

No. 690,682.

Patented Jan. 7, 1902.

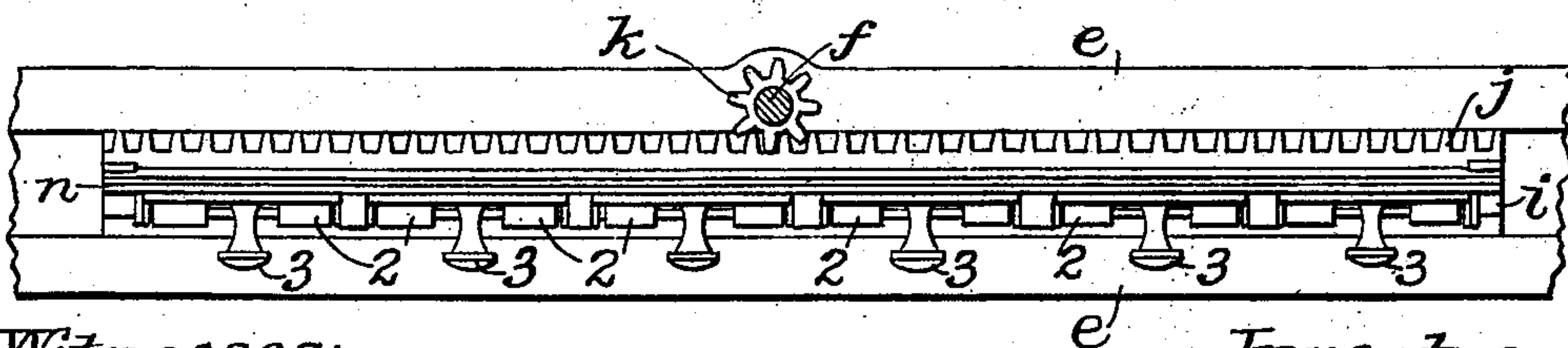
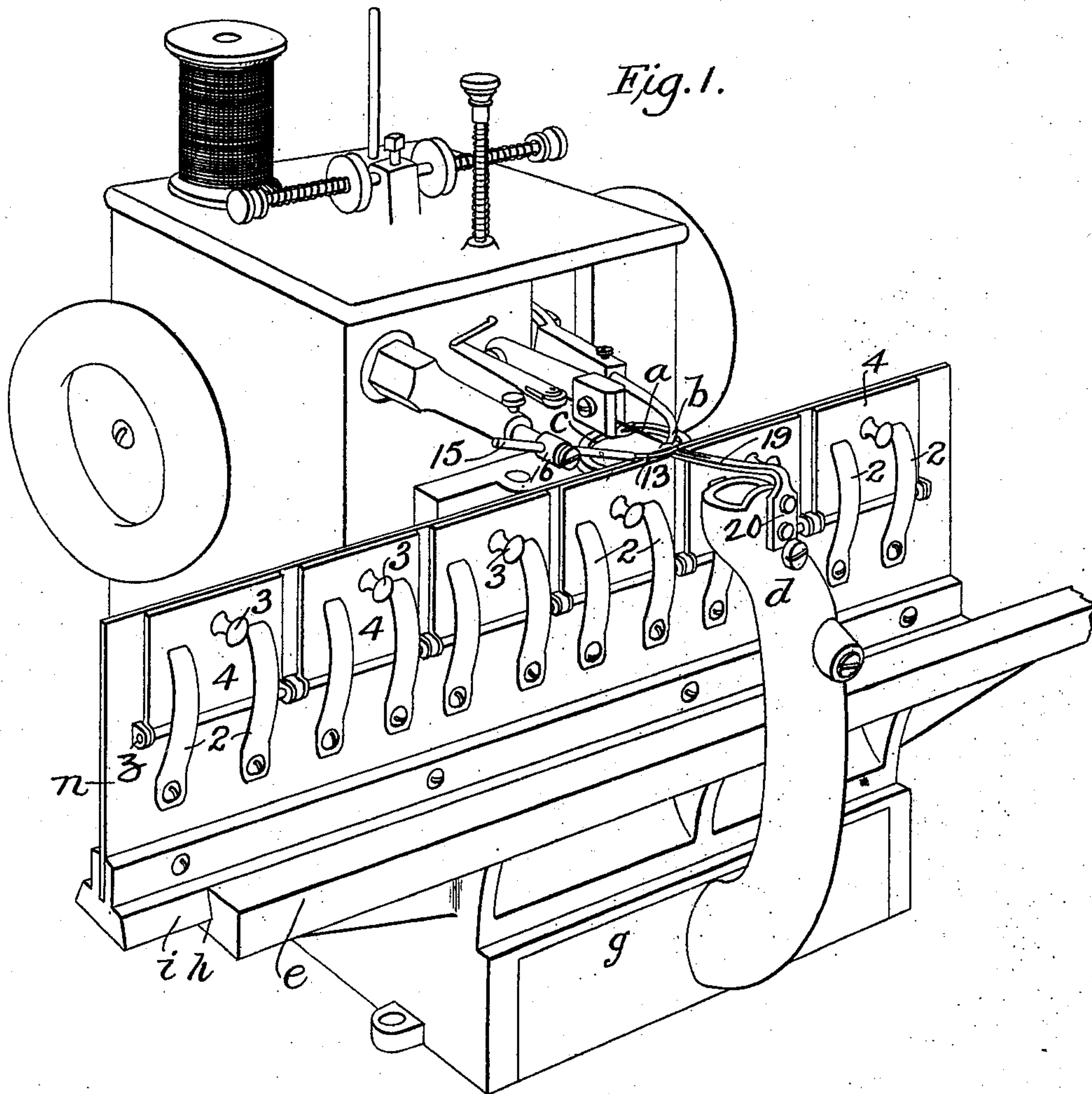
L. A. VAN PRAAG.

FINGER TIP ATTACHMENT FOR GLOVE SEWING MACHINES.

(Application filed Dec. 15, 1899.)

(No Model.)

4 Sheets—Sheet 1.



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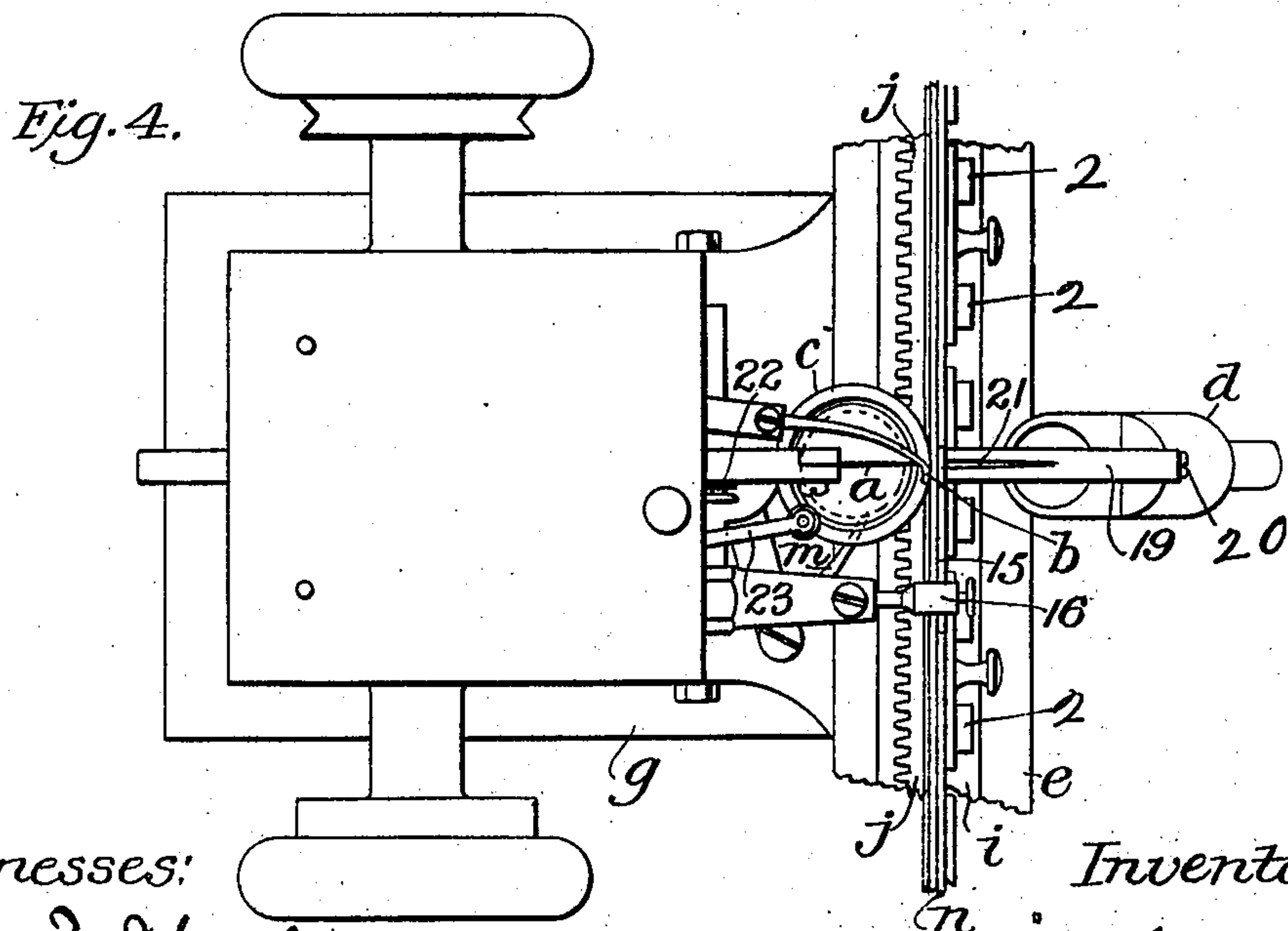
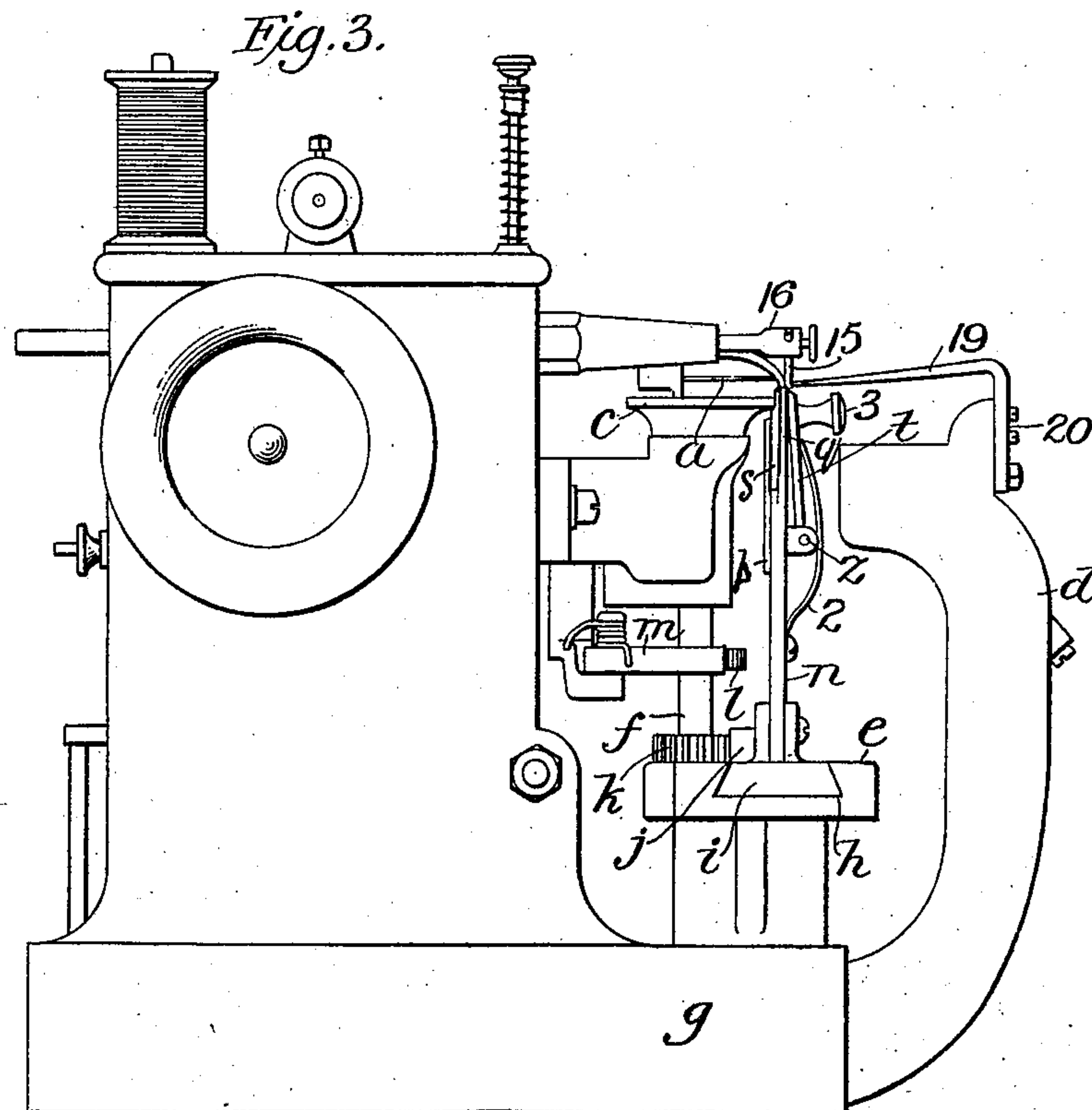
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4 Sheets—Sheet 2.



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Fig. 5.

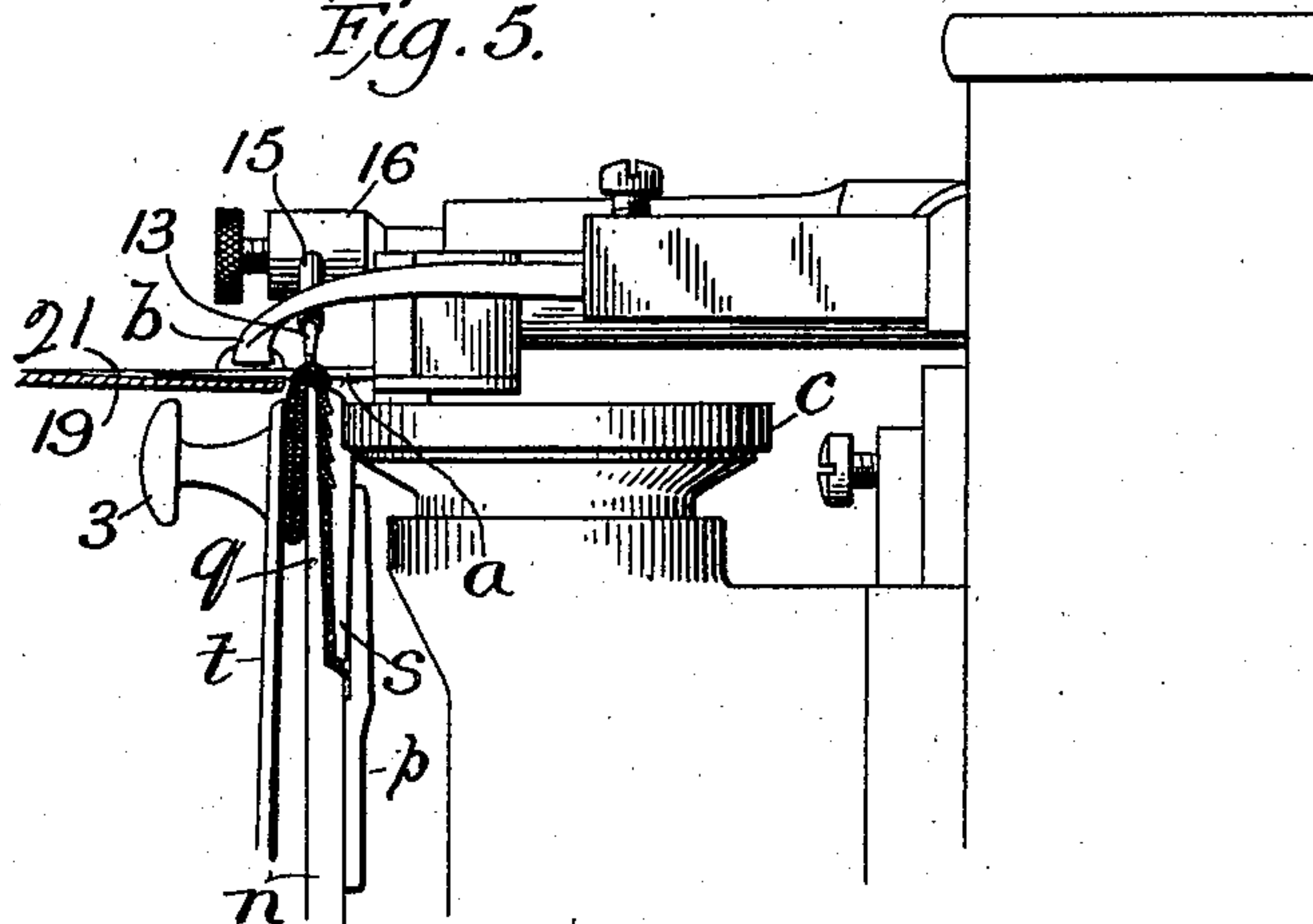


Fig. 6.

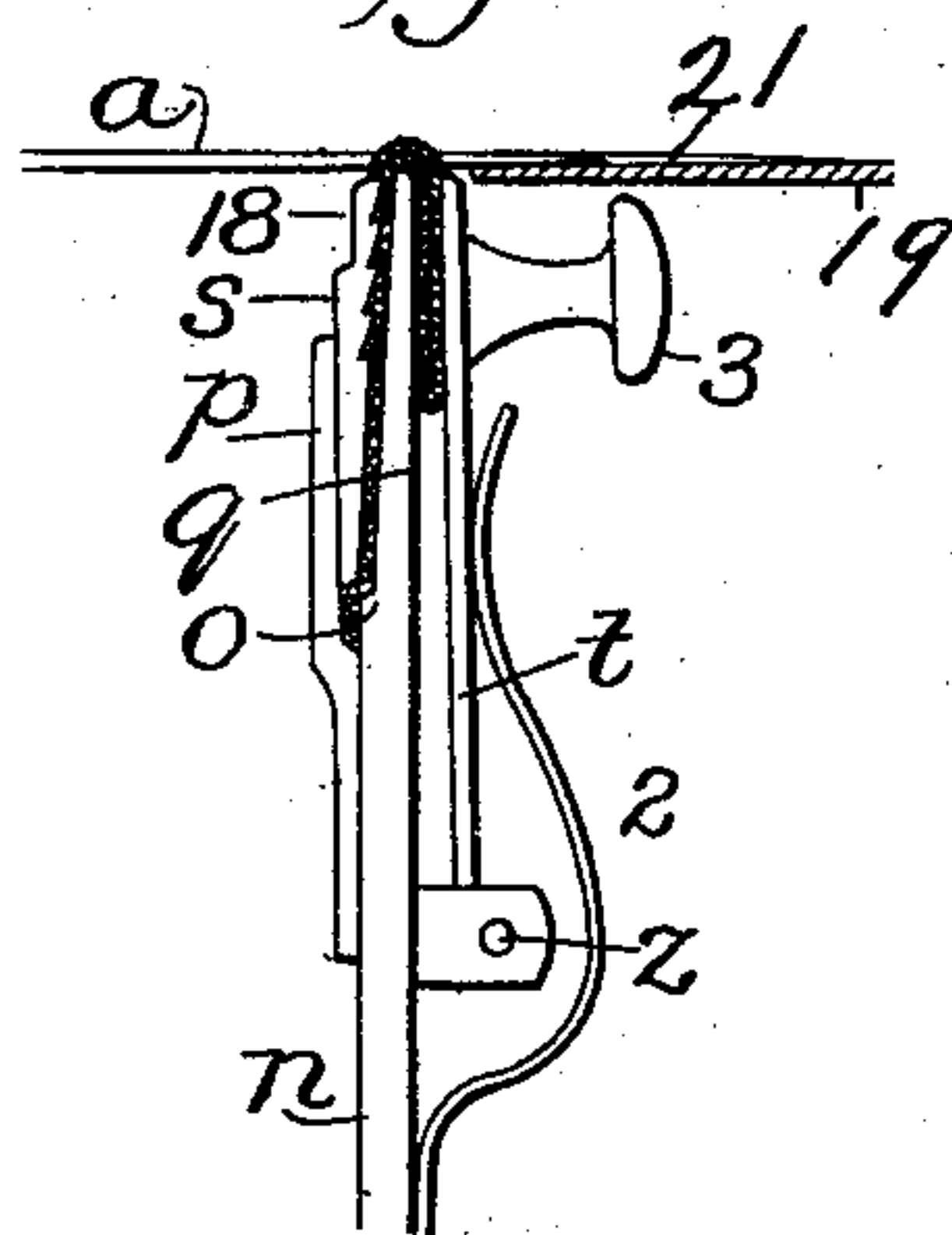
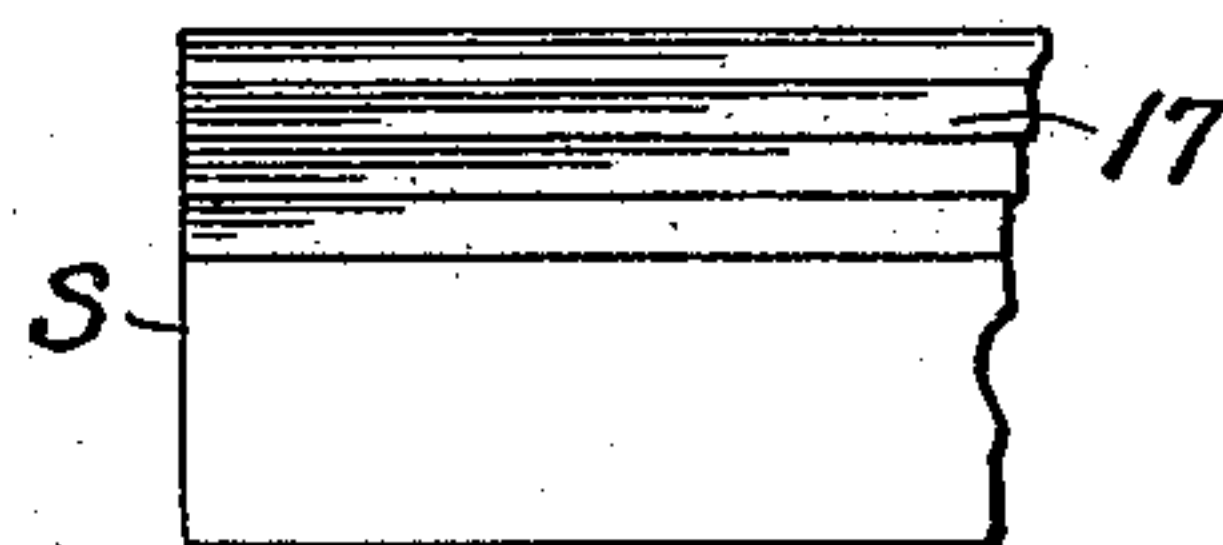


Fig. 7.



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Fig. 9.

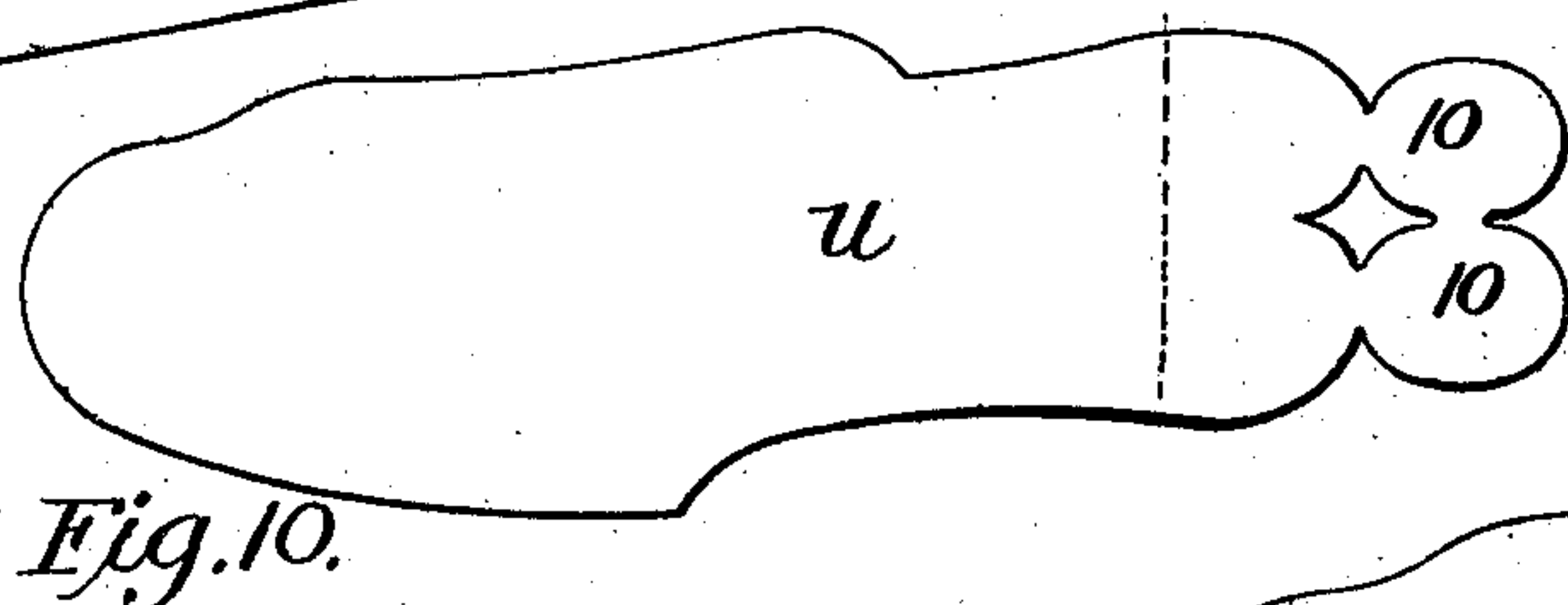
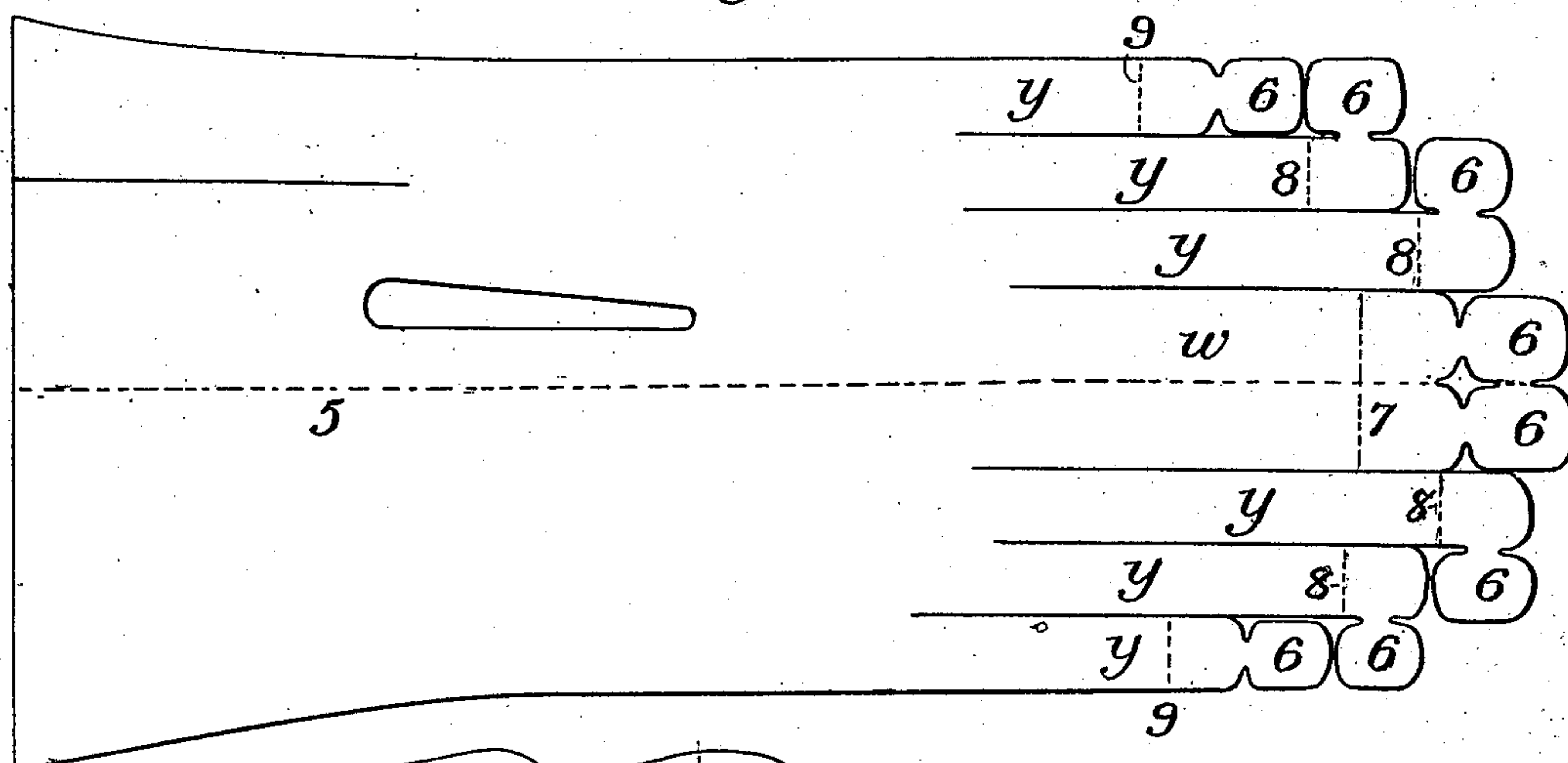


Fig. 11.

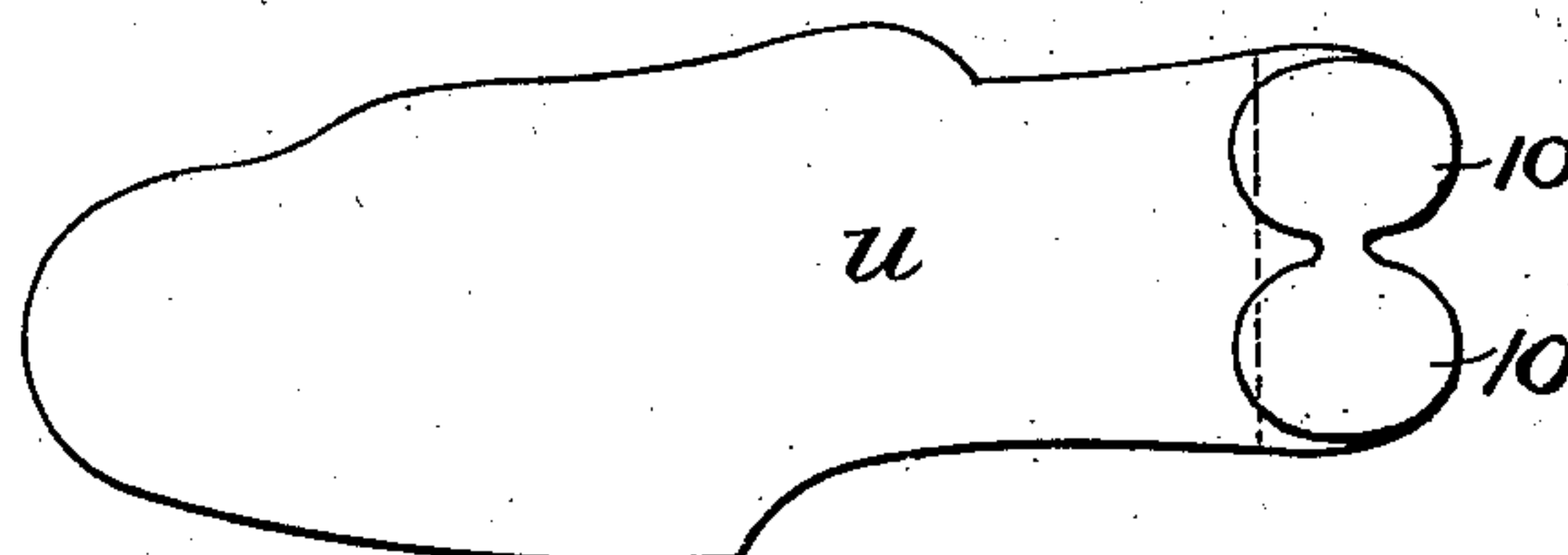
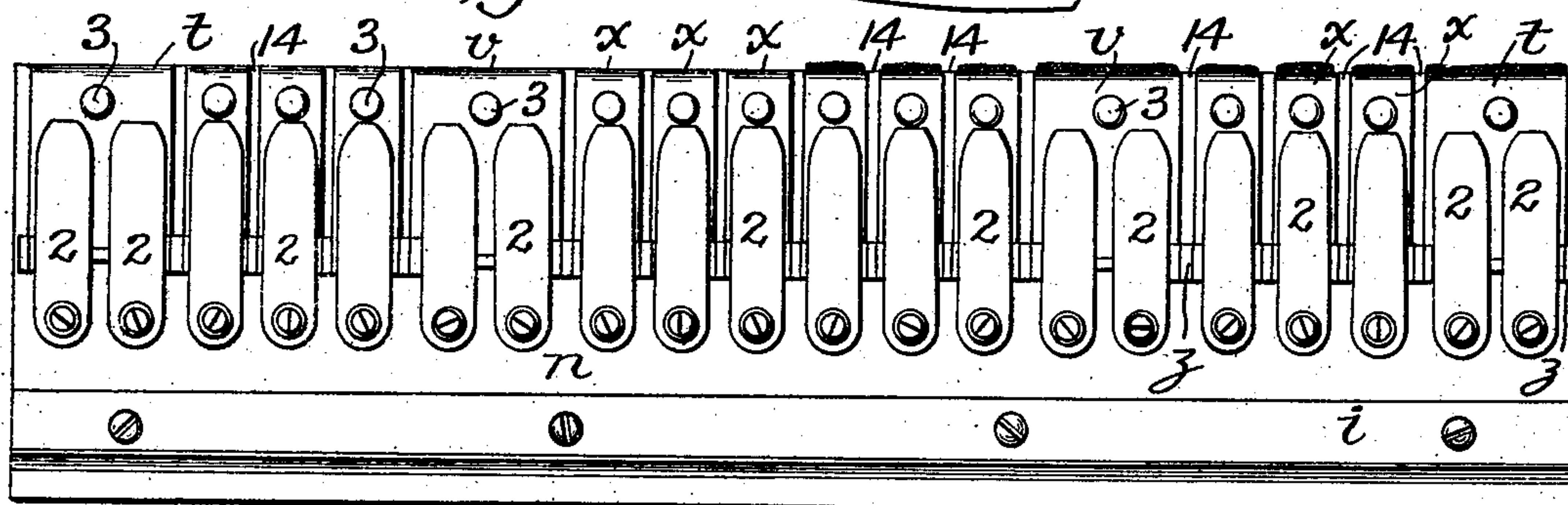


Fig. 8.



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UNITED STATES PATENT OFFICE.

LEONIDAS A. VAN PRAAG, OF NEW YORK, N. Y.

FINGER-TIP ATTACHMENT FOR GLOVE-SEWING MACHINES.

SPECIFICATION forming part of Letters Patent No. 690,682, dated January 7, 1902.

Application filed December 15, 1899. Serial No. 740,424. (No model.)

To all whom it may concern:

Be it known that I, LEONIDAS A. VAN PRAAG, a citizen of the United States of America, and a resident of New York city, county and State of New York, have invented certain new and useful Improvements in Finger-Tip-Sewing Attachments for Glove-Sewing Machines, of which the following is a specification.

My invention consists of an improved attachment to overseaming glove-sewing machines for sewing the reinforcing-tips of glove-fingers of the character represented in the patent granted to me June 28, 1898, No. 606,399, said reinforcing-tips consisting of integrally-connected parts folded over on what becomes the insides of the fingers in the complete glove and are at the inner ends sewed thereto by "blind" seams, which has always heretofore been done by hand and which it is the object of my invention to accomplish on the machine more accurately, with greater rapidity, and less labor, as hereinafter described, reference being made to the accompanying drawings, in which—

Figure 1 is a perspective view of a glove-sewing machine of usual construction with my improved tip-sewing attachment applied. Fig. 2 is a plan view of the work holder and feeder of my attachment and its slideway with a pinion applied to the feeding-shaft to operate said work holder and feeder, said shaft being shown in section. Fig. 3 is a side elevation of the machine equipped with my attachment. Fig. 4 is a plan view with parts of the work holder and feeder and its slideway broken off. Fig. 5 represents parts of the machine with my attachment in side view enlarged, the view being in reverse of that of Fig. 3. Fig. 6 is a detail of the work holder and feeder in end elevation enlarged, showing the work in position with a needle illustrating the operation. Fig. 7 is a detail of one of the clamp-plates in side view. Fig. 8 is a side elevation of the work holder and feeder specially designed for a complementary charge of work comprising the material of a pair of gloves. Fig. 9 is a diagram of the material of one glove less the part for the thumb. Fig. 10 is a diagram of the part for a thumb with the tips extended as cut from the fabric. Fig. 11 is a diagram of the part

for a thumb with the tips folded over as for being applied to the holder and feeder of my attachment to be sewed.

I take an ordinary chain-stitch overseaming glove-sewing machine comprising the reciprocating needle *a*, looper *b*, and two feeding-disks, one of which is shown at *c*, the other being detached from the standard *d*, where it is usually mounted, and I substitute for the feed-disks a straight line sliding work holder and feeder capable of being charged with a quantity of work, comprising at the least the material for the fingers of one glove, but preferably the complement of parts for a pair of gloves, while detached from the machine and then being applied to the machine and fed along the stitch-forming devices suitably for the sewing to be effected and then be passed out for recharging, while another like holder and feeder similarly charged is passing in like manner, and together with such a holder and feeder I provide a stitch-retainer on which a continuous chain of stitches may be formed in the intervals between the tips, where there is no material for receiving the stitches, the tips being secured at intervals apart in the holder and feeder and it being necessary that the chain of stitches be continued across these intervals.

In carrying out the invention I first provide a slideway *e* of suitable length in the line of the feed movement between shaft *f* of the feed-disk *c* and the standard *d* and at any suitable distance below the needle and looper. In this case it is placed a little above the base-plate *g* of the machine. The groove *h* of the slideway is dovetail in shape or may be any other form that will hold the base *i* of the work holder and feeder, and said groove is open at both ends, so that said holder and feeder may be entered at one end and passed out at the other end. The base *i* has a toothed rack *j*, with which a pinion *k*, which I apply to the shaft *f*, carrying the feed-disk *c*, gears to move the holder and feeder along, said shaft being operated by the ratchet *l* and pawl *m* of the regular equipment of such machines.

On the base *i* of the work holder and feeder a thin metal plate *n* is set up edgewise, the breadth of said plate being such that the upper edge rises to the under side of the needle, with a little slack, permitting the needle to

work over it freely, and the rear side of said plate ranges a little in advance of the face of disk *c*, said plate being on that side somewhat reduced in thickness and slightly taper from the shoulder *o* upward, as shown in Fig. 6, and near each end is a cleat *p*, between the upper ends of which and the taper section *q* of the plate *n* a clamping-plate *s* of taper cross-section is applied for clamping the work on the back side of plate *n*, said clamping-plate *s* reaching the whole length of plate *n* and serving for all of the several parts of work carried in one charge, while on the front side of plate *n* there is a separate hinged and spring-pressed clamp for each division of the charge of work, said plates comprising two wide ones *t* for the thumb divisions *u*, also two wide ones *v* for the index-finger divisions *w*, and twelve narrow ones *x* for the other finger divisions *v* of the work to be sewed, said individual clamps being hinged to the front side of plate *n* at *z* and provided with springs 2 for closing them on the work, also with finger-studs 3 for opening them to facilitate application and removal of the work. The arrangement of these clamps as thus described, and represented in Fig. 8, is that which is preferred, as it affords an individual clamp adapted for each individual part in a pair of gloves, which is the preferred complement of work in a charge for one holder and feeder, said clamps disposed in the order of the different individual parts of the gloves; but as the parts for the thumbs are separate from the other parts of the gloves they may be sewed separately in a work holder and feeder having all wide clamps, as 4, Figs. 1 and 2, and the holder and feeder for the other parts may be specially adapted for them, as would be the case with the holder and feeder of Fig. 8 with the clamps *t* omitted.

Fig. 9 is a diagram of the two parts of a blank for a complete glove, except the thumb, said parts joined and to be folded along the dotted line 5, and each part having one-half of each finger on which is a tip 6. The tips of the index-finger are to be folded over endwise and sewed at the ends of the tips to the other part along the dotted line 7, the tips of the second and third fingers are to be folded over sidewise and sewed along the lines 8, and the tips of the little finger are to be folded over endwise and sewed along the lines 9. The blank *u* for the thumb has like tips 10 to be folded over endwise and sewed along the line 11, all this being preparatory to sewing the edges and ends of the fingers and thumbs, which is done on the regular glove-sewing machines in the usual manner.

The work is applied to the holder and feeder as shown in Fig. 6. Each individual part with the tip folded is placed under a clamp, as *t*, and folded over the upper edge of plate *n*, with the end of the tip to be sewed on top and the rest of the part hanging behind plate *n*. When all the individual parts of a charge have been so adjusted, the rear clamping-

plate *s* is placed in the cleats *p*, which makes all ready for the holder and feeder to be inserted in the slideway and passed along the sewing apparatus, which, besides the needle *a* and looper *b* and their operating mechanism organized in the common arrangement for overedge chain-stitch sewing with a single thread, also comprises the stitch-retainer 13, which I provide for holding the stitches along the gaps 14 between the several individual parts to be sewed, where for lack of fabric to hold the stitches the formation of stitches would be interrupted and the thread would tangle on the needle and looper detrimentally to the work. This stitch-retainer consists of a needle-shaped point projecting from the end of a shank 15, mounted in a binding-post 16 over the upper edge of the holder and feeder and located in advance of the needle, from which post the retainer-shank reaches downward toward the needle and holds the retainer directly over the needle in the feed-line, said retainer being curved so as to become parallel, or nearly so, with the upper edge of the holder and feeder, and its point extends a little farther beyond the needle in the direction in which the work passes away from the needle than the breadth of the gaps 14 between the parts of the work, so that the stitches form over it and are retained along the gaps the same as they would be if the work were continuous, and they draw off the retainer as the work moves along. The excesses of the chain of stitches are afterward cut away.

It will be seen that the work is presented to the needle so that blind stitches are formed through the fabric of the glove and over the retainer in about the same manner as are made over the finger by hand, and manifestly the work can be done much faster and more accurately.

The plate *s* is ribbed and grooved along the margin 17 bearing on the work, to grip the work and draw it down on the edge of plate *n*, and on the back it is rabbeted at 18 to bear against the face of disk *c*, which serves as a steadying-support.

On the standard *d*, on which the outer feed-disk is carried in the ordinary glove-sewing machine, but which is displaced in the use of my attachment, the usual guard-plate 19 is fixedly attached at 20 or in any approved way which reaches from its support to the upper edge of plate *n*, less the thickness of the work stretched over said edge, and having a groove 21 in its upper surface about as deep as the thickness of the needle, into which groove the needle works, so as to be effectually protected from being caught by the point of the looper *b* when it reaches over the work and downward to pass between the thread and the needle for taking a loop of thread.

As the needle *a* and looper *b*, feed-pawl *m*, and the thread-grip 22 and gripping-lever 23 have precisely the same movements and the apparatus for operating them is the same

as in the ordinary overseaming glove-sewing machines, it is unnecessary to represent or describe these parts in detail, as the application and mode of operation of the attachment are plainly represented.

The stitch-retainer is applicable to any form of work-holder in which it may be desirable to continue the chain of stitches along gaps between parts of the work, and I do not limit my claim for it to any particular holder and feeder.

It will be seen that all the finger-tips being parts of one piece of fabric, Fig. 9, it is important that the clamp be adapted to receive the several parts at once, and owing to the different lengths of the fingers each must be adjusted independently of the other between plate *n* and the clamps *t*, *v*, or *x*, which latter must of necessity be of individual construction, so as to be operative independently of each other, so that when one tip is adjusted it will not be disturbed in adjusting another, and said individual clamp must also be independent of the clamp-plate *s* on the other side of plate *n*, where a single plate serves for all the parts after they have first been individually adjusted in said individual clamps, and it is to be noted that these clamps are operative with relation to plate *n* independently of the rear clamp *s*.

I am aware that a clamp has been used comprising two jaws pivoted together, so as to clamp simultaneously on the opposite sides of a bar by the operation of a screw connecting levers of the jaws, such as shown in the German patent to Weise, No. 51,102; but they are not independent of each other and cannot be released from the bar independently, which is an essential feature of the opposite clamps in my invention, it being an imperative requirement of the character of work for which my invention is employed that the goods be very accurately adjusted on the one side and be positively prevented from displacement in adjusting the clamp of the other side, as they would be in the use of a clamp so constructed that one jaw cannot be relieved without releasing the other. I am also aware of the patent to Bouton, in which a plate is shown on one side of which the work is clamped by a plurality of clamps controlled by levers and cams, but wholly inadequate for securing the work placed on the edge and both margins of the plate, and I make no claim to such a device. I am also aware that in Patent No. 333,937 a pair of fingers, one fixed and one movable laterally to the other, have

been located over the margins of the feed-disks, in which the work is fed with the edges of the work projecting above the disks for the work to pass between said fingers to be pressed together, as if held by the fingers of the hand and over which the stitches are formed; but in such application of such fingers the operation is not such as is feasible for sewing the tips with blind stitches; but I use the finger or retainer with the feeding-clamp for sewing glove parts necessarily placed at intervals apart, said clamp having a plurality of independently operative separated parts, whereby the stitch-retainer operates to hold unbroken and at a uniform tension the stitches formed in the interstices between the successive parts of the work being sewed, and I only use the finger or former in its specified arrangement with the particular glove-feeding elements of my invention, wherein only a single former is used and placed directly over the work, which passes wholly under it, and a purpose as hereinbefore set forth is accomplished not attainable in such use of gripping-fingers together with such feed-disks.

What I claim as my invention is—

1. The improved work holder and feeder comprising the plate set edgewise and rigidly supported on a sliding base adapted to be fed intermittingly along a slideway, a plurality of independently operative tip-clamps hinged to one side of said plate and provided with controlling-springs, and a clamping-plate on the other side of said plate carried on the base-slide, and being independent of the tip-clamps and adapted to secure on that side, the work hung on the edge of said plate of the base-slide and previously secured and while securely retained on the other side of said plate by the tip-clamps.

2. The combination with the stitch-forming elements, of apparatus for sewing glove parts, consisting of the feeding-clamp having a plurality of separate and independently operative holding parts placed at intervals apart along the clamp, and the stitch-retaining finger which operates to hold unbroken and at a uniform tension the stitches in the interstices between the successive parts of the work being sewed.

Signed by me at New York this 9th day of December, 1899.

LEONIDAS A. VAN PRAAG.

Witnesses:

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