

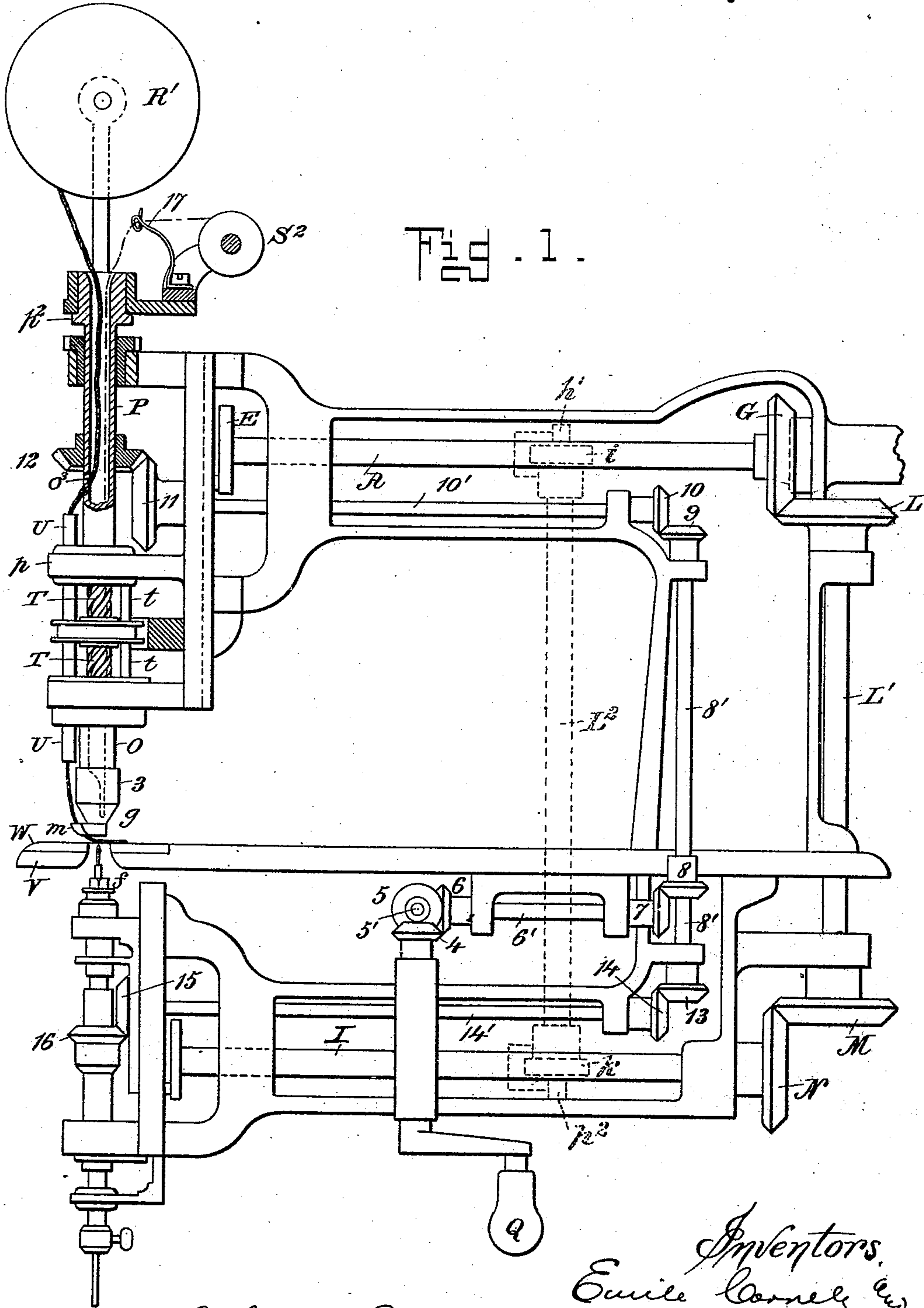
(No Model.)

3 Sheets—Sheet 1.

E. & R. CORNELY.  
EMBROIDERING MACHINE.

No. 501,704.

Patented July 18, 1893.



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Reverend Lewis

Inventors.  
Emile Cornely &  
Robert Cornely  
by John A. Mauro,  
their attor nys.

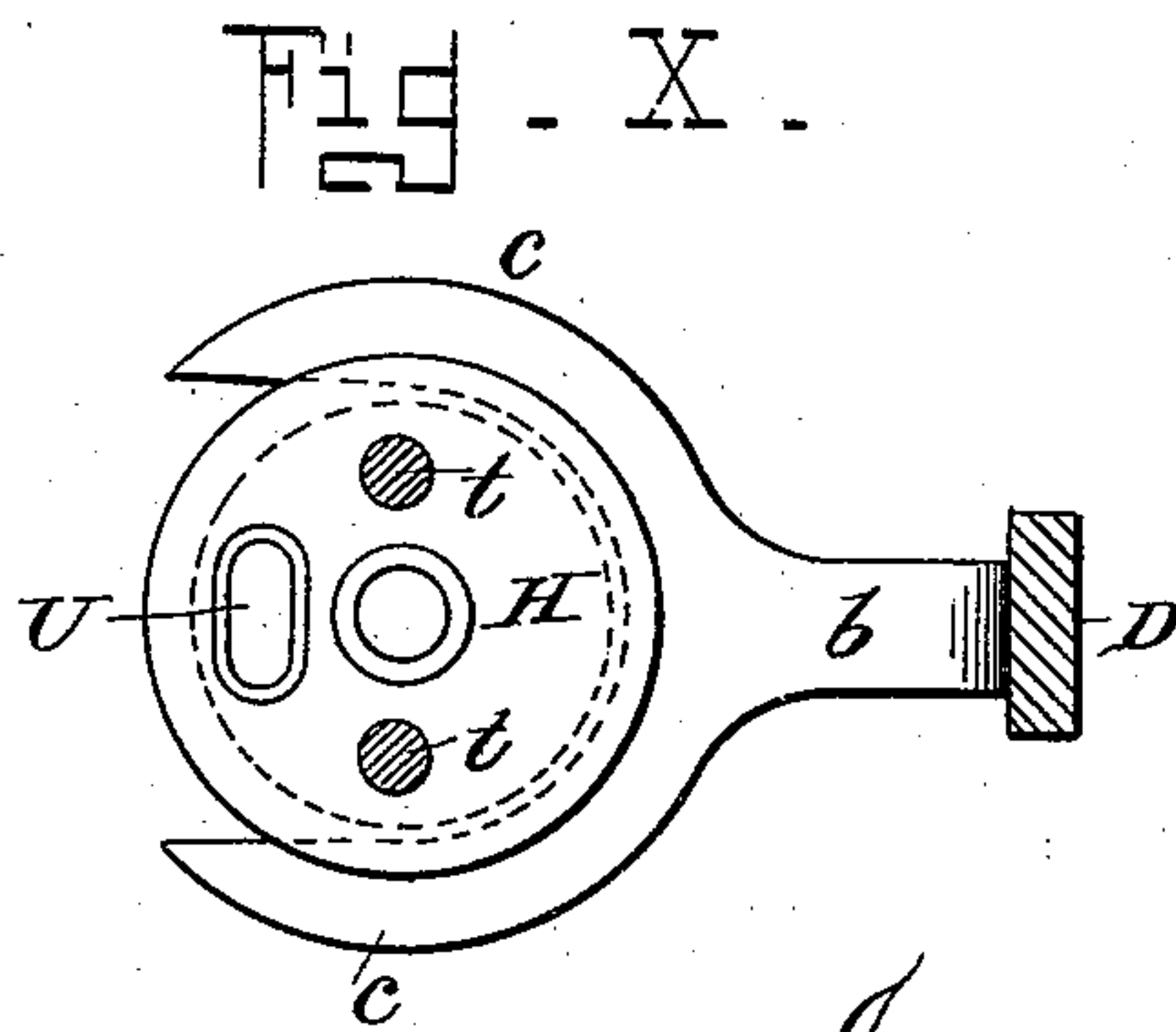
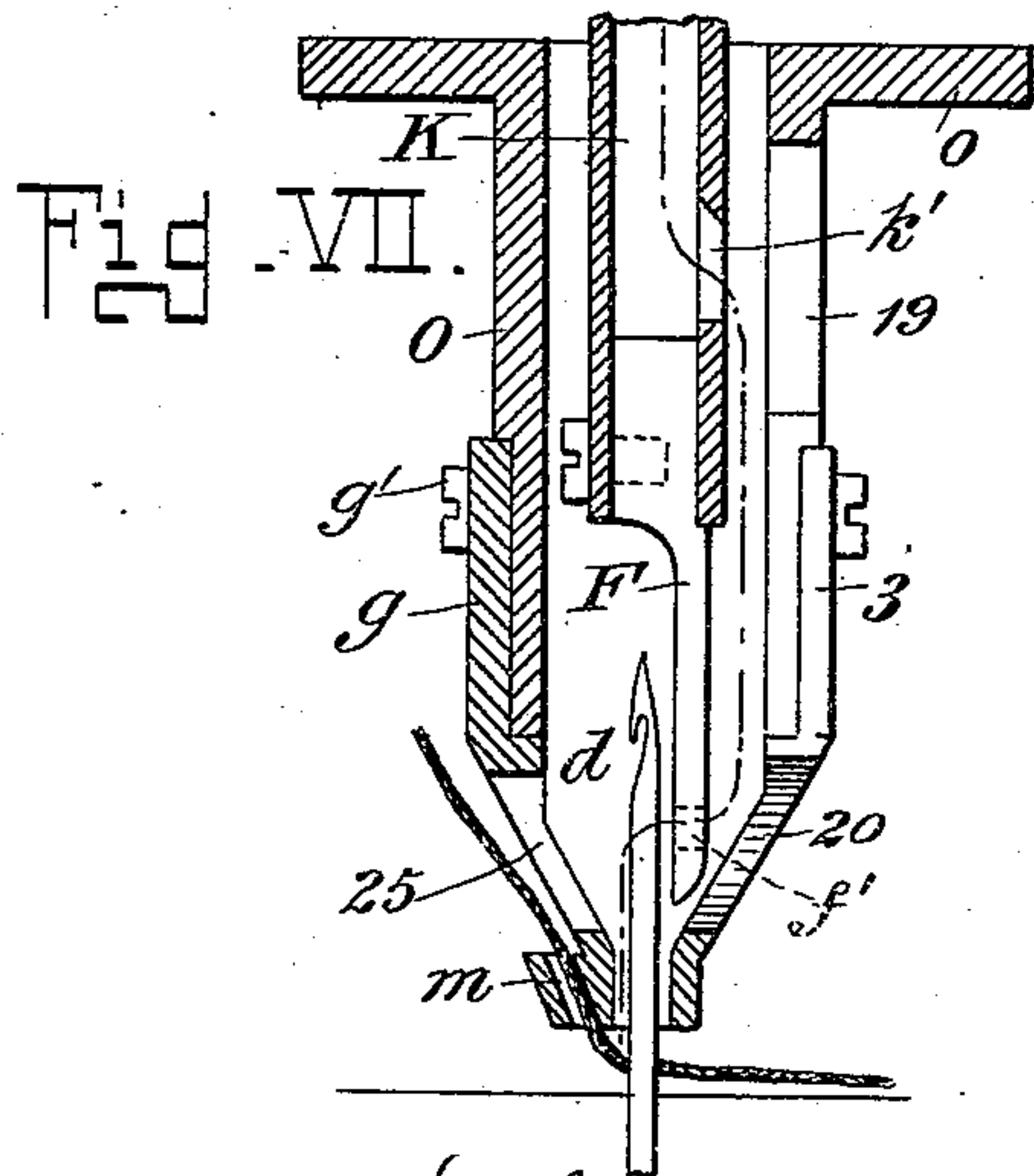
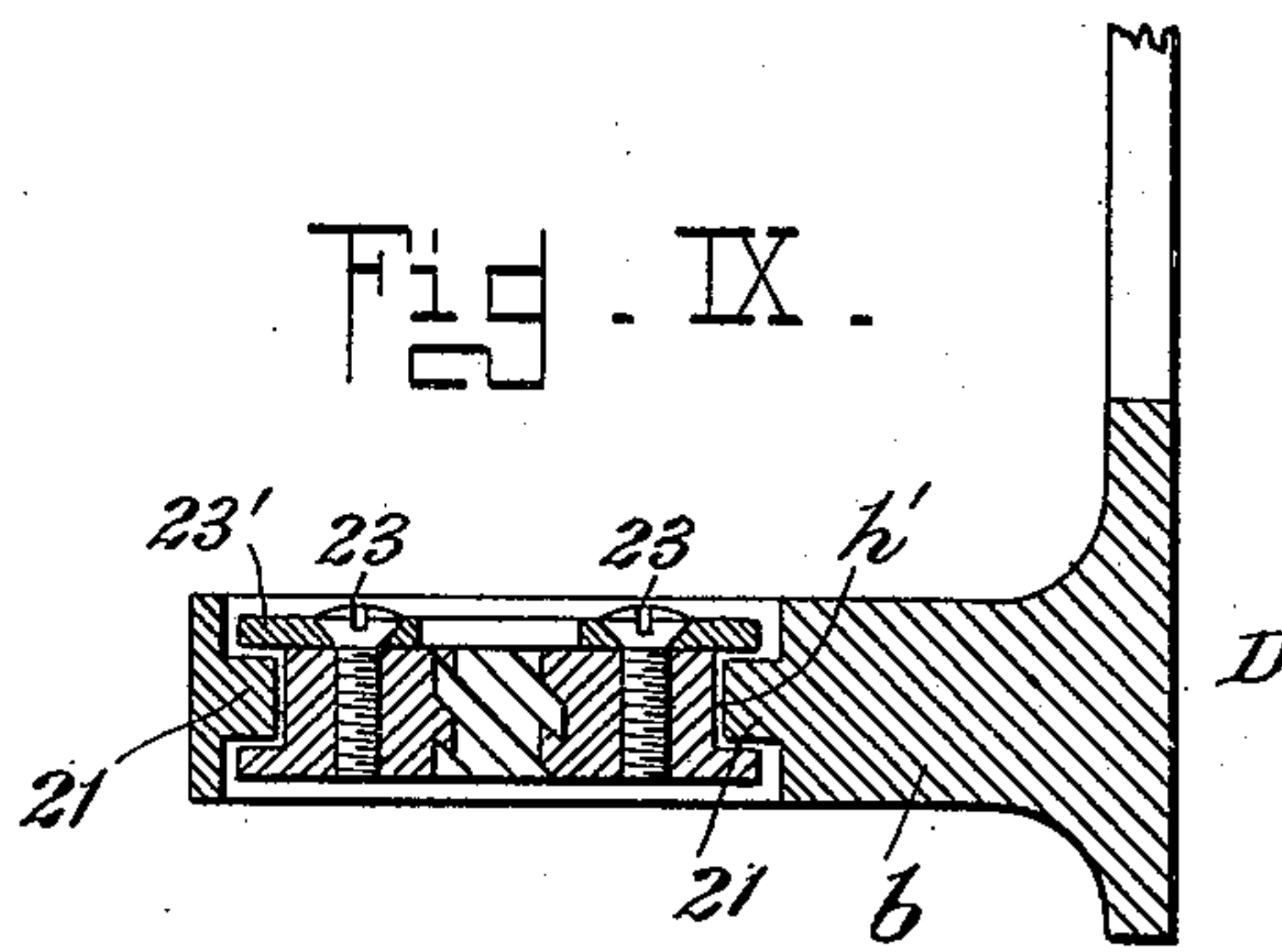
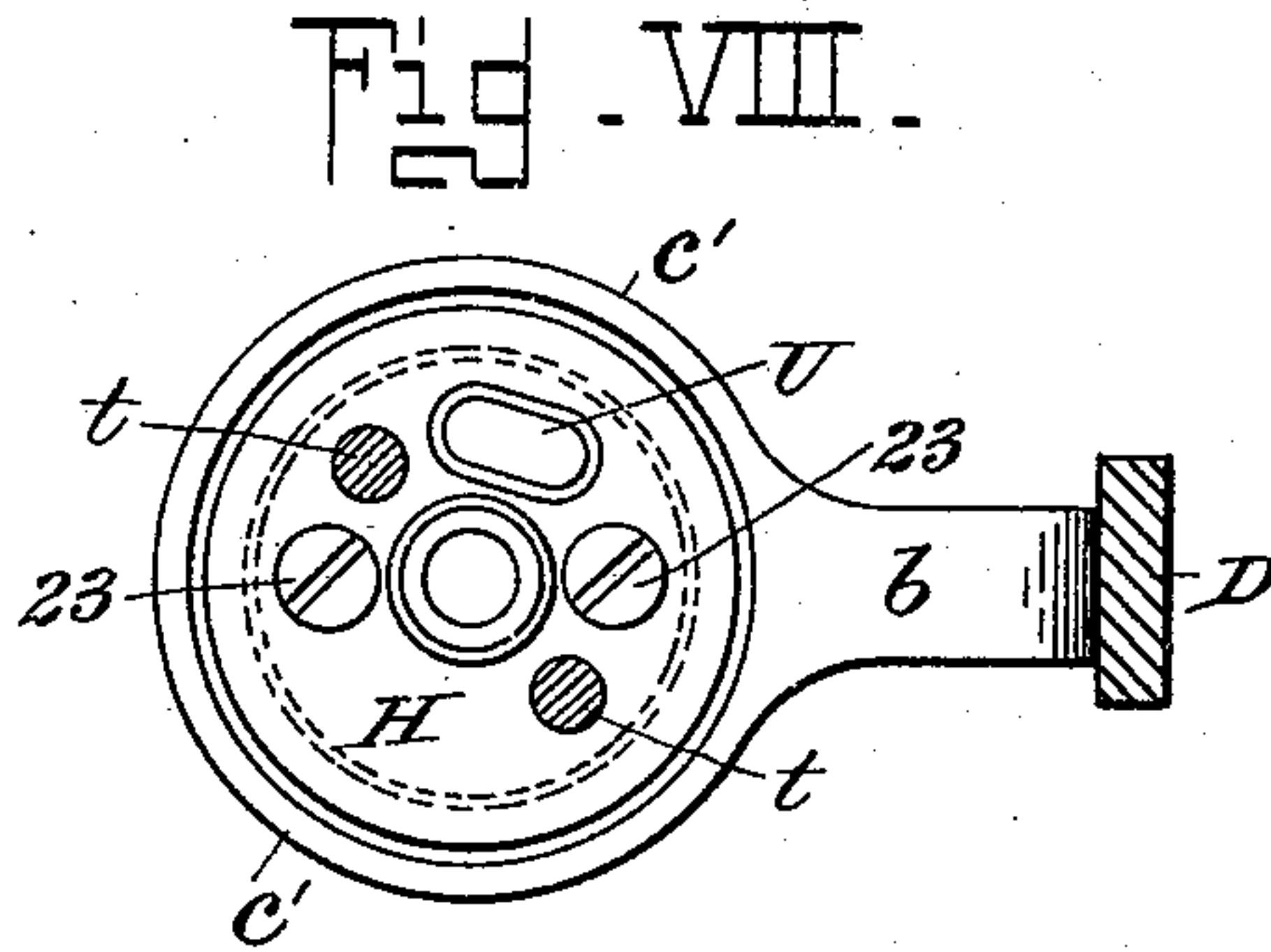
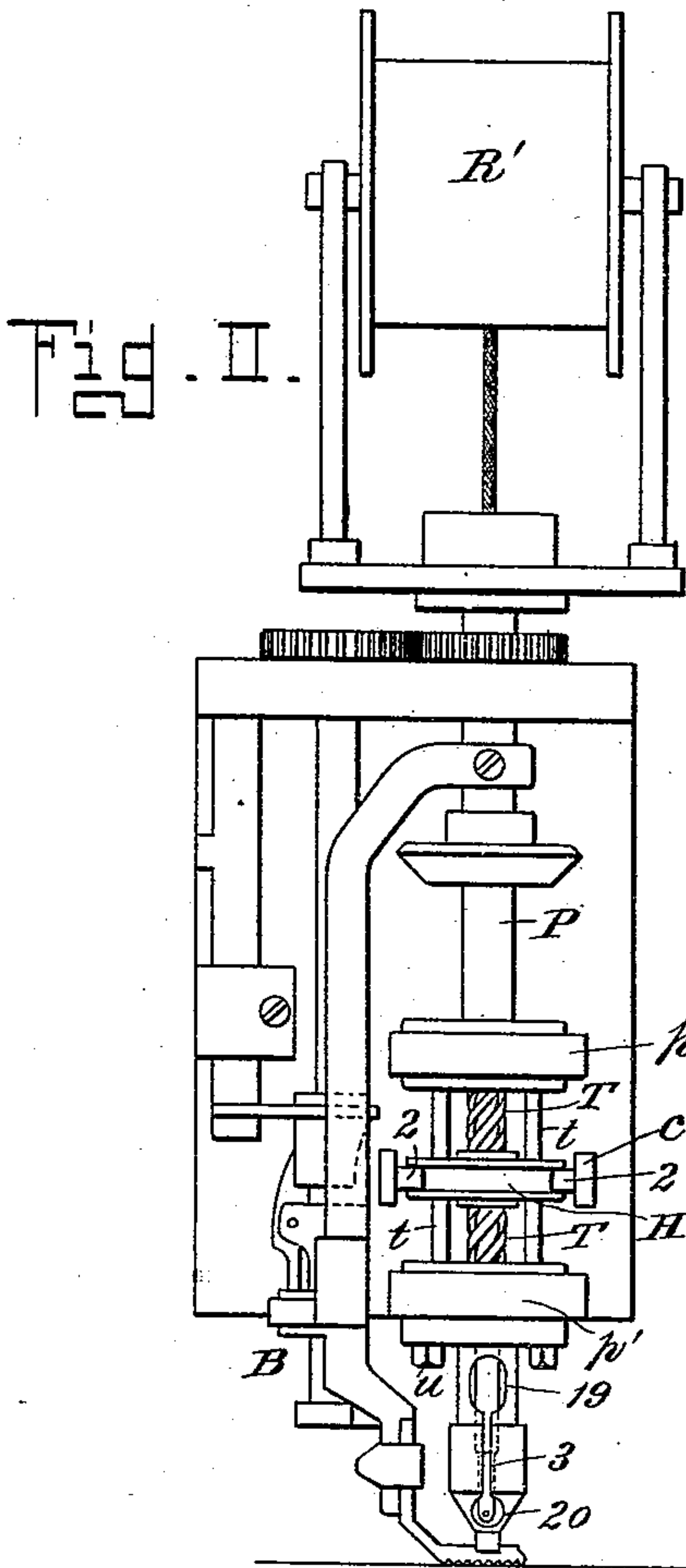
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Robert Cornely  
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Attorneys.



(No Model.)

3 Sheets—Sheet 3.

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Fig. III.

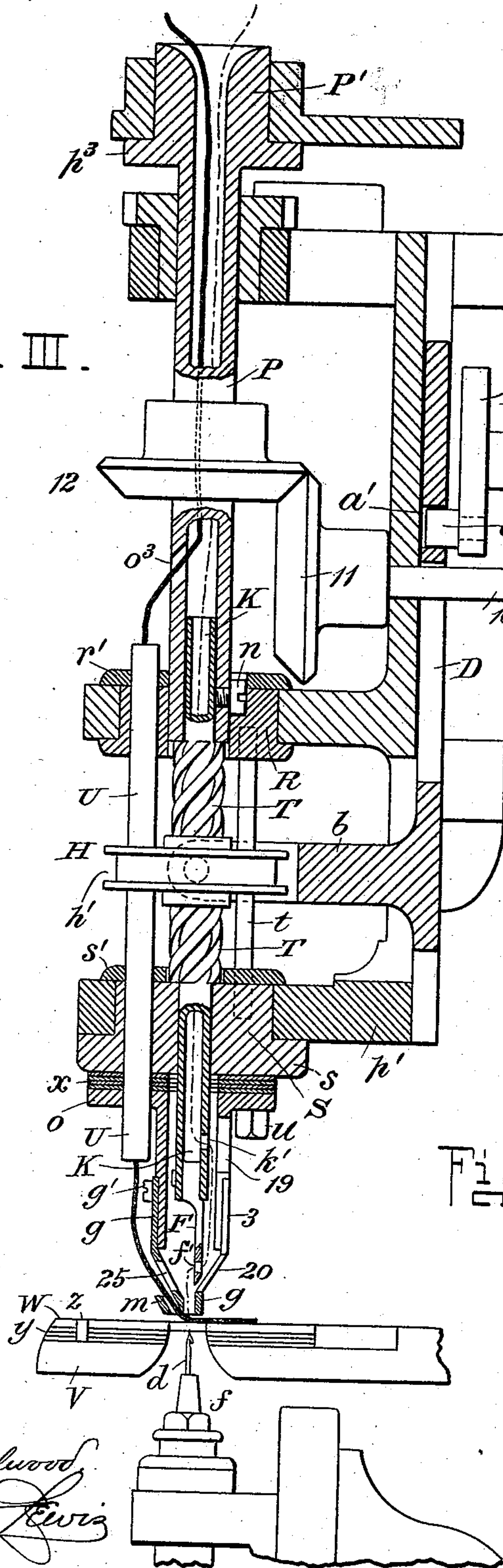


Fig. IV.

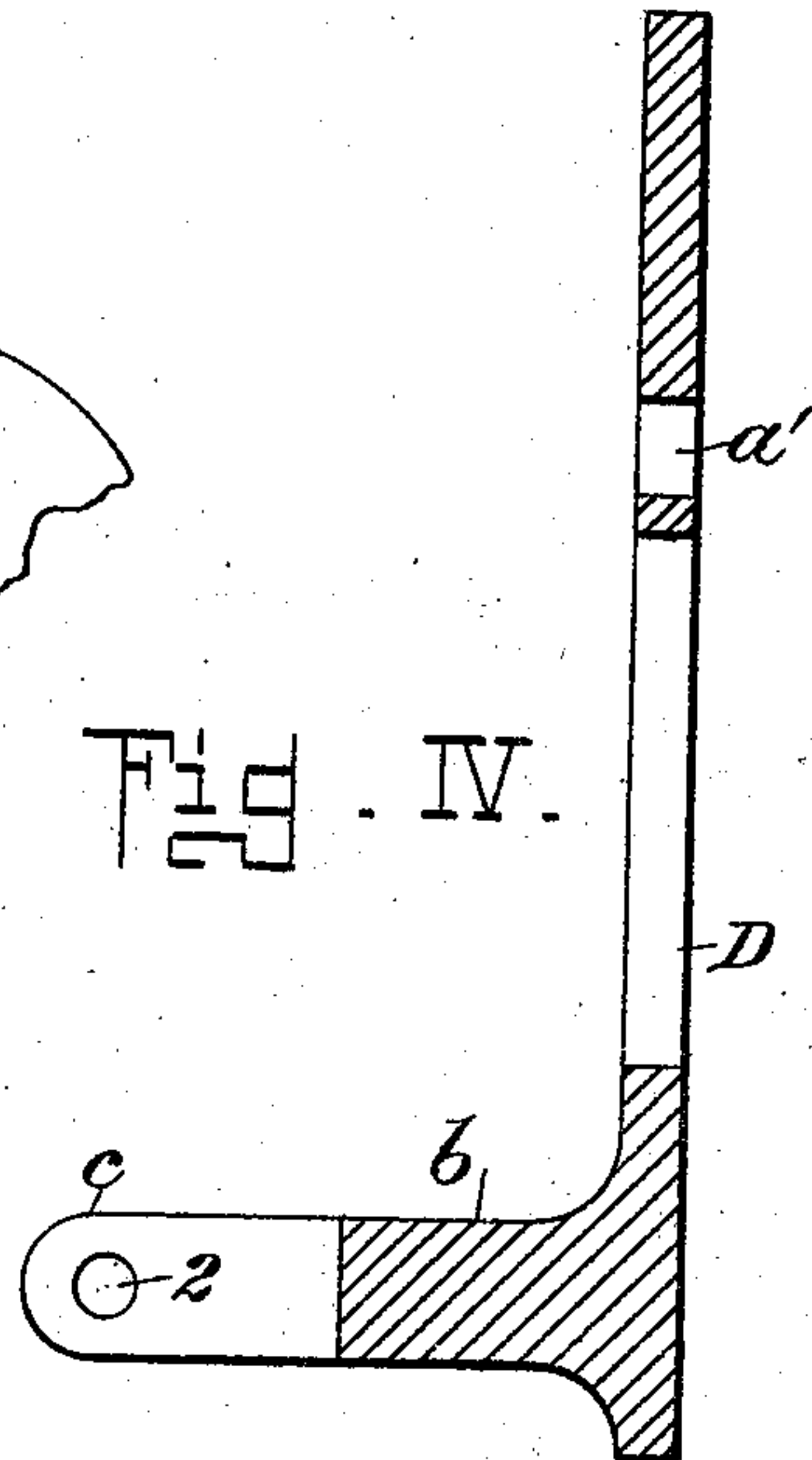


Fig. V.

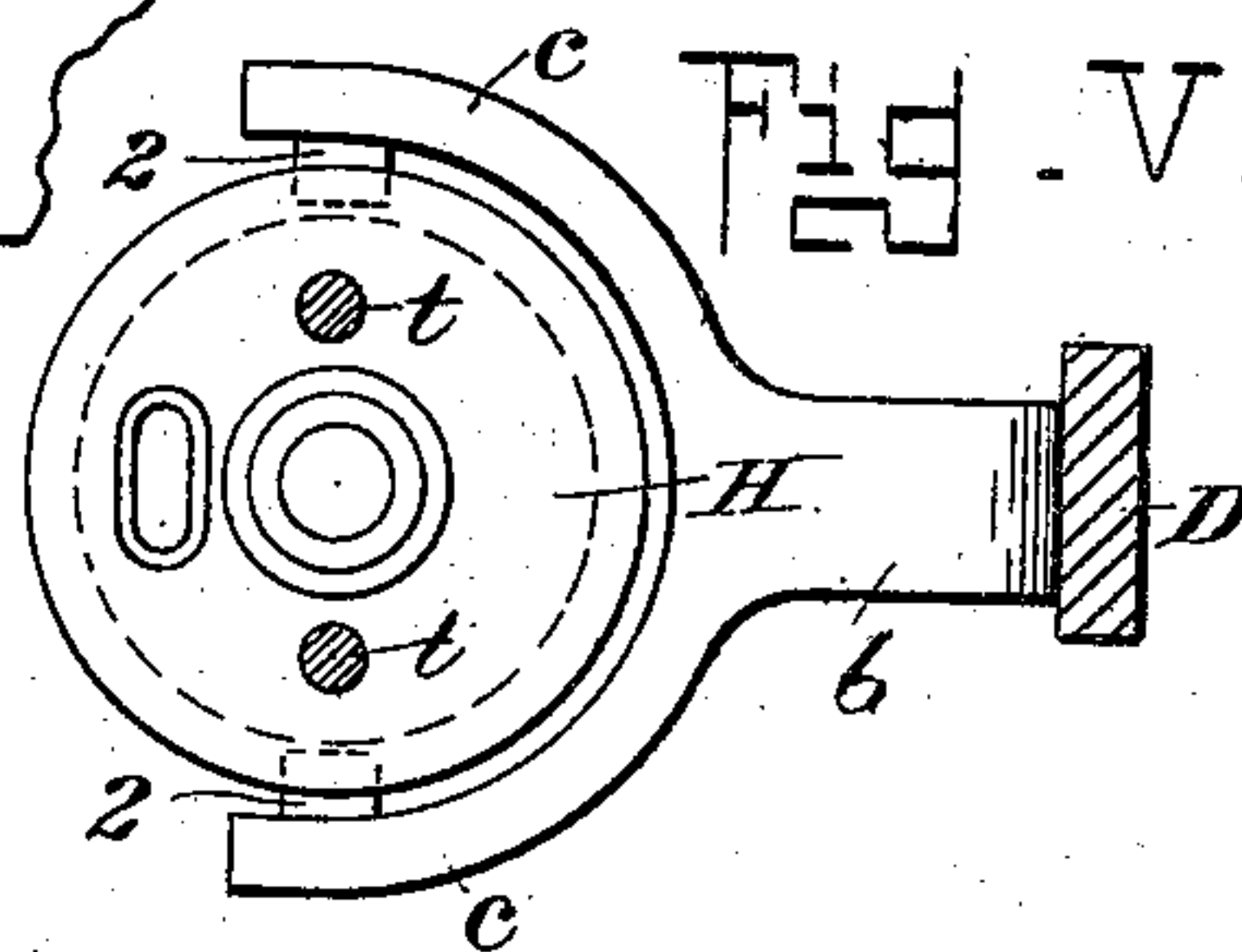
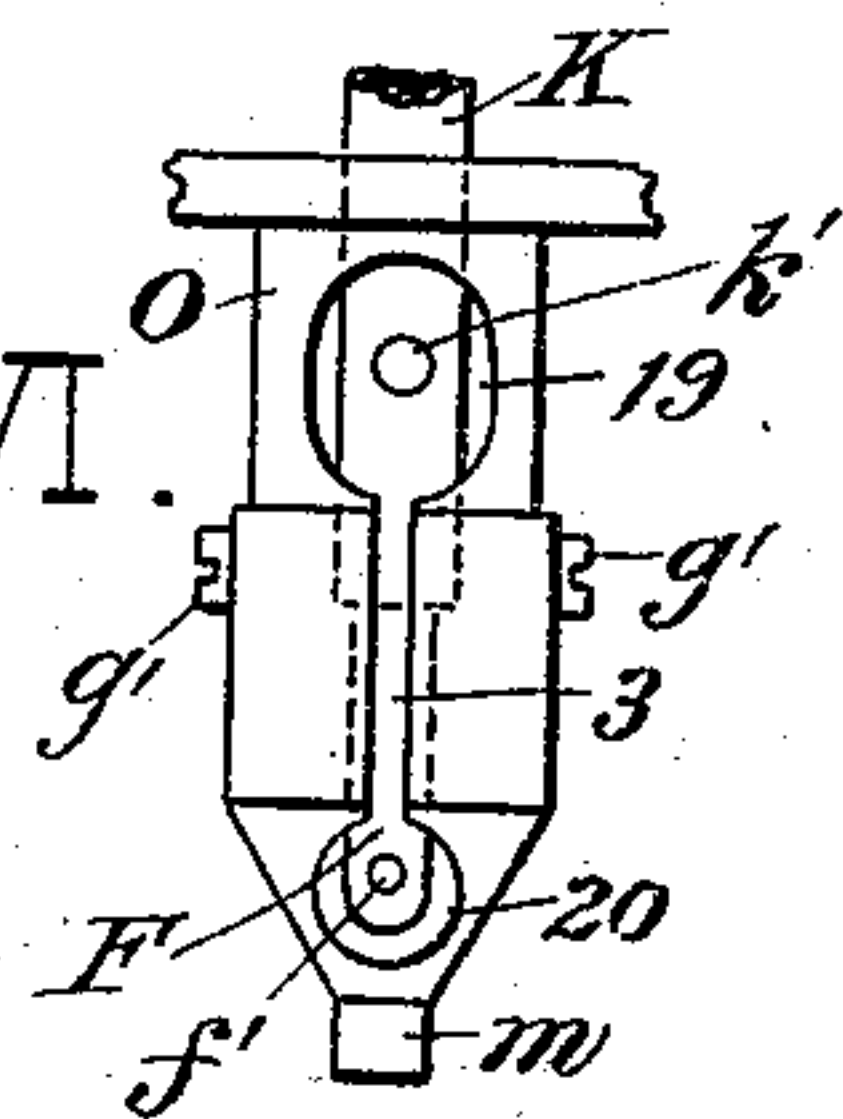


Fig. VI.



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# UNITED STATES PATENT OFFICE.

EMILE CORNELY AND ROBERT CORNELY, OF PARIS, FRANCE.

## EMBROIDERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 501,704, dated July 18, 1893.

Application filed April 7, 1893. Serial No. 469,469. (No model.)

*To all whom it may concern:*

Be it known that we, EMILE CORNELY and ROBERT CORNELY, residents of Paris, France, have invented a new and useful Improvement in Embroidering-Machines, which improvement is fully set forth in the following specification.

The present invention has reference to embroidering machines particularly adapted for the production of chain-stitching on the under side of the fabric, while a single seam stitch, which may be employed for attaching braid or cord to the fabric if desired, is produced on the upper side of the latter.

In carrying out the invention the needle (which ordinarily operates downwardly from above the bed-plate) passes upwardly through an opening in the bed-plate, through the fabric and into a cylindrical casing in which an oscillating thread-carrier or looper operates to feed the thread thereto. The machine is also equipped with universal feed mechanism which together with the mechanism for operating the thread-carrier and other important features of the construction will be more fully described in connection with the accompanying drawings, forming part of this specification, and in which—

Figure I, is a front elevation (partly in section) of a machine embodying our invention. Fig. II, is an end elevation of the parts above the bed-plate. Fig. III is an enlarged vertical section through the head of the machine, certain parts being in elevation. Fig. IV is a vertical sectional view of the slide which carries the oscillating nut for operating the thread-carrier or looper. Fig. V is a horizontal sectional view of the same showing the nut in place. Fig. VI is an elevation at right angles to Fig. III, of the casing for the thread-carrier. Fig. VII is an enlarged sectional view through the thread-carrier and casing therefor, showing the hook-needle in its raised position, and Figs. VIII, IX and X are detail views of modified forms of the oscillating nut and the slide therefor.

A represents the main shaft of the machine driven by any suitable power, and B the feed-mechanism of well known construction, operated from said shaft.

The mechanism for operating the oscillating thread-carrier, hereinafter referred to as

the looper, is as follows: A slide D engaging in suitable ways in the head of the machine is oscillated in a vertical direction by the shaft A, connected therewith by the disk E carrying an eccentrically arranged pin upon which engages the friction roller *a*, which bears in a cam-slot *a'* in the slide D. An arm *b* on slide D is formed with a forked end *c* curved in the arc of a circle, which fork embraces a circular nut H. Nut H encircles and is in engagement with the screw T formed on the hollow shaft K carrying at its lower end the looper F. The nut H has an annular groove *h'* around its edge, into which groove project pins 2 on fork *c*, whereby said nut is carried with the slide D in its vertical movement but is at the same time free to revolve in a horizontal plane. The lower end of the shaft K passes through the circular block S which projects into a corresponding opening in bracket *p'* on the head of the machine, a flange *s* on said nut engaging against the under side of the bracket. This nut is held in place by a washer *s'* secured to the upper face thereof and projecting over the edge of the bracket *p'*. At its upper end the shaft K engages loosely within the end of a tube P which rests in a block R similar in construction to block S, working in an opening in a bracket *p* corresponding to bracket *p'*. The head of a screw *n* on the tube P enters a recess formed in the block R and its washer *r'* so that the tube is carried with the block during its rotation, for purposes hereinafter to be described.

O is the casing for the looper F, secured to the under side of block S by a bolt *u* passing through the flange *o*. A nipple *g* having a vertical needle opening *g<sup>2</sup>* in its lower end is sleeved over the end of casing O and fastened thereto by screws *g'*. To facilitate the threading of the looper, openings 19 and 20 connected by slot 3 are formed in the casing O and nipple *g* respectively, opposite thread openings *k'* (in shaft K) and *f'* (in looper F). An opening 25 is also formed in nipple *g* opposite opening 20 to permit inspection of the looper during its operation. The tube P has an enlarged upper end P' and a flange *p<sup>3</sup>* which serves to support a braid bobbin R' and spool holder S<sup>2</sup> having a spring tension device 17 for regulating the feed of the thread therefrom. The thread from spool S<sup>2</sup> passes



downwardly through the tube P, hollow-shaft K, thread openings  $k'$  and  $f'$  whence it is fed to the needle. The braid from bobbin R' passes downwardly into tube P through an opening  $o^3$  in the side thereof, through a second tube U, (which projects through block R, nut H and block S,) and thence through braid guide  $m$ .

From the description given it will be noted that the nipple  $g$  is not movable vertically and in order to provide for the effective operation of the machine in connection with both thin and thick fabrics, removable plates  $x$  are placed between the casing O and block S. Similar plates  $y$  are also preferably located between the bed-plate V and the auxiliary plate W and are held in place by a pin  $z$ . The needle  $d$  secured by chuck  $f$  is operated by any suitable mechanism connected with a shaft I, which receives its power from the main shaft A through gears G and L, shaft L' and gears M and N, or by means of the gears  $h'$ ,  $i$ , shaft L<sup>2</sup> and gears  $p^2$  and  $k$ , as shown in dotted lines Fig. I.

Q is the crank handle for operating the universal feed mechanism, portions of which have already been incidentally described. Motion is transmitted from said handle to the needle through the pinions 4, 5<sup>3</sup>, shaft 5' to a pinion (not shown) which engages pinion 6, shaft 6', pinions 7 and 8, shaft 8', pinions 13 and 14, shaft 14' and pinions 15 and 16. From the shaft 8' motion is carried to the looper and its operating mechanism through the pinions 9 and 10, shaft 10', pinion 11, to a gear-wheel 12, secured on the tube P from which it will be seen that upon the operation of the crank-handle Q a corresponding movement will be transmitted to the blocks R and S, nut H and all parts of the looper and braiding mechanism connected therewith. In order to provide for the simultaneous movement of the blocks R and S they are more rigidly connected together by rods  $t$  which pass through the nut H.

In Figs. VIII, IX and X we have shown modifications of the nut H and arm  $b$ . In Figs. VIII and IX the end of arm  $b$  is in the form of a ring having an inwardly projecting flange 21 which projects into the groove  $h'$ . The upper edge of the groove  $h'$  is formed by a plate 23' secured to nut H by screws 23, in order that the nut may be easily put in place and removed. The modification shown in Fig. X is similar to the form shown in Fig. V with the exception that a flange 21 is substituted for the pins 2.

In operation the needle passes upwardly through the base-plate, and into the casing O through the needle opening  $g^2$  (as shown in Fig. VII) the nipple serving as a needle-plate. When in this position the looper rotates about the needle and feeds the thread from the spool S<sup>2</sup> thereto. Upon the descent of the needle

the loop is drawn through the fabric while a single seam stitch is formed on the upper side thereof. When braid is used, it is fed across the opening  $g^2$  so that the needle passes there-through and the single seam stitch is formed on the upper side of the braid. It will be understood that the nut H during its oscillatory movement slides freely on the rods  $t$  and tube U.

Having thus described our invention, what we claim is—

1. The combination with a needle operating upwardly from beneath the bed-plate, of a thread-carrier above the latter, a vertically arranged shaft, to the lower end of which the thread-carrier is secured, an interiorly screw-threaded nut engaging a screw-thread on the vertical shaft, a vertically oscillating slide operated from the main driving shaft, a right-angle extension on the oscillating slide carrying the nut and means for preventing the nut from rotating during its vertical movement, substantially as described.

2. The combination with the universal feed mechanism and its crank-handle of a hollow shaft through which the thread passes to the looper at its lower end, an oscillatory nut engaging a screw-thread on the exterior of said shaft, a tube slidably engaged by the nut in its oscillatory movement, through which braid passes, and means for rotating said tube around the hollow shaft as an axis upon the movement of the crank-handle, substantially as described.

3. The combination with the universal feed-mechanism and its crank-handle of rotatable blocks supported in suitable bearings in the frame of the machine, an exteriorly screw-threaded shaft engaging loosely in said blocks and carrying a looper at its lower end, an interiorly screw-threaded nut engaging said shaft, connections between said blocks upon which the nut slidably engages, means for imparting movement to said nut, and connections whereby said blocks and nut are rotated upon the movement of the crank-handle, substantially as described.

4. In an embroidering machine the combination with the needle operating upwardly from beneath the bed-plate, of a looper casing above the latter and a series of removable plates for regulating the distance between the looper casing and bed-plate, substantially as described.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

EMILE CORNELLY.  
ROBERT CORNELLY.

Witnesses:

ROBT. M. HOOPER,  
D. T. S. FULLER.