.

Improvement in Machines for Shaping Boot and Shoe Heel-Stiffeners.

No. 131,957. Patented Oct. 8, 1872.

Fig 1.

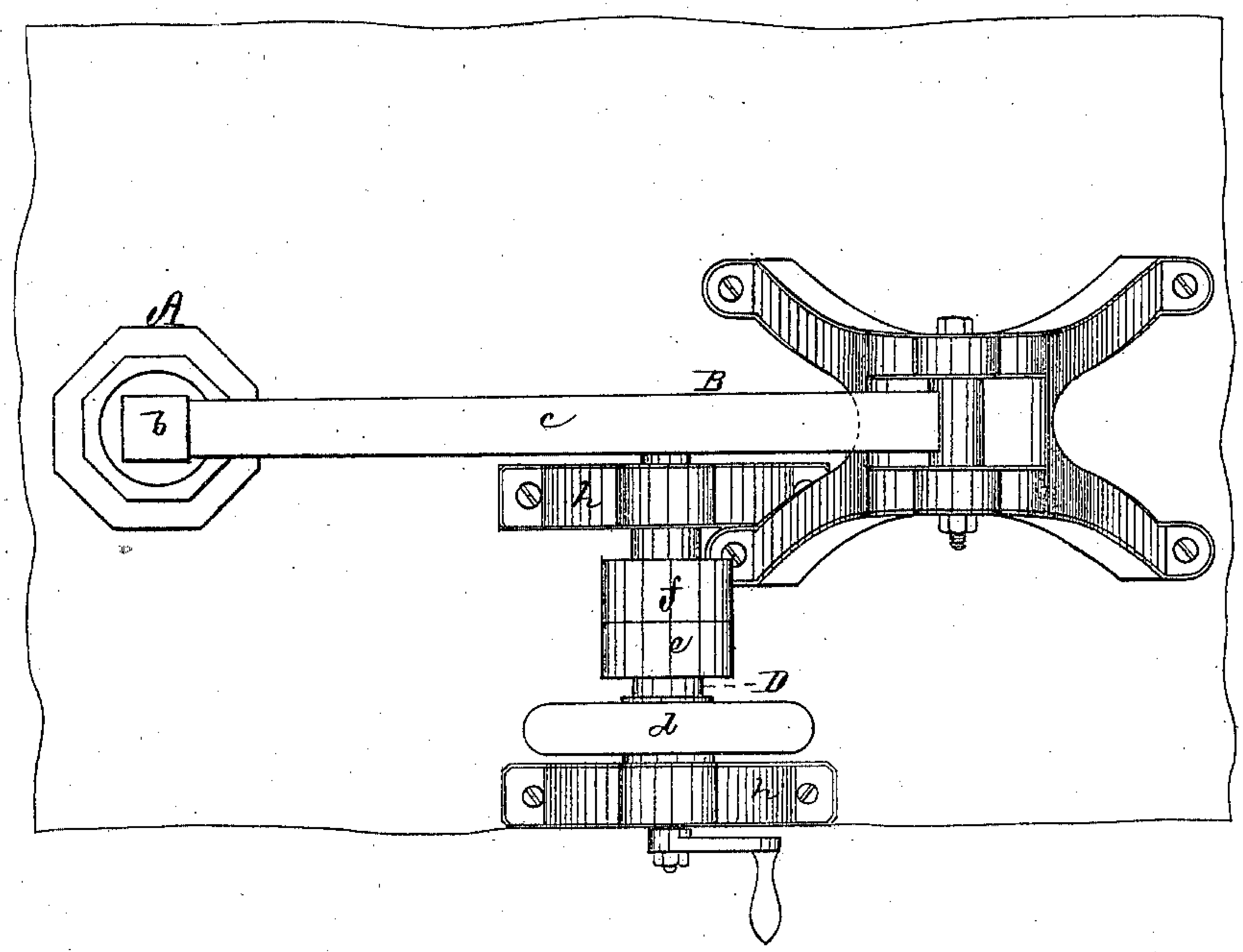
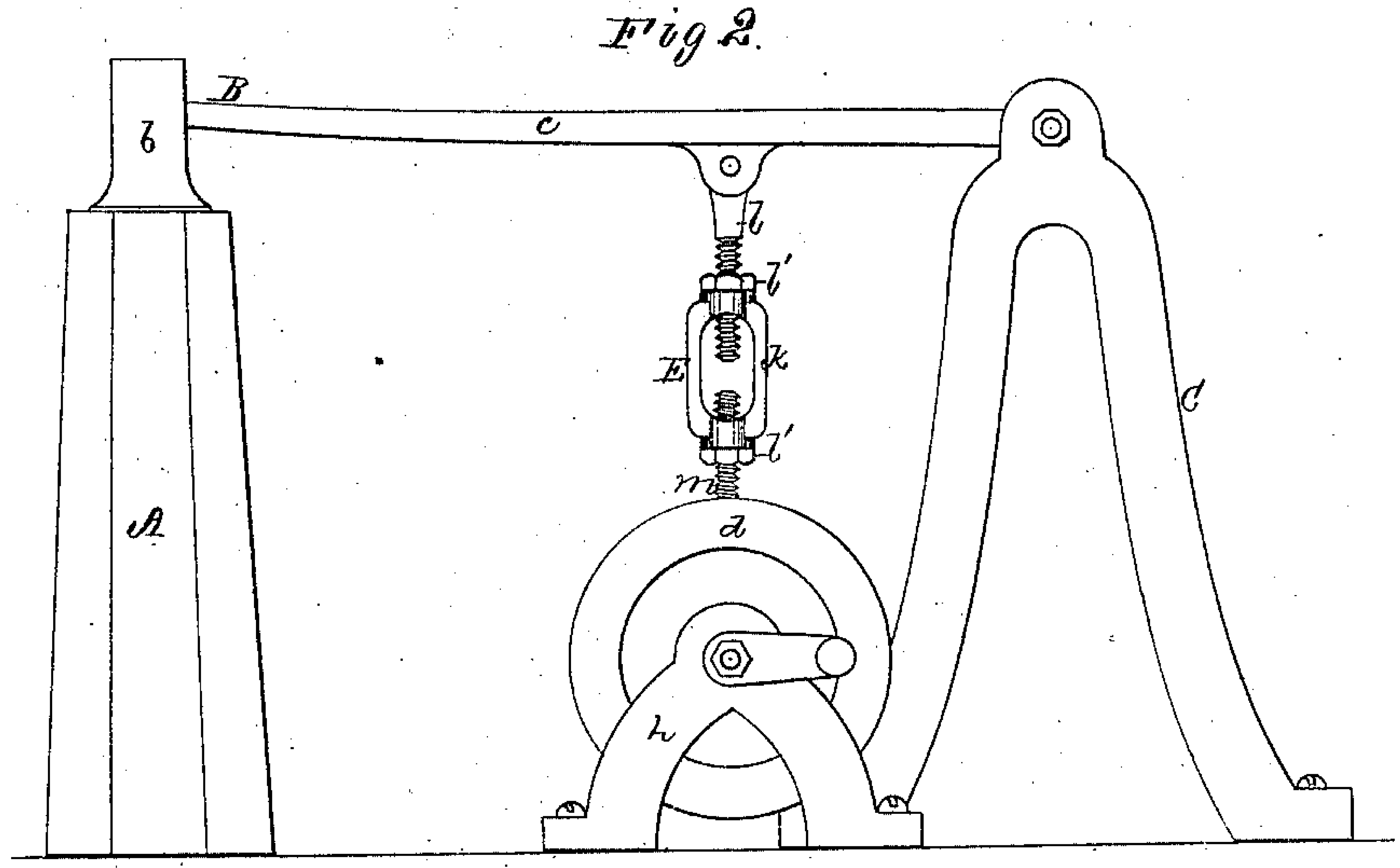


Fig 2.



Witnesses.

S. N. Piper

L. N. Möller

John. Kimball.

by his attorney.

R. H. Eddy

J. KIMBALL.

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Fig. 3.

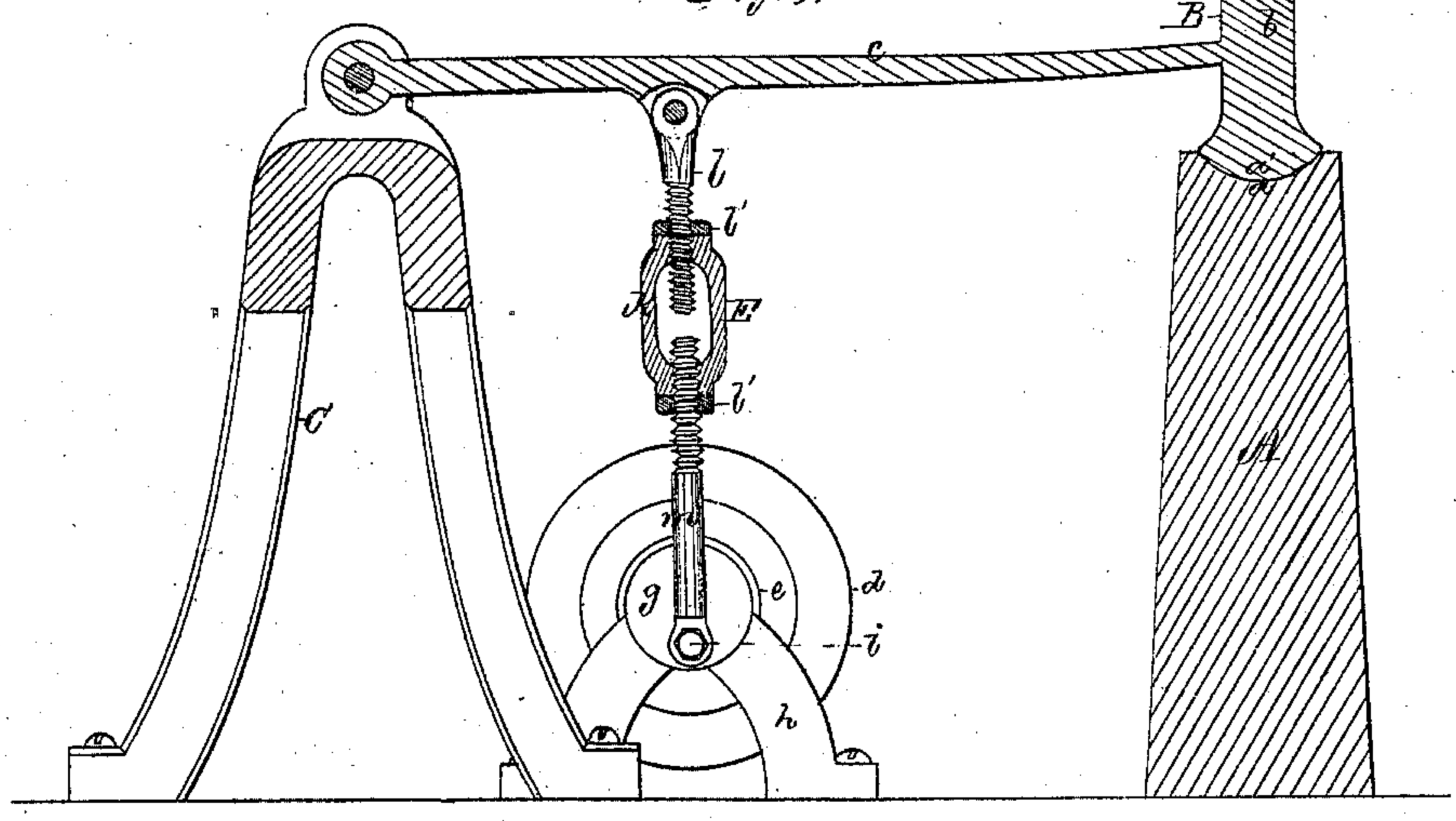


Fig. 5.

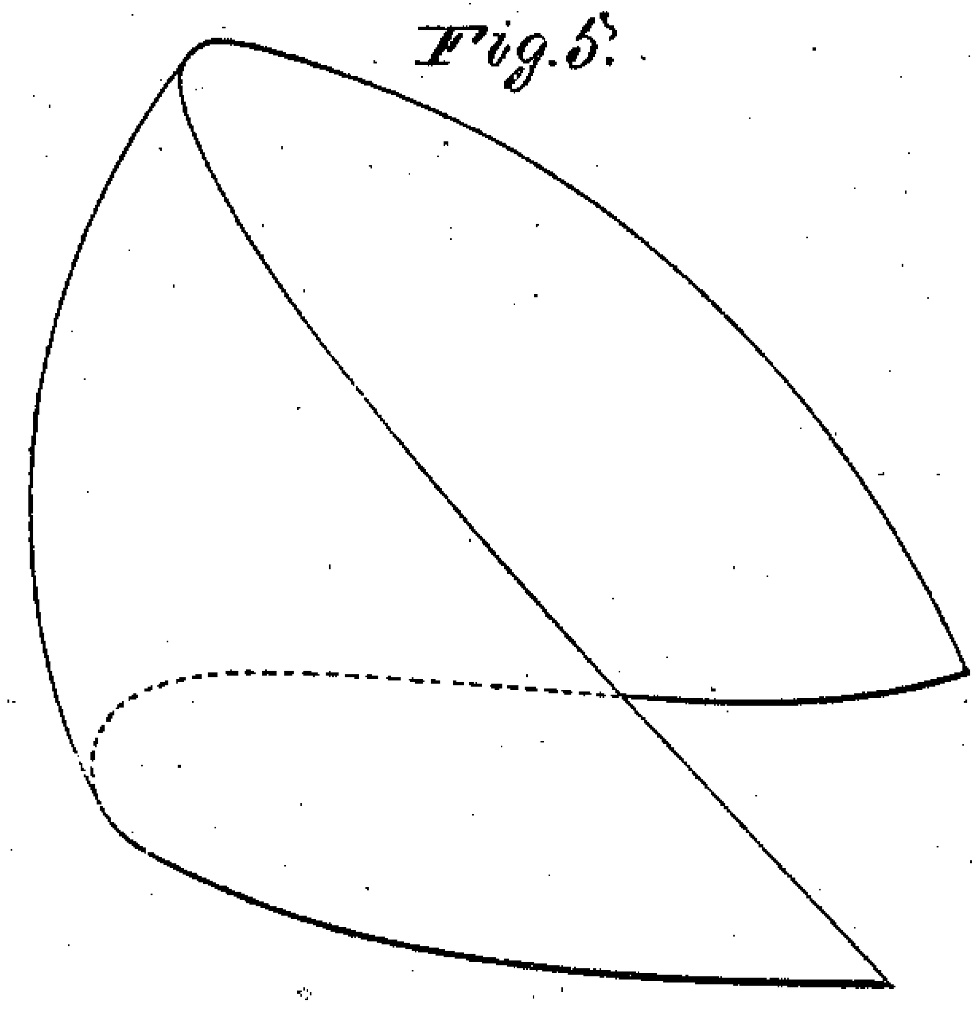
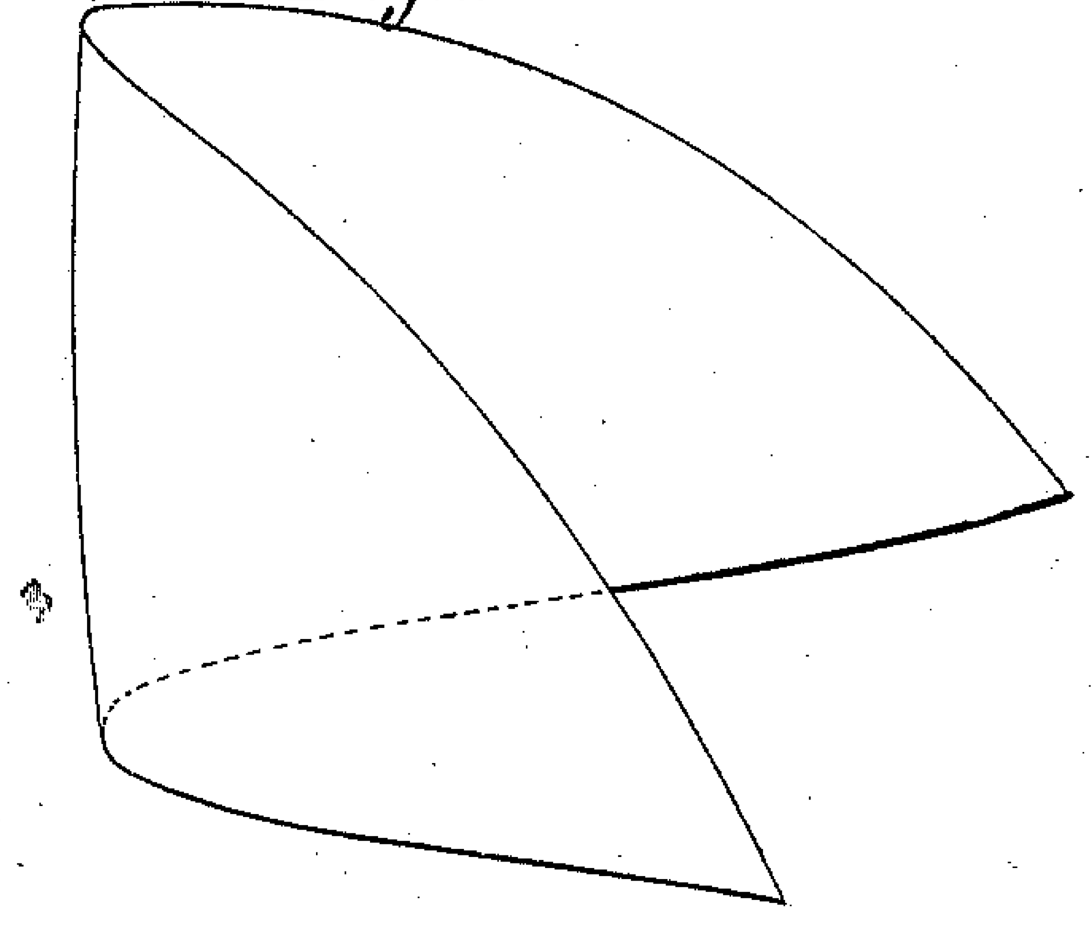


Fig. 4.



Witnesses.

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W. N. Möller.

John Kimball.

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R. H. Eddy

UNITED STATES PATENT OFFICE.

JOHN KIMBALL, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR SHAPING BOOT AND SHOE HEEL STIFFENERS.

Specification forming part of Letters Patent No. **131,957**, dated October 8, 1872.

To all whom it may concern:

Be it known that I, JOHN KIMBALL, of Boston, of the county of Suffolk and State of Massachusetts, have invented a new and useful Machine for Condensing and Shaping Shoe or Boot Heel Stiffeners; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a top view; Fig. 2, a side elevation; and Fig. 3, a longitudinal section of the machine. Fig. 4 is a perspective view of a heel-stiffener of the kind heretofore usually employed. Fig. 5 is a perspective view of it as it appears after having been treated by the said machine, which reduces it to form, or curves it both longitudinally and transversely so as to enable it to fit to the heel of a last.

In said drawing, A denotes a post having a concavity, *a*, in its head to receive a hammer, B, the face *a'* of whose head *b* is correspondingly convex. The shank *c* of the hammer is pivoted at its end to a standard, C; and said shank should not be rigid, but should be an elastic bar, capable of being sprung laterally somewhat like a bow. Below the hammer-shank is a driving-shaft, D, provided with a fly-wheel, *d*, a driving or fast pulley, *e*, a loose pulley, *f*, and a cranked wheel, *g*, the shaft being supported by suitable standards *h h* or boxes fixed thereto. The crank-pin *i* of the wheel is conjoined with the hammer-shank by an extensible connecting-rod, E, composed of a coupling, *k*, and two rods, *l m*. One rod is pivoted to the shank and the other to the crank-pin, and there is a right screw on one rod and a left screw on the other, such being for the coupling to screw upon the rods, in order that when the coupling is revolved in one direction it shall expand or lengthen the connecting-rod, and when turned the opposite way contract or shorten it. Upon each screw is a set-nut, *l'*, to screw against the coupling so as to prevent it from being revolved accidentally or out of time on the rods.

The object of the extensible connecting-rod is to accommodate the machine to work stiffeners differing in thickness; and the object of having the hammer-shank elastic is to enable the hammer to accommodate itself to the varying thickness of any stiffener, which is generally much thicker at its middle than at its edges.

On putting the driving-shaft in revolution a reciprocating movement will be imparted to the hammer—that is to say, it will be caused to beat successively upon the bed—and, if a stiffener-blank be interposed between the two and moved longitudinally and laterally, as may be required, it may be condensed and beaten into shape with great advantage.

With this machine percussion and pressure of the hammer may be used to effect condensation of the stiffener; for while the crank is passing its lower dead center it will operate to pull down the elastic hammer-shank, and, as a consequence, cause it to press down the hammer-head with force upon the leather, so as to aid in shaping it, or rendering it concavo-convex, the percussion-blows of the hammer serving to effect condensation of the leather.

I make no claim to a trip-hammer and its bed or anvil, such not having the elastic shank and the extensible connection-rod, or the concavity of the bed and convexity of the hammer-head, such as are incident to my machine.

I claim as my invention—

The heel-stiffener machine, substantially as described and represented, and for the purpose specified, it consisting of the cranked shaft D, the extensible connecting-rod E, the elastic shank *c*, convex hammer-head *b*, and the concavity *a*, all arranged, constructed, and combined with the post A and standard C, and provided with pulleys *e f* and a fly-wheel, *d*, as set forth and shown.

JOHN KIMBALL.

Witnesses:

R. H. EDDY,
S. N. PIPER.