

(No Model.)

A. L. TRAVER.

TRIMMING ATTACHMENT FOR MACHINES FOR SEWING LOOPED FABRICS.

No. 410,720.

Patented Sept. 10, 1889.

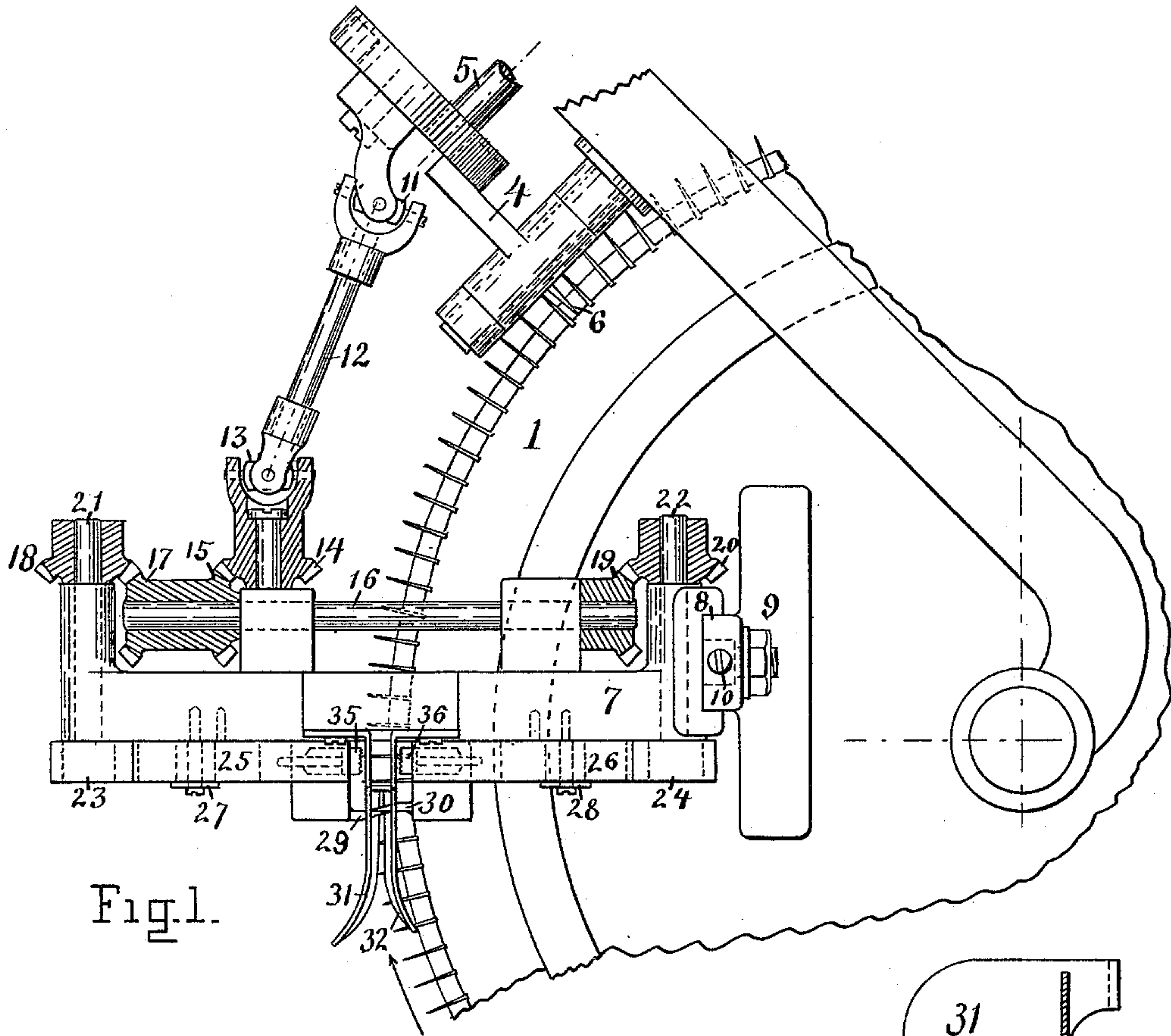


Fig. 1.

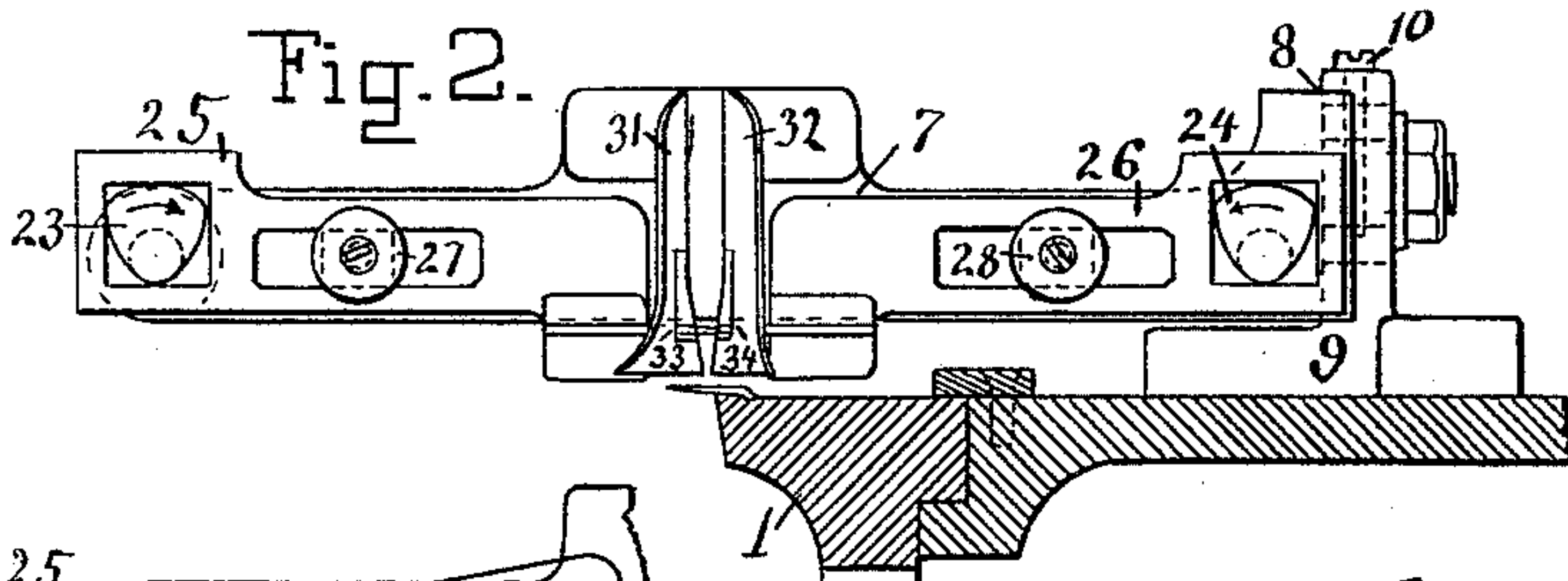


Fig. 2.

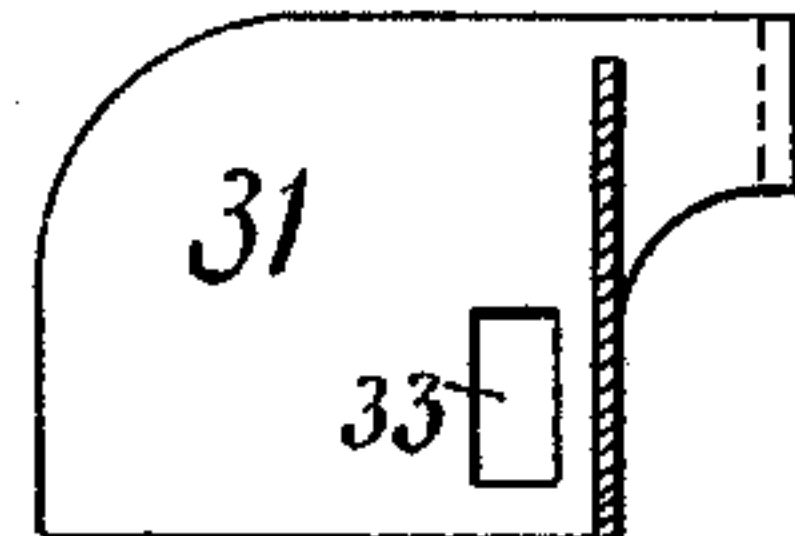


Fig. 8.

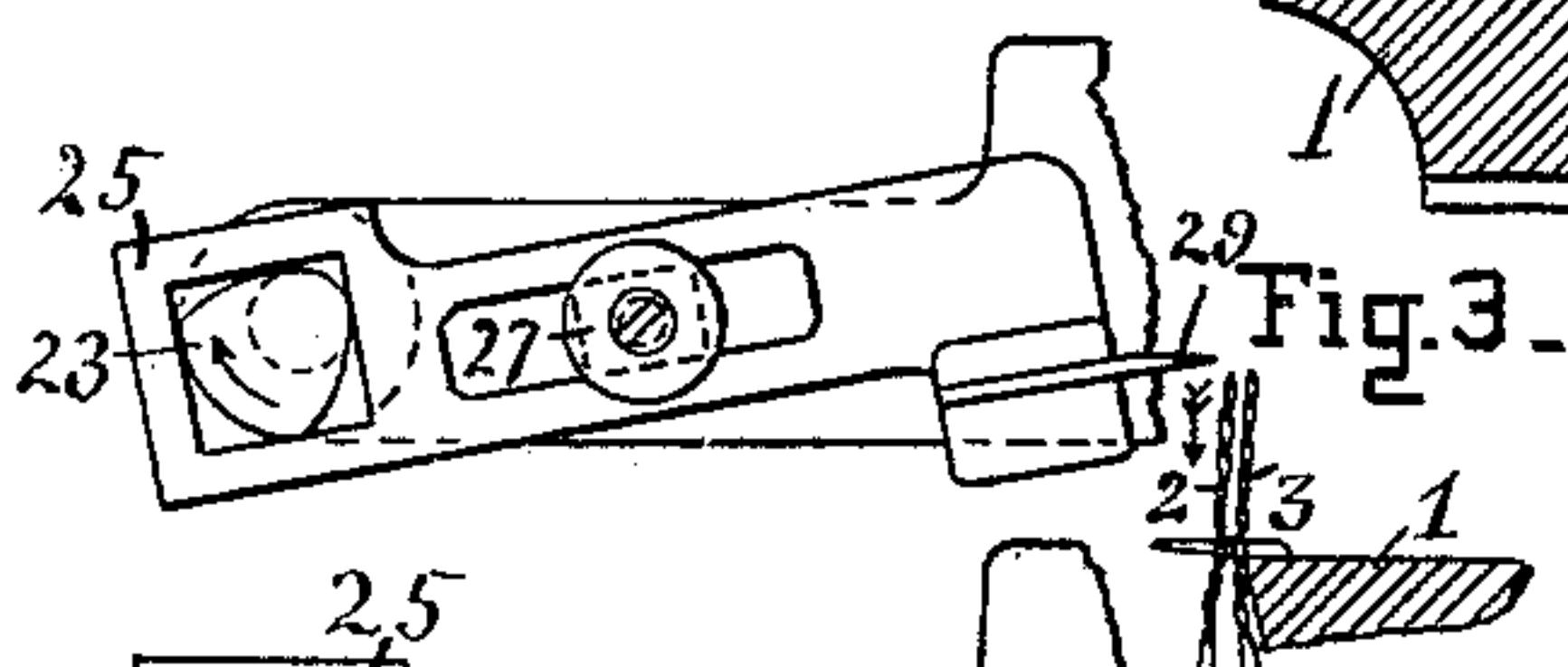


Fig. 3.

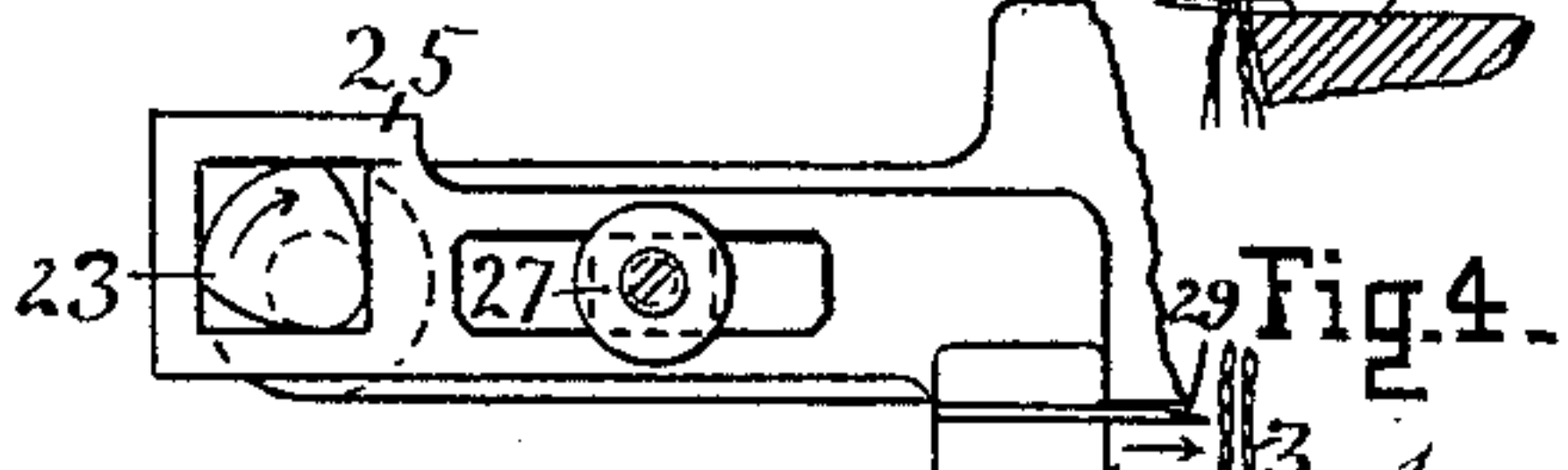


Fig. 4.

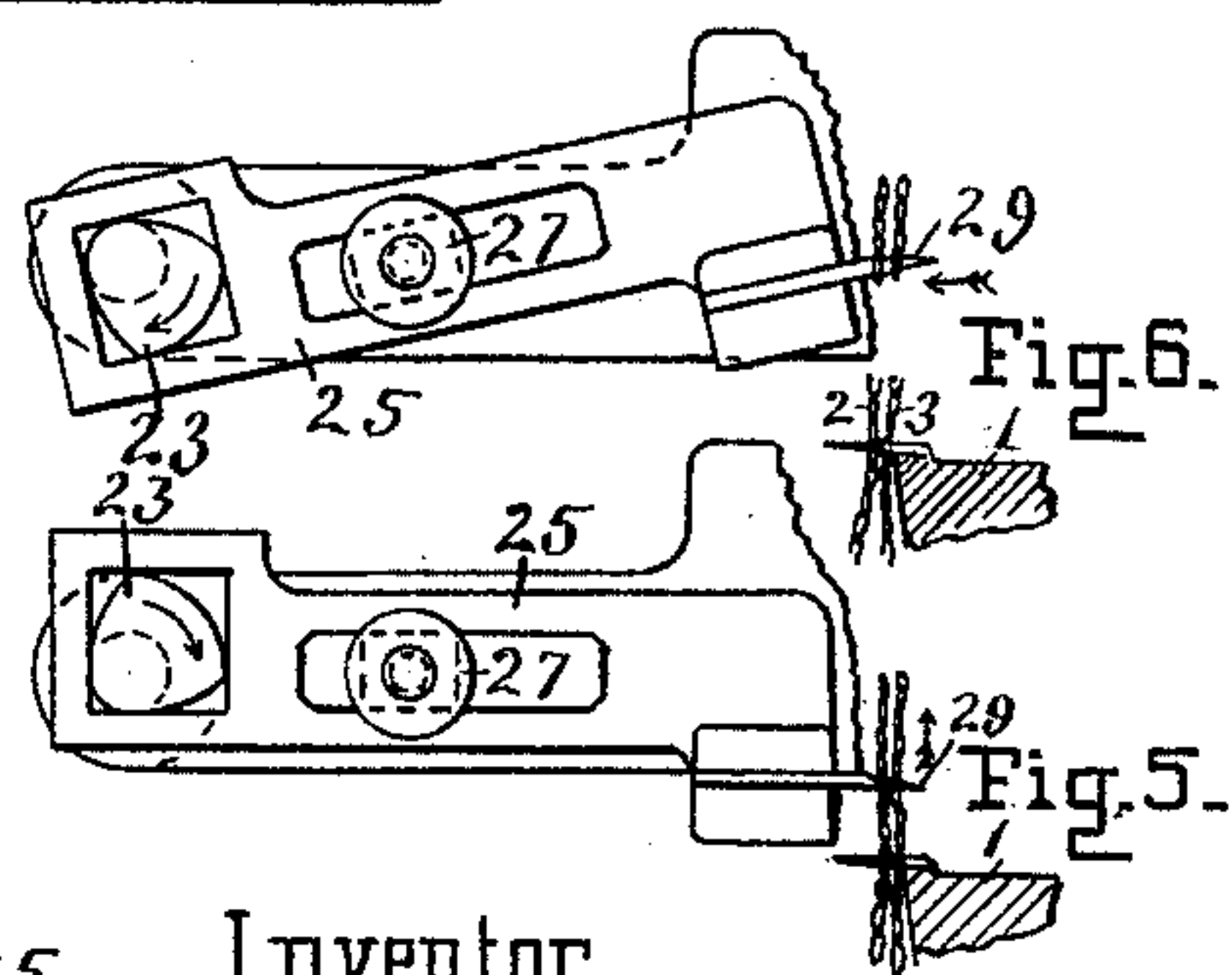


Fig. 5.

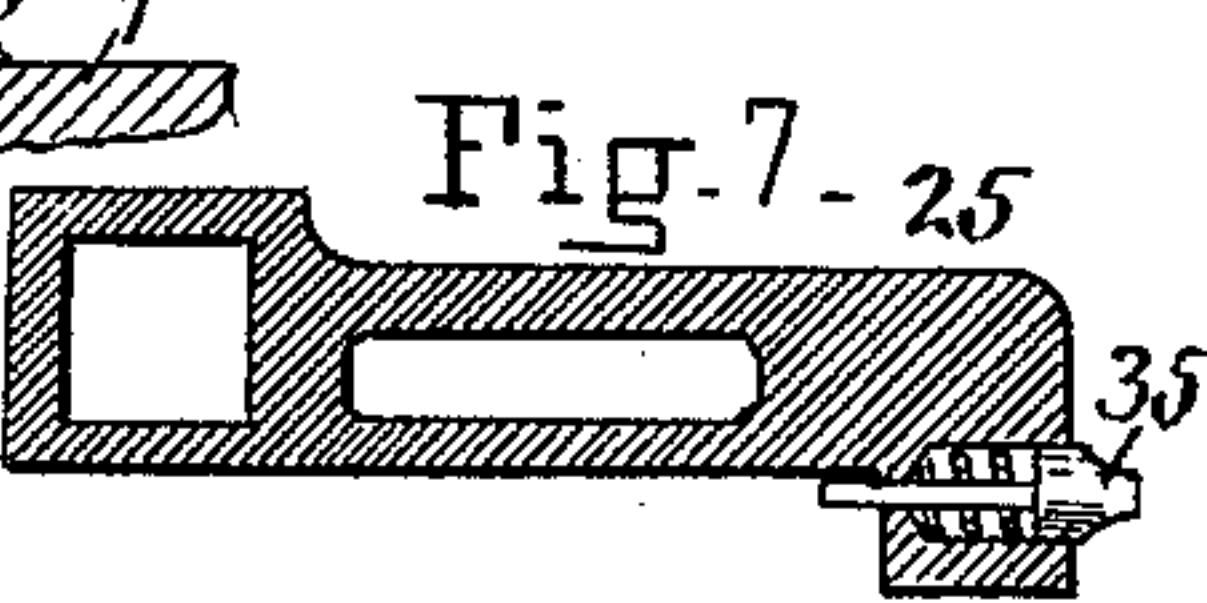


Fig. 7.

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UNITED STATES PATENT OFFICE.

ADELBERT LEE TRAVER, OF PHILMONT, NEW YORK.

TRIMMING ATTACHMENT FOR MACHINES FOR SEWING LOOPED FABRICS.

SPECIFICATION forming part of Letters Patent No. 410,720, dated September 10, 1889.

Application filed December 21, 1888. Serial No. 294,290. (No model.)

To all whom it may concern:

Be it known that I, ADELBERT LEE TRAVER, a citizen of the United States, and a resident of Philmont, Columbia county, State of New York, have invented new and useful Improvements in Trimming Attachments for Turning-Off Machines for Uniting Knit Fabrics, of which the following is a specification.

The purpose of my invention is to provide an attachment for a turning-off machine that will derive its motion from the main shaft of the sewing mechanism and trim and prepare the edges of the fabric to be united after they are placed upon the pin-plate and are being carried by it to the sewing mechanism.

Figures 1 and 2 are respectively top and side views of my invention, together with portions of a turning-off machine. Figs. 3, 4, 5, and 6 show successive positions of one of the levers. Fig. 7 is a section through the lever, and Fig. 8 is a side view of one of the guides.

Turning-off machines to which my attachment may be applied have been described in Letters Patent No. 354,374, granted to William Beattie December 14, 1886; in Letters Patent No. 344,897, granted to John Clute July 6, 1886, and in Letters Patent No. 389,533, granted to Thomas S. Smith September 11, 1888.

The elements of a turning-off machine to which my invention is applicable as an attachment are a pin-plate 1, Figs. 1 and 2, having on its periphery needles that carry the edges 2 and 3, Fig. 3, of the fabric to be sewed, and a sewing-machine 4, of which 5 is its main shaft and 6 is its sewing-needle. In the accompanying drawings the mechanism for transmitting motion from the sewing-machine shaft is arranged for a turning-off machine in which the shaft 5 makes one revolution in the making and completion of each stitch and the pin-plate 1 pauses and moves forward in the same interval, so as to be at rest while the sewing-machine needle is piercing the fabric.

The main frame of my attachment 7 is secured to any fixed part of the turning-off machine by which the operating parts may be brought in the proper position to act on the fabric carried on the pin-plate 1. In Figs. 1 and 2 I have shown the main frame of my attachment connected to the turning-off machine through the sliding joint 8 and angle-

piece 9. There is a slotted opening through the upright portion of the angle-piece 9, as indicated by the highest and lowest dotted lines thereon in Fig. 2. A projection from the main frame passes through this opening, and so much of it as projects through this angle-piece is threaded for a clamping-nut. A screw 10 passes through the top of the angle-piece 9 into the slotted opening, where it taps into the projection from the main frame, so that by loosening the clamping-nut and turning this screw the main frame may be drawn upward and its height from the ring 1 accurately adjusted.

The levers 25 and 26 receive motion from the sewing-machine shaft 5 through the universal joints and connections 11, 12, and 13, the bevel-gears 14 and 15, the shaft 16, the bevel-gears 17 and 18 and 19 and 20, the shafts 21 and 22, and cams 23 and 24, so that they will reciprocate in unison with it as though they were driven by cam or crank motion directly from it. These levers are fulcrumed at 27 and 28, respectively. They carry pointed ends 29 and 30 for breaking the stitches or raveling and thereby severing the fabric. The manner in which the cam 23 imparts motion to the lever 25 and the motion thereby obtained by the point 29 on this lever will be seen by reference, in succession, to Figs. 3, 4, 5, and 6. While the parts are changing from the positions shown in Fig. 3 to those shown in Fig. 4 the point 29 is descending out of contact with the fabric, and the motion is so timed as to take place while the pin-plate 1 is moving forward to feed for the next stitch. The remaining cycle of motions is timed to take place while the pin-plate 1 is at rest. In changing from the position shown in Fig. 4 to that shown in Fig. 5 the point enters the fabric. If the loops of the fabric are small in comparison with the body of the point 29, they will be broken or raveled by the wedging action during this motion. To insure the severing of the fabric where the points enter, they are carried away from it, as shown in following from Figs. 5 and 6, in such a direction as to cause them to pull it apart. In passing from the position shown in Fig. 6 to that shown in Fig. 3 the point withdraws from the work, so that it may be returned as first described. The point 30 on the lever 26 oper-

ates in a similar manner. Either of these points will accomplish the work of separating the fabric; but by having two entering simultaneously from opposite sides there is no possibility, in event of one or both becoming blunted, of the fabric being pushed to one side so that it will fail to be pierced.

Two guides 31 and 32, Figs. 1, 2, and 8, are provided in front of the points. They are close together under them, so as to confine the fabric where it is being pierced and severed, and flaring at the front. These guides have respectively openings 33 and 34, through which the points enter and recede from the fabric, whereby the severed portions are stripped off from the points when said points are withdrawn.

On the levers 25 and 26 and back of the points, so as to follow their action, on the edge of the fabric, are jaws 35 and 36, Figs. 1 and 7. These jaws have a similar motion to the points 29 and 30. After gripping they lift until the fabric draws out from between them. They do not take hold of the fabric with such force as to tear it when they draw away, and their purpose is to draw out any loose threads that may be adhering to the trimmed and raveled edges of the fabric and remove them before the edges are united by sewing. These jaws are mounted in the levers, as shown in Fig. 7, so that they are held forward by spring-pressure and yield when the levers are brought toward each other according to the thickness of material that they are gripping.

Having described the construction and operation of my invention, I would here state that I am aware that numerous devices are on record for trimming the edges of the fabric to be sewed. I therefore will not claim, broadly, devices for the attainment of such results. These several parts, however, that comprise my invention I believe to be novel in construction and function, as set forth in the claims. I have employed positive rotary mechanism to transmit power from the sewing-machine shaft to the reciprocating parts on my attachment, whereby the number and weight of the reciprocating elements are reduced and a smoother action secured. I have dispensed with the use of cutting-edges, and therefore have no elements in my trimmer that require to be sharpened. To do this I use points that sever the fabric by breaking. I also dispense with the use of a brush for removing the loose threads from the trimmed edge, and use for this purpose gripping-jaws that also serve to straighten the edges of the fabric before it is carried to the sewing-machine.

I claim as my invention—

1. A fabric-trimming attachment combining with the intermittently-rotating pin-plate and sewing mechanism of a turning-off machine levers having points attached thereto in a position to pierce and sever the fabric, jaws on the levers behind the points and in a position

to grip the trimmed edge of the fabric, yokes at the rear end of these levers affording surfaces at right angles to each other for cam action, cams for imparting motion to these levers, by which they are pushed toward the fabric and the points and jaws carried by them lifted while in contact with the work, positive rotary mechanism for revolving the cams from the sewing-machine shaft in such time that the severing and gripping elements will be withdrawn from the fabric during the feeding of the pin-plate, and a frame for supporting and guiding said levers and carrying said cams and rotary mechanism, as and for the purpose set forth.

2. A fabric-trimming attachment combining with the pin-plate of a turning-off machine slotted levers guided by fulcrum-pins on which they can slide and rock, points positioned on these levers where they can pierce opposite sides of the fabric impaled on said pin-plate, yokes at the rear ends of said levers affording surfaces at right angles to each other for cam action, cams for imparting motion to these levers, by which the points are pushed through the fabric in the direction of their axes and then lifted at right angles thereto, whereby the fabric is broken apart at a uniform height above the pin-plate, and a frame for supporting and guiding said levers through said fulcrum-pins and carrying said cams, as and for the purpose set forth.

3. A fabric-trimming attachment combining with the pin-plate of a turning-off machine slotted levers guided by fulcrum-pins on which they can slide and rock, points positioned on these levers where they can pierce opposite sides of the fabric impaled on the pin-plate, guides having openings through which the points enter and recede from the fabric, whereby severed portions thereof lodging on the points are removed, cams operating said levers to carry them toward and withdraw them from the fabric, and a frame for supporting and guiding said levers through said fulcrum-pins and carrying said cams and said guides, as and for the purpose set forth.

4. The combination, in an attachment to a turning-off machine, of levers situated on opposite sides of the fabric impaled on the pin-plate and guided by fulcrum-pins, so that they can slide in a direction to and from the fabric and rock to and from said pin-plate, jaws supported from these levers in a position to oppose each other, springs between the levers and the jaws, four-motion cams, positive connecting mechanism, and a frame for supporting and guiding said levers through said fulcrum-pins and supporting said cams and connecting mechanism, whereby the jaws may be caused to press the edges of the fabric with a spring-pressure when lifting, as and for the purpose set forth.

5. A trimming attachment for a turning-off machine combining with the pin-plate for feeding the fabric slotted levers guided by fulcrum-pins on which they can slide and rock,

points positioned on these levers where they
can pierce the fabric, jaws supported on these
levers in a position to oppose each other on
opposite sides of the fabric between the points
5 and the sewing mechanism, cams acting upon
these levers to slide them toward the fabric
and then rock the ends with points and jaws
upward from the pin-plate, and a frame for
supporting and guiding said levers through
10 said fulcrum-pins and supporting said cams,
as and for the purpose set forth.

In testimony that I claim the foregoing as my
invention I have signed my name, in presence
of two witnesses, this 18th day of December,
1888.

ADELBERT LEE TRAVER.

Witnesses:

WILLARD FELTS,
JAMES C. FERGUSON.