No. 636,693. Patented Nov. 7, 1899.

T. E. PERKINS.

MACHINE FOR MAKING DRESS BINDING.

(Application filed Mar. 6, 1897.)

(No Model.) 2 Sheets—Sheet 1.

FIG. 3.

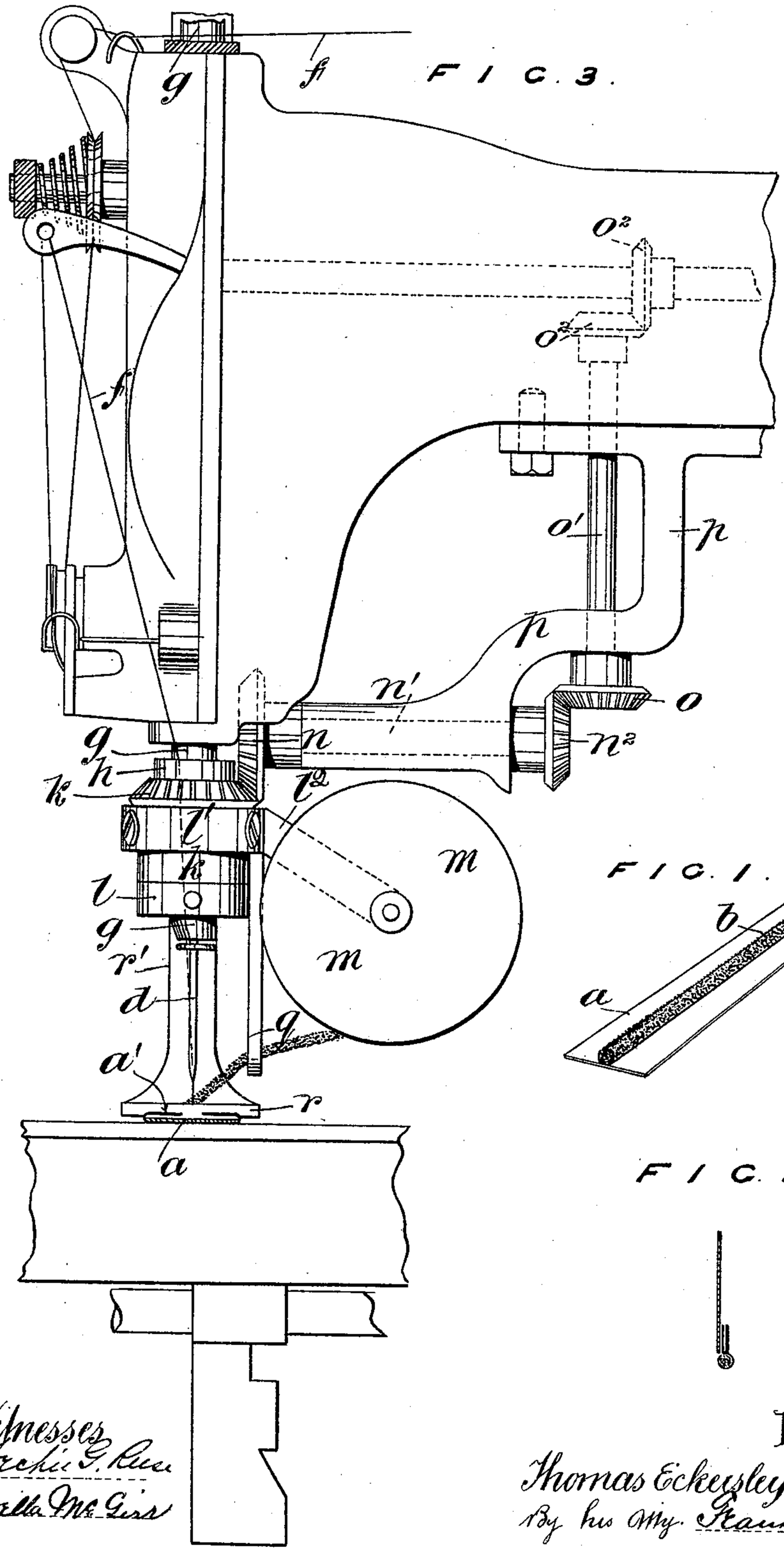

FIG. 1.

FIG. 2.

Witnesses
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By his Atty. Frank L. Dyer

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Fig. 6.

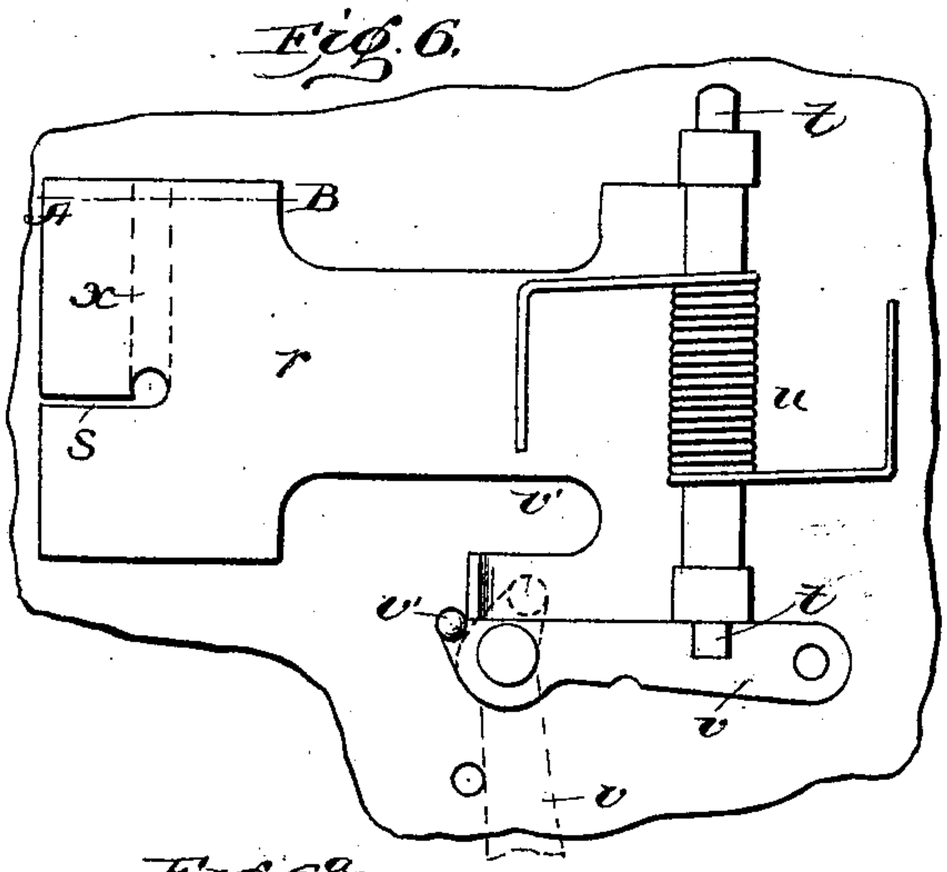


Fig. 6a

Fig. 4a

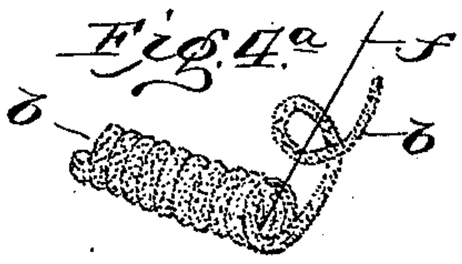


Fig. 4b

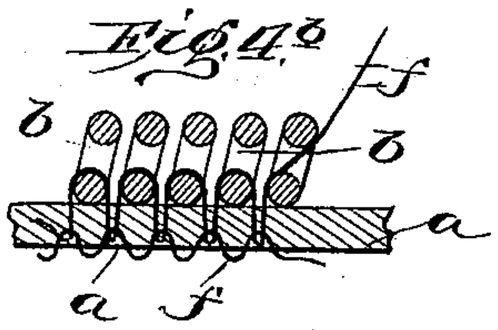
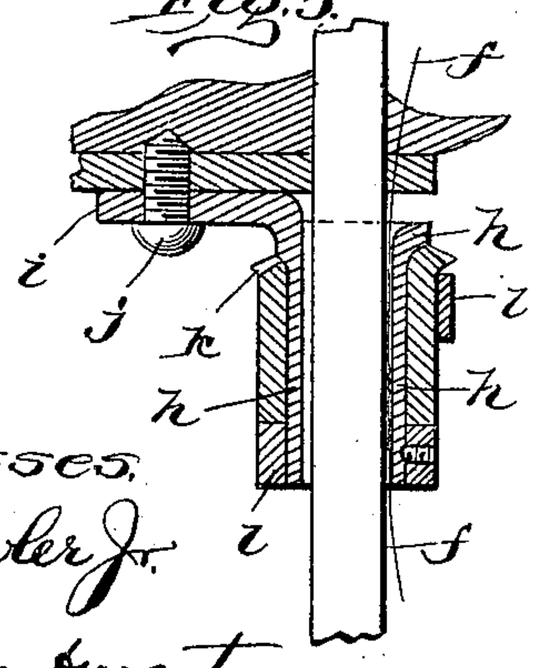
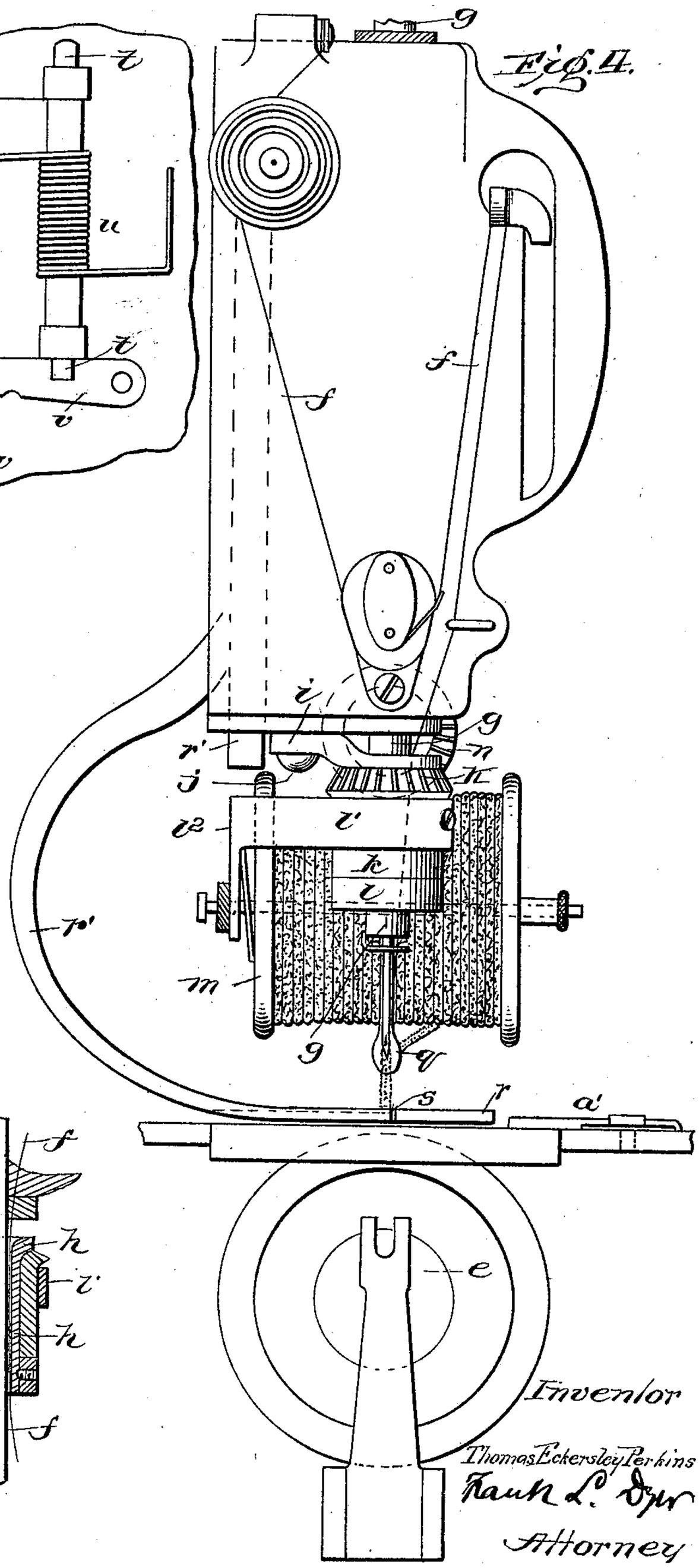


Fig. 5.



Witnesses.
J. M. Fowler Jr.
Thomas Durant.

Fig. 4.



Inventor
Thomas Eckersley Perkins
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UNITED STATES PATENT OFFICE.

THOMAS ECKERSLEY PERKINS, OF MANCHESTER, ENGLAND.

MACHINE FOR MAKING DRESS-BINDING.

SPECIFICATION forming part of Letters Patent No. 636,693, dated November 7, 1899.

Application filed March 6, 1897. Serial No. 626,254. (No model.)

To all whom it may concern:

Be it known that I, THOMAS ECKERSLEY PERKINS, a subject of the Queen of Great Britain and Ireland, residing at Manchester, in the county of Lancaster, England, have invented certain new and useful Improvements in Machines for Making Dress-Binding, (for which Letters Patent have been obtained in Great Britain, No. 7,291, dated April 4, 1896;) and I do hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My said invention relates to an improved machine for making dress bindings or trimmings; and it consists in improvements in the structure of the sewing-machine whereby the chenille-reel may be mounted concentrically in relation to the needle and thread, means for revolving the reel in a horizontal plane, and means for holding and guiding the chenille adjacent to the point of the needle, and generally to various details of construction whereby a machine may be constructed for sewing chenille to the braid.

To render my invention well understood, I will now proceed more particularly to describe the same, reference being had to the annexed two sheets of illustrative drawings.

To give a correct description of the trimming to the manufacture of which my machine is intended, I will in the first place refer to Figure 1, which is a perspective view of a piece of skirt-trimming consisting of a strip of woolen braid *a*, having stitched to it a length of chenille *b*. Fig. 2 shows the trimming in section and as applied to the foot *c* of a skirt, the braid being folded together and stitched to the skirt, so as to let the chenille edge project beyond the foot of the skirt. As before stated, the object of my invention is to stitch the chenille *b* or its substitute to the braid by a lock-stitch which will not come loose or unravel if cut or disconnected. The apparatus by which I effect this lock-stitching of the chenille to the braid is illustrated in Figs. 3 to 6. Fig. 3 is a side view of the front of the arm of my machine. Fig. 4 is a front view at right angles to Fig. 3; Fig. 4^a, a perspective view illustrating particularly the coiling of the chenille around the thread during the operation of applying the same to the braid; Fig. 4^b, an enlarged sectional view through the braid and chenille. Fig. 5 is a section of the hollow sleeve through which the thread is led. Fig. 6 shows a modified form of presser-plate; Fig. 6^a, a section on the line A B of Fig. 6.

In all of the above views corresponding letters of reference indicate like parts.

I use a needle *d*, working in conjunction with any ordinary revolving or reciprocating shuttle *e*, the thread *f* being led to the needle from a reel. (Not appearing in the drawings.) The needle-bar *g*, with the needle *d*, is worked in the ordinary manner, and surrounding the needle-bar is a hollow sleeve *h*. (Shown in section in Fig. 5.) The sleeve *h* projects downward from a bracket *i*, which is screwed by a screw *j* to the foot of the needle-bar box. The sleeve *h* serves as a bearing to carry a revoluble bevel-wheel and boss *k*, which is kept on the sleeve by a collar *l*, secured by screws to the foot of the sleeve.

To the wheel-boss *k* I secure a band *l'*, to which is attached an arm l^2, which carries a reel *m*, containing chenille-cord coiled on. The bevel-wheel *k* gears with a similar wheel *n* on a short shaft *n'*, which terminates in a wheel n^2, gearing with another wheel *o* on a counter-shaft *o'*, which is driven by wheels o^2 o^2 from the main shaft of the machine. The shafts *n'* and *o'* are supported by a bracket *p*, secured to the arm of the machine. In the example illustrated the gearing is so proportioned as to cause the wheel and boss *k*, with the supported chenille-reel *m*, to revolve once around the needle for each up-and-down movement of the same.

In addition to the reel the boss *k* carries a guide *q*, with an eye at the foot, through which the chenille is led from the reel to the needle. The thread *f* is led through the usual tension and other appliances and passes through the interior of the hollow sleeve *h*—*i. e.*, between the interior of the sleeve and the needle-bar—to the eye in the foot of the needle. The needle, in conjunction with the shuttle *e*, performs the usual and well-known lock-stitch. The thread, passing, as it does, through the sleeve, is free from any obstruction from the surrounding parts and enables the stitch to be properly performed. The

reel *m*, with the chenille, is carried around by the rotating boss *k*, and the chenille as it enters beneath the presser-foot *r* is stitched to the braid, which is fed by the usual feed, the braid, with the stitched or coiled chenille, being preferably directed beneath the presser-foot by a guiding-channel *x*, with a slot *s* leading thereto. This channel *x* serves to protect the chenille from the pressure of the presser-foot *r* and is illustrated in dotted lines in the plan view, Fig. 6. As the work proceeds the portion of the thread *f* extending between the needle-eye and the presser-foot *r* is served with a turn or coil of the chenille, which is being carried around it by the revolution of the wheel-boss *k*. When the needle descends through the braid, the shuttle-thread beneath locks the thread *f*, each lock-stitch being thus served with a turn of the chenille. The consequence is that in the complete article the coiled-on chenille-cord lies along the braid and is secured thereto by a lock-stitched thread-cord, so that even if the trimming is cut or the stitching broken at any point in the length the rest of the stitching does not become disengaged and unraveled. It will be observed that the arm *r'*, carrying the presser-foot *r*, is bent so as to allow of the rotation of the chenille-reel *m* around the needle-bar. The braid *a* is directed to the presser-foot by means of a bent metal guide *a'*, secured to the bed of the machine.

By altering the proportions of the indicated gearing, so as to speed up the wheel-boss *k*, more than one coil or turn of the chenille could be thrown around each stitch.

Instead of carrying the presser-foot *r* on a cranked or bent arm, as shown, I might disconnect it altogether from the needle-bar head and pivot it to the sole of the machine, as indicated in Fig. 6 of the drawings. The presser would then consist of a plate *r*, pivoted to the sole by a pivot *t* and held down by a spring *u*, so as to press on the material.

To raise and hold the presser-plate *r* clear of the work when required, I provide a lever-catch *v*, the head *v'* of which can be turned beneath a part of the presser-plate, as indicated in dotted lines, thereby raising and upholding the presser-plate.

The lock-stitch sewing apparatus hereinbefore described might be used singly; but to expedite manufacture I prefer to arrange two, three, or more machines successively along a bench, placing a batch of machines under the care of one attendant.

Although I have specially devised my improvements with reference to the production of the aforesaid dress binding or trimming, nevertheless the mechanism hereinbefore referred to might be used for other purposes. For example, it might be used for lock-stitching cording upon fabrics or for laying silk or other fibers, as bindings, edgings, or embroidery, upon cloth.

Having now described my invention, what I claim as new therein, and desire to secure by Letters Patent, is as follows:

In a lock-stitch sewing-machine for the purpose described the combination with the arm, a needle-bar *g*, the fixed sleeve *h* surrounding said needle-bar with sufficient clearance to permit the passage of the top thread between the two, the part *i* formed integrally with the sleeve and removably secured to said arm, the said sleeve being cylindrically shaped, a flange at its upper end, the collar *l* removably secured at its lower end, the boss *k* surrounding said sleeve and kept in position between the said collar *l* and the said flange, the chenille-reel *m*, the arm l^2 connected to said boss and supporting said reel to one side thereof, and means for driving said boss, substantially as set forth.

This specification signed and witnessed this 9th day of February, 1897.

THOMAS ECKERSLEY PERKINS.

Witnesses:
JOSHUA ENTWISLE,
RICHARD IBBERSON.