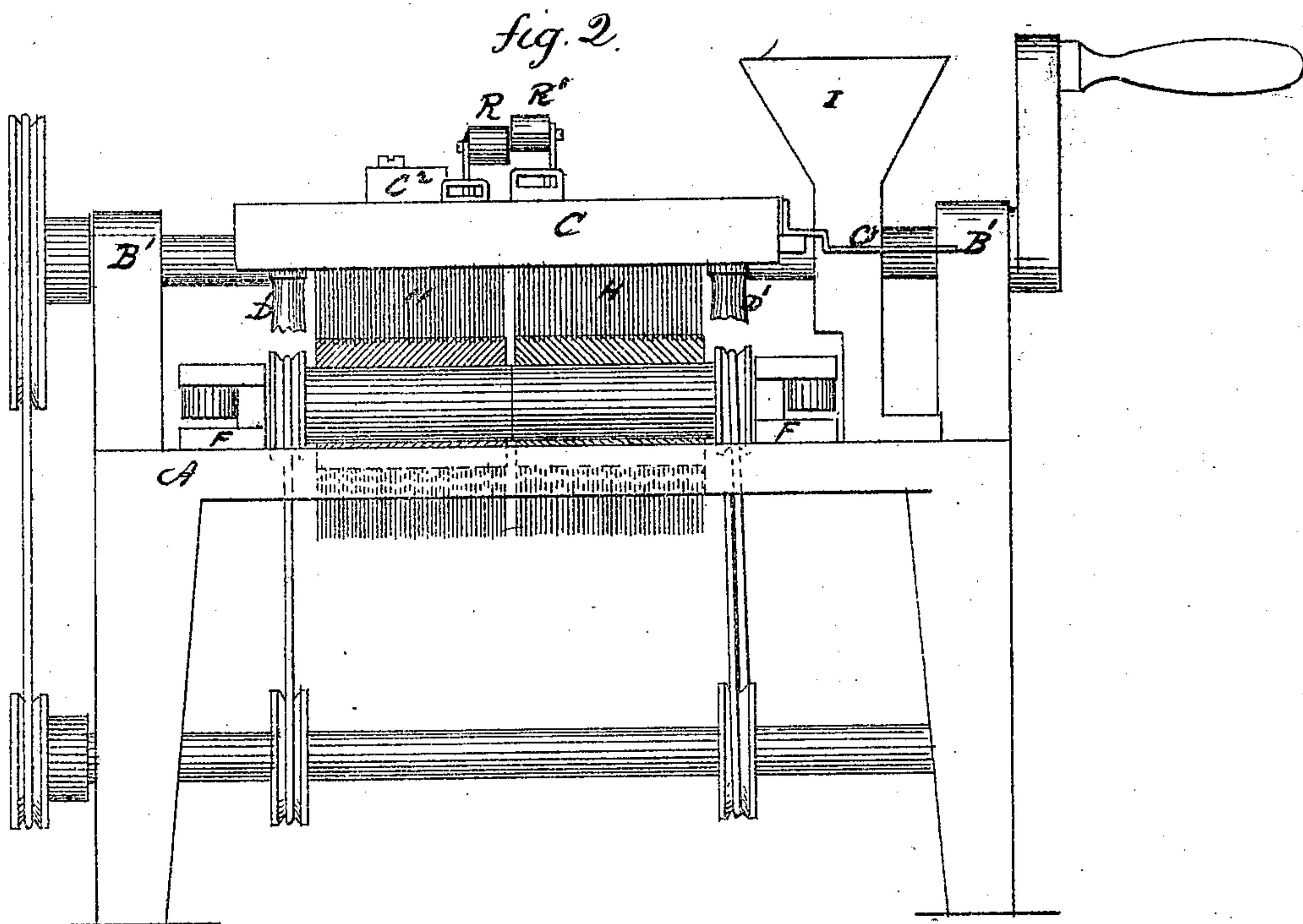
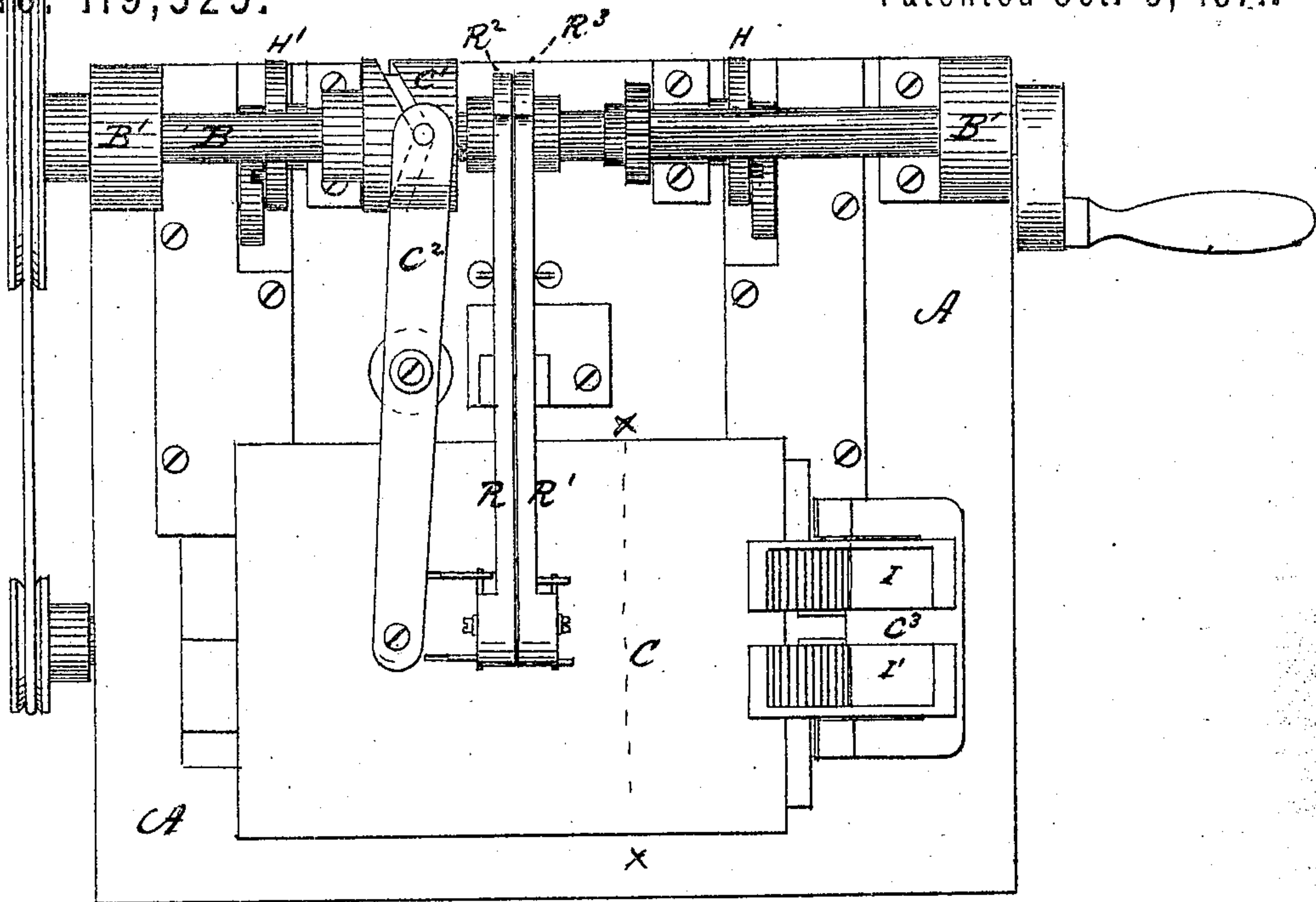


FRANCIS W. MALLET.

Improvement in Machines for Polishing Needles.

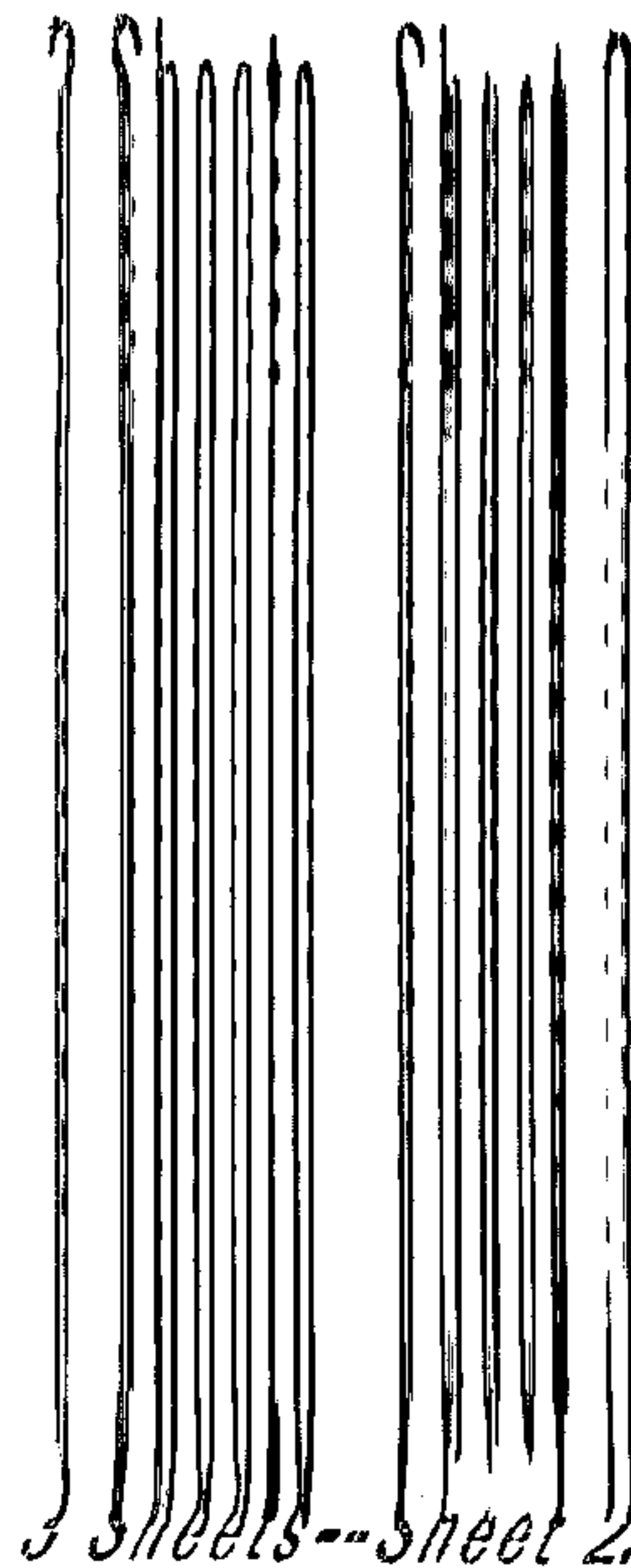
No. 119,525.

Patented Oct. 3, 1871.



Witnesses.
 Jos. C. Earle
 J. W. Shumway

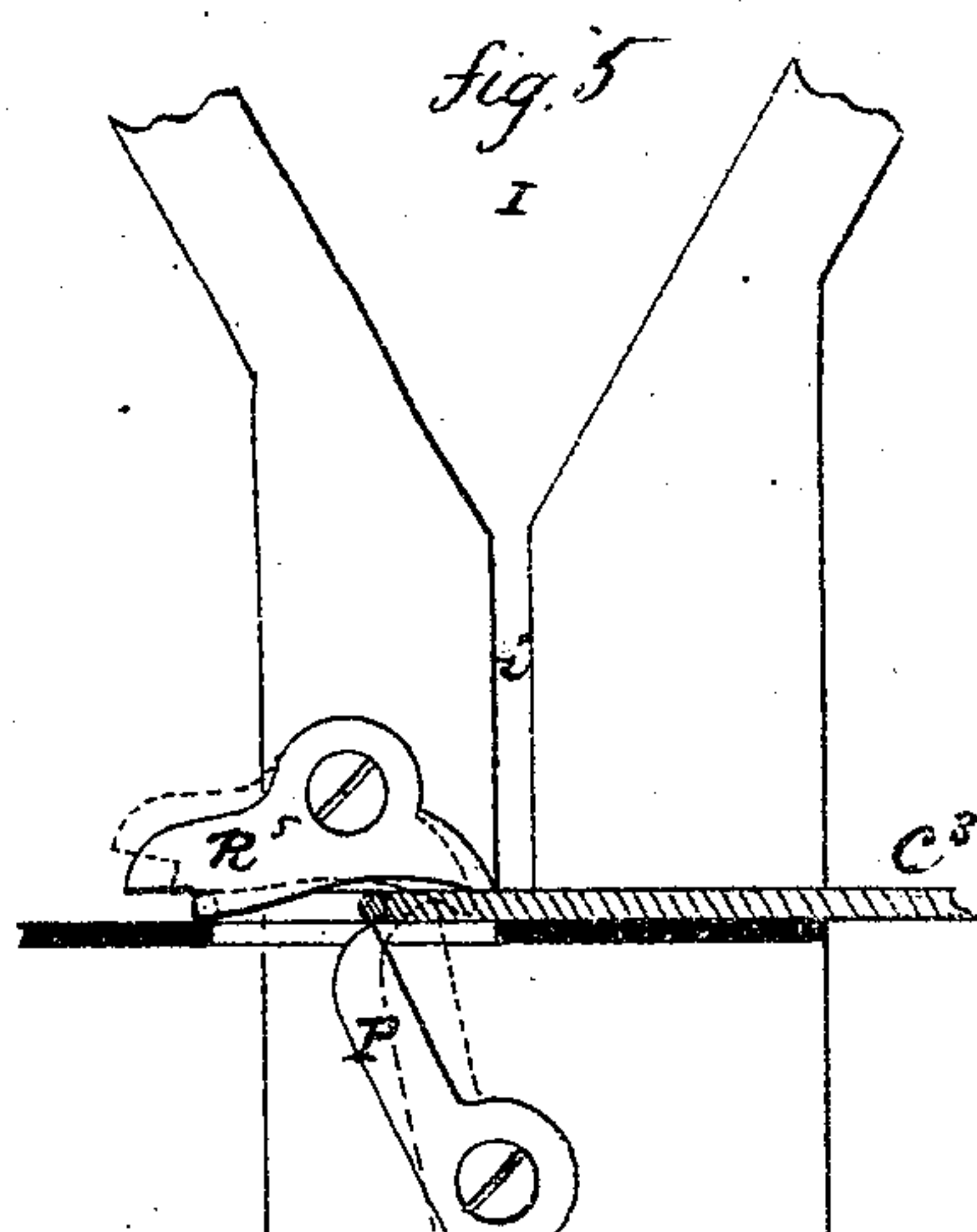
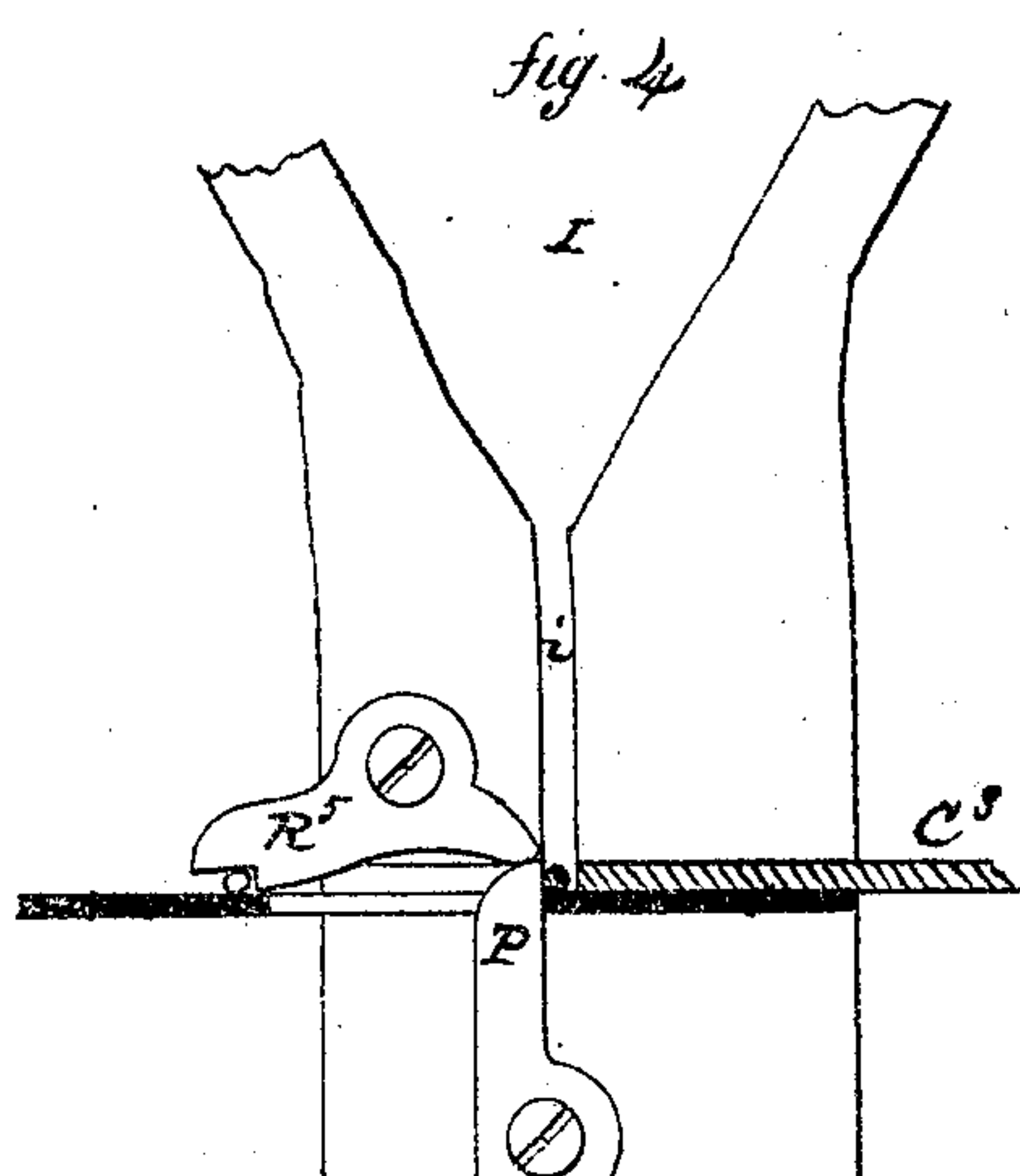
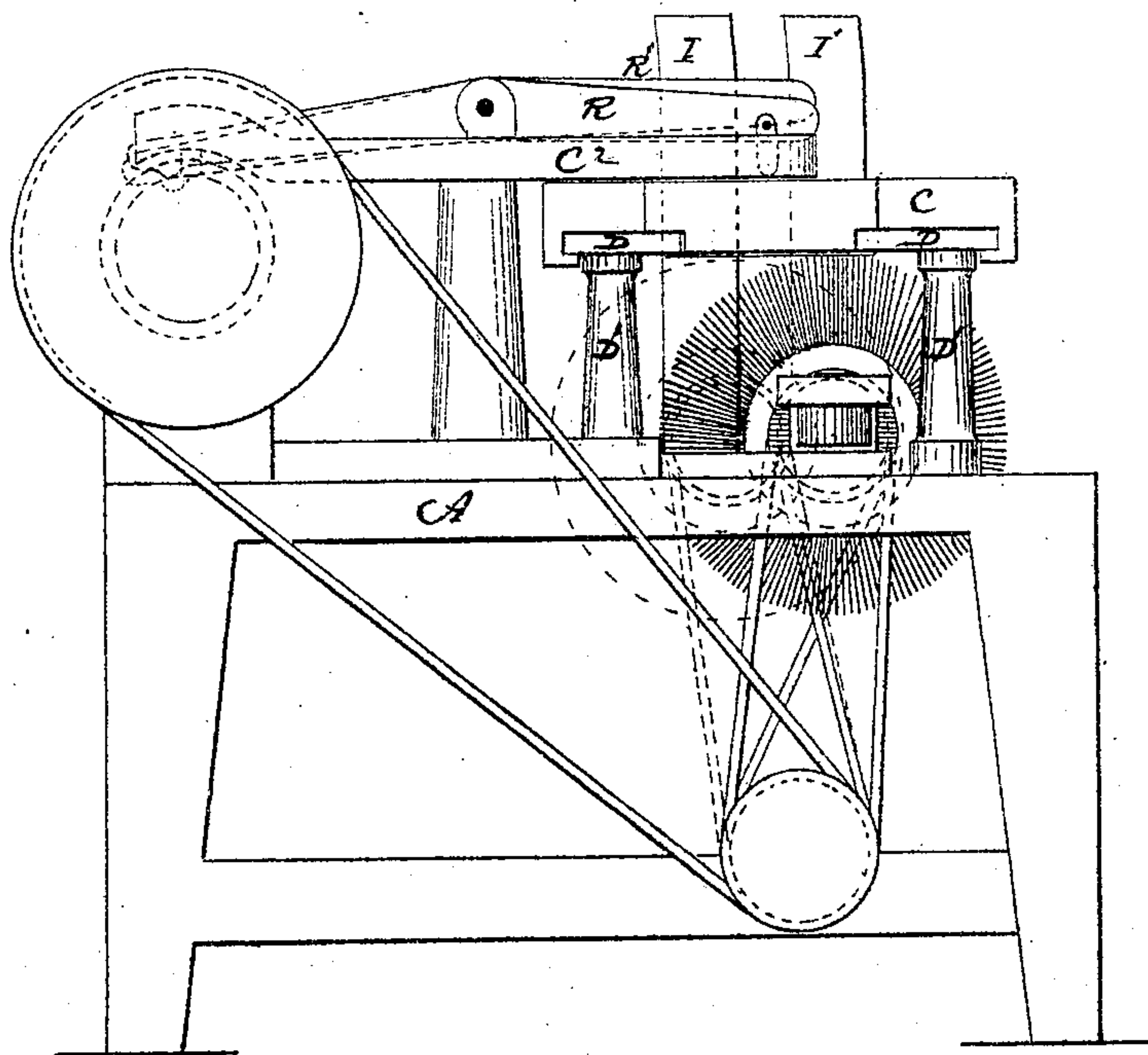
Francis W. Mallett
 Inventor.



FRANCIS W. MALLET.

3 Sheets--Sheet 2.

Improvement in Machines for Polishing Needles.
No. 119,525. *fig. 3.* Patented Oct. 3, 1871.



UNITED STATES PATENT OFFICE.

FRANCIS W. MALLET, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE
MALLET MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR POLISHING NEEDLES.

Specification forming part of Letters Patent No. 119,525, dated October 3, 1871.

To all whom it may concern:

Be it known that I, FRANCIS W. MALLET, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Machine for Polishing Needles; and I do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents, in—

Figure 1, a top view; Fig. 2, a front view, the brushes being shown in section; Fig. 3, an end view from the left of Fig. 2; Figs. 4 and 5, detached views of the feeding device; Fig. 6, a transverse section of the plate on line *xx*; Fig. 7, a top view of the polishing-plate; and in Figs. 8 and 9, detached views of the longitudinal racks for moving the needles.

This invention relates to an improvement in machinery for polishing and finishing needles—that is to say, that part of the process in the manufacture of needles which is performed after the needles have been tempered; and the invention consists in mechanism, substantially as hereinafter described, for revolving the needles, and, while revolving, passing them over brushes which revolve or vibrate in a line with the axes of the needles.

A is the bed of the machine, upon which the operative mechanism is placed. B is the driving-shaft, supported so as to revolve in bearings B', power being applied to the said shaft in any convenient manner. C is a plate to which a reciprocating movement is imparted by a cam, C¹, through a lever, C². The plate is shown in transverse section enlarged in Fig. 6, and is arranged upon a bed, D, overlapping the edges, as seen in Fig. 6, or otherwise, so as to be guided upon the said bed, the said bed being supported upon posts D' or otherwise. The bed D is in two parts, as seen in Figs. 6 and 7, which are connected by a thin metal plate, E, the said metal plate being constructed with numerous perforations *e*, in form described, and arranged substantially as shown in Fig. 7, so that the several perforations overlap each other. Beneath the plate D, on a sliding carriage, F, are arranged revolving brushes H, more or less in number, the said brushes being caused to revolve by belts and pulleys or otherwise, and at the same time, by the action

of the cams H', to traverse back and forth transversely across the plate E, as denoted in broken lines, Fig. 3; the brush passing under the perforated portion of the plate, and being adjusted so that the bristles will project through the said perforations. Longitudinally on the plate C is arranged a leather or other facing, L, in close proximity to the plate E, as seen in Fig. 6, so that the needles lying between the said facing L and the plate E will be caused to revolve as the plate C is reciprocated, passing over the perforations in the plate E, and thus exposed to the action of the brush, which, being coated or supplied with polishing material, acts upon the surface of the needles to give them a high degree of finish. In order to feed the needles, and at the same time retain them parallel to each other, and transversely across the plate E, I arrange a hopper in two parts, I I', both parts being alike, so that, placed near together, they form a complete hopper. In Figs. 4 and 5 the one part I of this hopper is shown detached; the other part is the same, but reversed, so that the part shown represents the inner surface of the part I. The needles are placed in mass in the hopper after they have been straightened, and are arranged parallel to each other, the passage *i* from the hopper downward being of sufficient width to permit the free passage of a needle singly, so that a column of needles will lie therein. Attached to the plate C is a cut-off, C³, which, as the plate C vibrates, passes beneath the column *i*—that is, as the plate is thrown to the left the cut-off will be in position seen in Fig. 5, closing the column, and when in the other position will open the column, as seen in Fig. 4, and permit a single needle to drop. Forward of the cut-off, (as seen in Fig. 4,) on each part of the hopper, is arranged a lever, P, which prevents the needles, as they fall forward of the cut-off, from passing out; but at the proper time, when the plate C is again thrown to the left, the cut-off passes beneath the column, forcing the needle forward, the lever P yielding for the purpose until the needle is carried over the end of the lever, as seen in Fig. 5, and passed beneath a holder, R⁵, as denoted in broken lines, Fig. 5; there the needle is left and the cut-off carried back; the lever P, returning by the force of its spring P', strikes upon the opposite arm of the holder R⁵, and bears a sufficient force to temporarily retain

*Robert M^cHardy's Improved Mode of Harnessing Horses to
Vehicles + Apparatus Employed therefor*

3 Sheets--Sheet 1.

No. 119,526.

Patented Oct. 3, 1871.

Fig. 1.

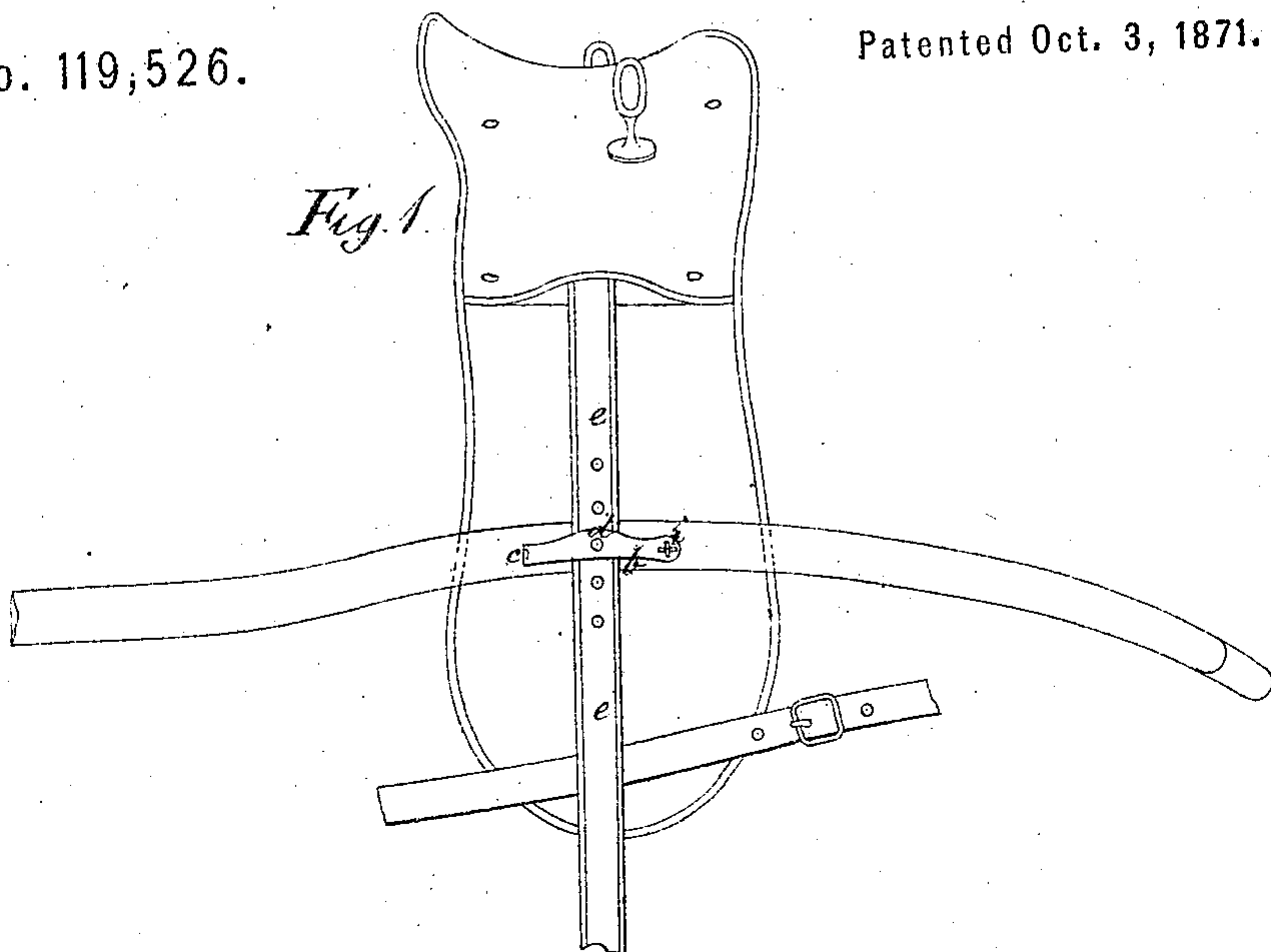
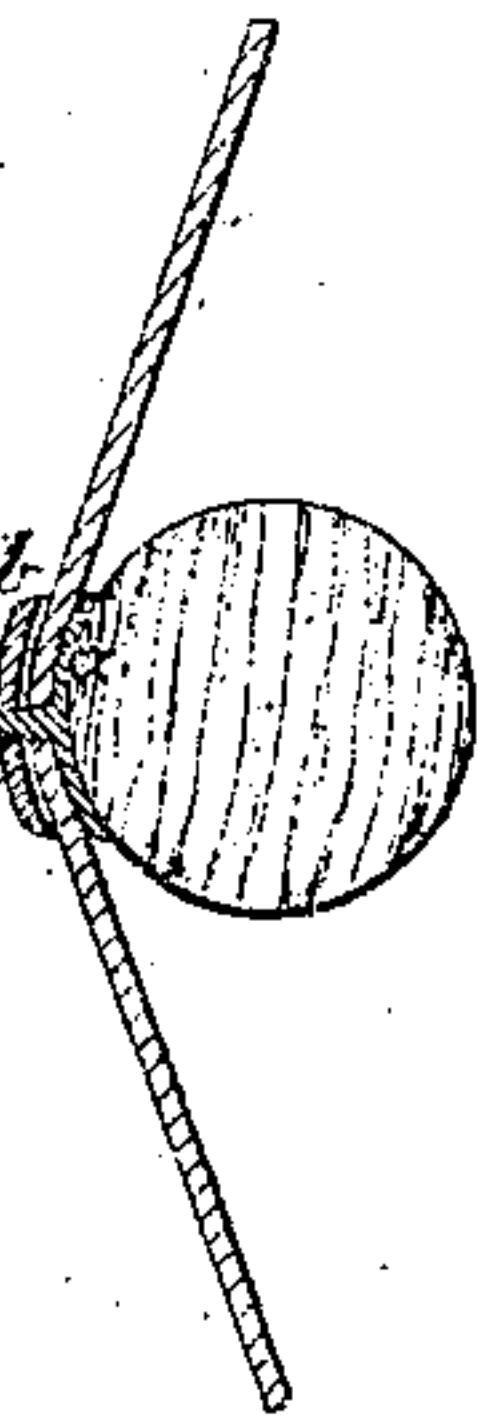


Fig. 2.



Witness.

*John H. Shumway
A. J. Tibbitts*

*Robert M. Hardy
Inventor
By his Atty.*

John E. Earle

Fig. 3.

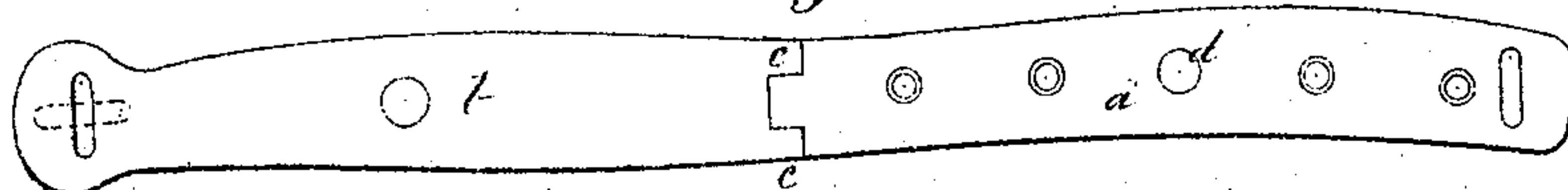


Fig. 4.

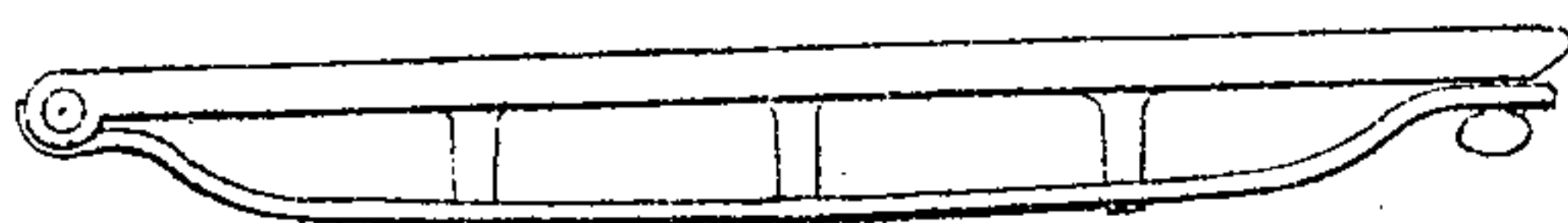


Fig. 5.

