

No. 712,191.

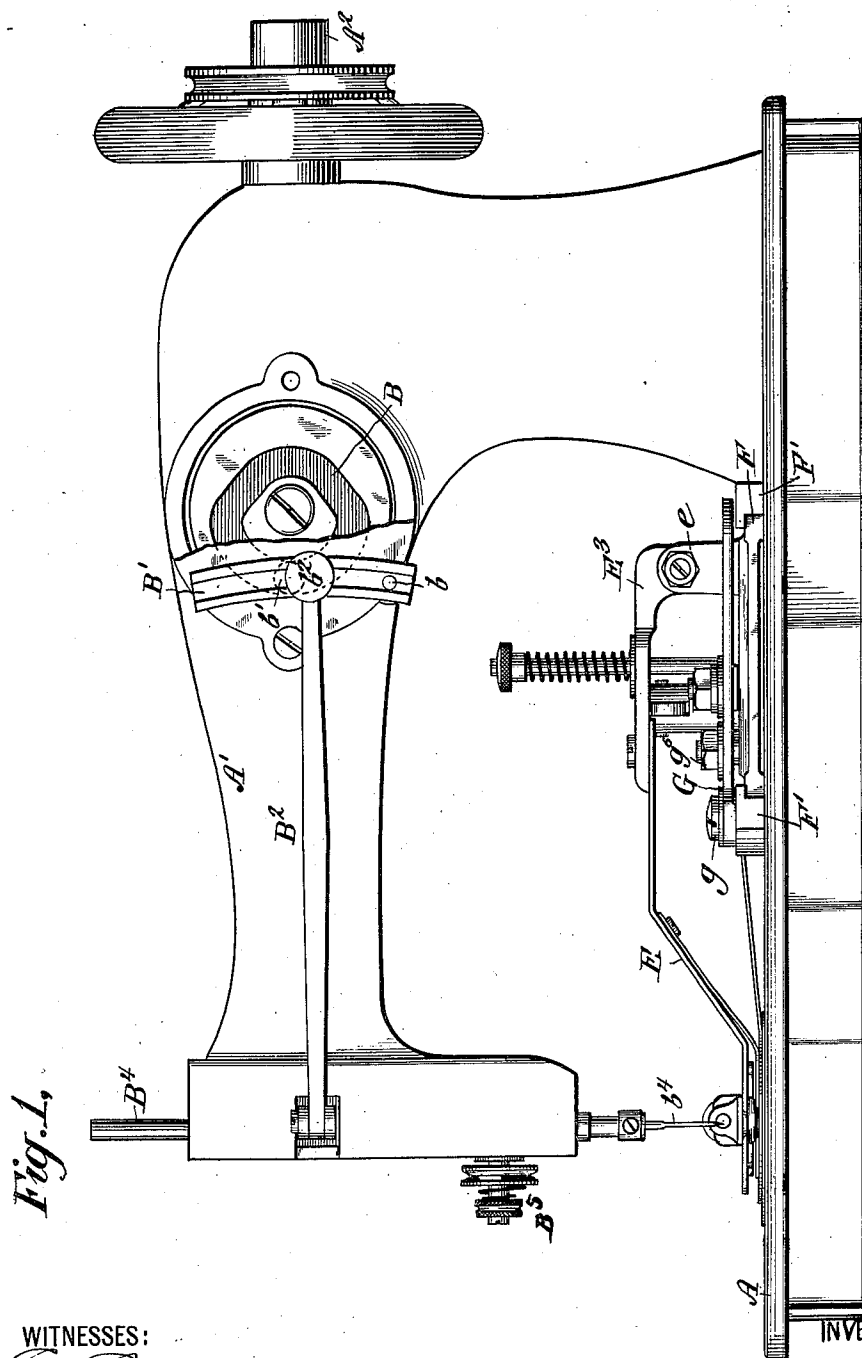
Patented Oct. 28, 1902.

J. T. HOGAN.
MACHINE FOR SEWING BUTTONS TO FABRICS.

(Application filed Dec. 18, 1899.)

(No Model.)

4 Sheets—Sheet 1.



WITNESSES:

Geo. E. Cruise.

Charles D. Jones.

INVENTOR

James T. Hogan

BY

Edwin H. Brown

HIS ATTORNEY

No. 712,191.

Patented Oct. 28, 1902.

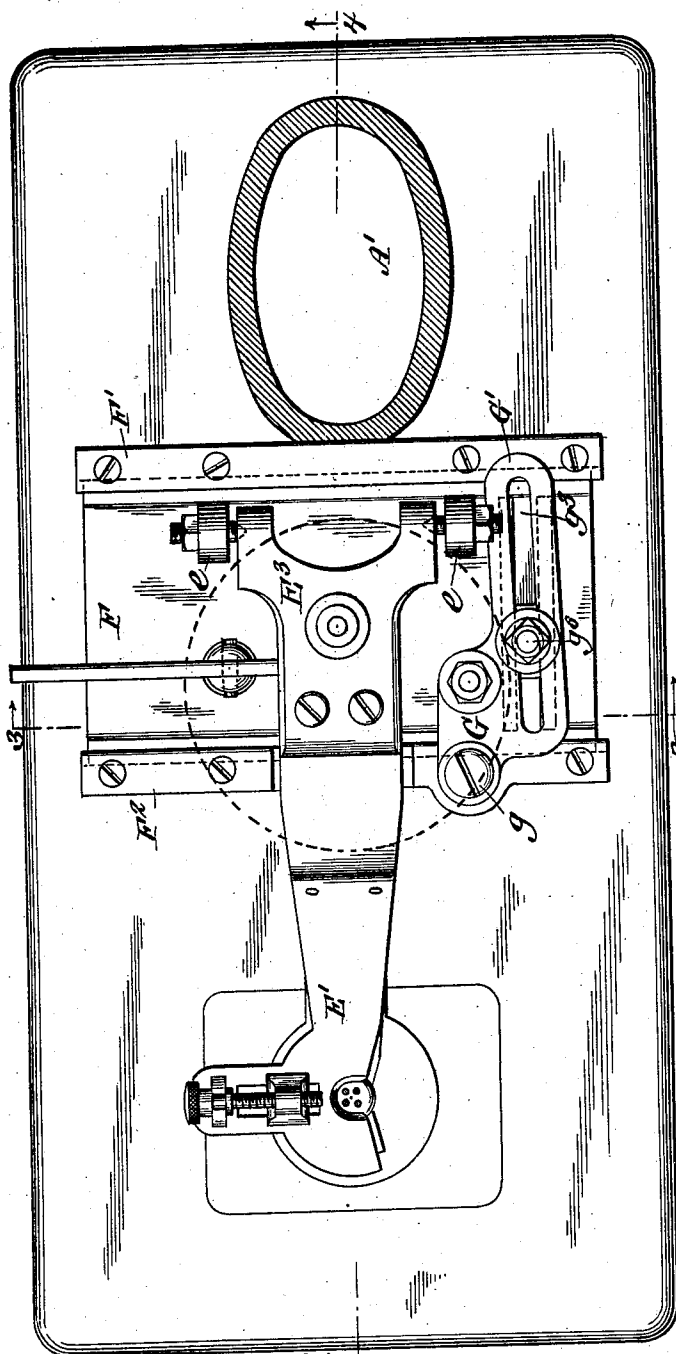
J. T. HOGAN.

MACHINE FOR SEWING BUTTONS TO FABRICS.

(Application filed Dec. 18, 1899.)

(No Model.)

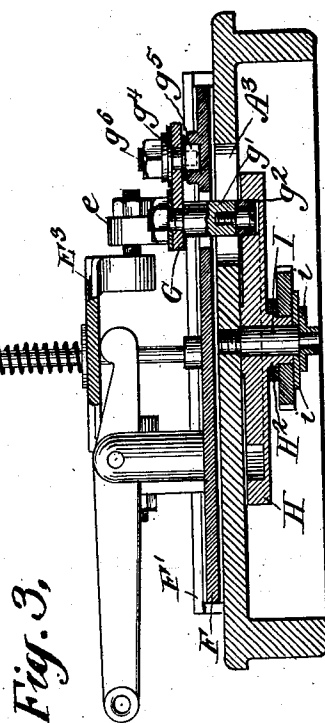
4 Sheets—Sheet 2.



WITNESSES:

Geo. C. Bruce.

Charles S. Jones.



INVENTOR

James T. Hogan

BY *Edwin H Brown*

HIS ATTORNEY

No: 712,191.

Patented Oct. 28, 1902.

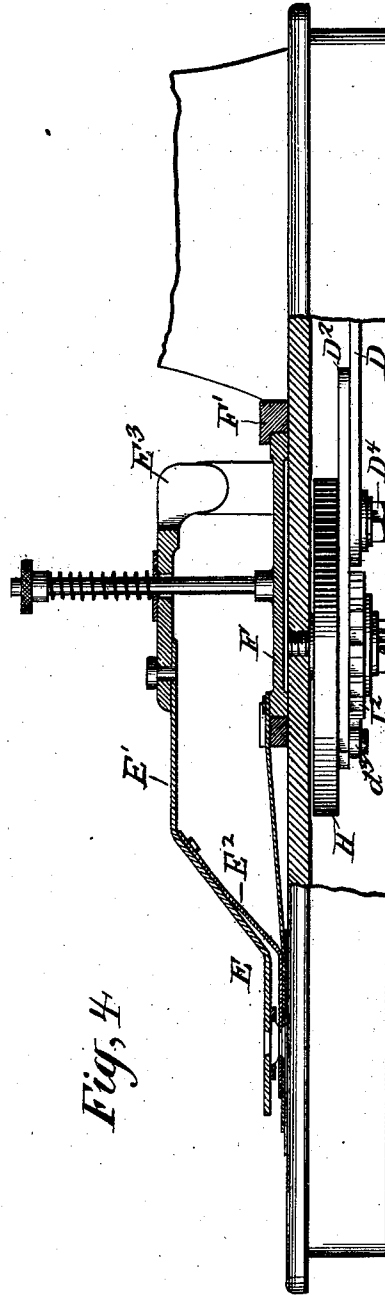
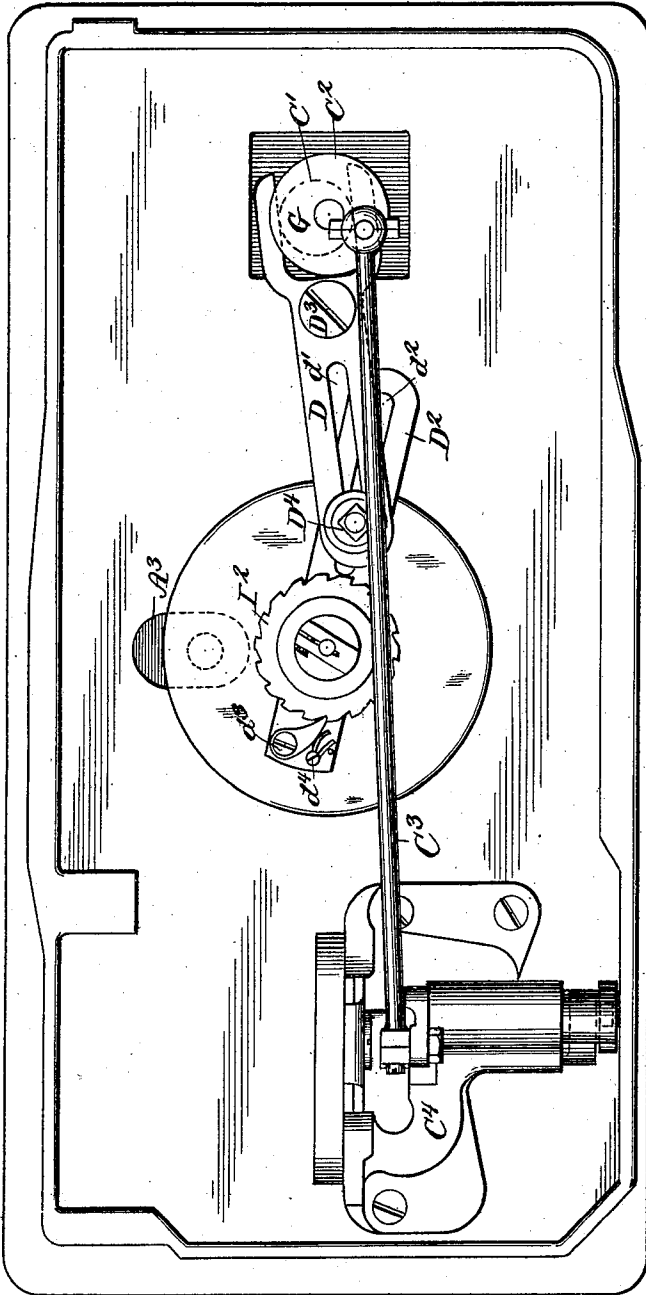
J. T. HOGAN.

MACHINE FOR SEWING BUTTONS TO FABRICS.

(Application filed Dec. 18, 1899.)

(No Model.)

4 Sheets—Sheet 3.



WITNESSES:
Edw. C. Brown
Charles S. Jones
Fig. 3.

INVENTOR
James T. Hogan
BY *Edwin H. Brown*
HIS ATTORNEY

J. T. HOGAN.

MACHINE FOR SEWING BUTTONS TO FABRICS.

(Application filed Dec. 18, 1899.)

(No Model.)

4 Sheets—Sheet 4.

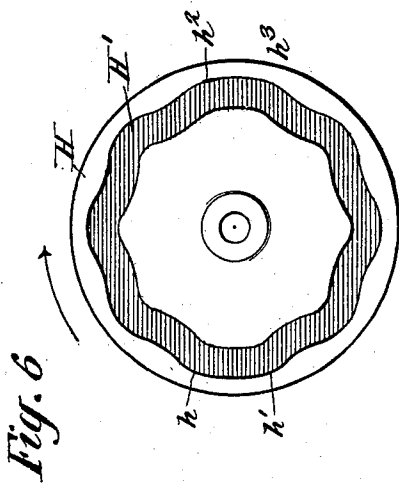


Fig. 6.

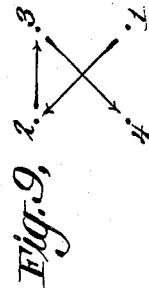
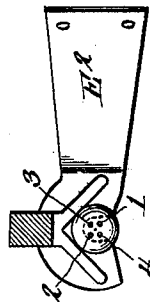
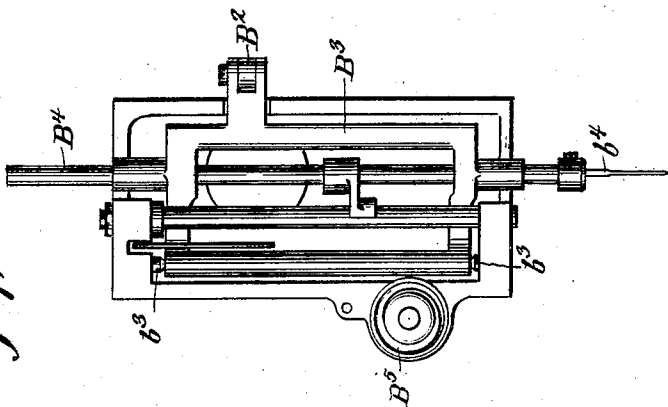


Fig. 8.

Fig. 7.



WITNESSES:

W. E. Cruise

Charles D. Jones

INVENTOR

James T. Hogan

BY

Edwin H. Brown

HIS ATTORNEY

UNITED STATES PATENT OFFICE.

JAMES T. HOGAN, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO THE NATIONAL MACHINE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

MACHINE FOR SEWING BUTTONS TO FABRICS.

SPECIFICATION forming part of Letters Patent No. 712,191, dated October 28, 1902.

Application filed December 18, 1899. Serial No. 740,642. (No model.)

To all whom it may concern:

Be it known that I, JAMES T. HOGAN, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Machine for Sewing Buttons to Fabrics, of which the following is a specification.

My invention relates to machines for sewing buttons to fabrics, and has for its object to provide a machine which will automatically sew a button having four eyes by stitches between the diagonally opposite eyes, so as to resemble a hand-sewed button.

My invention consists in the construction and combination of elements hereinafter fully described and then pointed out in the claims.

In order that others may understand and use my improved mechanism, I will describe the same, referring by characters to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of a sewing-machine embodying my invention, showing the parts above the bed-plate. Fig. 2 is a plan view showing the button-holder and slide-plate, the neck of the machine being in section. Fig. 3 is a section on the plane of the line 3 3 of Fig. 2. Fig. 4 is a section on the plane of the line 4 4 of Fig. 2. Fig. 5 is an inverted plan view of the mechanism for moving the button-holder and the shuttle mechanism. Fig. 6 is a sectional view of a form of cam which gives certain desired movements to the button-holder. Fig. 7 is a front view of the head of the machine with the plate removed. Fig. 8 is a detail view of a part of the button-holder, and Fig. 9 is a diagrammatic view showing the manner of laying the stitches in sewing a button according to my invention.

Similar characters of reference indicate similar parts on the several views.

A designates the bed-plate, and A' the head, of the machine; A², the main shaft, which may be driven in any suitable manner; B⁴, the needle-bar, carrying the needle b⁴, the said bar being mounted in the frame B³ and reciprocated by the usual connection from the shaft A². The frame B³ is pivoted on the

studs b³, and the needle-bar is given a vibratory movement by the pitman B², secured at one end to the said frame and at the other to the lever B'. The lever B' is pivoted at b and is rocked by means of a roller b', attached thereto, engaging a cam B, which cam is rotated by gearing from the shaft A² in a manner well known. The point of connection b² between the pitman B² and the lever B' is adjustable along said lever to vary the amplitude of vibration of the needle.

E designates any suitable form of button-holder adapted to securely hold the button during the sewing operation. It is here shown as comprising a top part E' and a lower part E², the former being secured to bracket E³, hinged on the studs e of the slide-plate F. The slide-plate F moves between the guides F and F², secured by screws to the bed-plate, and its movement is of course imparted to the button-holder.

G designates an arm pivoted to the bed-plate at g. This arm carries a stud g', which stud extends through an elongated opening A³ in the bed-plate. The stud g' has at its lower end a roller g², which engages the groove H' of a cam H, the latter being mounted to rotate on the stud I, secured to the bed-plate. On the hub H² of said cam I mount a ratchet-wheel I² and hold the same in engagement with said hub by a tap-screw i and washer i'. Motion is imparted to the ratchet-wheel I² by means of a pawl d³ on the lever D², which lever has a bearing on the hub H² of the cam H. The lever D² receives its motion from a lever D, pivoted at D³ to the base of the machine, the said lever D being oscillated by a cam C' on the shaft C, driven by suitable gearing from the main driving-shaft. The levers D and D² are slotted at d' and d² and are adjustably secured together by a screw-bolt D⁴. A spring d⁴ holds the pawl d³ in engagement with the ratchet-wheel I².

The arm G is provided with a part G', which is slotted, as shown at g³. Through this slot extends a stud g⁴, having at its lower end a block, which latter engages the plate F through a groove f, formed by vertical walls f' and f². The stud g⁴ by means of the nut

g^6 may be adjusted to any desired position to give a greater or less throw to the button-holder.

In the particular construction shown the cam H has concentric portions or dwells at opposite points from h to h' and from h^2 to h^3 to suspend the movement of the button-holder for one stitch. Intermediate these dwells the cam H is of such construction as to impart a vibratory movement to the plate F and button-holder for as many diagonal stitches as may be desired and in a direction at right angles to the direction of vibration of the needle-bar.

The number of teeth on the ratchet-wheel I^2 corresponds to the number of divisions of the cam H. In the present illustration of the invention the ratchet-wheel I^2 has eighteen teeth and the cam H eighteen divisions, sixteen of which divisions are for moving the button-clamp and two for the dwells on opposite sides of the cam, making eighteen movements in all, corresponding with the number of teeth on the ratchet-wheel. By having this correspondence between the teeth of the ratchet-wheel I^2 and the divisions of the cam H the sewing operation may begin at any point of the ratchet-wheel and the suspension of movement of the button-clamp will always occur at the proper point in the sewing operation.

The operation of the machine may be readily understood from the above description. The button is placed in the holder as shown in Fig. 8. By the simultaneous vibration of the needle through the pitman B^2 and the button-holder by means of the cam H a set of stitches is sewed from the holes 1 to 2, Figs. 8 and 9. Assuming that the stud g^2 to have started from the dwell h h' , a vibratory movement will be imparted to the button-holder until the said stud reaches the dwell h^2 h^3 on the opposite side of the cam. When the stud g^2 has reached the last-named dwell, the vibratory movement of the button-holder will be suspended; but as the vibratory movement of the needle continues one stitch will be laid from the hole 2 to the hole 3. The stud g^2 then passes beyond the dwell h^2 h^3 and a set of stitches will be sewed between the holes 3 and 4, the machine being stopped by suitable means when the dwell h h' is reached by the stud h^2 . In the cam H eight stitches will be sewed between the holes 1 and 2 and then eight stitches between the holes 3 and 4; but it is evident that I may increase or decrease this number at will or I may vary the manner of sewing by alternating the set of stitches between the holes 1 and 2 and 3

and 4. Thus the cam H may be so constructed as to sew two or more stitches between the holes 1 and 2 and then two or more stitches between the holes 3 and 4, then back to the holes 1 and 2, and so on alternatively, this being effected by having dwells located at proper intervals on the cam.

I of course provide the usual shuttle mechanism C^4 and the tension B^5 .

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

1. In a button-sewing machine, the combination with stitch-forming mechanism and a button-holder, of means for imparting a vibratory movement to the needle-bar, a cam and means actuated thereby to impart a vibratory movement to the button-holder in a plane at substantially a right angle to the plane of vibration of the needle-bar and simultaneous with the vibration of the needle-bar, said cam having dwells at opposite points to suspend the vibratory movement of the button-holder whereby a button may be sewed with lines of stitches crossing each other, substantially as described.

2. In a button-sewing machine, the combination of a stitch-forming mechanism and a button-holder, of means for imparting a vibratory movement to the needle-bar, and means comprising a cam to impart a vibratory movement to the button-holder in a plane at substantially a right angle to the plane of vibration of the needle-bar and simultaneously therewith, said cam having a plurality of dwells to suspend the motions of said button-holder during the vibration of the needle-bar, substantially as described.

3. In a button-sewing machine, the combination with stitch-forming mechanism and a button-holder, of means for imparting a vibratory movement to the needle-bar, means to impart a vibratory movement to the button-holder in a plane at substantially a right angle to the plane of vibration of the needle-bar and simultaneously therewith, and to suspend the motions of said button-holder during the vibration of the needle-bar, said means comprising a cam and a ratchet-wheel, said ratchet-wheel having its teeth corresponding in number to the divisions of said cam, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES T. HOGAN.

Witnesses:

GEO. E. CRUSE,
CHARLES S. JONES.