

A HARROUN, Jr.
Sewing Machine.

No. 92,965.

Patented July 27, 1869.

Fig. 1.

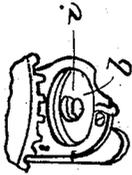


Fig. 6.



Fig. 4.

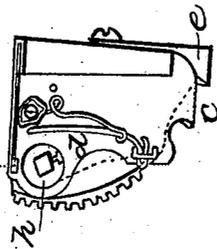


Fig. 3.

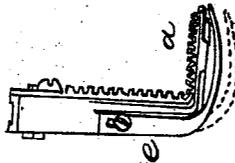


Fig. 2.

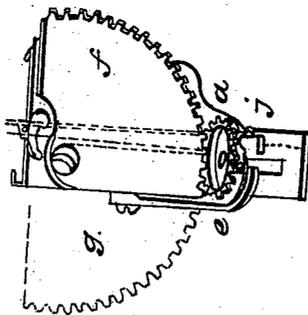
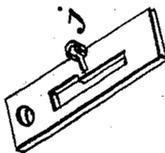


Fig. 5.



Witnesses
George Stanton
John H. Youngman

Inventor
Alexander Harroun Jr.

United States Patent Office.

ALEXANDER HARROUN, JR., OF ONONDAGA, NEW YORK.

Letters Patent No. 92,965, dated July 27, 1869.

IMPROVEMENT IN SEWING-MACHINE FOR WORKING BUTTON-HOLES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, ALEXANDER HARROUN, JR., of the town and county of Onondaga, and State of New York, have invented a new and improved Machine for Making a Button-Hole Stitch; and I hereby do declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, which forms a part of this specification, and to the letters of reference marked thereon.

The stitch which my machine is designed to make is shown by Figure 1 of the accompanying drawings.

My improvement consists of a device intended to take the place of the foot or cloth-presser of the sewing-machine in common use, besides doing other things hereafter to be mentioned.

Figure 2 of the drawings gives a front view of my machine, with the cloth-presser raised above the throat-plate and needle-guard;

Figure 3 gives a side view;

Figure 4 gives a rear view;

Figure 5 gives a view of the needle-guard attached to the throat-plate;

Figure 6 gives a view of a hollow wheel, which is also referred to by the letter *a*, figs. 2 and 3; and

Figure 7 gives a view of the seat of the wheel.

The red lines of dots in the upper part of fig. 2 represent the needle-thread of the sewing-machine, and correspond with the red line in fig. 1.

The red line in the lower part of fig. 2 represents the gimp or cord over which the stitch is made.

The red line in fig. 3 represents the same.

The red line in fig. 4 represents a thread which enters the machine at the place referred to by the letter *e*, fig. 4, and passes thence under the rim of the wheel *a*, fig. 2, and to the right of the stay or point referred to by the letter *i*, fig. 7, and thence below through the opening in the seat of the wheel.

The black crooked line interwoven with the red line in fig. 1 represents the same thread.

I use but one perforating-needle, and cause it to reciprocate laterally in any well-known way.

The perpendicular lines of black dots in fig. 1 represent the sewing-machine needle in its different positions; but instead of reciprocating the needle, I may move the cloth laterally.

When a button-hole is to be stitched it is first cut and laid upon the throat-plate, in such a position that the operation will commence at the rear end.

The needle-guard rises in the button-hole at the place of beginning, and as the stitching progresses, the cloth is moved along by the feed, as in common sewing, until the other end of the button-hole is brought to the front side of the guard.

The cloth is then caused to revolve around the guard, as its centre, while the stitches continue to be

made, until the opposite side of the button-hole is against the face of the guard, when the feed acting upon the cloth, as before, it is moved along until the guard is at the end of the button-hole where the work commenced.

When stitching is to be commenced, the needle is caused to descend through the cloth, back of the button-hole, where its thread is secured, when the cogged plate *f*, fig. 2, should be brought to the position shown by dotted lines at *g* of the same figure, and the needle or cloth is moved laterally and the needle left over the guard, as shown at the right in fig. 2.

The wheel *a*, fig. 2, during this lateral movement of the cloth or needle, commences a right-hand motion, and the pointed arm *b*, fig. 6, takes up the thread, shown by the red line in fig. 7, and carries it under the needle.

The needle then descends within the wheel and needle-guard, and also within the button-hole.

The needle-guard is referred to by the letter *j* of figs. 2 and 5.

While the needle is descending, and its thread is being connected with the shuttle-thread, and the needle is rising again, the wheel goes forward with the thread upon its arm *b*, and this motion of the wheel is continued until it has made nearly one entire revolution.

At the time the third or wheel-thread is carried under the needle, or soon after it, the arm *b* passes near a stationary point, which separates the upper from the lower member of the thread upon the arm, one member of which is carried forward by the arm, while the other is retained by the point.

The thread which is being carried by the arm is thereby made to form a loop.

The stationary point above mentioned is referred to by the letter *k*, fig. 7.

The cloth is then moved forward and laterally, and the needle in its next descent goes within the above-described opening or loop, and also through the cloth, at a suitable distance from the edge of the button-hole.

The connection of the needle-thread with the shuttle-thread is then formed as before, which is the same as in common sewing.

The position of the needle when about to puncture the cloth back of the button-hole is indicated by the left perpendicular line of black dots, fig. 2.

After carrying the thread as far as necessary, the wheel referred to by letter *a*, figs. 2 and 3, remains stationary until the needle at the last-mentioned descent has penetrated the cloth far enough to make the loop secure, when the motion of the wheel is reversed to the place of starting.

As soon as the needle rises from the cloth, or before, the slack in the thread of which the loop was

made, is taken up by the rod *d*, fig. 4, and the tightening of the thread is perfected by the wheel as it commences another right-hand movement.

When the thread is drawn sufficiently tight, a stitch is completed.

The wheel then carries the same thread around again, as before, the needle descends within the guard and button-hole; the thread upon the arm *b* is separated, and so on to the completion of another stitch.

I give the required motion to the wheel *a*, figs. 2 and 3, by connecting it in any convenient way with the moving parts of the sewing-machine.

The letter *h*, fig. 4, refers to a tension-clasp, through which the third thread passes.

The letter *C*, figs. 2, 3, and 4, refers to an adjustable foot, which may be raised or lowered according to the thickness of the goods in which a button-hole is to be made.

I claim the rotary reciprocating hook *b*, in combination with the holding-points *i* and *k*, for laying the thread, substantially as and for the purpose set forth.

ALEXANDER HARROUN, JR.

Witnesses:

GEORGE B. QUICK,
JAMES QUICK.