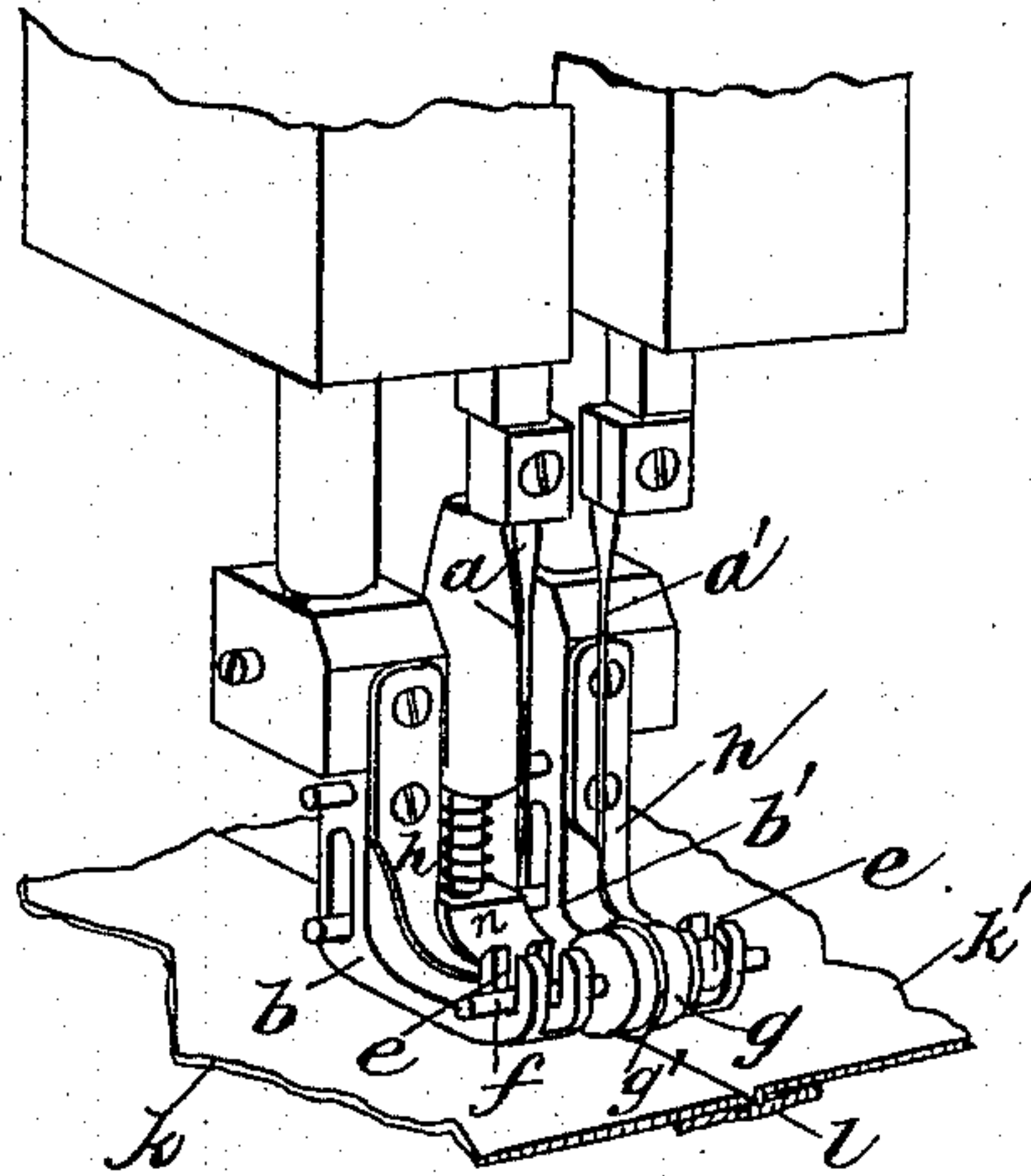


(No Model.)

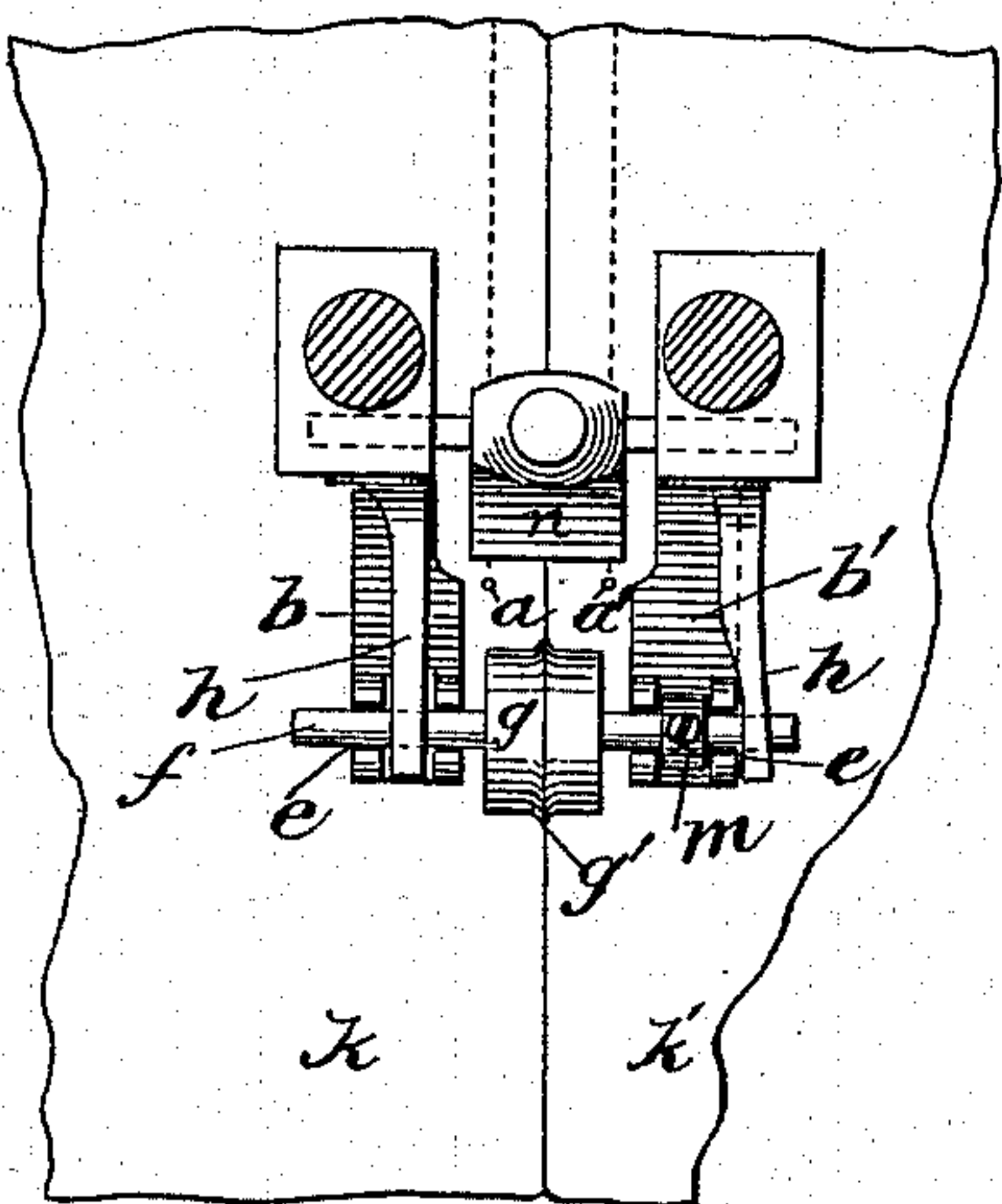
H. BOND & G. A. MERRILL.  
TWIN SEWING MACHINE.

No. 251,674.

Patented Dec. 27, 1881.



*Fig. 1.*



*Fig. 2.*

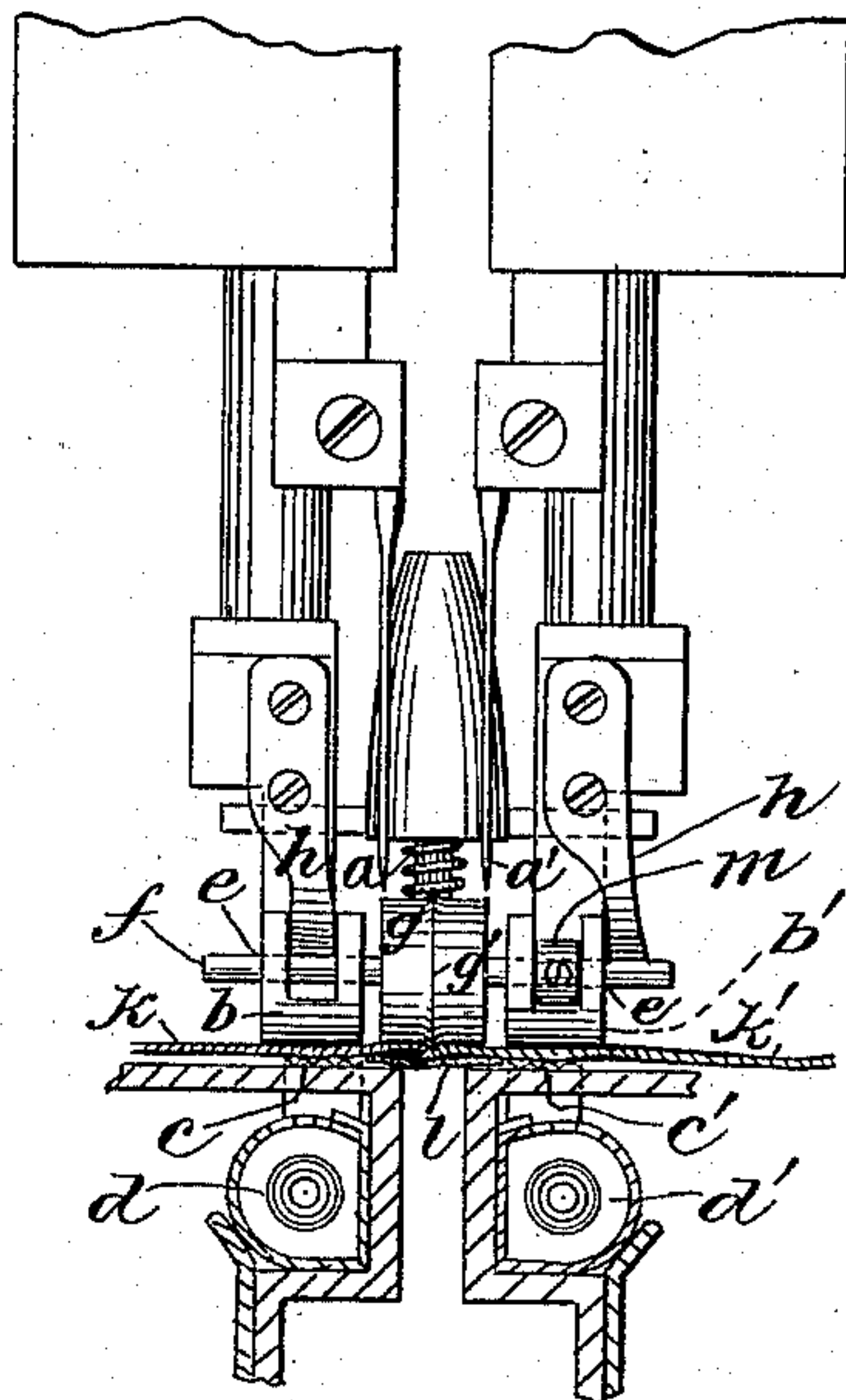


Fig. 3.

Witnesses:  
H. G. Maduin  
L. B. Morrison

*Inventors:*  
*Hiram Bond,*  
*George A. Merrill,*  
*by Wright & Brown.*  
*Attorneys:*



# UNITED STATES PATENT OFFICE.

HIRAM BOND AND GEORGE A. MERRILL, OF HAVERHILL, MASSACHUSETTS,  
ASSIGNORS TO SAID HIRAM BOND.

## TWIN SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 251,674, dated December 27, 1881.

Application filed August 12, 1881. (No model.)

*To all whom it may concern:*

Be it known that we, HIRAM BOND and GEORGE A. MERRILL, of Haverhill, in the county of Essex and State of Massachusetts, have invented certain Improvements in Twin Sewing-Machines, of which the following is a specification.

This invention relates to that class of sewing-machines which are provided with two stitch-forming mechanisms adapted to form two parallel rows of stitches simultaneously, and laterally adjustable so as to form said rows at any desired distance apart, such machines being known as "twin" sewing-machines, and used largely in attaching seam-covering stays to the uppers of boots and shoes, the two rows of stitches required to attach the stay to the two parts connected by the seam being made simultaneously.

Our invention has for its object to prevent the work from being vertically displaced between the presser-feet and to enable the work to be easily and accurately guided during the operation of attaching an inside seam-covering stay; and to this end it consists generally in the provision of means for holding down the work at a point between the twin presser feet, and specifically in the provision of a roller journaled in the ends of the twin presser-feet, and provided with a peripheral rib adapted to run in the groove formed in the outer surface of the seamed part of a boot or shoe upper to which a stay is to be attached, and thereby guide said parts by the seam while the stay is being attached, as we will now proceed to describe and claim.

Of the accompanying drawings, forming part of this specification, Figure 1 represents a perspective view of a portion of a twin sewing-machine embodying our invention. Fig. 1<sup>a</sup> represents a modification. Fig. 2 represents a top view of the same. Fig. 3 represents a front elevation, the bed and mechanism below being in section.

The same letters refer to the same parts in all the figures.

In the drawings, *a a'* represent the needles, *b b'* the presser-feet, *c c'* the feed-dogs, and *d d'* the shuttles, of a twin sewing-machine, said parts forming two separate stitch-forming

mechanisms, which are movable toward and from each other, as shown in the patent to G. Stackpole, Jr., No. 45,278, dated November 29, 1864. The presser-feet *b b'* are adapted to be raised and lowered together to release and hold the work, and to be raised and lowered independently to a slight extent to accommodate each foot to a thickness of work varying from the thickness under the other foot. These features of the machine, however, are not of our invention.

The outer ends of the presser-feet *b b'* are provided with upwardly-projecting ears, having substantially vertical slots located in front of the needles, and in these slots is placed the arbor of a roller, *g*, the roller being interposed between the presser-feet in front of the needles. The arbor *f* is elongated, so that it will admit of any desired separation of the presser-feet without losing its bearings in said feet. The arbor *f* is movable vertically in the slots *e*, and pressed downwardly by springs *h h* attached to the feet, said springs enabling the roller to have a yielding movement independent of the presser-feet *b b'*, so that said roller can yield to the extra thickness of work between but not under the feet *b b'*, caused by an inside stay of less width than the space between the proximate edges of said feet.

The roller *g* is provided with a peripheral rib, *g'*, which is adapted to run in the groove formed in the outer surface of a boot or shoe upper between the two parts *k k'* thereof when said parts are united in such manner as to require an inside seam-covering stay, *l*. The rib *g'*, running in said groove, guides the work mainly or wholly without assistance from the operator, thereby insuring the formation of the two rows of stitches at equal distances from and parallel with the seam, and also enabling additional rows of stitches to be formed exactly parallel with the first rows, the distance between the stitch-forming mechanisms being changed after the first rows are formed, and the roller being adjusted, by means hereinafter described, so that its rib is equidistant from the two presser-feet as last adjusted. The second rows of stitches are therefore guided by the same means as the first rows, and their parallelism with the first rows is assured.



To secure the rib  $g'$  at a point equidistant from the presser-feet we employ a collar,  $m$ , adapted to be adjusted on the arbor  $f$  and held at any desired point thereon by a screw. The collar  $m$  is prevented from endwise movement by two of the slotted ears of one of the presser-feet, between which said collar is interposed, as shown in Figs. 2 and 3, so that when the collar is affixed to the arbor the ribbed roller is prevented from lateral movement between the presser-feet.

We prefer to employ an auxiliary presser-foot,  $n$ , located between the feet  $b$   $b'$  and behind the needles, for the purpose of holding down the portion of the work between the presser-feet  $b$   $b'$ . Said auxiliary foot  $n$  is adapted to rise and fall with the feet  $b$   $b'$ , and, like the roller  $g$ , has an independent yielding movement, and is adapted to be adjusted laterally, so as to remain equidistant from said feet when the distance between them is varied. The auxiliary foot  $n$  is not an essential part of this invention, although it is useful in preventing the work from rising between the feet  $b$   $b'$ , and thus preventing the formation of the stitches, which is liable to occur when the feet are widely separated. Its chief function, however, is to hold down an outside stay, as shown in our application for Letters Patent of the United States filed with the present application, (serial No. 39,761,) to which reference is made for a fuller description.

We do not limit ourselves to the employment of the roller  $g$  in all cases as a means for holding down and guiding the work, for in some cases the work may be held down and guided between the presser-feet by the bar  $g$ , (shown in our pending application for Letters Patent No. 39,761,) said plate or bar being placed in the slots  $e$   $e$  of the presser-feet  $b$   $b'$  and having preferably a slot to receive, hold down, and guide an outside stay in advance of the needle; or the lower edge of said bar may be used to hold down and guide the work.

Having thus described our invention, we claim—

1. In combination with the stitch-forming mechanism of a twin sewing-machine, a laterally-adjustable roller journaled in bearings in the two presser-feet of said mechanism, and provided with a peripheral central rib adapted to run in a seam and guide the work having such seam while an inside seam-covering stay is being applied to the work, as set forth.

2. In combination with the stitch-forming mechanism of a twin sewing-machine, a laterally-adjustable ribbed roller journaled in bearings in the two presser-feet of said mechanism, and provided with a yielding movement independent of said presser-feet, whereby the said roller is enabled to yield independently to the extra thickness of material between said feet caused by the inside stay, as set forth.

3. The combination of the twin presser-feet having substantially vertical slots  $e$  in their outer ends, the ribbed roller  $g$ , having an elongated arbor adapted to rotate and move up and down in said slots, an adjustable collar on said arbor to keep the roller in a central position between the presser-feet, and springs  $h$   $h$ , adapted to exert a downward yielding pressure on said arbor, as set forth.

4. In combination with the stitch-forming mechanism of a twin sewing-machine, a device supported by the outer ends of the twin presser feet of such mechanism, and adapted to guide and hold down the work, as set forth.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, this 5th day of August, A. D. 1881.

HIRAM BOND.  
GEORGE A. MERRILL.

Witnesses:  
DAVID B. TENNEY,  
RAYMOND NOYES.