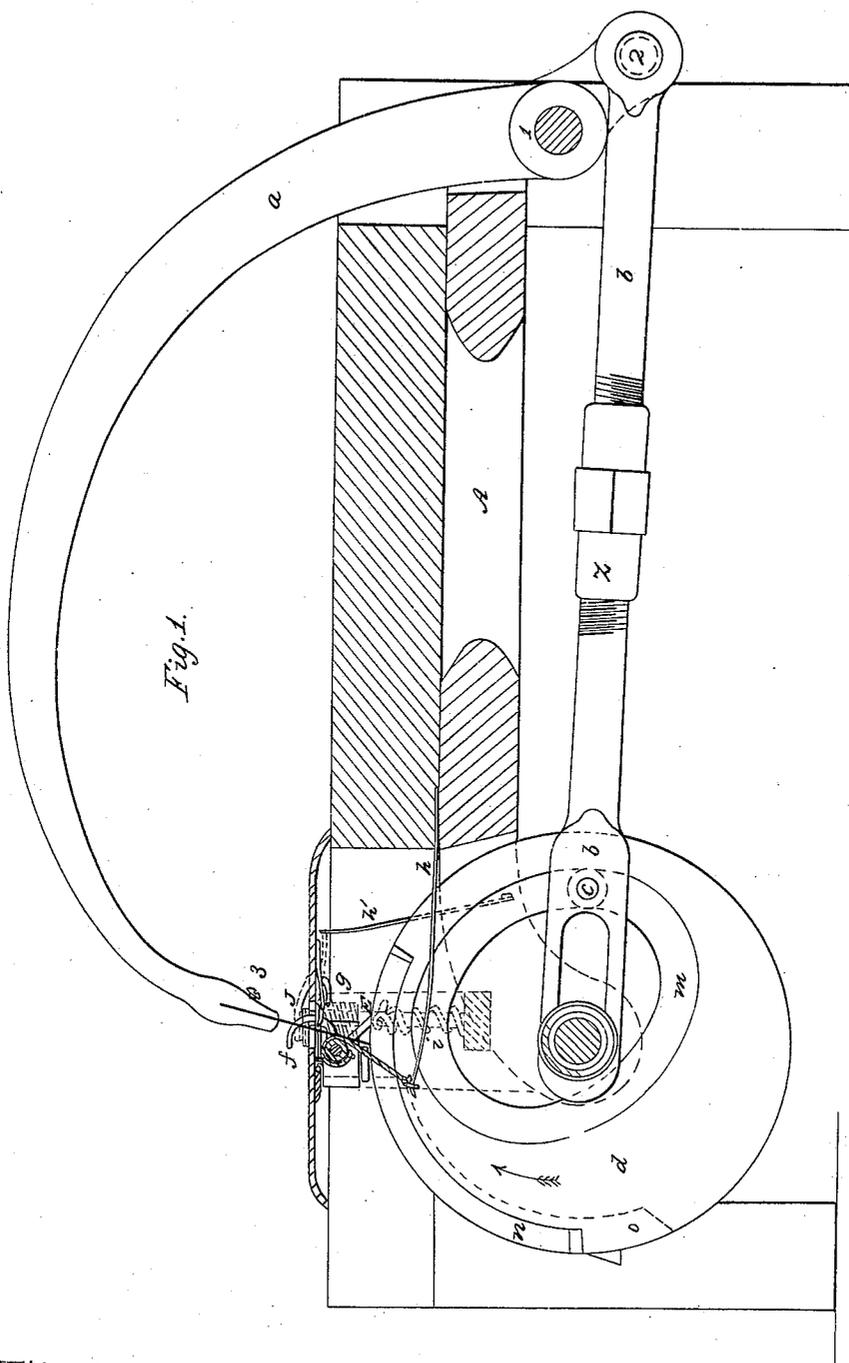


G. F. CASE.  
Sewing Machine.

No. 33,029.

Patented Aug. 13, 1861.



Witnesses:

*W. R. Ronalds*  
*James*

Inventor:

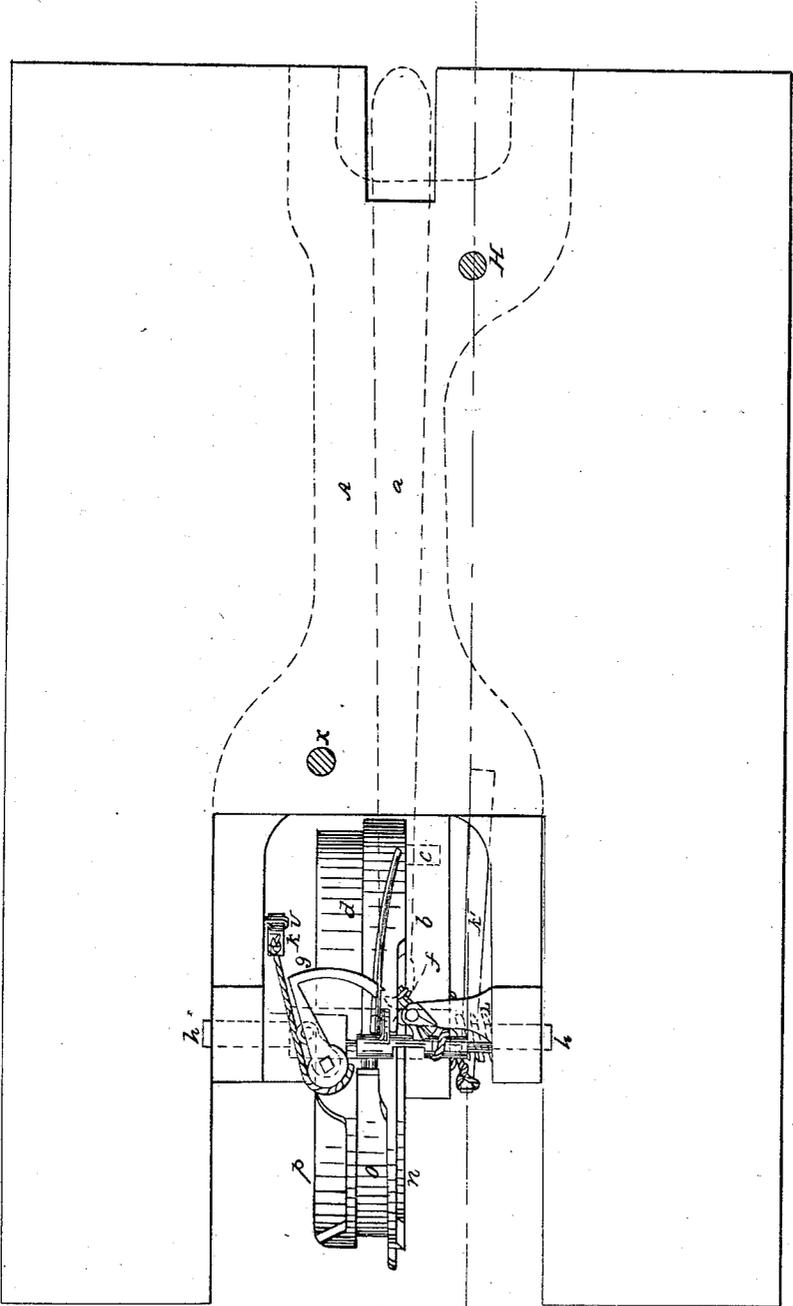
*George Franklin Case*

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*Fig. 2.*



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Fig. 3.

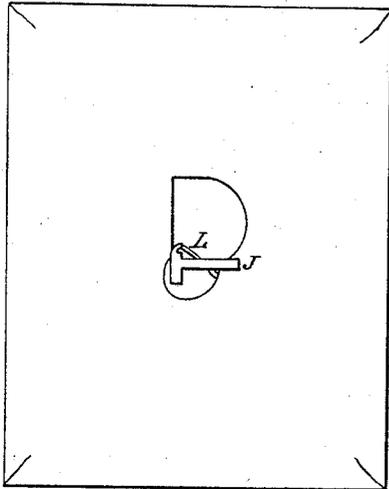


Fig. 4.

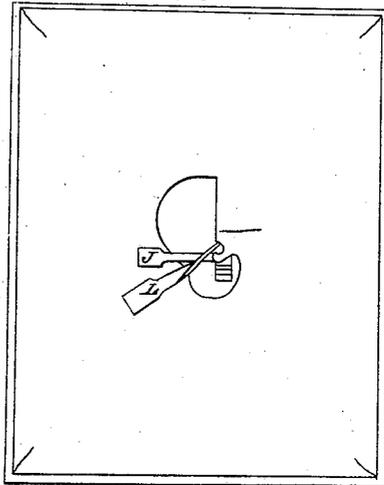


Fig. 5.

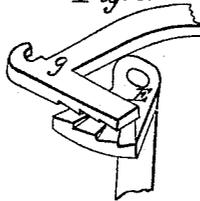
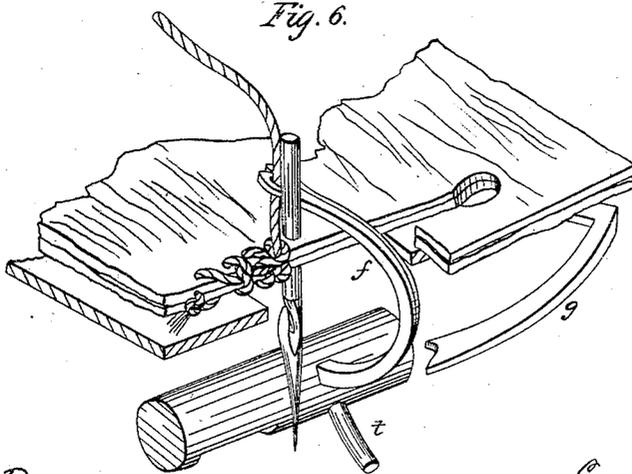


Fig. 6.



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Fig. 7.

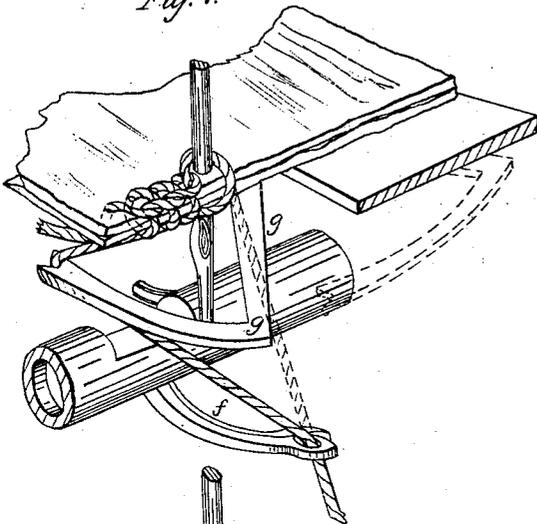


Fig. 9.

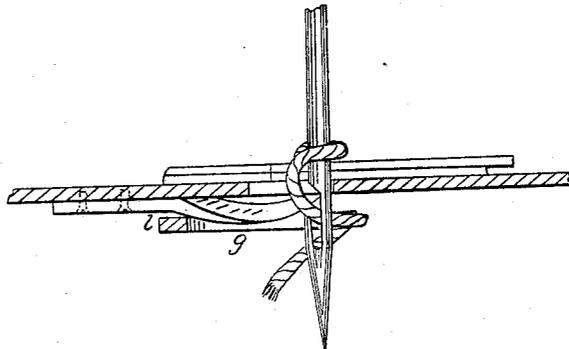
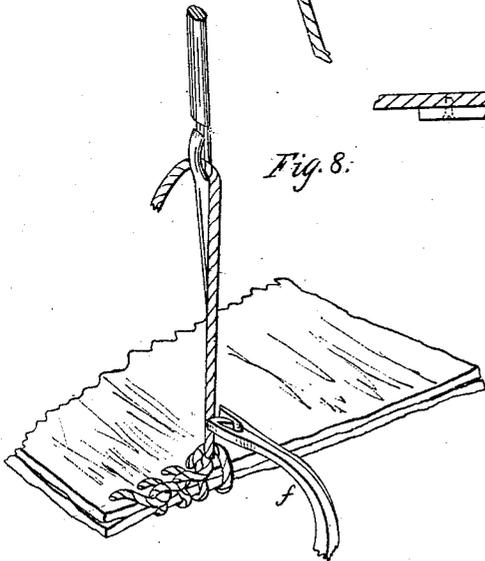


Fig. 8.



Witnesses:

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*H. Jones*

Inventor:

*George Franklin Case*

# UNITED STATES PATENT OFFICE.

GEO. F. CASE, OF NEW YORK, N. Y.

## IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 33,029, dated August 13, 1861.

*To all whom it may concern:*

Be it known that I, GEORGE F. CASE, of the city of New York, in the county of New York and State of New York, have invented a new and useful Machine for Working Button-Holes, the construction and operation of which I have described in the following specification and illustrated in its accompanying drawings with sufficient clearness to enable competent and skillful workmen in the arts to which it pertains or is most nearly allied to make and use my invention.

Figure 1 is a longitudinal section. Fig. 2 is a plan or top view with the plate removed. Fig. 3 is a top view of plate. Fig. 4 is a view of the under side of plate. Fig. 5 is an enlarged view of foot or holder. Figs. 6, 7, 8, 9 show the different positions of the pieces in forming the stitch.

A is the main body of the machine.

a is the needle-bar.

b is the connecting-rod.

c is the pin, that is fastened to and projects from the connecting-rod and enters the slot marked *m* of the cam-wheel, marked *d*.

*e* is a semi-rotating standard or feed device, from which there is a projection, (marked *s*,) which is held in contact with and enters the indentation marked *n* on the side of the cam-wheel *d* by the spiral spring marked *i*, which also presses upward, lifting the standard, so that the broad portion or ratchet-face presses against the under side of the cloth.

*f* is a hooked finger or looper, which is attached to the shaft marked *k*, which has a projection marked *t*. This projection presses against the face of the cam-wheel *d* and enters the slot marked *o*, and is held in contact with the wheel *d* by the spring marked *h*, which is connected to the shaft by a cord.

*g* is a forked finger or threader. The shaft of *g* is made in the form of a crank, the wrist of which is held in contact with the side of the cam-wheel *d* and enters the indentations marked *p*, and is held in contact with the side of the wheel *d* by means of the spring marked *h'*.

*l* is a stationary piece, that passes through the button-hole to hold that portion of the hole being worked firmly on the plate.

*i* is a spiral spring, that holds the projection *s* firmly against the cam-wheel, and which

spiral spring also presses upward to hold the head of the standard against the cloth.

*h h'* are springs connected to *f* and *g* by means of a cord or chain; or a link might be used to connect, which holds their projections against the cam-wheel *d*.

*k k* are center pins upon which the cam-wheel *d* rotates.

*r* is a spiral spring, which holds the rod *b* close to the wheel, being wound around the shaft of the wheel.

*m* is a slot in the cam wheel, into which the pin *c* enters.

*n* is the indentation upon the side of the wheel, which operates the feed *e*.

*o* is the indentation on the face of the wheel, to operate the piece *f*.

*p* is the indentation upon the edge of the wheel, to operate the piece *g*. The cam-wheel *d* also has a projection, (marked *o*,) for the purpose as hereinafter explained.

*z* is a nut having a right-and-left-hand thread, into which the rod *b* screws, so that by turning the nut the rod can be lengthened or shortened.

*l* is a piece having an incline toward the point which terminates near the hole in the plate through which the needle passes.

The nature of my invention consists of an improved form of that class of sewing-machines for working button-holes, but may be advantageously used in working along the edge of cloth, forming a rib similar to that formed on the edge of a button-hole, thus dispensing with a cord as now used.

The description of my machine is as follows:

A is the main body of the machine, so formed as to connect the different parts of the machine together, and so as to be attached to a stand by screw at *x x*, as shown.

*a* is the needle-bar, to the upper end of which the needle is attached by placing it in the hole in the end, and is secured by the binding-screw *z*. The bar vibrates upon the pin *l*, below which the connecting-rod *b* is attached at *2*. The rod is formed of two pieces and connected together by a nut, *z*, having a right and-left-hand screw, so that by turning the nut the rod is lengthened or shortened, as may be desired. The end of the rod *b* has a slot, that the shaft of the wheel *d* passes through. This acts as guide to the rod. At the inner end of the slot a pin, *e*,

projects, which enters the eccentric slot *m* in the side of the wheel *d*. The perpendicular standard *e* has a partial rotation by means of the projection *s*, which presses against the side of the wheel *d*. This projection is held in contact with the wheel by a spiral spring, *i*. This also presses upward, lifting the standard. The top or head of the standard is made into ratchets, which press against the under side of the cloth.

The hooked finger or looper *f* has a semi-rotation of the shaft upon two pins, that enter the end of the shaft. (See Fig. 2.) The depth of the hole *e* in the ends of the shaft being greater than the length of the pins, it allows the shaft to have a lateral motion, which is produced by the projection *t* entering the shallow portion of the slot *o*, it being at an angle with the face of the wheel *d*. As the latter revolves it carries the shaft laterally, so that the hook will avoid the needle, for the purpose hereinafter described. The rotation of the shaft *k'*, and consequently the finger *f*, is caused by the projections *o* on the cam-wheel striking against the curved portion of the finger *f*, that rotating it partially, when the projection *t* from the shaft of the hook enters the slot *o* on the face of the wheel, which forces it around, thus completing the throw. The upper or curved projection has a forked hook, as shown in Figs. 7 and 8, which passes through the button-hole close to the stationary piece marked *j*. The notched finger or threader *g* has a partial rotation upon its center, the lower portion of the shaft being in the form of a crank, the wrist of which presses against the side of the wheel *d*, which has a recess or indentation, (marked *p*) which allows it to revolve, so that the upper or curved portion passes around the opposite side of the needle from its center. The rest is held in contact with the wheel by the spring *h'*, connected to it by a cord, the cord passing around that portion of the finger that embraces the shaft, and lying in a groove on its edge. The stationary piece *J* passes through the button-hole to hold the cloth down upon the plate. A portion of the under surface of the broad portion has a ratchet-face to correspond with the head of the standard *e*, being directly over it, (see Fig. 5,) and the cloth is held between them. The piece is firmly fastened to the plate that covers the working portion of the machine around the wheel, there being an opening in the plate for the standard *e* and the looper *f* to pass through. There is a piece marked *l* secured to the underside of the plate, the end terminating close to the opening through which the needle passes. The piece *l* has an incline near the point, across which the thread is drawn by the finger *g*; but the point is placed upon the opposite side of the needle from the end of the finger *g* to the position shown in Fig. 7. The cam-wheel being on a short shaft and rotated between two center pins, *k k*, these pins being slightly wedging as they pass through the frame *A*, which holds them in their position, these pins might

be made to screw into the frame, and by which means the wheel could be readily adjusted and held in its position.

Having described the different parts of my machine, the operation is as follows: The cam-wheel rotates in the direction of the arrow by a band running in the groove on the projecting portion of its side, or by any other means, the pin *c* projecting from the connecting-rod *b* into the eccentric groove in the wheel *d*. As the wheel rotates the pins slide around in the groove. This gives the bar a vibratory motion. As the other end is connected to the needle-bar, that also has a vibratory motion, carrying the needle. The wheel *d* also causes the standard or feed *e*, the looper *f*, and the threader *g* to vibrate by the grooves or indentations on its edge, as shown. The button-hole is first prepared for the machine by being bound around with one or more rows of thread, which is left long enough to work the hole, the thread coming out at the end of the hole and upon the right side of the cloth. The standard *e* is then pressed down and the stationary piece *J* is passed through the hole, the thread coming up at the point where the needle would enter the cloth. The thread is then placed in the hook of the needle as the latter is in the act of rising. The hook *f* passes through the hole above the cloth, catching the thread and holding it, as shown in Fig. 6, until the return of the needle after the point had entered the cloth. The hook *f* recedes through the button-hole, carrying the thread holding it, as shown in Fig. 7 by the red lines. The notched finger *g* then catches the thread and carries it across the piece *l*, which is so inclined that the thread slips to the point, (see Fig. 9,) so that the piece *l* and *g* holds the thread partially around the needle above the hook, as shown in Figs. 7 and 9. As the needle rises the thread passes into the hook of the needle, which draws it through the cloth, thus completing the stitch. The hook then rises through the hole, catching the thread, as in Fig. 8, and holding it, as before, until the return of the needle before the latter reaches the cloth. The hook has a lateral motion to allow the needle to pass down in the place that it covered, the needle passing between the hook and the last stitch formed, thus making a loop around the needle. (See Fig. 6.) As the needle rises the standard *e* rotates, bringing the ratchet-face near the needle, and as the latter descends the ratchet rotates from the needle, moving the cloth, the vibration of the standard being only sufficient to allow the ratchets to move over one stitch at a time, so that the size of the thread will govern the distance the cloth is moved.

I am aware that machines have been invented for the same purpose as this, but owing to their imperfections and complication have been but little used. I am also aware that machines having the same form and motion of needle-bar have been used, as in the Robinson & Roper machine; but these I do not

claim; neither do I claim any particular form of needle. I also disclaim the finger or hook *f* and the forked finger *g* separately; but

What I do claim, and desire to secure by Letters Patent, is—

1. The semi-rotating feed *e*, pressing against the under side of the cloth close to the edge of the button-hole, constructed and operated substantially as described and shown.

2. The combination of the finger or looper *f*, the forked finger *g*, and the incline piece *l*, constructed and operated substantially as shown, and for the purpose specified.

GEORGE FRANKLIN CASE.

Witnesses:

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W. R. RONALDS.