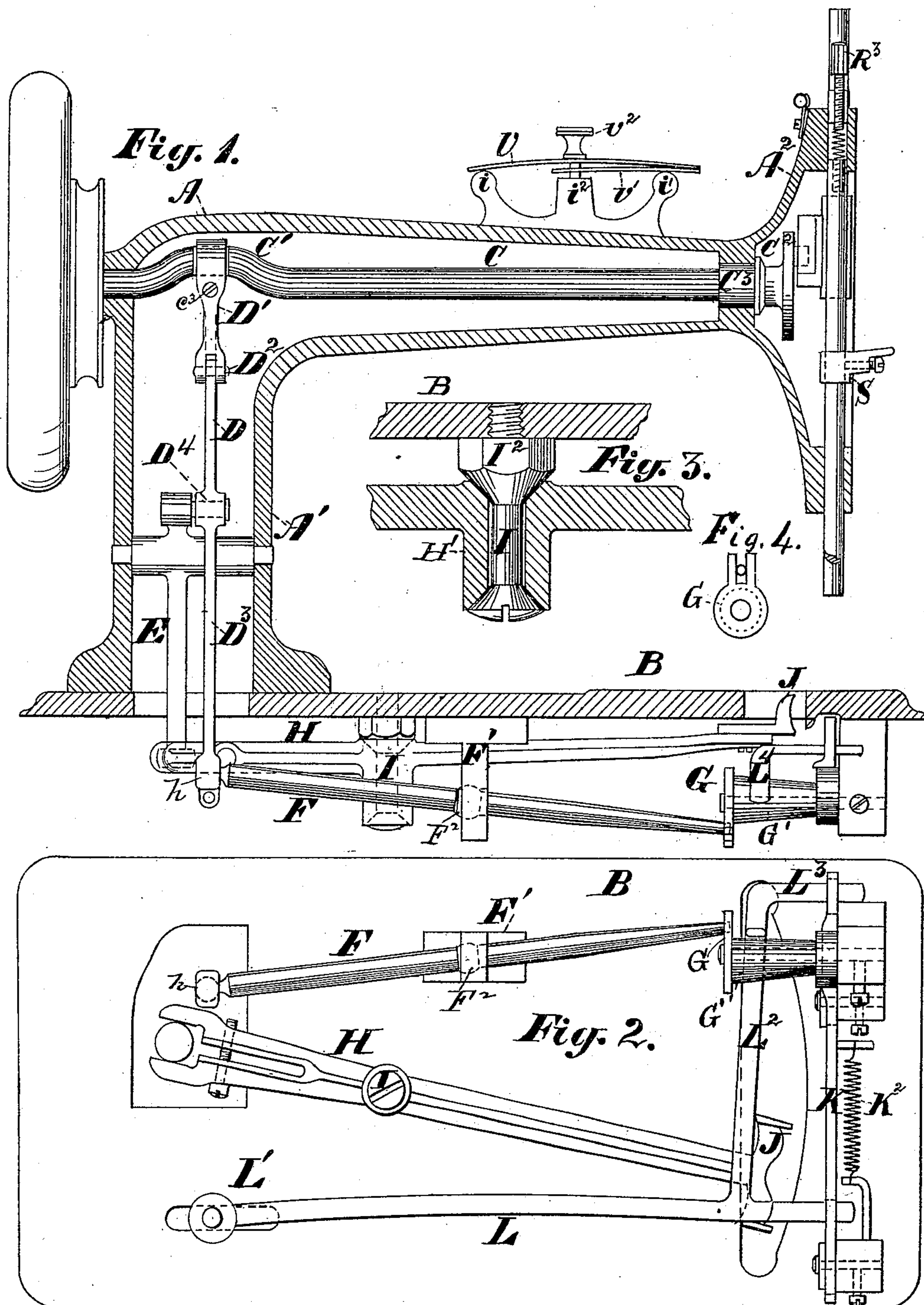


T. A. MACAULAY.
SEWING MACHINE.

No. 248,593.

Patented Oct. 25, 1881.



Witnesses.

H. F. Parker,
J. L. Hawley

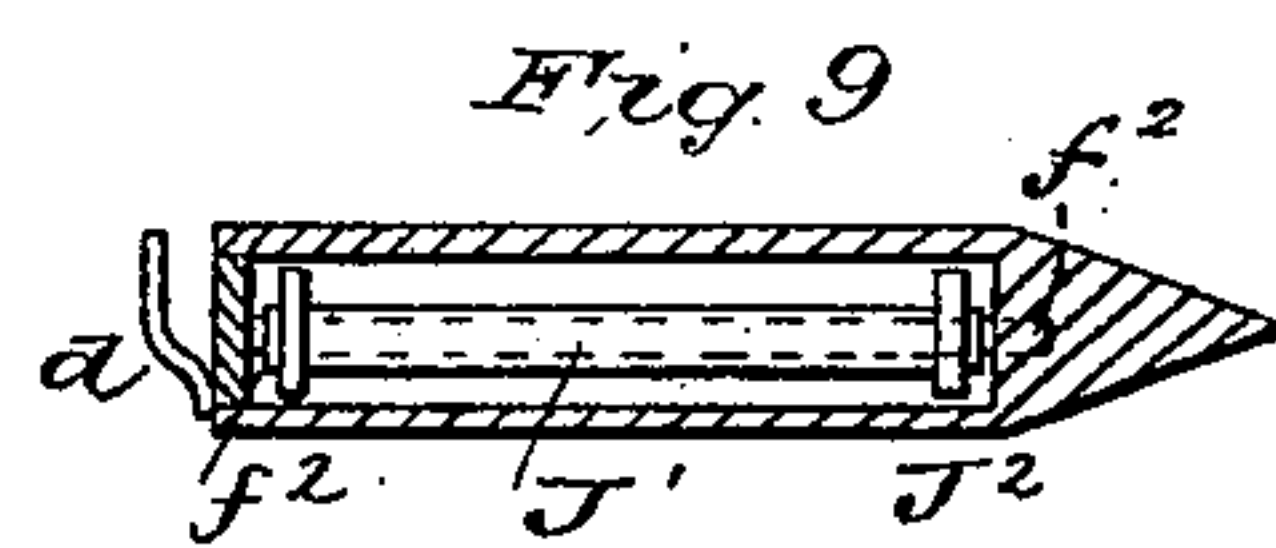
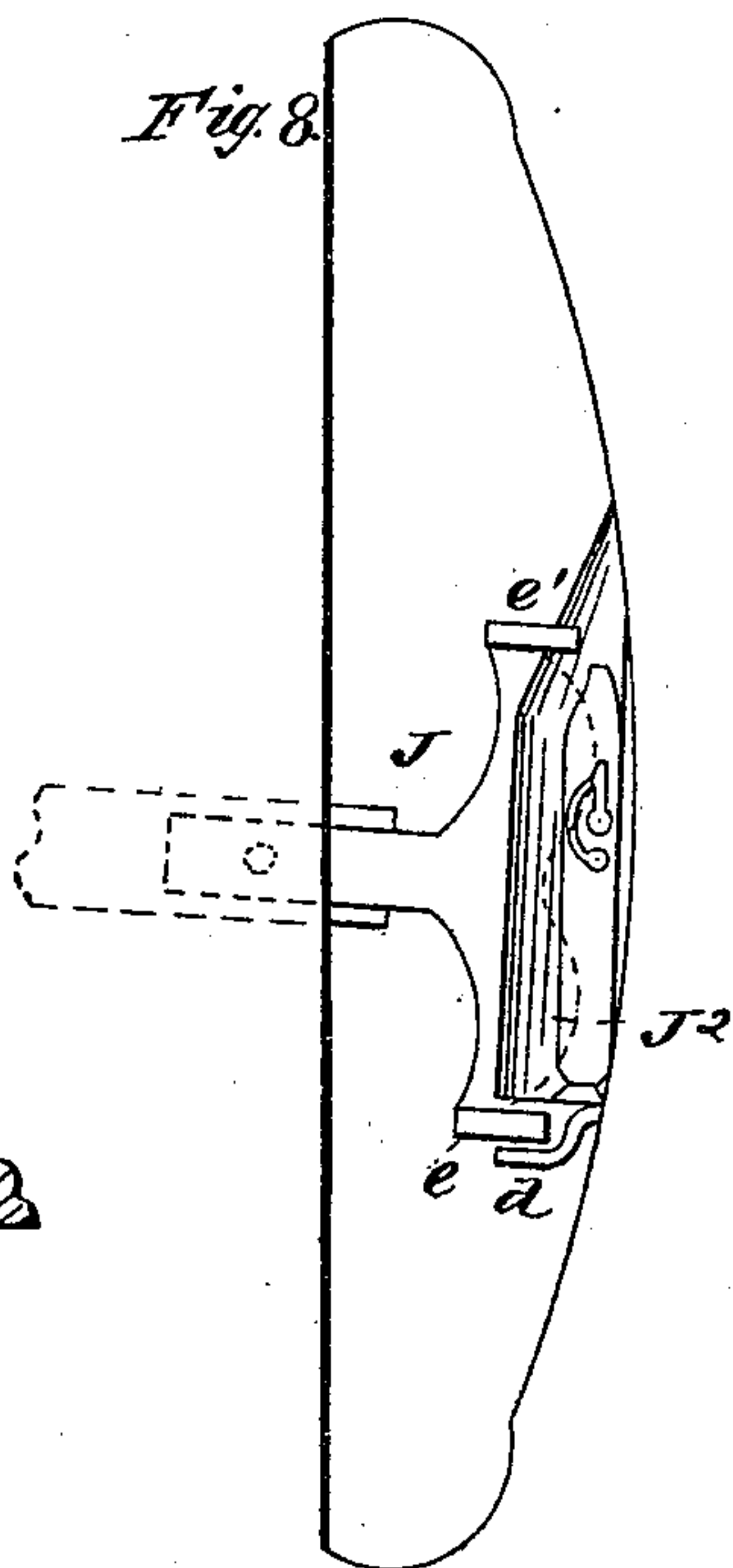
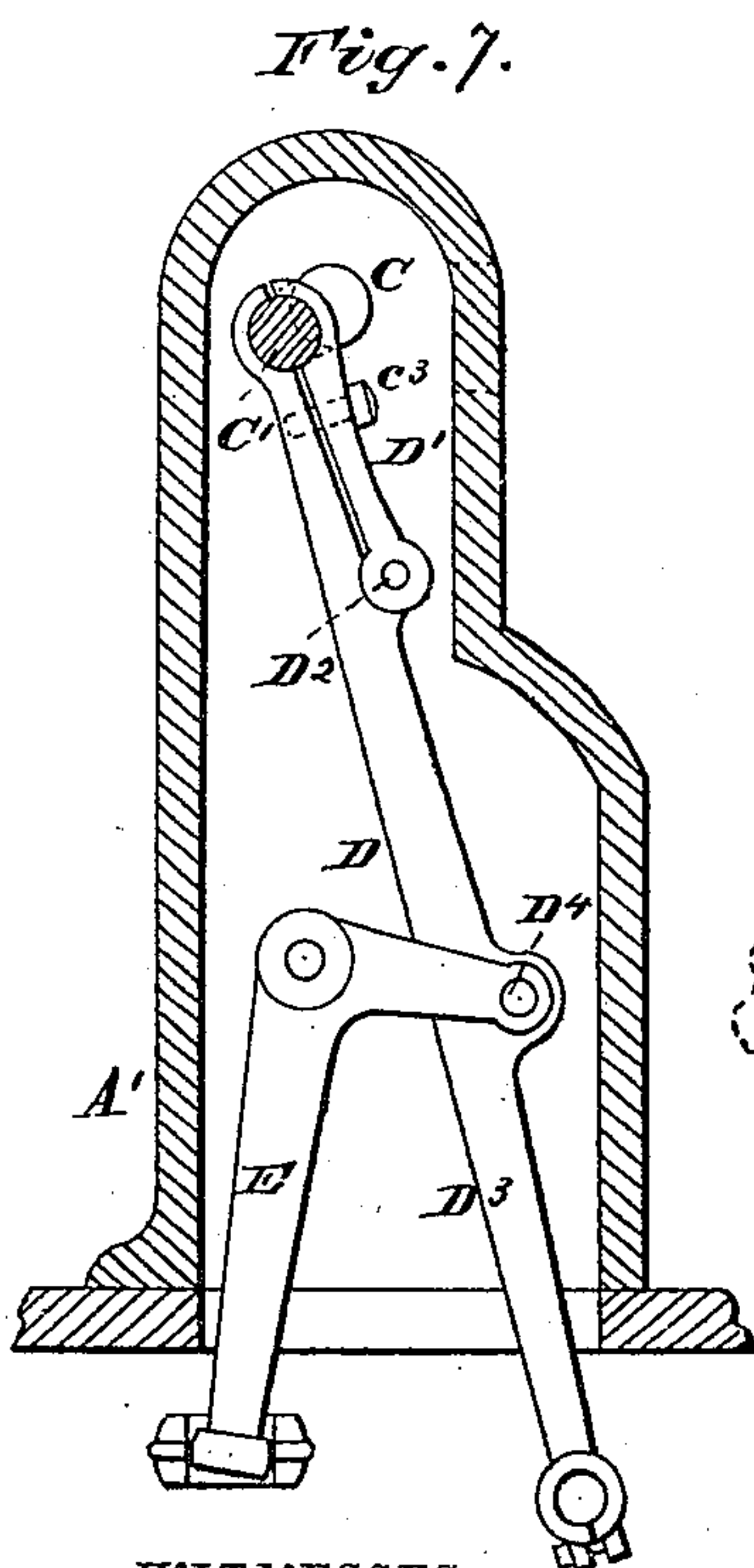
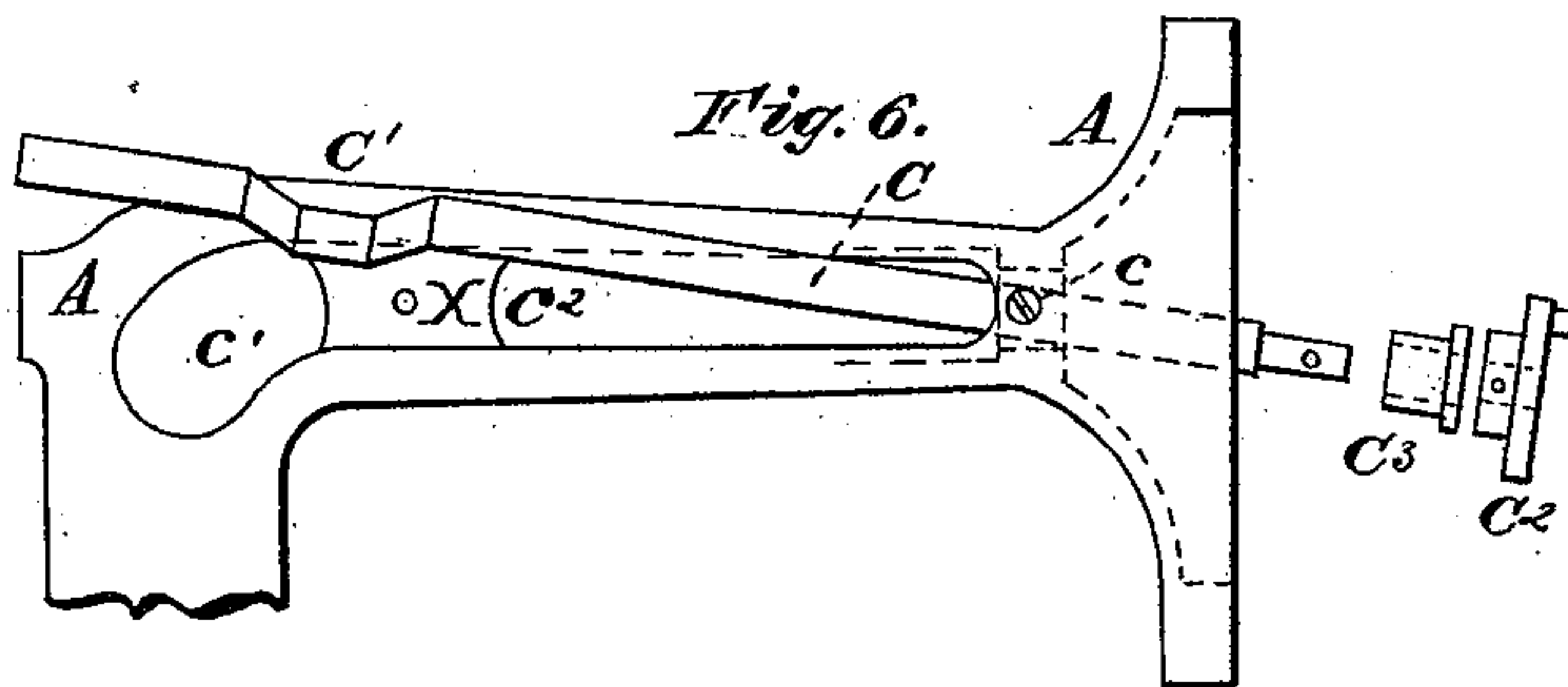
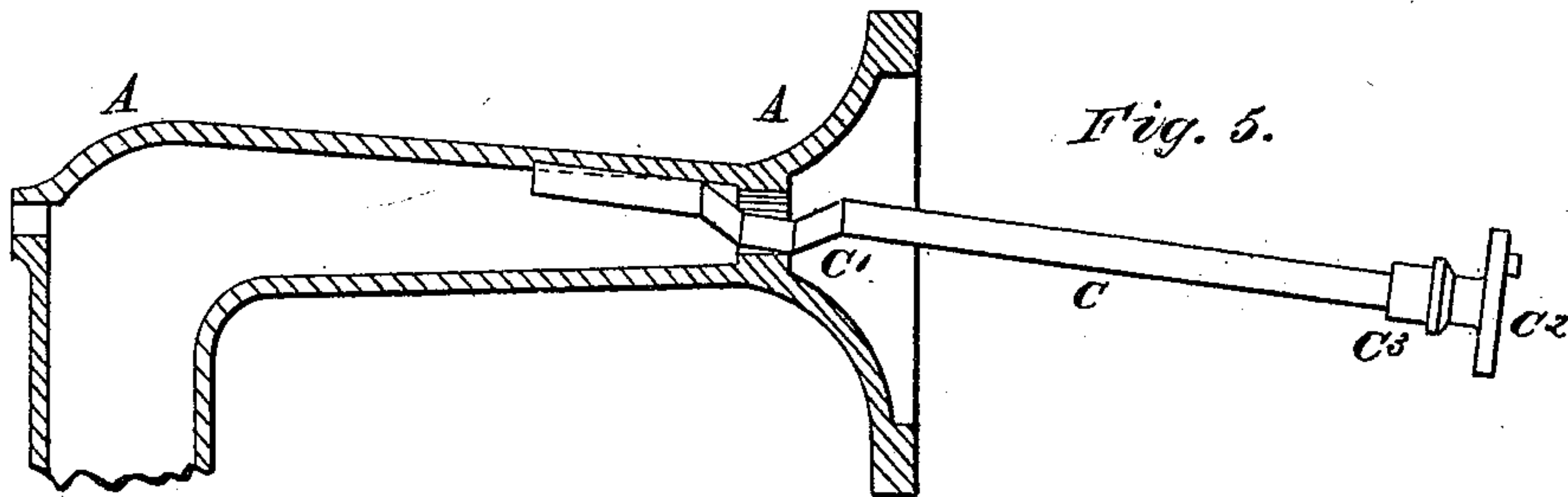
INVENTOR.

T. A. Macaulay

T. A. MACAULAY.
SEWING MACHINE.

No. 248,593.

Patented Oct. 25, 1881.



WITNESSES

Fred. G. Dieterich
J. A. Schmidt

INVENTOR
Thos. A. Macaulay

Attorneys

UNITED STATES PATENT OFFICE.

THOMAS A. MACAULAY, OF NEW YORK, N. Y.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 248,593, dated October 25, 1881.

Application filed November 11, 1879.

To all whom it may concern:

Be it known that I, THOMAS A. MACAULAY, of the city, county, and State of New York, have invented new and useful Improvements in Sewing-Machines, of which the following, with the accompanying drawings, is a specification which will enable others skilled in the art of making sewing-machines to make and use the same.

10 Similar letters refer to like parts.

The object of my invention is to simplify the construction of sewing-machines; and it consists of the devices and their arrangement, as hereinafter more fully described, the features thereof being, first, the combination, with the arm provided with a side opening and an enlarged inclosed bearing, of a crank-shaft adapted to be inserted in said arm; second, a means of coupling the pitman to the crank which conveys motion from the crank to other parts of the machine located under the platform; third, a device for converting and conveying the rotary motion of the main driving-shaft in the arm of the sewing-machine to operate other devices located under the platform requiring rotary motion; fourth, a compensating-journal stud for taking up lost motion; fifth, a means of operating a shuttle when held in a carrier.

In the drawings, Figure 1 is a sectional side elevation of a sewing-machine embodying my invention. Fig. 2 is a plan view of the under side of the bed. Fig. 3 is a sectional elevation of the compensating-journal. Fig. 4 is a face view of the slotted crank G. Figs. 5 and 6 are detail views of the arm and crank-shaft. Fig. 7 is a cross-section of Fig. 1 through the post A'. Fig. 8 is a plan view of the shuttle-carrier. Fig. 9 is a sectional view of the shuttle.

A is the arm. A' is the post of arm. B is the bed. C is the main driving-shaft. C' is the crank. C² is a disk or crank. C³ is an enlarged journal. D is a pitman. D' is a hinged cap. D² is a hinged pin. D³ is an extension of the pitman D. D⁴ is a stud-pin. E is a bell-crank lever. F is a connecting-lever. F' is a projection for bearing. F² is a ball-joint or bearing. G is a slotted crank. H is a shuttle-lever. H' is a hub on the said lever. I is a cone-headed bolt. I² is a coned lock-nut. J is a shuttle-carrier. J² is a shuttle. K is a feed-bar. K² is a spring. c' c² are openings in the arm. c³ is a

clamping-screw on the pitman. d is a wing or heel-piece on the shuttle. e is a driving-horn. e' is a shuttle-guard.

The arm A is hollow, and provided with an enlarged bearing or seat at its front end or head A², and two openings, c' c², on its rear side.

The shaft C, crank C', and disk C² are made in one piece. The front bearing, C³, is of larger diameter than the shaft and is made short. The opening C² extends from the edge of the front bearing backward. To insert the shaft its rear end is passed in through the front bearing in the head A slantwise and upward, (see Fig. 5,) so as to pass out of the opening c². The crank C' is now in the front bearing. By turning the shaft round, bringing its rear end into the hollow of the arm and pressing it toward the rear bearing, the crank C' will have passed through the front bearing in the head A'. The shaft can now be passed backward to the rear bearing, in which it fits, the front bearing, C³, fitting snugly in the enlarged bearing in the head A'. A modification of this way of inserting the crank-shaft is shown in Fig. 6, where the crank-shaft and disk and hub or bush are two or more separate pieces, the front end of the shaft being passed through the opening c² slantwise from the outside and out through the front bearing, which is larger than the diameter of the shaft. The disk C² is pinned to the shaft while in this position. The shaft is then passed back to its rear seat, as in Fig. 5, and is in place. The bush C³ is then secured in the enlarged bearing of the arm by a set-screw, c, as indicated in said figure. The bush C³ may be made integral with the disk C², if desired. The screw c would then be unnecessary.

The pitman is attached to the crank C' by the hinged cap D', which is pinned to the pitman D by the hinge-pin D² and clamping-screw c³. An opening, c', in the rear side of the arm gives access to the cap, screw, and crank.

The rotary motion of the main driving-shaft is transmitted to a crank under the platform, to which is connected a cam for operating the feed.

The pitman-lever D D³ being centrally connected at D⁴, the motion of the crank C' causes its lower end to travel round a given center.

The connecting-lever E being connected to

the pitman-lever at *h* and fulcrumed at *F'*, its front end travels round the center of crank *G*, revolving the crank and its cam. A revolving hook or revolving shuttle-carrier may be operated in the same way.

The compensating-journal consists of the cone-headed bolt *I*, the adjustable cone lock-nut *I*², and the screw-threaded hole in the bed *B*, the bolt and lock-nut being in the position shown in Fig. 3, tight enough to permit an easy motion of the shuttle-lever *H* between the cones. By turning the lock-nut until it is tight against the bed the bolt will then be firmly locked in the bed, and the lever will move freely on the bolt. The bolt may be a taper one instead of cone-headed, and the lock-nut without a cone and secured in the same way, and serve the purpose of a compensating-journal as well as the cones.

The shuttle is carried in a cradle in the usual manner, but is carried forward and back by the rear horn, *e*, of the carrier engaging with the rear end of the shuttle and a wing, *d*, fixed to the rear end of the shuttle. The front horn, *e'*, of the carrier acts as a guard to keep the shuttle from falling out. The bobbin *J'*, being hollow, is held in the shuttle on an arbor, *f*², passing through it, resting in a cavity in the front end of the shuttle. The shuttle is cylindrical and split in the direction of its length, and the head of the arbor, being of slightly greater diameter than the internal diameter of the shuttle, when pressed into the shuttle is held sufficiently tight to draw the shuttle backward as the rear horn of the carrier engages with it. When the shuttle is of the kind in which the bobbin is inserted from the side, the wing *d* may be part of the body of the shuttle and be operated by the carrier, as above described.

The arm *A*, having the openings *c'* *c*² for admitting the shaft and connecting the crank and pitman, as described, is weakened thereby to some extent. To prevent this weakening as

much as possible a sunk rib or web, *X*, is provided inside of the depression left for the reception of the cover which closes the openings *c'* *c*². This rib or web, having a threaded hole, serves also as a means whereby to attach the cover as well as to strengthen the arm.

A shuttle having a curved face and driving-wing and a shuttle having a swinging bar provided with a driving-wing will not be claimed in this application, but will be made the subject-matter of a separate application.

Having described my invention and the manner of carrying it into effect, what I claim is—

1. The combination of a sewing-machine arm, *A*, having a side opening and an enlarged inclosed bearing, with the crank-shaft *C*, substantially as and for the purposes herein described.

2. The shaft *C*, having a crank, *C'*, and an enlarged journal, *C*³, in combination with the sewing-machine arm *A*, provided with an enlarged inclosed bearing and side opening, substantially as and for the purposes herein described.

3. In combination with the crank *C'* and pitman *D*, provided with the hinged cap *D'*, the hollow arm *A*, having an aperture, *c'*, opposite the said cap and crank, for the purpose set forth.

4. The combination of the crank *C'*, pitman-lever *D* *D*³, with the lever *F*, crank *G*, and sleeve or shaft *G'*, substantially as set forth.

5. The compensating-journal composed of the bolt *I* and single lock-nut *I*², located beneath the bed-plate, in combination with the hub *H'* and bed-plate *B*, substantially as herein specified.

6. The combination of the carrier *J*, having the rear driving-horn, *e*, with a shuttle having a wing, *d*, substantially as set forth.

THOS. A. MACAULAY.

Witnesses:

I. L. HEWLETT,
PHILIP BECKER.