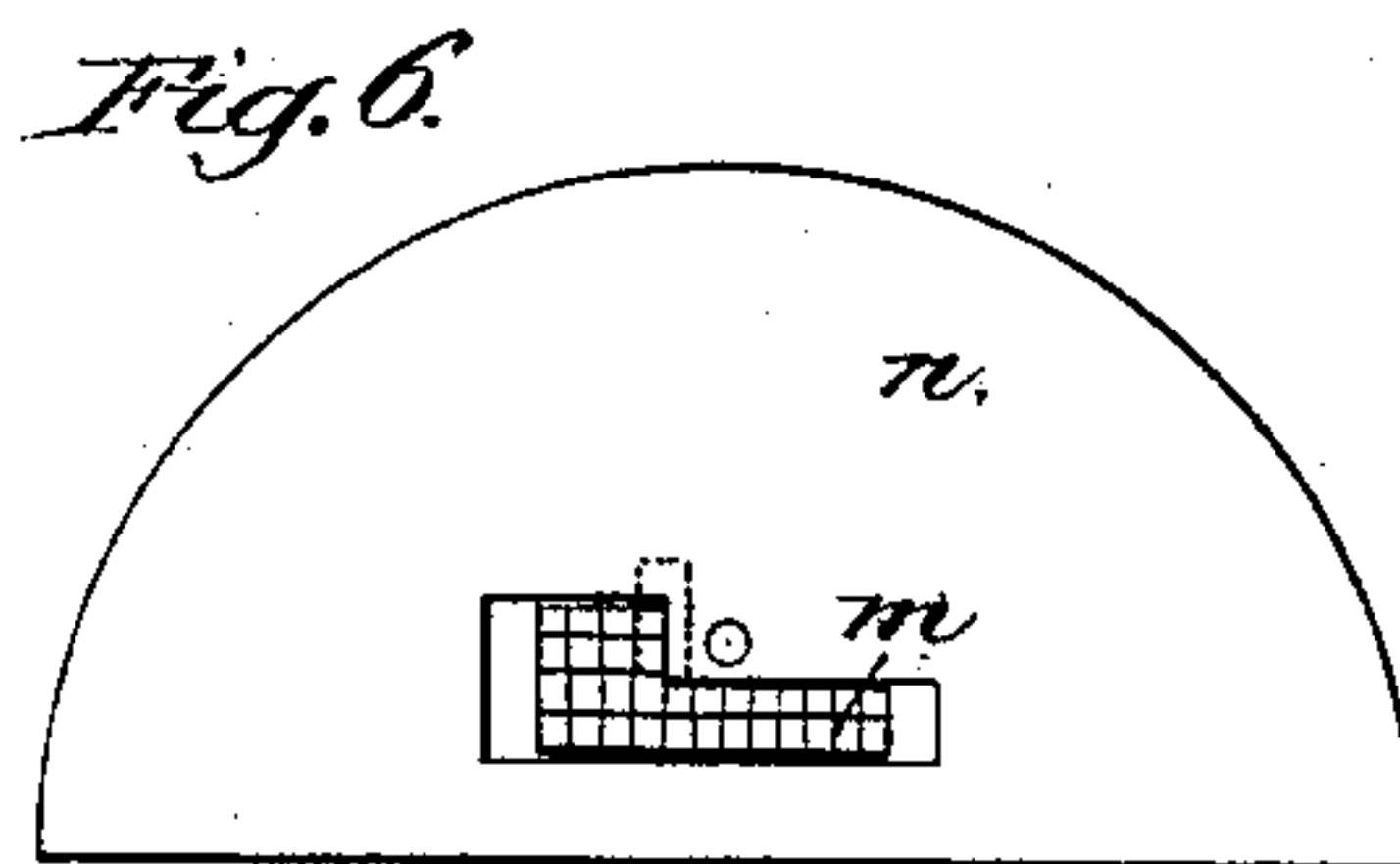
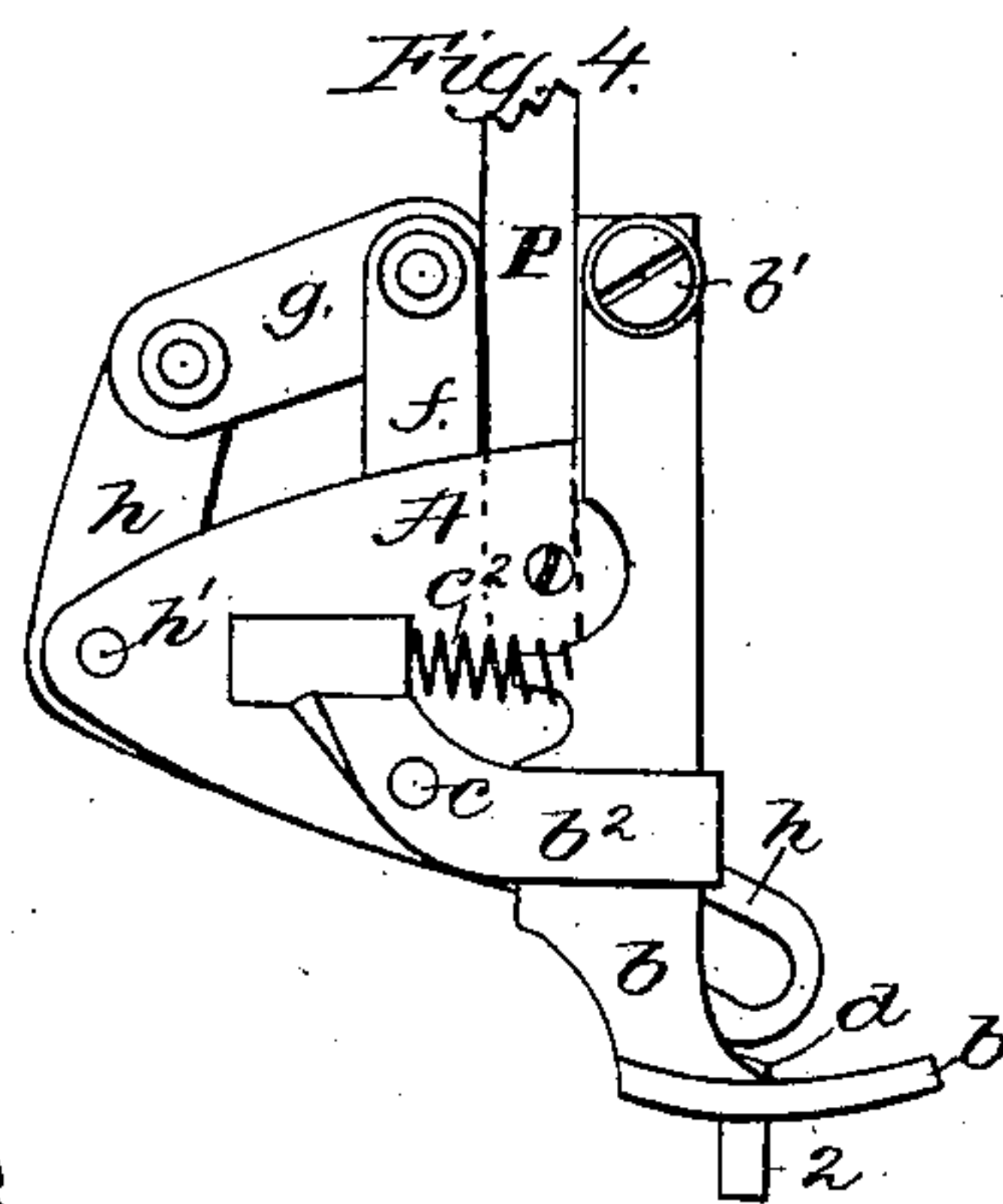
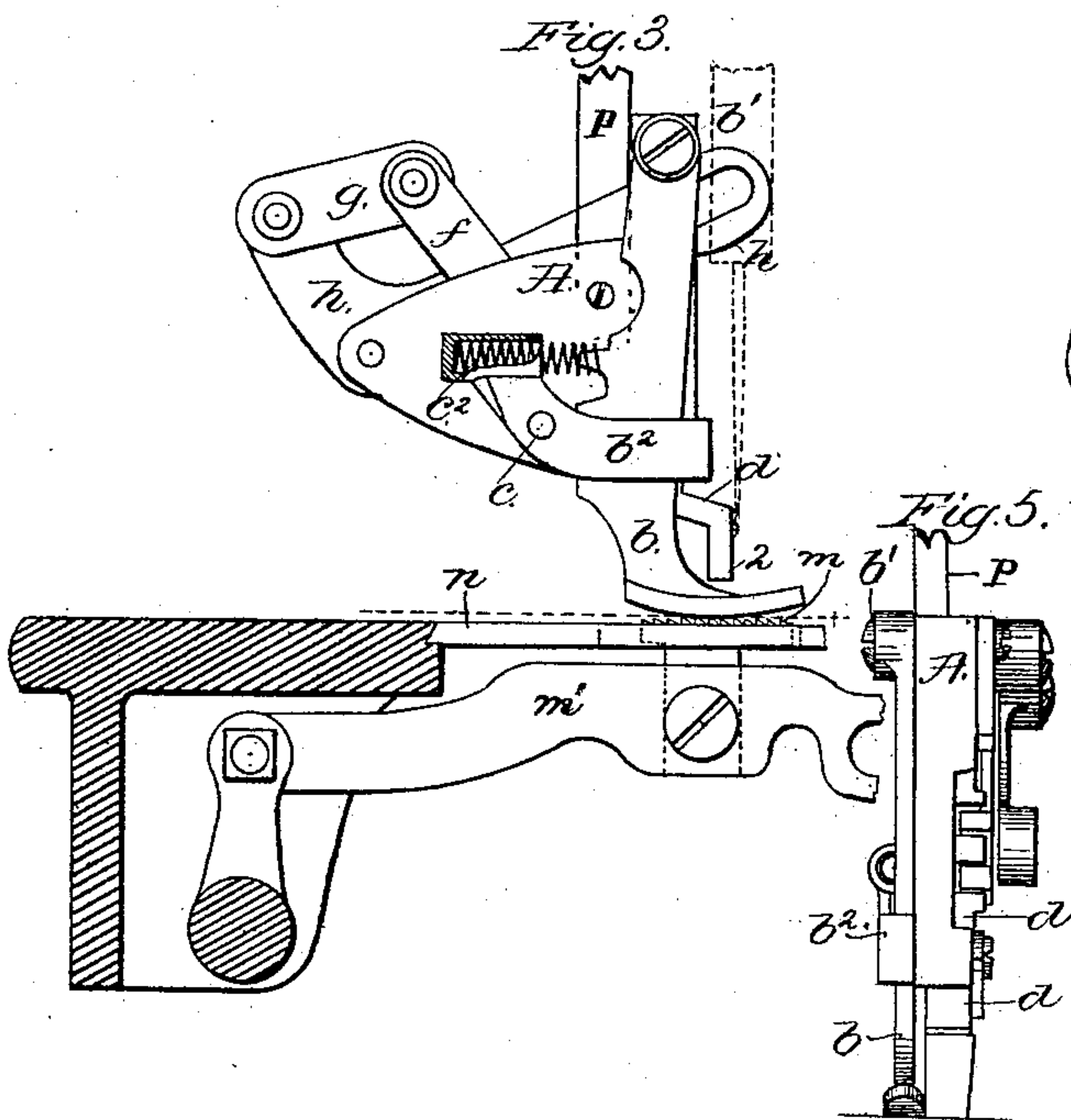
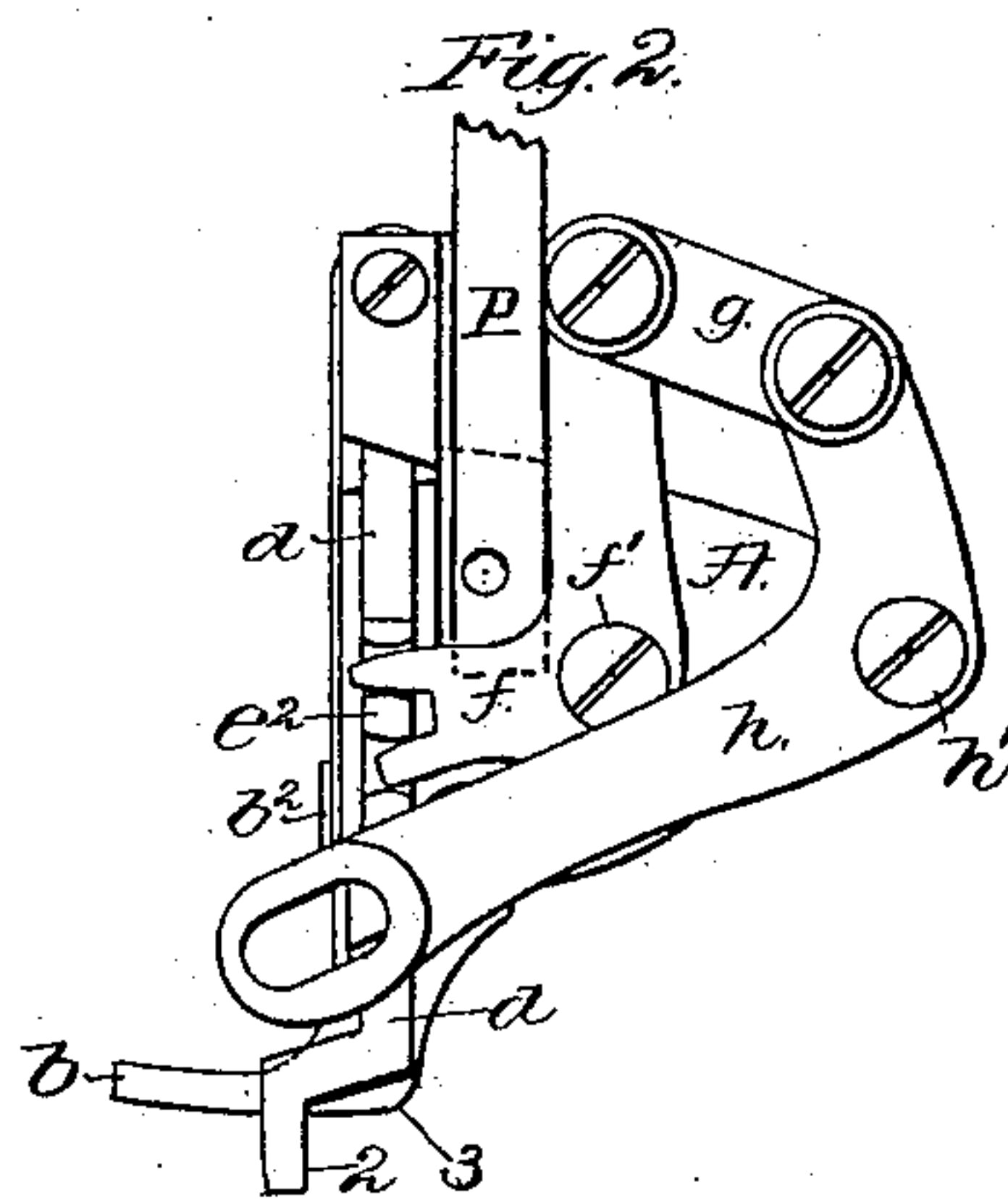
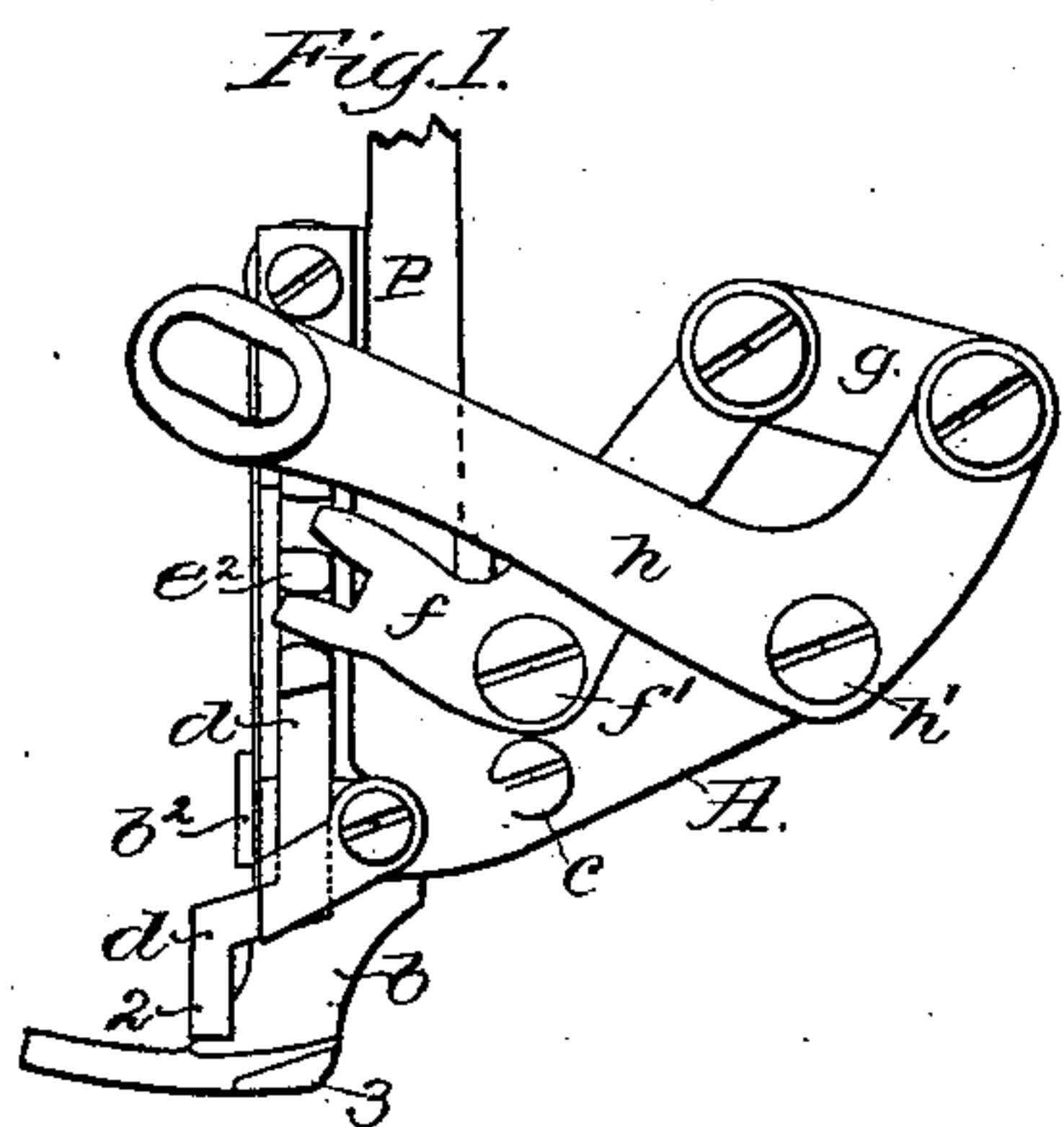


(Model.)

W. JOHNSON.
SEWING MACHINE.

No. 254,486.

Patented Mar. 7, 1882.



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM JOHNSON, OF HAVERHILL, MASSACHUSETTS.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 254,486, dated March 7, 1882.

Application filed November 10, 1881. (Model.)

To all whom it may concern :

Be it known that I, WILLIAM JOHNSON, of Haverhill, county of Essex, State of Massachusetts, have invented an Improvement in Sewing-Machines, of which the following description, in connection with the accompanying drawings, is a specification.

This invention in sewing-machines has reference to improvements in feeding the material, especially when binding and similar work is being done, wherein the drag of the presser on the binding tends to injuriously stretch it.

My invention relates especially to an organization of mechanism for lifting the presser-foot to obviate hurtful drag or tension on the binding or material.

My invention will preferably be made as an attachment, but may, it is obvious, form a regular part of a sewing-machine.

Figure 1 is an inner side view of my invention embodied in an attachment, the lifting-bar being elevated; Fig. 2, a like view with the bar depressed. Fig. 3 is a front or outer side view with the swinging presser-foot carried back, as it will be by the movement of the cloth, (shown in dotted lines,) acted upon by the regular feeding device, a portion of which is shown as having been lifted above the needle-hole plate. This figure also shows, in dotted lines, the needle and part of the usual needle-bar. Fig. 4 is a like view, the lifting-bar being thrown down, as in Fig. 2, to relieve the pressure of or lift the swinging presser-foot from the fabric or material being sewed, to permit a spring or device connected with the swinging foot to throw the latter forward as the usual under feeder below the material is drawn back; and Fig. 5 is a view of the parts shown in Fig. 1, looking at them from the left, the lower end of the lifting-bar and the under side of the presser being, however, in the same plane horizontally; and Fig. 6 a detail of the needle-hole plate, showing the top of the usual under feeder and the needle-hole, the dotted lines showing the point occupied by the lifting-bar when it descends upon the material just at the rear of the needle-hole.

This my improved apparatus may be applied

to any sewing-machine having any usual under feed, a four-motioned feeding device being, however, preferable.

The aim of my invention is the production of mechanism whereby the material being sewed may be held by the presser-foot down upon the feeding device as the latter is moved forward in feeding, the presser-foot moving with the material and under feeder, whatever may be its extent of movement; but the feed having been completed the presser-foot will be automatically lifted and thrown backward above the material as the under feeder retires or is moved backward prior to again being moved forward to carry the material for a new stitch.

In the drawings, A represents a bracket of suitable shape to properly sustain the working parts.

The upper end of the presser-foot *b* is pivoted at *b'* upon an ear at the upper end of this bracket, and near its lower end is guided between the said bracket and a cap, *b²*, connected with the bracket A by a screw, *c*. The cap at its upper end is made tubular to receive and hold a spiral or other spring, *c²*, the outer end of which bears against the rear side of the shank of the said presser-foot, the normal tendency of the said spring being to keep the presser forward toward the operator and in the right-hand end of the slot or space between the cap *b²* and the bracket A, as in Figs. 1 and 4. This spring permits the said foot *b* to be carried away from the operator with the material being sewed in the direction of the forward movement of the usual under feeder, *m*, connected with bar *m'*, into the position shown in Fig. 3, thus making a presser-foot which may swing on its pivot *b'* as well as rise and fall in the usual manner, to adapt it to the thickness of the material and keep the material on the usual under feeder during its feeding movements, it being understood that the bracket A, carrying the presser-foot *b*, will in practice be adjustably attached to the usual presser-bar, P, of the sewing-machine in which this my invention is to be used. The feeder *m* and its carrying-bar *m'* are the same, and will be actuated as in the New Singer sewing-machine.

The bracket A has a suitable guideway to receive the lifting-bar *d*, which at proper times is thrown down positively upon the material being sewed, immediately at the rear of that point where it is penetrated by the sewing-machine needle, the said material being at that point supported by that part of the throat or needle-hole plate, as shown in dotted lines, Fig. 6, immediately at the rear of the needle-hole made therein. This lifting-bar is thrown down on the material just after the completion of the forward stroke of the usual under feeding device and of the movement of the presser-foot *b* away from the operator, and as it is so thrown down the presser-foot is lifted, (the usual feeding device then being retracted below the material,) and as soon as lifted the spring *e* quickly throws or swings the said presser-foot toward the operator, so that it will be in correct position over the usual feeding device, when it is again started to move the material forward for a new stitch. The lower end, 2, of the lifting-bar is carried forward over the heel 3 of the presser-foot, so that it will fall immediately at the rear of the usual needle-hole in the plate *n* of the sewing-machine. This lifting-bar has a lug or pin, *e*², which is engaged by the forked end of an elbow-lever, *f*, pivoted at *f'* on the bracket A, the said elbow-lever being connected by a link, *g*, with a bell-crank lever, *h*, pivoted at *h'* on the bracket A, the front end of the said bell-crank lever being slotted or otherwise shaped, as common to like levers in sewing-machine rufflers, to permit the said lever to be operatively connected with the usual needle-bar of the sewing-machine in the usual manner.

Instead of the slot-and-pin connection between the lifting-bar and the elbow-lever, I may provide the end of the said lever with sector-teeth and make it engage rack-teeth on the said bar. I do not desire to limit my invention to the exact mechanical details herein shown for actuating the lifting-bar, as other well-known equivalent devices actuated from the needle-bar or other part of the machine may be employed.

I do not claim a presser-foot and a feeding device located above the cloth, for I am aware that a lifting presser-foot has been provided with a toothed feeding device which is thrown

down upon the material and moves it positively for each stitch, as in United States Patent No. 24,939; nor do I claim a vertically-reciprocating presser-foot having a vertically and horizontally movable helper or cloth-feeding device arranged to bear upon the cloth in advance of the needle in the direction of the feed of the cloth, and which moves with and co-operates with the needle to feed the cloth forward.

I claim—

1. The pivoted swinging presser-foot and the vertically-movable lifting-bar, adapted to descend upon the material being sewed near the needle-hole of the plate which supports the material to lift the presser-foot above the material, combined with an under feeder, adapted to engage the under side of and feed the material for each stitch, the presser-foot moving with the said feeder and cloth as the cloth is being fed forward, substantially as and for the purpose described.

2. The under feeder to engage the under side of the material and carry it forward, and a swinging presser-foot above the material and moving with it, combined with a vertically-movable lifting-bar adapted to be thrown down upon the material while at rest to lift the presser-foot, and with a spring to move the said presser-foot toward the operator, substantially as and for the purposes set forth.

3. The bracket A, the swinging presser-foot pivoted thereon, and the spring to throw it toward the operator, combined with the short lifting-bar guided by the said frame and reciprocated vertically therein, substantially as described.

4. The bracket A, swinging presser-foot pivoted thereon, and the lifting-bar guided by the bracket, combined with the system of levers carried by the said bracket, and adapted to be actuated by the needle bar, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM JOHNSON.

Witnesses:

G. W. GREGORY,
W. H. SIGSTON.