2 Sheets—Sheet 1.

E. L. HOWARD.

RUFFLING DEVICE FOR SEWING MACHINES.

No. 120,817. Patented Nov. 14, 1871.

Fig 1.

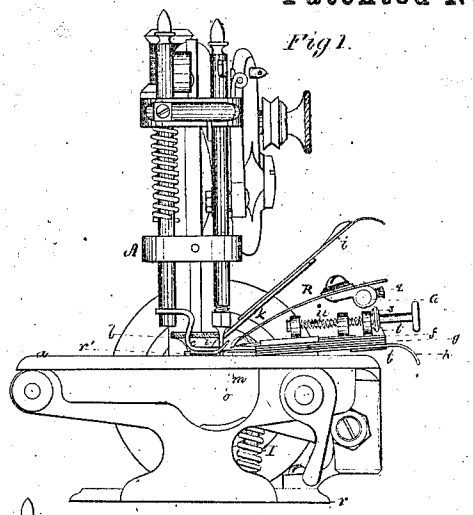
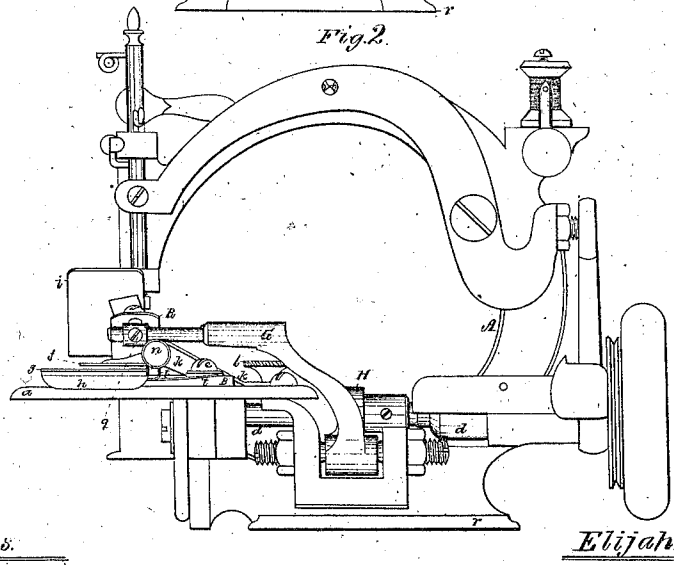


Fig 2.



Witnesses.

S. N. Piper

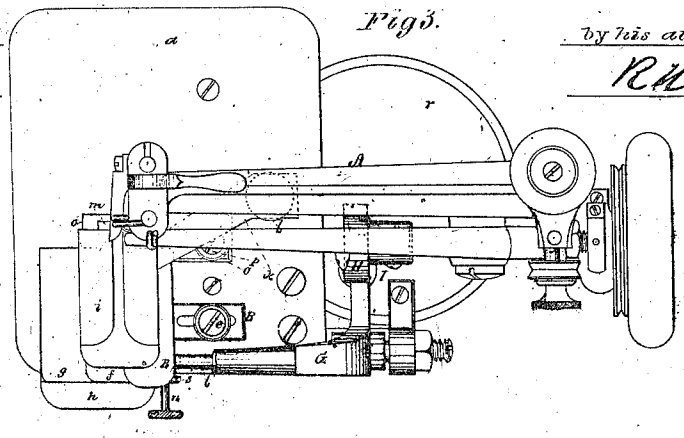
L. N. Moller

Elijah L. Howard

by his attorney.

R. H. Eddy

Fig 3.



2 Sheets—Sheet 2.

E. L. HOWARD.

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No. 120,817. Patented Nov. 14, 1871.

Fig. 5.

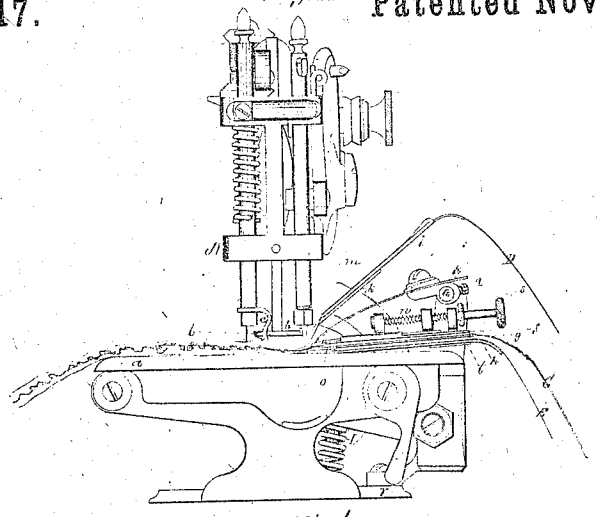
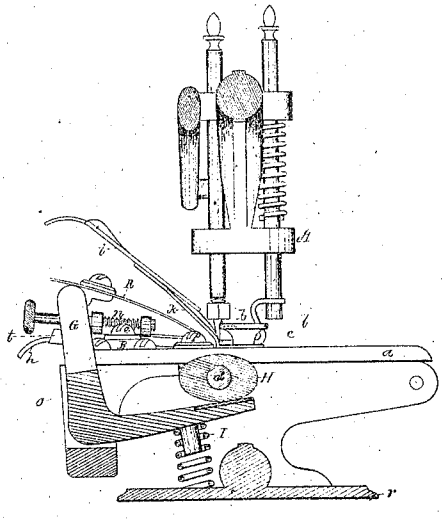


Fig. 4.



Witnesses.

S. N. Piper

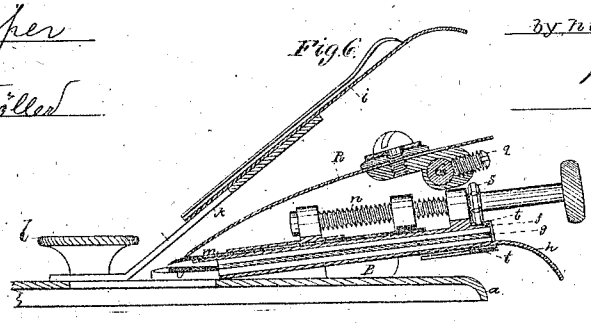
L. N. Moller

Elijah L. Howard.

by his attorney

R. Wade

Fig. 6.



UNITED STATES PATENT OFFICE.

ELIJAH LEAVITT HOWARD, OF MALDEN, ASSIGNOR TO GEORGE AUGUSTUS WHITING, OF CHARLESTOWN, MASSACHUSETTS.

IMPROVEMENT IN RUFFLING DEVICES FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 120,817, dated November 14, 1871.

To all whom it may concern:

Be it known that I, ELIJAH LEAVITT HOWARD, of Malden, of the county of Middlesex and State of Massachusetts, have invented a new and useful Sewing and Ruffling-Machine; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 denotes a front elevation; Fig. 2, a side view; and Fig. 3 is a top view of the said machine. Fig. 4 is a vertical section taken through the band-guides and the ruffling mechanism. Fig. 5 denotes a front view of the machine as it appears while in operation, the band to be ruffled and the bands to be sewed to the ruffle being also exhibited as arranged in their guides.

The object of the machine is to corrugate or ruffle or convert into a ruffle a band or strip of cloth and guide it between and stitch it to two other bands.

In the drawing, A denotes a sewing-machine of the kind known as "Wilcox and Gibbs' sewing-machine," *a* being its base-plate, *b* the needle, *c* the presser, and *d* the main driving-shafts; other parts of such machine being as well known and understood. For the said sewing-machine various others in common use may be substituted. From a common slotted arm, B, fixed to the bed-plate *a* by a set-screw, *e*, there project over the bed three somewhat inclined plates, *f g h*. The lowest of the said plates, viz., that marked *h*, rests at its inner edge upon the upper surface of the bed. The next plate, *g*, is disposed over and parallel to the plate *h*, and at a little distance from it the upper plate *f*, being similarly arranged with respect to the plate *g*. Arranged above the plates *f g h*, in manner as represented, is a flat tubular guide, *i*, which is supported by an arm, *k*, projecting from the bed-plate and held thereto by a clamp-screw, *l*. The band C to be ruffled or corrugated passes between the two plates *f* and *g*, and thence goes between the other bands D E, one of which goes between the plates *g* and *h* and the other through the guide *i*, all as represented. Thence the three bands are carried or go conjointly underneath the presser-foot or between such and the bed-plate, in order to be subjected to the action of the needle, or, in other words, to be sewed together. A gauge or plate, *m*, is arranged on the top of the plate *f* and applied thereto so as to be capable of being moved longitudinally thereon. The said gauge-plate is furnished with an adjusting-screw, *n*, so applied to it and the plate *f* as to cause the gauge-plate to be moved either toward the needle or away from it, as occasion may require with reference to the ruffler R. A plate, *o*, fixed to the bed-plate by a set-screw, *p*, extends against the inner edge of the plate *g*, and underneath the front position of the guage. The said plate *o* is to operate in conjunction with the ruffler R and the presser-foot in effecting the corrugating or ruffling of the band C. The ruffler R has mechanism applied to it for imparting to it reciprocating movements in a longitudinal direction. This mechanism consists of a bent lever, G, to one arm of which the ruffler is attached by a set-screw *q*, a cam or wiper, H, and a spring, I, the whole being formed and arranged as represented.

Fig. 6 denotes a vertical section of the cam, the lever, and the spring, the cam being fixed to the driving-shaft *d*, and the spring being disposed on the base *r* of the sewing-machine. While the cam may be performing a portion of its revolution it will depress the lever-arm on which it rests, such lever-arm being subsequently elevated by the spring. During each advance of the ruffler R the band C will be met by the lower end of the ruffler, and will be pressed forward toward the presser-foot, and crimped between the two bands D E. With them it will be drawn through the sewing-machine by the action of the feeder *r'* thereof on the lowest band. The needle operating in the mean time will sew the three bands together. On the shank of the adjusting-screw of the gauge-plate of the ruffler there is a notched wheel, *s*, to engage with a spring-retainer or pawl, *t*, fixed to the lowermost guide-plate. The gauge-plate serves to determine the amount of cloth crowded forward during each advance of the ruffler R, such amount depending on the distance of the inner end of the gauge-plate from the presser foot.

I make no claim to any thing, combination,

or arrangement of parts, described in either of the United States Patents No.. 37,550, 46,424, 52,387.

I claim—

For use with a sewing-machine, the improved ruffling mechanism, as described, consisting of the plate *m* and its adjusting mechanism, the three plates *f g h*, the reciprocating ruffler R, and the upper band-guide *i*, all arranged and constructed in manner and to operate substantially as described.

ELIJAH LEAVITT HOWARD.

Witnesses:
R. H. EDDY,
J. R. SNOW.

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