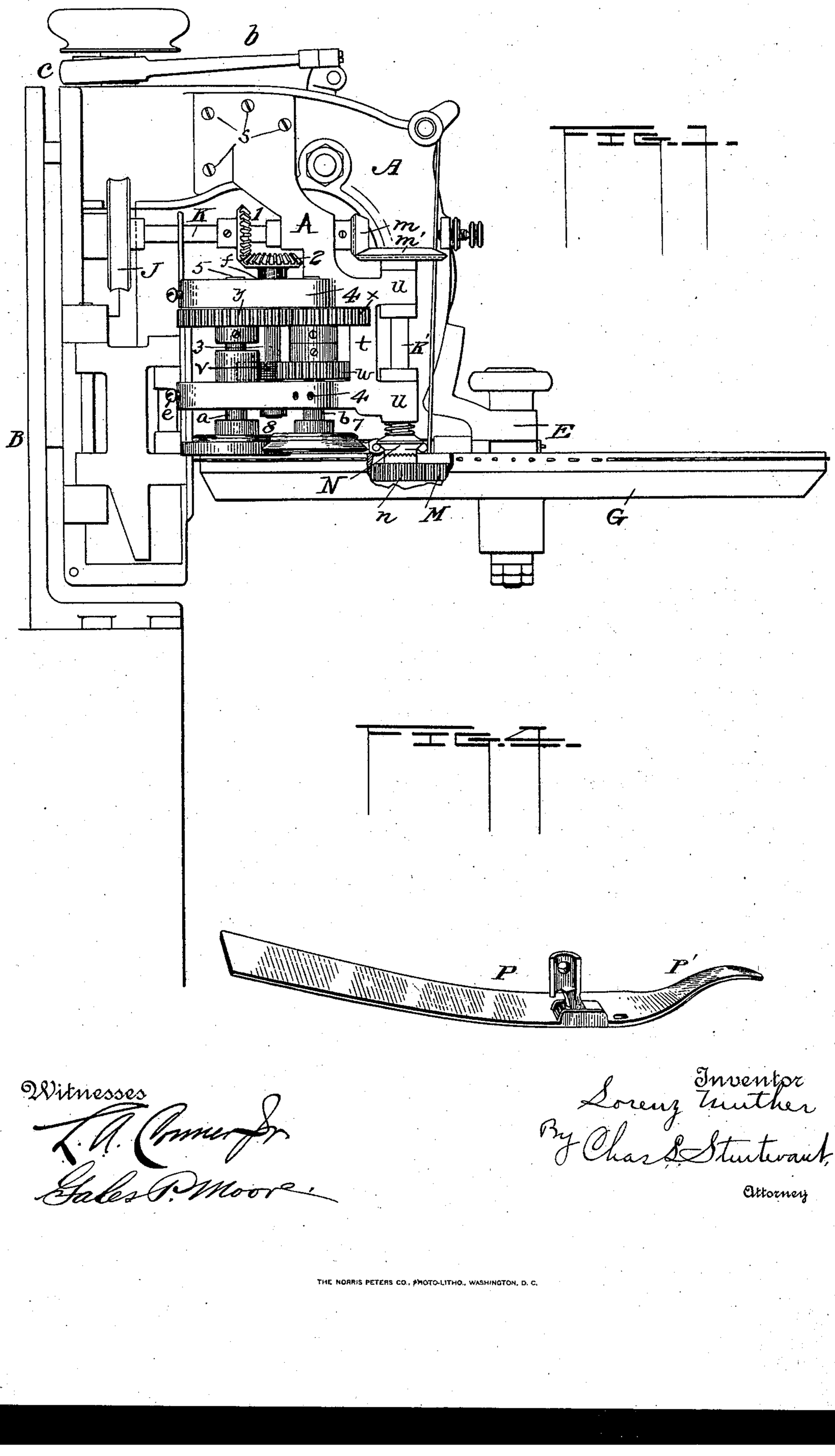
(No Model.) 2 Sheets—Sheet 1.

L. MUTHER.

MACHINE FOR SEWING LOOPED FABRICS.

No. 577,197. Patented Feb. 16, 1897.



Witnesses
T. A. Connor Jr.
Gales P. Moore.

Inventor
Lorenz Muther
By Chas. S. Stuntevant,
Attorney

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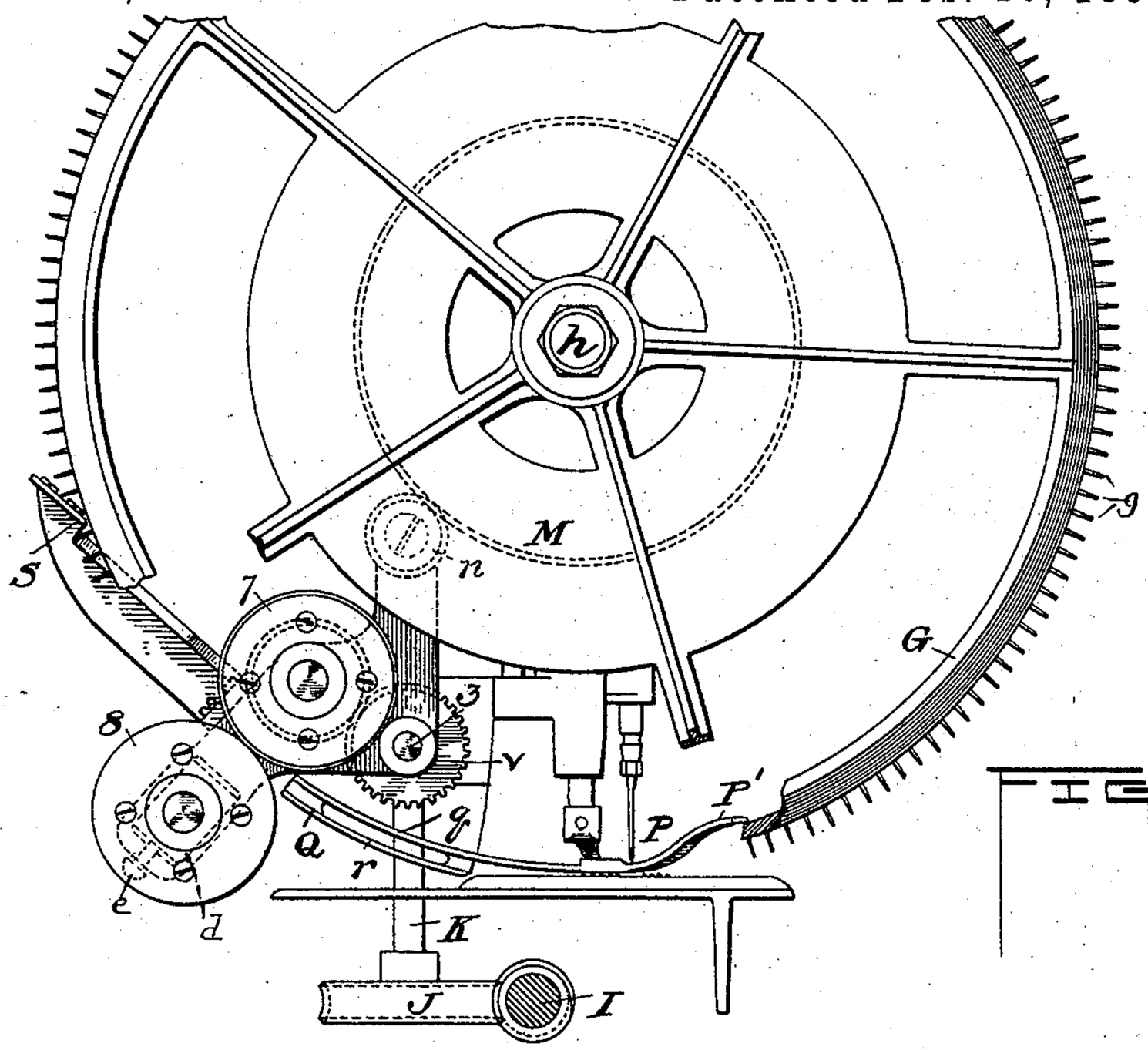

FIG. 2.

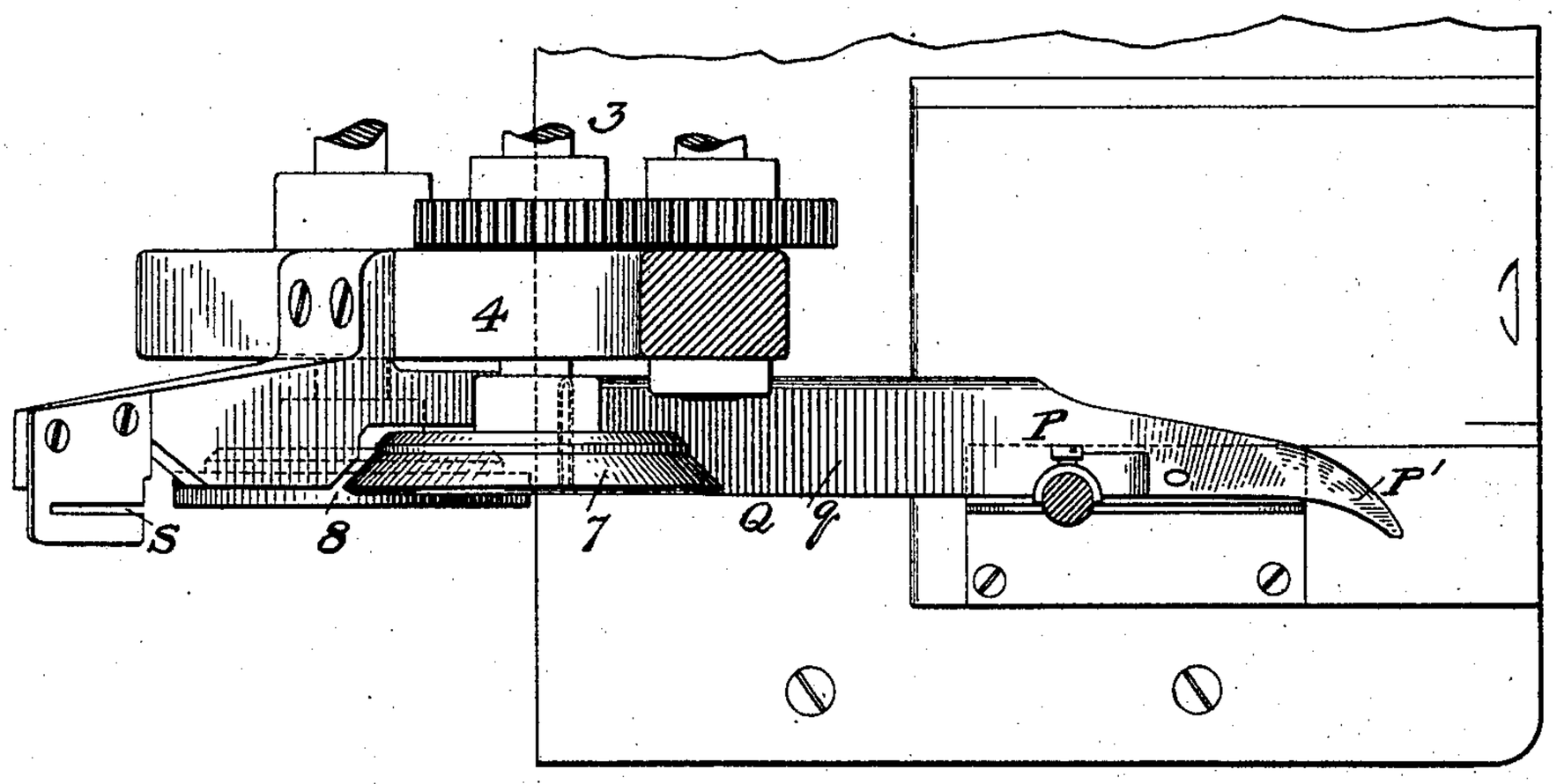

FIG. 3.

Witnesses
L. A. Connor
Gales P. Moore

Inventor
Lorenz Muther
By Chas. L. Stutevant
Attorney

UNITED STATES PATENT OFFICE.

LORENZ MUTHER, OF OAK PARK, ILLINOIS, ASSIGNOR TO THE UNION SPECIAL SEWING MACHINE COMPANY, OF CHICAGO, ILLINOIS.

MACHINE FOR SEWING LOOPED FABRICS.

SPECIFICATION forming part of Letters Patent No. 577,197, dated February 16, 1897.

Application filed January 27, 1892. Serial No. 419,456. (No model.)

To all whom it may concern:

Be it known that I, LORENZ MUTHER, a citizen of the United States, residing at Oak Park, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Sewing Looped Fabrics, of which the following is a description, reference being had to the accompanying drawings and to the letters and figures of reference marked thereon.

My invention relates to sewing-machines, and particularly to that class known as "machines for sewing looped fabrics," used for uniting the edges of knitted fabrics or for sewing together the cuffs and body portions of shirts and drawers. These machines as usually constructed comprise a horizontally-rotating cylinder provided with pins upon its periphery, upon which the goods to be united are impaled, and in connection therewith is a suitable stitch-forming mechanism, with mechanism for suitably operating the stitch-forming mechanism and feeding mechanism at the proper times.

In an application filed by me September 18, 1891, Serial No. 408,143, patented February 23, 1892, No. 469,525, I have shown, described, and claimed a type of machine adapted to such uses, this machine comprising a vertically-arranged overhanging arm, a horizontally-rotating material-carrying cylinder journaled to and rotating beneath said arm, suitable stitch-forming mechanism, and intermediate operative mechanism between the main shaft and said cylinder and stitch-forming mechanism whereby the stitches are formed and the feed of the goods accomplished at proper times.

The present invention is to a certain extent in certain of its features an improvement in the machine claimed in said application; and it consists in the various matters hereinafter described, and referred to in the appended claims.

In the accompanying drawings, which illustrate the invention, Figure 1 is a side elevation of my machine, part being broken away. Fig. 2 is a bottom plan view. Fig. 3 is a front elevation showing the presser-foot and trimming mechanism, and Fig. 4 is a view of a modified form of presser-foot.

In the drawings the main portion of the machine is similar to that illustrated in my previous application, and comprises a suitable frame, as A, secured, as shown, to a bracket or table B in such manner that the needle reciprocates in a horizontal direction and the looper vibrates vertically, the parts extending out beyond the table, thereby rendering it possible to apply to the machine a horizontally-rotatable material-carrying cylinder which shall be easy of access for the purpose of putting on the goods.

C is the main shaft of the sewing-machine, actuated in any suitable manner.

D is the needle-arm, pivoted on the main vertical arm of the machine and operated from the main shaft by the rod *b* and eccentric *c*.

The operation of the parts just referred to and the manner of forming the stitch are substantially the same as that shown in the above-mentioned application and also in Patent No. 299,568, granted to Charles A. Dearborn and myself June 3, 1884. I do not wish to be limited to this particular sewing-machine mechanism, as the invention is broad enough to include other types of machines, and while only one needle is herein shown, and that having only a reciprocating motion, it is obvious that two or more needles may be used and that in addition to the reciprocating motion a vibratory movement similar to that used in overseaming may be employed.

The cylinder G has on its outer periphery pins or points *g*, on which the pieces of goods are impaled and held in proper position to be acted upon by the sewing mechanism. This cylinder is journaled on the axle *h*, attached to the bracket E, said axle being held in the manner described in my previous application, that is, attached to the goose-neck of the machine. Also secured to the frame A of the machine by means of the screws *s* is the bracket A′, which has the downwardly-extending part *t*, provided with lugs *u*, in which lugs is journaled a shaft K′, carrying on its lower end a gear-wheel *n*, adapted to mesh

with a gear M, secured to the cylinder G, the meshing of the gear *n* with the gear M being controlled by means of a clutch N under the control of the presser-foot, as indicated in my previous patent. This shaft K′ has on its upper end a beveled gear *m′*, meshing with a second beveled gear *m*, carried on the outer end of the horizontal shaft K, which at its inner end carries a worm-wheel J, in mesh with the worm I, Fig. 2, of the main shaft of the machine. This bracket A′ has rearwardly and laterally extending triangular projections 4, provided with openings 5, in which are journaled shafts *a b*, the shaft *a* carrying on its lower end the rotating part 8, which acts as a bed upon which the goods rest, while upon the lower end of the shaft *b* is carried an abrading-disk 7. The relation of these openings 5 is such that when the rotary cutters are in position their point of contact is practically in a vertical plane corresponding with the vertical plane of the circle in which the pin-cylinder travels. As shown in Fig. 2, the disk 8 is made adjustable toward and from the disk 7 by means of the adjustable sleeve *c*, in which the shaft *a* has a bearing, this sleeve being adjustable back and forth in the opening *d* in the lower projection 4 of the bracket A′ by means of the screw *e*.

Having bearings in other openings *f* at the opposite end of the projections 4 is the shaft 3, which has on its upper end a beveled gear 2, meshing with a similar wheel 1 on the horizontal shaft K. At its lower end the shaft 3 carries a gear-wheel *v*, meshing with a gear *w* on the shaft *b*, which shaft *b* has a gear *x* near its upper end meshing with a gear *y* on the shaft *a*, whereby the proper movements are given to the rotating trimmer parts.

In rear of the trimming mechanism, as shown in Fig. 3, there is secured a stripper S to one of the projections 4 of the bracket A′, whereby after the trimming is accomplished the fabric may be removed from the cylinder.

For properly holding the goods while being stitched and for guiding them to the trimmer I have devised the form of presser-foot shown in Figs. 2 and 3. This presser-foot P is of the usual form as far as certain features are concerned and is operated in the usual manner. It is provided, however, with certain additional features, making it particularly useful on machines of this character. For example, on its forward end it has the extension P′, curved, as shown, to bear upon the periphery of the cylinder and upon the goods, thereby taking the curl out of the fabric before it reaches the sewing-needle. In rear of the needle the presser-foot is provided with a suitable guide Q, curved, as shown in Fig. 2, to direct the goods accurately to the trimmer. While I have shown the extension P′ and the guide Q as integral with the presser-foot, it will be understood that it may be made separate and attached thereto. Furthermore, while the guide Q consists, broadly, of the inner and outer plates *q r*, attached at the rear, its form may be changed in many ways without departing from the invention, as, for example, the outer plate may be dispensed with and the form in Fig. 4 be used.

I have also in this present machine provided a slot in the throat-plate, into which the pins on the cylinder extend, and by the passage of the pins into this slot the material is forced more firmly upon the cylinder at the place where the operation of sewing is accomplished.

Various minor modifications and changes may be made in the construction of this machine without departing from the spirit of the invention, and I do not wish to be limited to the attachment of the pin-cylinder to the gooseneck or head of the sewing-machine frame itself, my invention being broad enough to include means of attachment which may be independent of the sewing-machine proper, that is, the arm supporting the cylinder may be attached to some other support than the frame of the sewing-machine or may be unconnected with the overhanging arm of the machine, but secured to a separate bracket or support.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a machine for sewing looped fabrics and in combination with the material-carrying pin-cylinder, stitch-forming mechanism and a trimmer, a presser-foot bearing on the material adjacent the stitching-forming mechanism and having an extension bearing upon the material in advance of the stitch-forming mechanism and a guide in rear of the stitch-forming mechanism for directing the fabric to the trimmer; substantially as described.

2. In a sewing-machine the combination with a main vertically-arranged shaft, and vertically-arranged overhanging arm, of a horizontally-rotatable material-carrying cylinder secured to said arm, a trimmer, and intermediate operative mechanism whereby the fabric is fed, the stitches placed therein and the edge of said fabric trimmed; substantially as described.

3. In a sewing-machine the combination with a main vertically-arranged shaft, and vertically-arranged overhanging arm, of a horizontally-rotatable material-carrying cylinder secured to said arm, a trimmer, suitable intermediate operative mechanism whereby the fabric is fed, the stitches placed therein and the trimmer operated, and a guide for directing the material from the stitch-forming mechanism to the trimmer; substantially as described.

4. In a sewing-machine, the combination with the main vertically-arranged shaft and vertically-arranged overhanging arm, of a horizontally-rotatable material-carrying cylinder secured to said arm, a trimmer, suitable

intermediate operative mechanism whereby the fabric is fed, the stitches placed therein and the trimmer operated, and a suitable presser-foot provided with a guide for directing the material from the stitch-forming mechanism to the trimmer; substantially as described.

5. The combination with a main shaft and stitch-forming mechanism of a sewing-machine, of a horizontal rotatable material-carrying cylinder for holding said material in position to be operated upon by the stitch-forming mechanism, a trimmer, suitable intermediate operative mechanism whereby the fabric is fed, the stitches placed therein, and the trimmer operated, and a presser-foot having an extension in front of the needle to guide the goods thereto and being provided also with a guide in rear of said needle to direct the fabric to the trimmer; substantially as described.

6. In the herein-described machine, the bracket A′ having the downwardly-projecting portion with the forwardly-projecting lugs one above the other, having openings for the shaft K′, the rearwardly and laterally extending projections 4 arranged one above the other and having openings for the shafts *a*, *b*, and an opening for the shaft 3, and having a bearing for one end of the horizontal shaft K; substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

LORENZ MUTHER.

Witnesses:
W. S. NORTH,
CHESTER MCNEIL.