

(No Model.)

H. CASE.
SEWING MACHINE TRIMMER.

No. 495,020.

Patented Apr. 11, 1893.

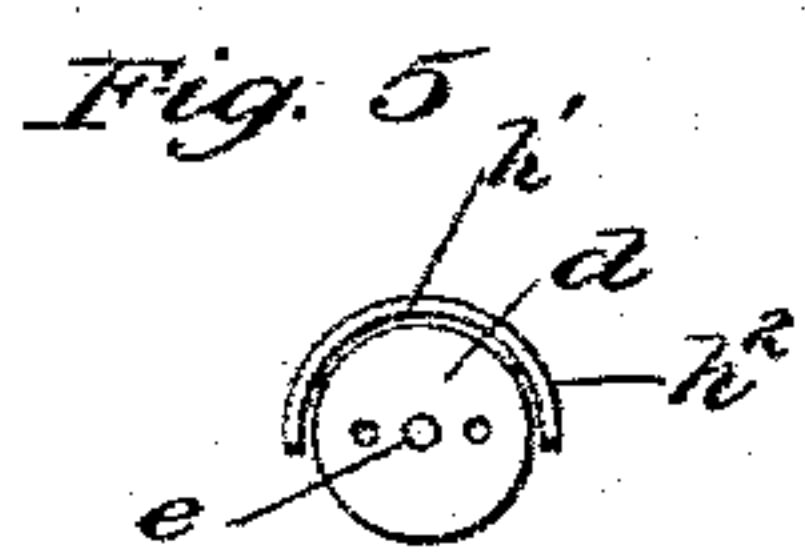
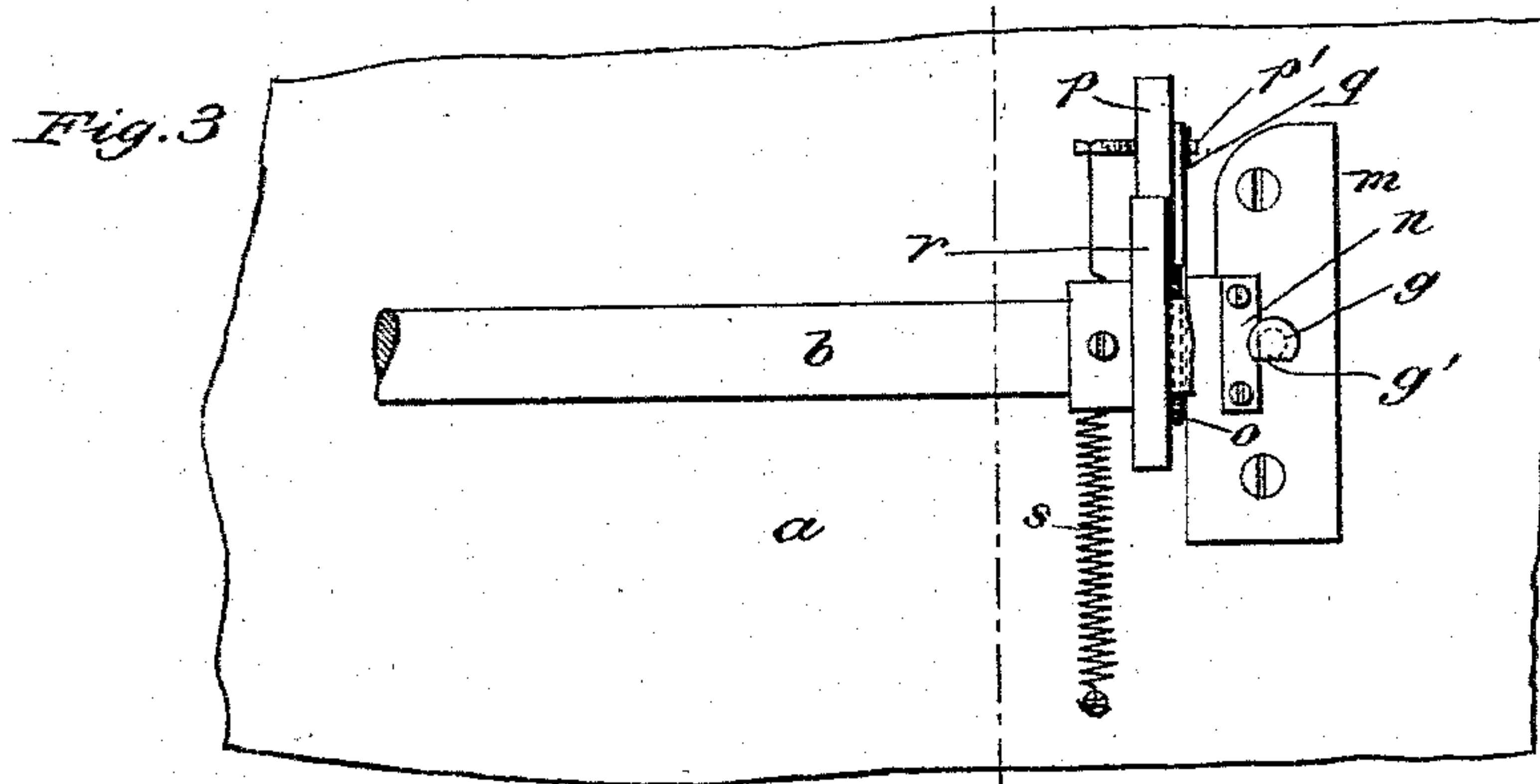
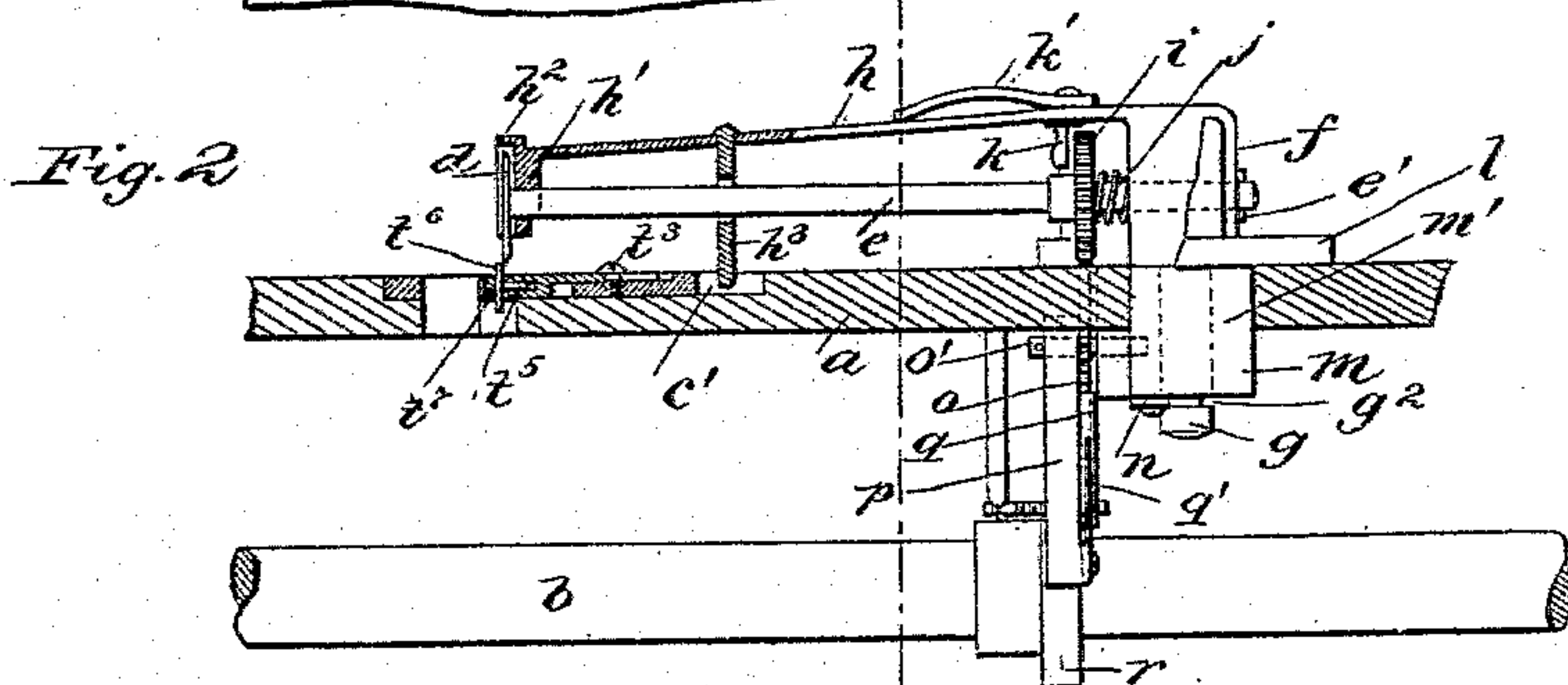
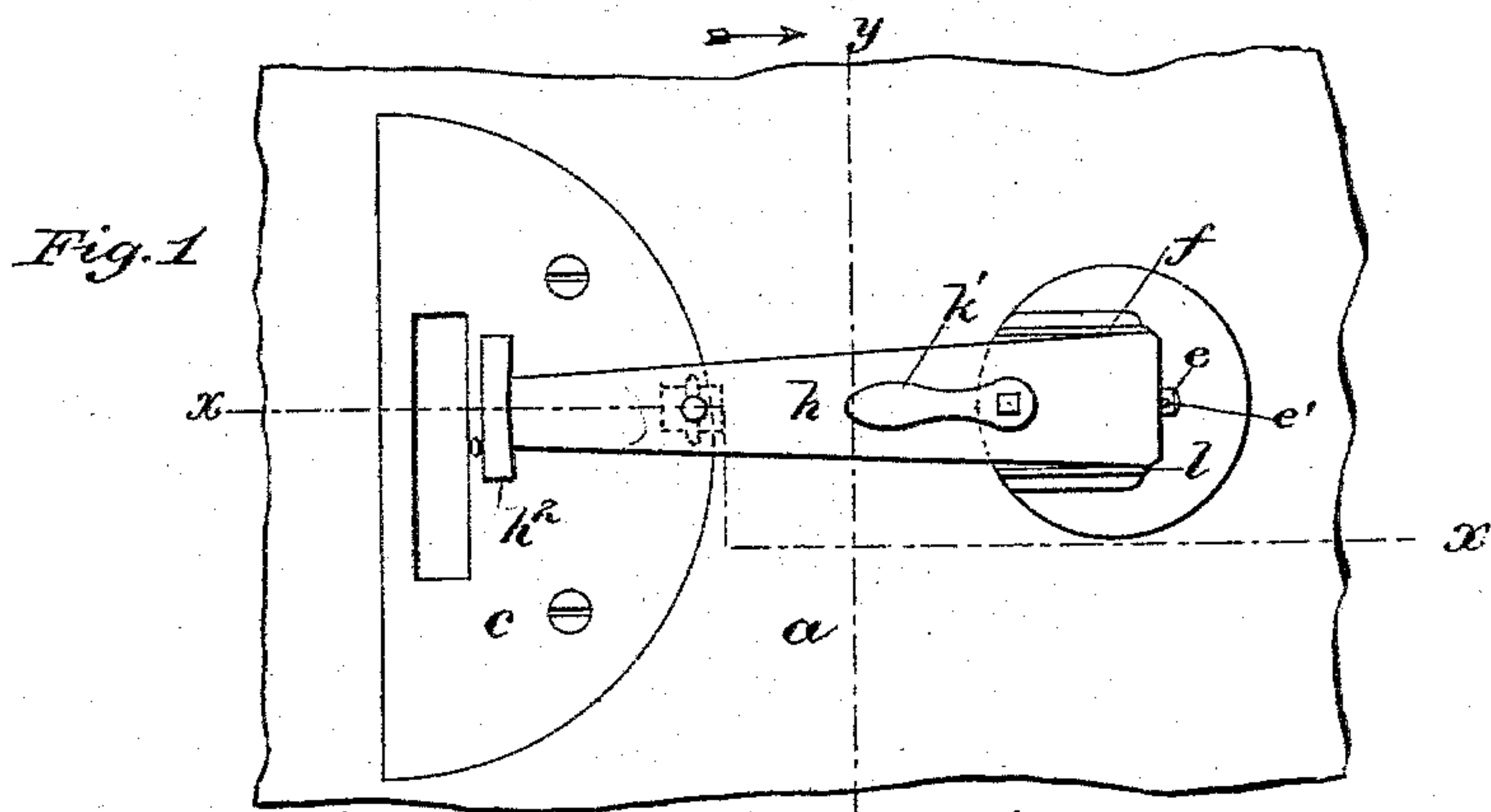


Fig. 4

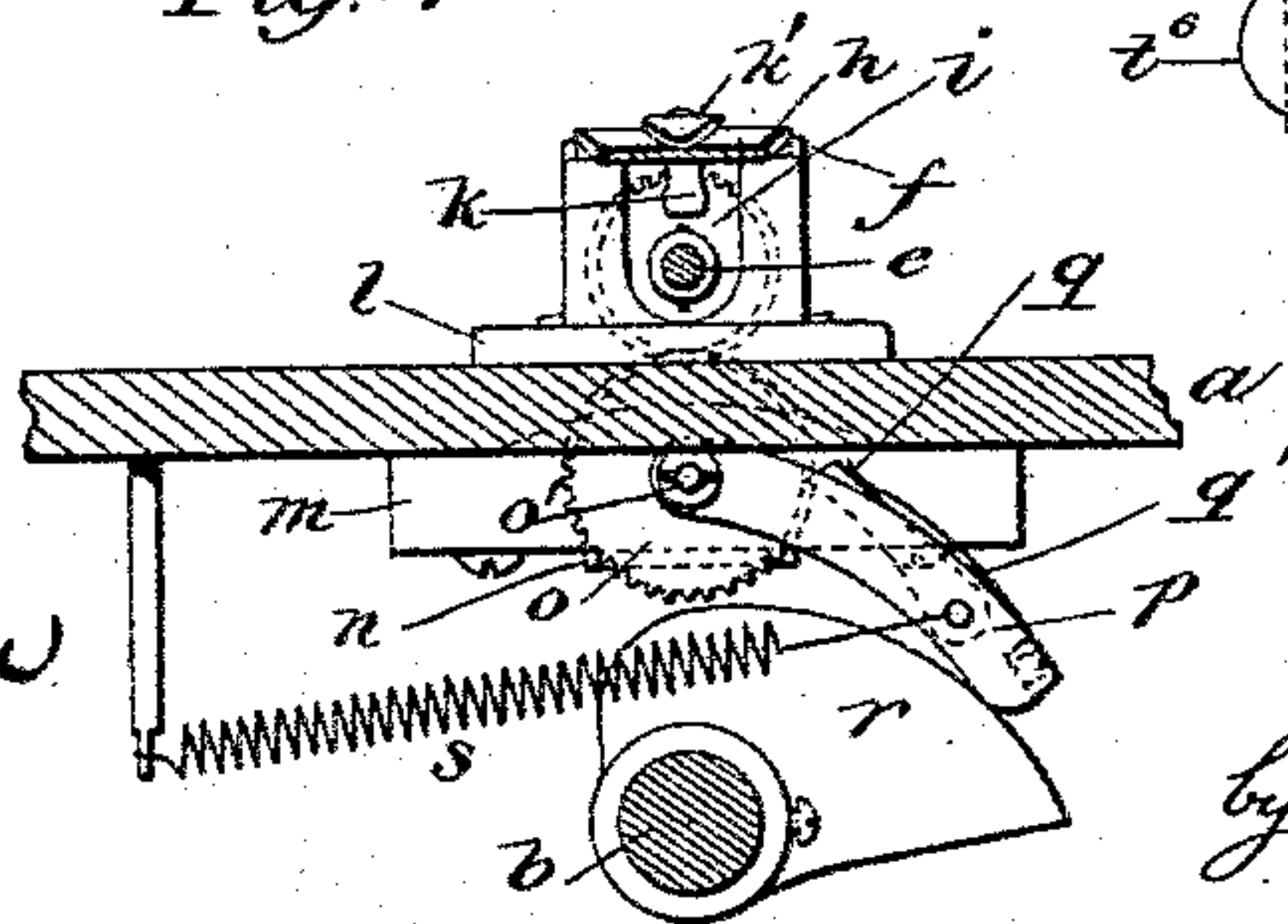
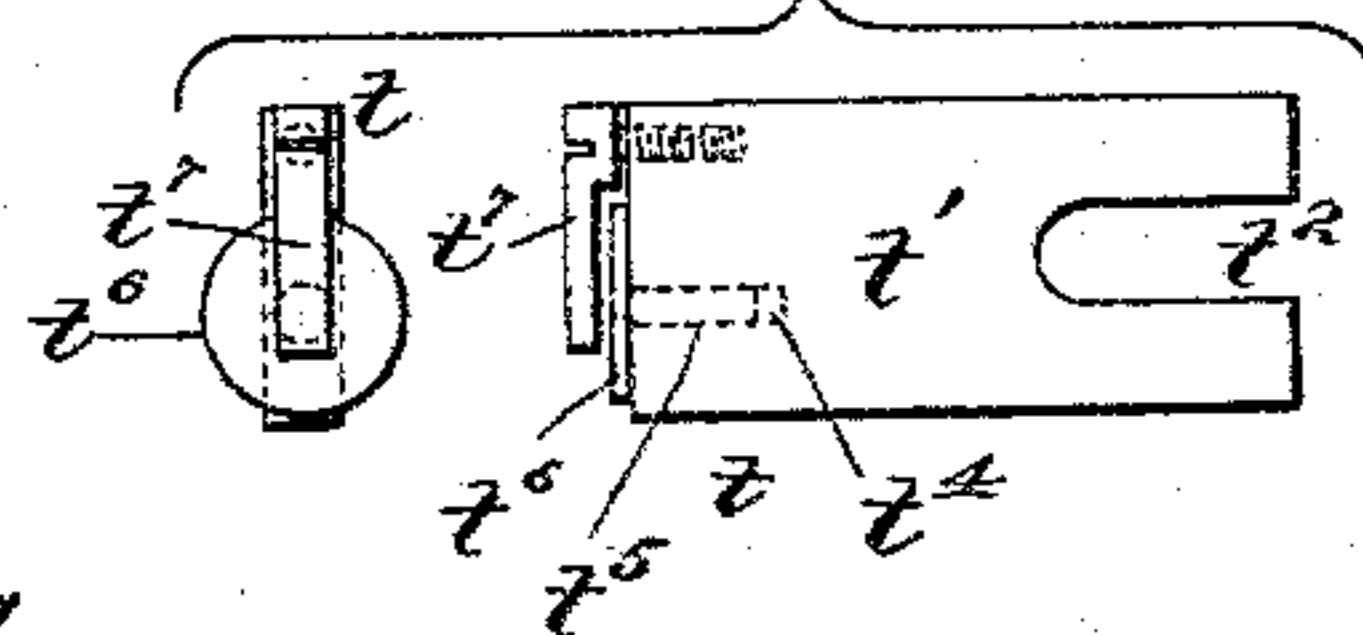


Fig. 6



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UNITED STATES PATENT OFFICE.

HENRY CASE, OF GLOVERSVILLE, NEW YORK.

SEWING-MACHINE TRIMMER.

SPECIFICATION forming part of Letters Patent No. 495,020, dated April 11, 1893.

Application filed August 10, 1892. Serial No. 442,649. (No model.)

To all whom it may concern:

Be it known that I, HENRY CASE, a citizen of the United States, residing at Gloversville, in the county of Fulton and State of New York, have invented a certain new and useful Improvement in Trimming Attachments for Sewing-Machines, of which the following is a full, clear, and exact description.

The object of this invention is to provide an attachment applicable to various kinds of sewing machines, for trimming the seams as they are sewed, and it is designed more especially for those sewing machines which are capable of use in sewing kid and other skin or leather gloves.

The invention comprises a rotary disk cutter and a cutter shaft adjustably mounted upon a post, said post being swiveled to the cloth plate or bed of the machine in such way that the cutter may be thrown readily into and out of action and the trimmer be removed from the machine; operating mechanism interposed between the main or other shaft of the sewing machine and the cutter shaft by which an intermittent motion is given to the cutter shaft so that the trimming will be effected only as the stitching proceeds, and a rotary disk guard for the cutter which co-operates therewith to effect a cutting action, the cutter and the guard being adjustable toward and from the needle hole in order to vary the marginal width of the seam or the quantity cut off.

Having thus stated the principle of my invention, I will proceed now to describe the best mode in which I have contemplated applying that principle and then will particularly point out and distinctly claim the part, combinations of parts or improvement which I claim as my invention.

In the accompanying drawings illustrating my invention in the several figures of which like parts are similarly designated, Figure 1 is a top plan view. Fig. 2 a vertical section taken in the plane of line $x-x$ of Fig. 1. Fig. 3 is a bottom plan view. Fig. 4 is a transverse vertical section taken in the plane of line $y-y$ and looking in the direction of the arrow, Fig. 1. Fig. 5 is an elevation of the cutter and adjacent parts, and Fig. 6 shows in plan and elevation, and on an enlarged scale, the cutter guard.

The letter a may designate the cloth or bed plate of a sewing machine, b the main driving shaft, and c the throat plate of ordinary construction.

The attachment constituting my invention consists of a rotary disk cutter d which is fixed to a cutter shaft e , and this cutter shaft is supported at one end in the head f of a post g , and is capable of motion in the direction of its length in said post. From the head of the post there extends a spring bracket h , having a bearing h' for the outer end of the cutter shaft and provided with a shield h^2 over the cutter to prevent accidental contact of the operator with said cutter. The cutter shaft is provided with a toothed wheel i made fast thereto, and between this wheel and the head f a spring j is interposed which tends normally to project the cutter shaft and cutter toward the throat plate and permits movement of said cutter shaft and cutter in the opposite direction for purposes presently appearing. A cam k is pivoted in the bracket h in front of the wheel i and is provided with a handle k' by which said cam may be rotated to act against the wheel i and thereby move the cutter shaft and cutter toward the post for a purpose presently appearing. The bracket h has a depending lug h^3 which is adapted to engage a notch or recess c' in the throat plate and by virtue of the set of the spring bracket forcing it downward, this lug holds the cutter in proper position for trimming and also assists in holding the trimmer in place. A movable shield l is applied to the head f to protect it and the adjacent parts.

The post g extends through a hole in a block m having a projection m' fitted in a hole in the bed-plate and on which projection the head f rests; and this block is secured to the underside of such bed-plate. The post has a segment slabbed off to leave a flat portion g' above which is a circumferential groove g^2 which is engaged by a locking plate n on the block m to lock the trimmer to the machine bed-plate. This locking plate projects across the hole in the block m a distance nearly equal to the slabbed-off portion of the post and hence when the post is turned till its slabbed-off portion is next the locking plate, the trimmer may be detached from the machine.

On the block *m* is journaled a combined ratchet and gear wheel *o* which projects up through the bed-plate into mesh with the wheel *i*. The journal *o'* of wheel *o* is stationary, and to its outer end is applied a swinging arm *p*. This arm is supplied with a post *p'* on which is arranged a click or pawl *q* which is held in engagement with the wheel *o* by a spring *q'* fastened to the swinging arm and bearing upon the back of the click. A cam *r* is secured to the shaft *b* in line with the swinging arm, and said arm is held up to the cam by a spring *s* secured to said arm and some fixed portion of the machine. The cam and swinging arm constitute a tappet and they will be hereinafter so referred to, and other forms of tappet or other motion may be used to rotate the cutter shaft intermittently in accordance with the progress of the stitching.

The guard *t* for the rotary cutter is composed of a plate *t'* slotted longitudinally at *t²* to receive the set-screw *t³* by which said plate is adjustably secured in a suitable recess in the throat plate *c*. A bearing socket *t⁴* is made in the edge of plate *t'* and in this socket is placed the journal *t⁵* of the circular, discous guard wheel *t⁶*. The guard wheel is secured in its socket by the turn-button or screw *t⁷* tapped in the plate *t'* and overlapping the wheel.

When it is desired to trim the seam close to the stitching, the guard will be moved as close to the needle hole as the limit of movement of the cutter shaft will permit the cutter to remain in contact with the guard; and when it is desired to trim with a larger margin, the cam *k* will be turned to act upon the wheel *i* so as to move the cutter and cutter shaft away from the needle hole, and the guard will be correspondingly adjusted. In order to hold the cam and cutter shaft in this last mentioned adjusted position, the handle *k'* is made as or provided with a stiff spring to bear against the bracket and lock these parts, but other locking mediums may be used for this purpose. The forward movement of the cutter shaft may be limited by a pin or other device *e'*, therein, coming against the head *f*. The wheel *i* is here shown as made with a sufficiently broad toothed rim to engage the gear *o* in all of these adjustments, but it is obvious that the gear *o* might be so constructed.

When it is desired to disconnect the trimmer from the machine or to turn it into inoperative position, the cam *k* is turned to move the cutter shaft toward its head and thus separate the cutter from its guard so that the cutter may swing clear of the guard (by rotation on its post *g* as a center) and thereby save both from injury. In this operation of the device, the lug *h³* of the spring bracket *h* must be lifted out of the recess *c'*, and thereafter traveling on the bed-plate frees the gear-wheels and so permits the swinging of the bracket and cutter-shaft.

The action of the rotary cutter and cutter

guard somewhat resembles that of a pair of shears and trims the seam clear and fair, whether the margin be small or large. With my trimmer also, the crotches and ends of the fingers and thumbs may be trimmed equally well with the other seams. Inasmuch as the trimmer may be turned aside, or swung out of trimming position, the sewing machine may be used for sewing purposes only, and the whole is entirely within the control of the operator and does not require a skilled mechanic to adjust it.

It will be seen that my trimmer cannot interfere with the stitching mechanism and cannot be interfered with by it; and that it is applicable to a great variety of if not all sewing machines, the main requisite being a suitable medium for applying power to drive the cutter shaft.

I do not limit my invention to the cam *k* acting against the wheel *i* to move the shaft lengthwise, as said cam may act against any fixed portion of or applied to said shaft for this purpose; and so also the spring *j* may be replaced by other returning device. Moreover, while I prefer the freely rotating discous cutter guard, I may use a stationary curved or other guard with or without a cutting edge.

What I claim is—

1. A disk cutter, a cutter shaft, and means to rotate it, combined with a spring bracket in which said shaft is supported, a post supporting the bracket and cutter shaft, and a bearing applicable to a sewing machine bed or cloth plate and receiving the post, to permit the rotation of the post to bring the cutter into and out of operative position, and means to connect the bracket and bed or cloth-plate to hold the bracket in operative position, substantially as described.

2. A seam trimming attachment for sewing machines, comprising a disk cutter, a horizontal shaft therefor, a vertical post adapted to be swiveled to a sewing machine bed or cloth plate, a horizontal bracket attached to the post, said bracket and post forming bearings for the cutter shaft, in which said shaft is longitudinally adjustable, a cam adapted to act against some fixed portion of said shaft to adjust said shaft in its said bearings, and means to rotate said shaft, substantially as described.

3. A seam trimming attachment for sewing machines, comprising a disk cutter, a shaft therefor, a bracket, a post adapted to be removably swiveled to a sewing machine bed or cloth plate, said bracket and post being united and forming bearings for the cutter shaft in which said shaft is longitudinally adjustable, means to rotate said shaft intermittently, a cam arranged on the bracket to act against a fixture on said shaft to move it in one direction, and a spring to move said shaft in the other direction and hold it up to its work, substantially as described.

4. A seam trimming attachment for sewing machines, comprising a cutter disk, a shaft

therefor, and means to rotate it intermittently, combined with a spring bracket, a post adapted to be swiveled to a sewing machine bed or cloth plate and to which the bracket is fixed, the said bracket and post forming bearings for the shaft, and a lug on said bracket adapted to engage a notch or recess in the sewing machine bed or throat plate, substantially as described.

5 5. A seam trimming attachment for sewing machines, comprising a disk cutter, a horizontal shaft therefor, a vertical post adapted to be swiveled to a sewing machine bed or cloth plate, a horizontal bracket fixed to said post, the said bracket and post forming bearings for the cutter shaft, in which said shaft is longitudinally adjustable, a cam adapted to act against some fixed portion of said shaft and thereby effect its said adjustment in said bearings, a spring handle for said cam to hold it in adjusted position, and means to rotate said shaft, substantially as described.

6. A seam trimming attachment for sewing machines, comprising a disk cutter, a shaft therefor, a bracket, a post adapted to be swiveled to a sewing machine bed or cloth plate, said bracket and post forming bearings for the cutter shaft in which said shaft is longitudinally adjustable, a cam adapted to act against some fixed portion of said shaft to move it, a rotary disk guard adapted to be adjustably fixed in the throat plate, and means to rotate said shaft, substantially as described.

7. A seam trimming attachment for sewing machines, comprising a disk cutter, a shaft therefor, a bracket, a post adapted to be secured to a sewing machine bed or cloth plate, said bracket and post being connected and forming bearings for the cutter shaft in which said shaft is longitudinally adjustable, a gear-wheel fast on said shaft, a cam swiveled in the bracket and adapted to act upon the said gear-wheel to move the shaft in one direction, a spring tending to move the shaft in the opposite direction, and means to actuate the

said gear-wheel to impart an intermittent rotary motion to the cutter shaft, substantially as described.

8. A seam trimming attachment for sewing machines, comprising a disk cutter, a shaft therefor, a bracket, a post adapted to be secured to a sewing machine bed or cloth plate, the bracket and post being connected and forming bearings for the shaft, a gear-wheel fast on said shaft, a combined gear-wheel and ratchet meshing with said gear-wheel on the outer shaft, a pawl or click for said combined gear-wheel and ratchet, and a tappet motion for intermittently rotating the gear wheels, substantially as described.

9. In a seam trimming attachment for sewing machines, a rotary cutter disk, a shaft therefor, and means to drive it, in combination with the cutter guard comprising an adjustable plate, a discous wheel loosely journaled in said plate, and a turn-button or screw applied to the plate to extend across the face of the wheel to connect the wheel and plate, substantially as described.

10. A disk cutter, a cutter shaft, and means to rotate it, combined with a bracket in which said shaft is supported, a vertical post supporting the bracket and cutter shaft, and a bearing applicable to a sewing machine bed or cloth plate and receiving the post, to permit the rotation of the post to bring the cutter into and out of operative position, the post having its lower end slabbed off and grooved to cooperate with a locking plate on the post's bearing and constituting a locking mechanism for holding the post to its bearing and to permit the ready application and removal of the trimmer, substantially as described.

In testimony whereof I have hereunto set my hand this 8th day of August, A. D. 1892.

HENRY CASE.

Witnesses:

EZRA A. SUTLIFF,
NELSON H. ANIBAL.