(No Model.) 2 Sheets—Sheet 1.

R. S. NORTON.

SEWING MACHINE.

No. 270,244. Patented Jan. 9, 1883.

Fig. 1

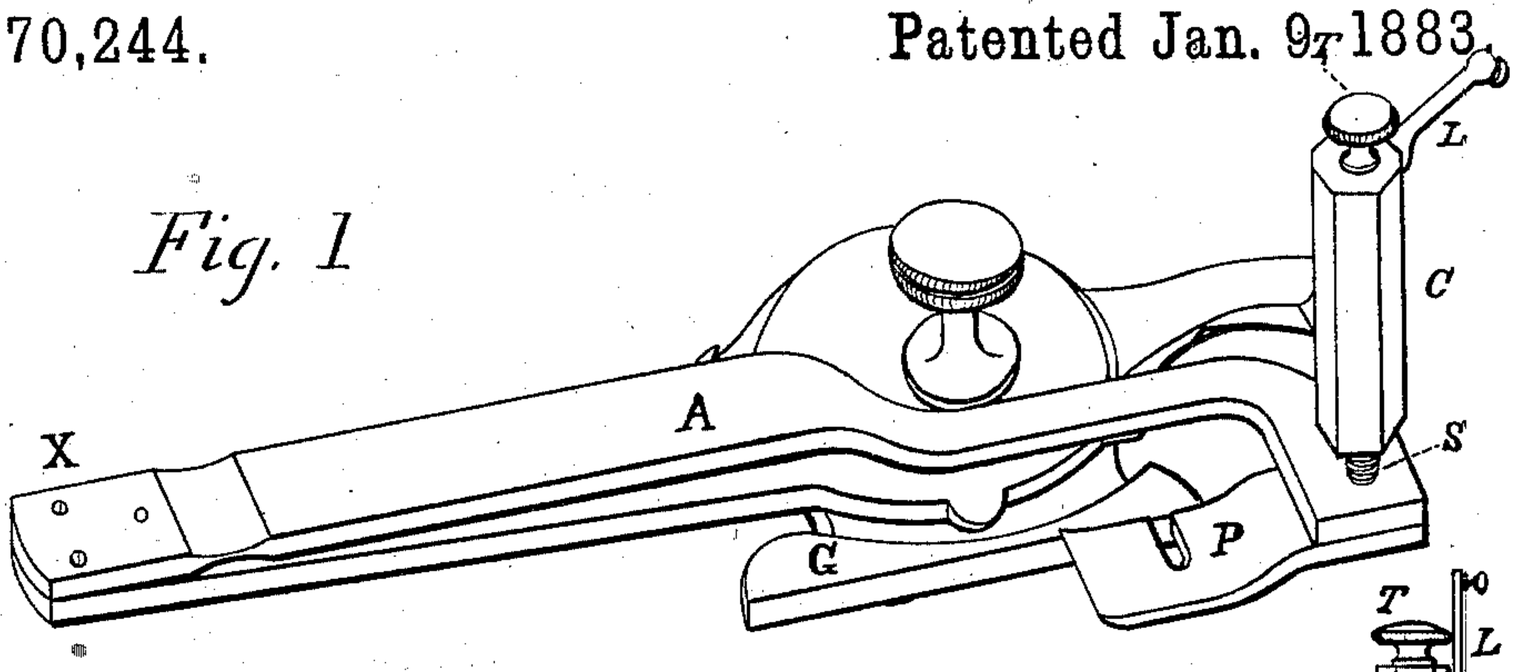


Fig. 2

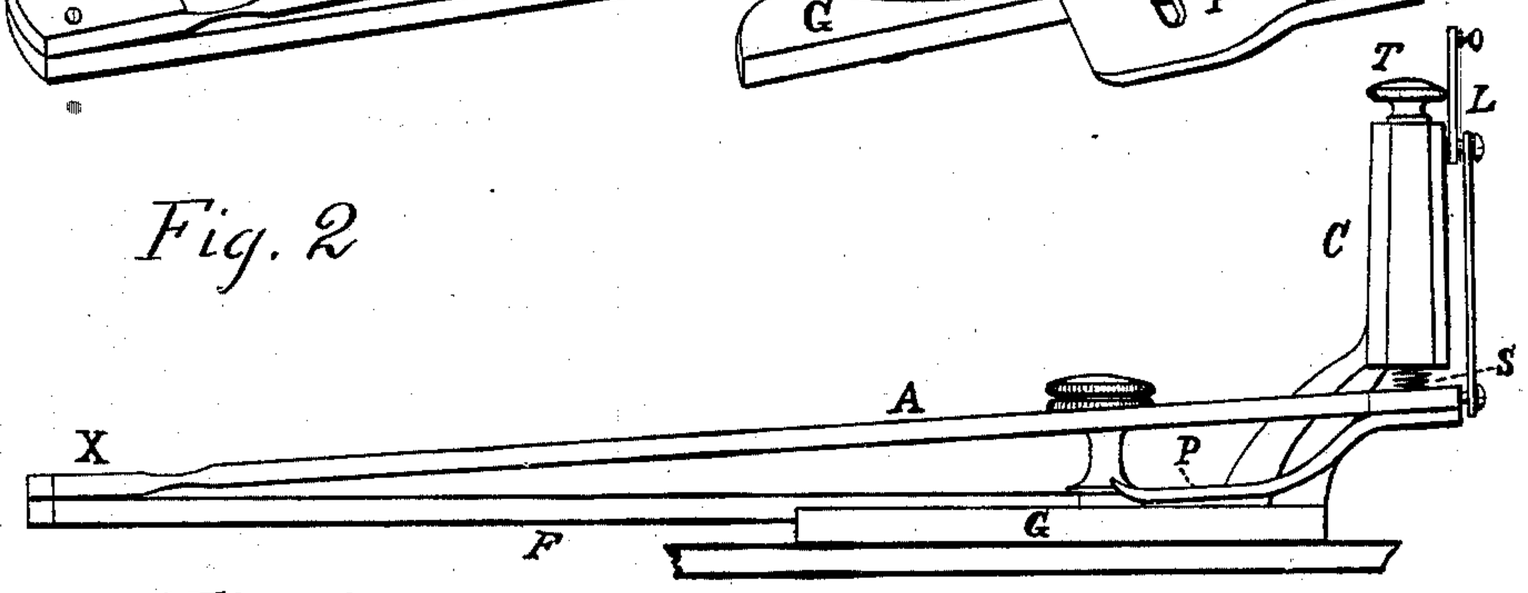


Fig. 3

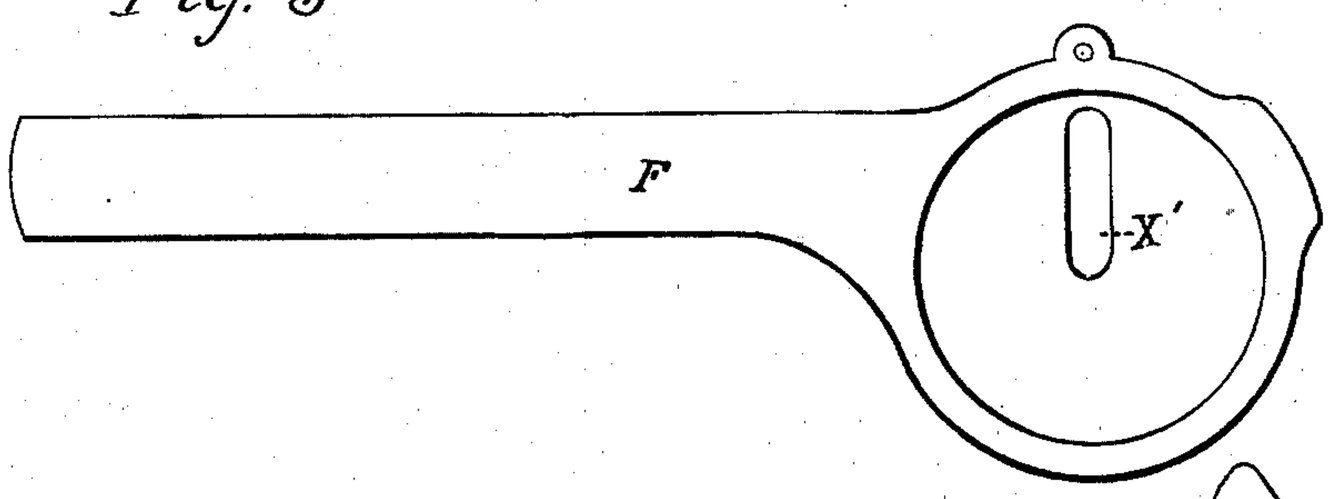
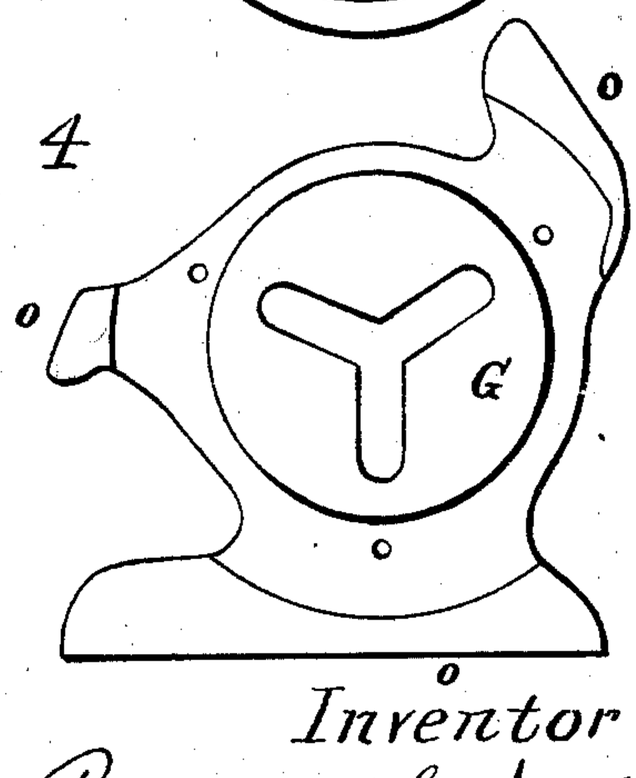


Fig. 4



Witnesses
Wm. H. Hollister Jr
Rob Townsend Jr

Inventor
Rowland S Norton
by N Davenport atty

(No Model.)

2 Sheets—Sheet 2.

R. S. NORTON.

SEWING MACHINE.

No. 270,244. Patented Jan. 9, 1883.

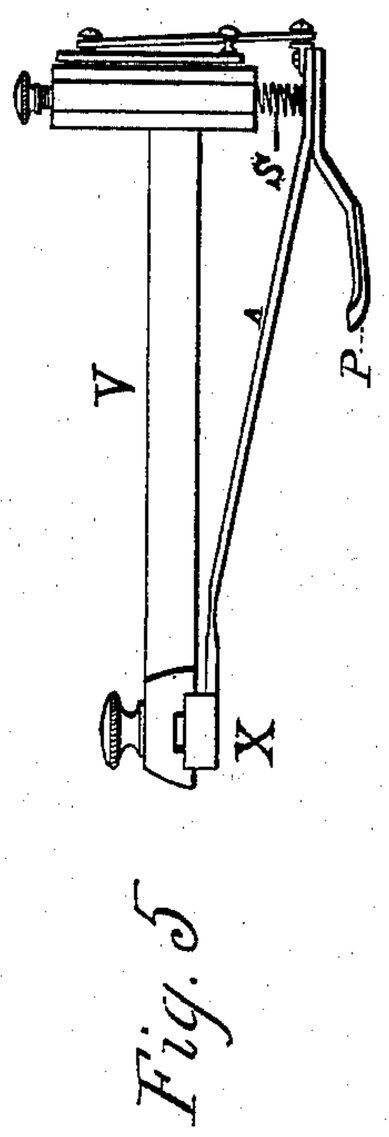


Fig. 5

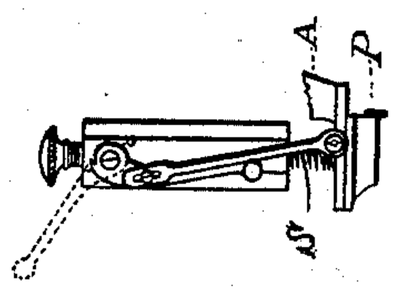


Fig. 7

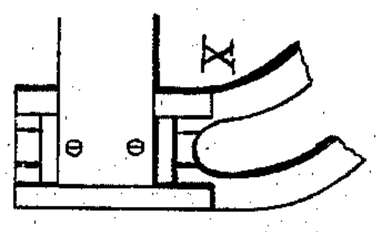


Fig. 6

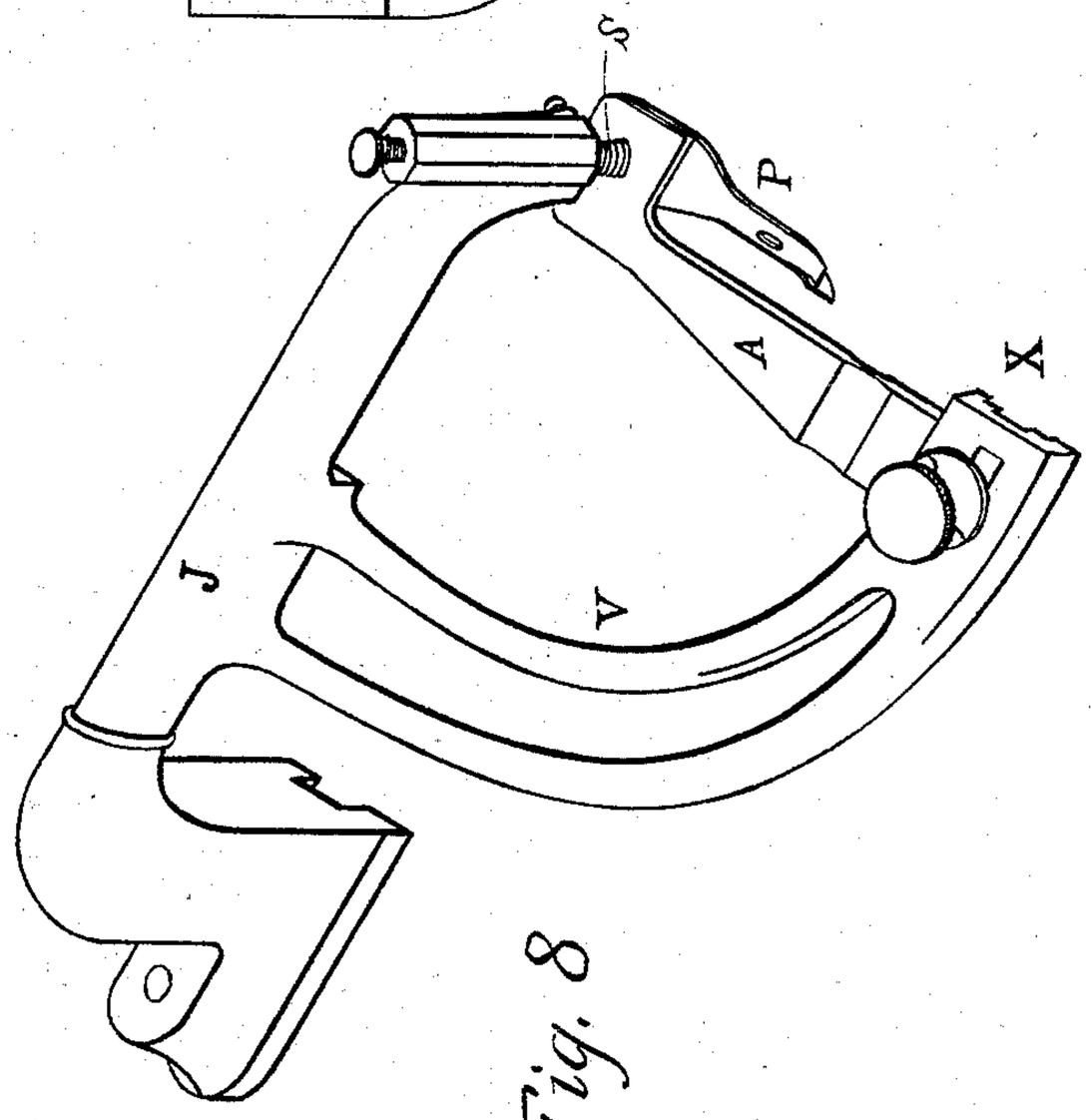


Fig. 8

Witnesses
Wm. H. Hollister Jr
R. M. Townsend Jr

Inventor
Rowland S. Norton
per N. Dawson Jr. Atty.

UNITED STATES PATENT OFFICE.

ROWLAND S. NORTON, OF TROY, NEW YORK.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 270,244, dated January 9, 1883.

Application filed September 30, 1882. (No model.)

To all whom it may concern:

Be it known that I, ROWLAND S. NORTON, of the city of Troy, county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Sewing-Machines, of which the following is a specification, reference being had to the accompanying drawings and reference letters marked thereon.

In the annexed drawings, Figure 1 is a perspective view of the presser-foot and attachments. Fig. 2 is a side elevation of presser-foot and attachments. Fig. 3 is a plan view of the fulcrum-bar. Fig. 4 is plan view of the gage-plate. Fig. 5 is a side elevation of the presser-foot when connected with the supporting-arm V. Fig. 6 is a plan view of X in Fig. 8. Fig. 7 is an end elevation of the fulcrum standard and appliances for raising the presser-foot. Fig. 8 is a perspective view of presser-foot when attached to the supporting-arm V.

As at present generally constructed, the bearings or attachment of the presser-foot is in rear of the needle and the feed, and is operated by means of a post attached to the presser-foot and passing through a standard. The post has a lug or pin on each side, which works in a groove in the side of the standard, holding the presser-foot parallel with the seam. The lugs upon the post and the grooves in the standard begin to wear as soon as the machine is put into use, and the result is that the presser-foot, in consequence of the motion of the machine, vibrates laterally or to and from the gage, carrying the fabric with it, thereby producing an uneven and irregular stitch or line of stitching. To avoid this lateral vibration of the presser-foot is one of the objects of my invention. And, further, the presser-foot post in the present machines must be kept oiled to avoid friction of the parts when in operation, and the oil, even with great care, will frequently be thrown off or drop down upon the goods and soil them. This difficulty I also avoid by dispensing entirely with this post and by making the presser-foot without any frictional bearings. And, further, as the presser-foot is now generally constructed, the gage for regulating the width of seam is secured to the cloth-plate behind the presser-foot and independently of it, and as such presser-foot is not adjustable laterally to any marked extent there will be, when certain widths of seams are required, a space left between the face of the gage and the edge of the presser-foot. In such cases this space is filled up by the operator by attaching to the presser-foot what is known among operatives as a "cow-catcher," which is a thin strip of metal running parallel with the presser-foot and just wide enough to fill the space between the face of the gage and the edge of the presser-foot. These cow-catchers must be of various widths, according to the width of seam and space, and their office is to prevent the fabric from puffing up between the presser-foot and the gage, and of course much time and trouble are expended in fitting and adjusting these appliances. In my invention and improvements the gage is so attached to the arm of the presser-foot that it can be moved and adjusted simultaneously with the presser-foot, and so that no space can be left between the gage and the presser-foot.

In my drawings, P is the presser-foot, which is rigidly attached to its arm A, called the "presser-arm," extending outwardly and preferably in advance of the needle and feed, and on a line parallel with the movement of the fabric under the needle. This presser-arm A, which is so made that it has only a vertical spring at its outward end, (designated in the drawings by X,) is rigidly attached to the fulcrum-bar F, and at the inner end of which is the fulcrum-standard C, which is attached to the inner end of the presser-foot, and to which is attached the ordinary hinged or jointed lever-bar, L, for raising the presser-foot to insert and adjust thereunder the fabric to be stitched. This fulcrum-bar F is secured to the cloth-plate by means of an ordinary thumb-screw, which passes through a slot, X′, in the fulcrum-bar and through a slot in the gage, and through the cloth-plate and into the bed of the machine. This slot in the bar and in the gage allows the presser-foot and gage to be simultaneously moved and adjusted to any desired width of seam, and as the gage by this means is always close to the edge of the presser-foot there is no space between such parts for the fabric to puff or be forced into.

The fulcrum-standard C is made hollow for the purpose of inserting therein a spiral spring,

S, resting upon and working against the presser-foot to supplement the spring of the presser-arm A. This spiral spring may be of use when certain fabrics are being stitched, and its tension may be regulated by means of the screw T, located in the top of the standard C and reaching down to the spiral spring. There are no frictional bearings about these parts requiring oil, and the fabric therefore cannot be soiled by oil, as frequently occurs in using the present machine. Neither can there be any lateral vibration of the presser-foot to cause an uneven and irregular line of stitching, as the presser-foot, instead of being attached to a loose post, as in the machines now in use, is so rigidly attached to the arm A, and that to the fulcrum-bar F, at X, and having no spring or flexibility, except vertically, that it can have no lateral vibration.

The gage and presser-foot as commonly constructed cannot be adjusted to all widths of seam without sometimes leaving a space between the gage and presser-foot, for the reason that the presser-foot, on account of its location and construction, is not readily nor sufficiently adjustable for the purpose. Consequently in certain kinds of work the fabric will puff up between the presser-foot and gage unless cow-catchers or some equivalent device be used to fill the space, as hereinbefore mentioned. To avoid this difficulty I make my presser-foot adjustable by means of the slot and screw at X′, also the gage G adjustable under the same screw.

For greater accuracy, and to facilitate the adjustment of the gage and presser-foot to the required width of seam, I make what I call a "universal gage," which is the plate G, having two, three, or more gage-faces, *o o o*, of different forms, for gaging straight and curved seams. This gage G has a series of radial slots corresponding with the gage faces, as seen in Fig. 4, and is secured under the presser-arm and to the cloth-plate by the thumb-screw at X′. In order to facilitate the adjustment of the parts to the required width of seam, I adjustably attach the gage to the presser-arm by means of pins projecting from the arm and through corresponding holes in the gage G, which will so connect the gage and presser-foot that they will be adjusted and operated simultaneously by loosening the thumb-screw at X′. The gage can be readily changed so as to present the required face to the presser-foot.

The above-described method of attaching the presser-foot is particularly adapted to work not requiring the goods to pass freely under the needle-bar and fulcrum-bar. When work is to be done requiring the goods to pass freely under such bars I attach the presser-foot rigidly to the presser-arm, and this arm rigidly to a supporting-arm, V, Fig. 8, so that the presser-arm A will be parallel with the motion of the fabric under the needle, as before described; but instead of placing the presser-arm and fulcrum-bar close to the cloth-plate this fulcrum-bar is dispensed with, and the presser-arm, at its outer end at X, is adjustably attached to the supporting-arm V, elevated at a sufficient distance above the cloth-plate to allow a free passage of the goods under said arms. The inner end of this supporting-arm V is secured to the arm J, attached to the bed-plate of the machine.

In addition to the spring of the presser-arm, a spiral spring, S, may be placed in the hollow fulcrum-post located at the end of the bar J. All the improved parts described herein are easily and readily adjusted, kept in order, and renewed from time to time without defacing or injuring the machine.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In an attachment for a sewing-machine, the combination of the fulcrum-bar F, formed with slot X′, to connect a gage, and the presser-arm A, carrying the presser-foot P, the said members F and A being united at X, substantially as and for the purpose set forth.

2. In an attachment for a sewing-machine, the combination of a presser-arm, A, with presser-foot P, fulcrum-standard C, and interposed spring S, substantially as and for the purpose set forth.

3. In an attachment for a sewing-machine, an adjustable gage-plate having a plurality of gage-faces and a series of radial slots, substantially as shown, and for the purpose set forth.

4. In an attachment for a sewing-machine, the combination, with the fulcrum-bar F, formed at one end with the elongated slot X′, of the adjustable gage-plate G, having a plurality of gage-faces and a series of radial slots, as and for the purposes set forth.

In witness whereof I have hereto set my hand this 1st day of June, 1882.

ROWLAND S. NORTON.

Witnesses:

N. DAVENPORT,

WM. H. HOLLISTER, Jr.