(No Model.)

L. V. MOULTON.

BUTTON ATTACHING MACHINE.

No. 312,748. Patented Feb. 24, 1885.

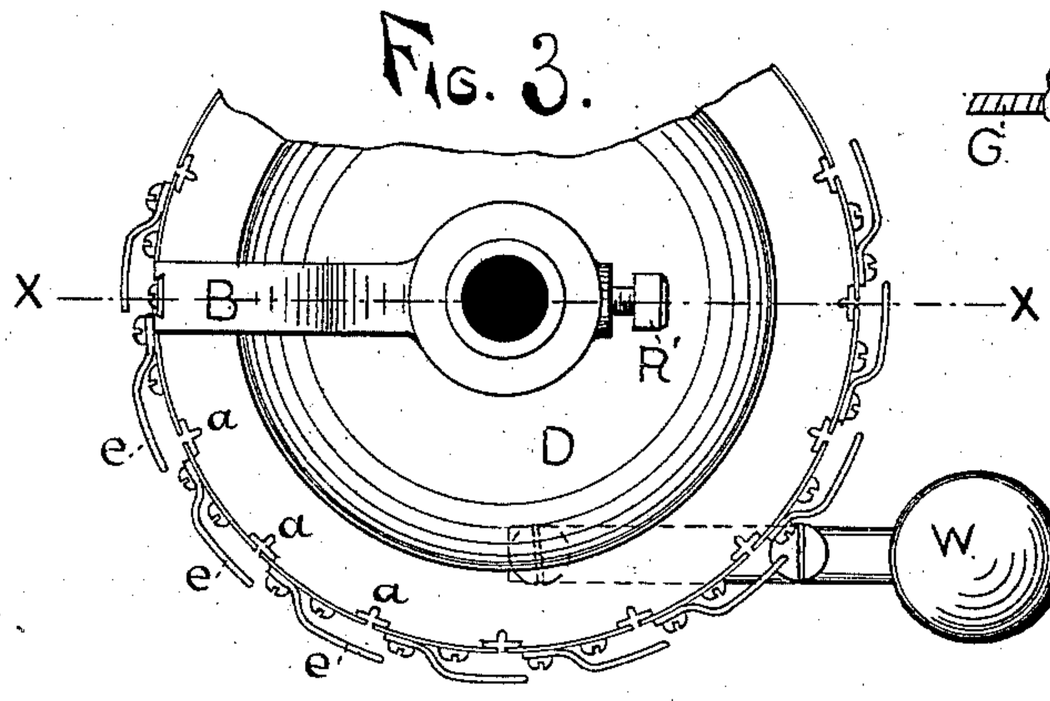

Fig. 3.

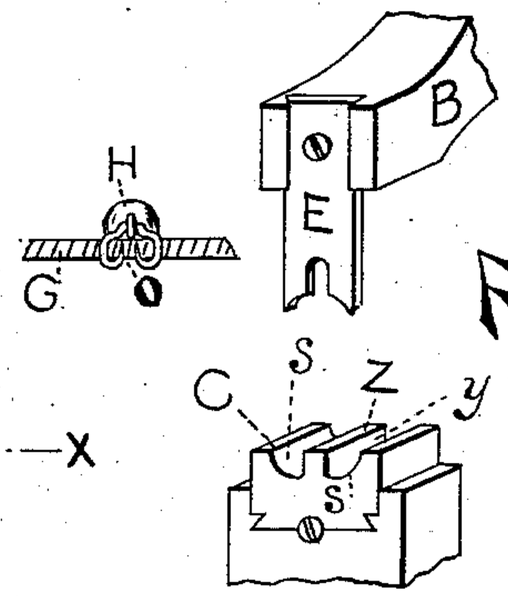

Fig. 4.

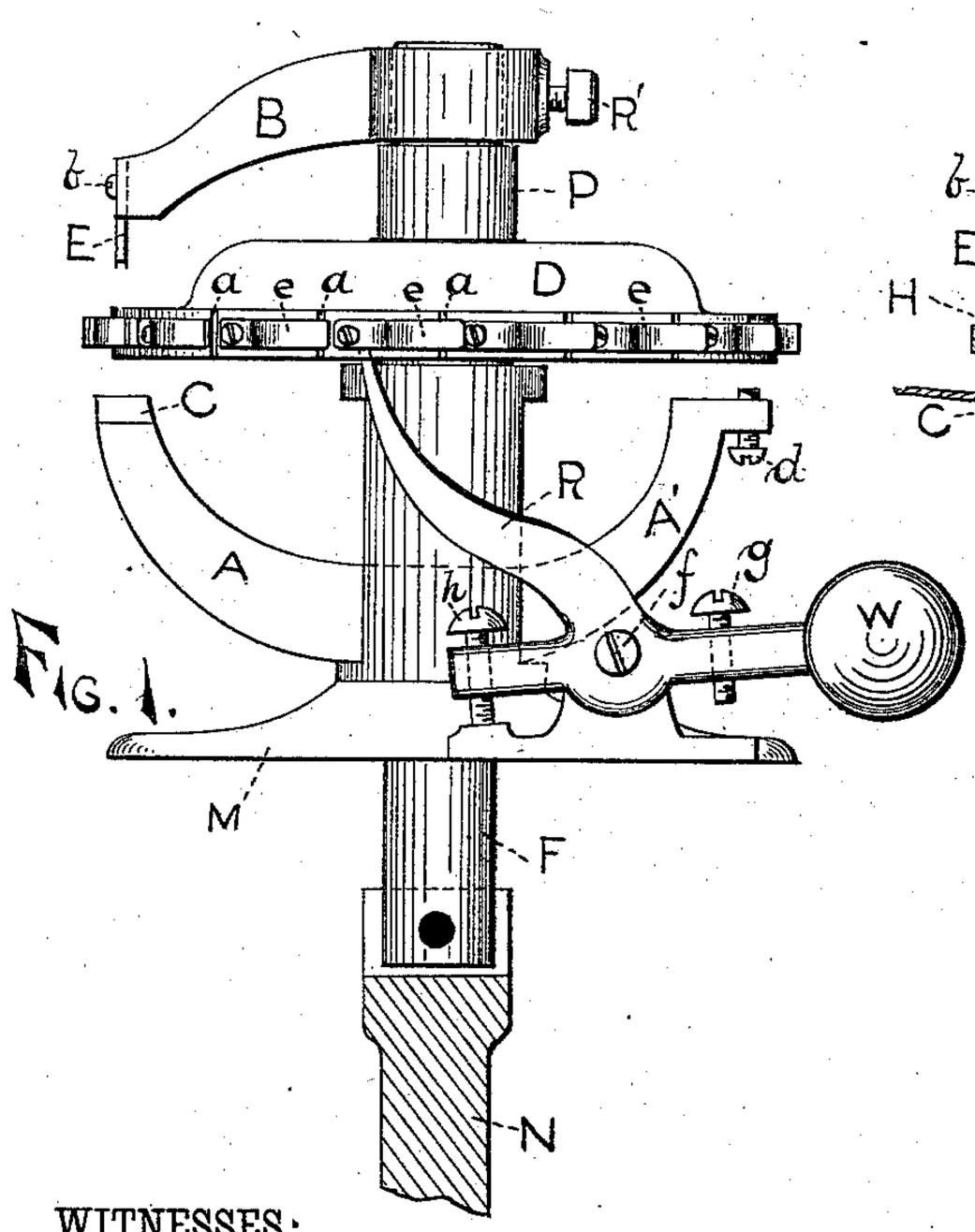

Fig. 1.

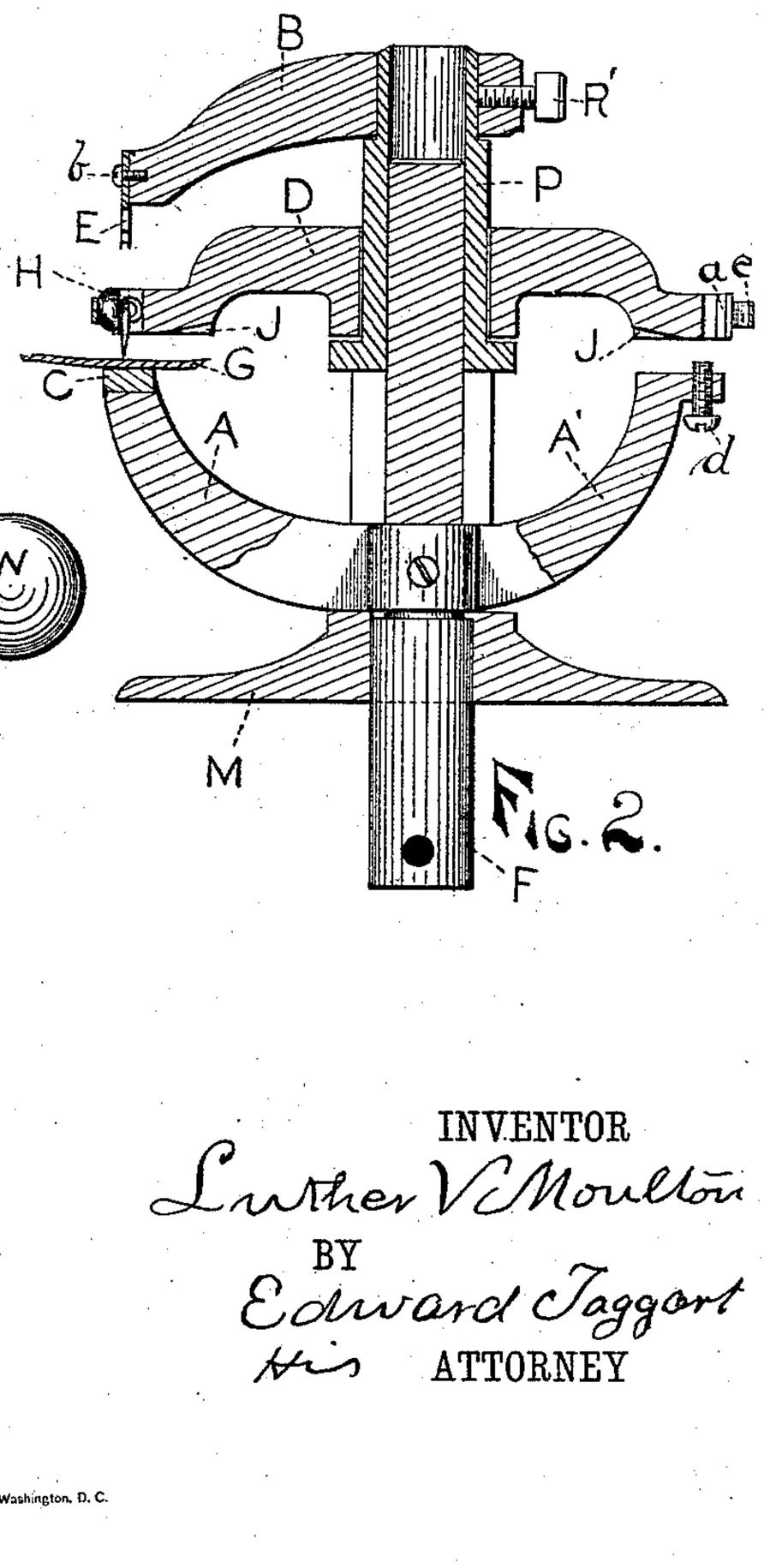

Fig. 2.

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LUTHER V. MOULTON, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO EDWARD O. ELY, JOHN B. PARKER, AND GEORGE G. BRIGGS, ALL OF SAME PLACE, AND GEORGE E. PARKER, OF BOSTON, MASSACHUSETTS.

BUTTON-ATTACHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 312,748, dated February 24, 1885.

Application filed June 6, 1884. (No model.)

To all whom it may concern:

Be it known that I, LUTHER V. MOULTON, a citizen of the United States, residing at the city of Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Button-Attaching Machines, of which the following is a specification.

My invention relates to a rotary machine operated by a treadle or other power for rapidly attaching buttons to leather and other fabrics; and its objects are, first, to combine with the upper and lower jaws of a button-attaching device a rotary disk provided with grooves for holding the staples and buttons, the disk having an intermittent rotary motion, to thus bring each staple and button in position to be operated upon by the jaws in affixing the button to the leather or fabric; second, to move the disk holding the connected staple and button to the required point and lock it there until the button is attached; third, automatically to revolve the disk, as more fully described below. These objects I accomplish by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my button-attaching machine in perspective. Fig. 2 is a vertical sectional view of the same on line *x x* of Fig. 3. Fig. 3 is a plan view of Fig. 1, showing the grooves for holding the buttons; and Fig. 4 shows a perspective view of the die C, enlarged in order to show the form of the grooves, and also shows the form of the staple when set upon the fabric.

Similar letters refer to similar parts throughout the several views.

M is the base, which I construct of metal and in any suitable form. It may be attached to a table or other support, or may be a part of the support itself.

F is a vertical shaft passing up through the base M and into the cylinder P, which cylinder is attached firmly to the base, and supports the arm B at its upper end, as shown.

D is a disk provided with the grooves *a a a*, &c., as shown in Fig. 3. It has an opening through its center, and fits so as to turn freely on cylinder P as its journal, and also has a vertical motion thereon, as hereinafter described.

A and A′ are two arms, rigidly attached to the shaft F. These arms have a vertical motion with the shaft F, the cylinder P having a slot on either side for the arms.

E is the upper jaw, attached to the arm B by means of the screw *b*.

Upon the upper surface of the outer end of arm A is a die, C, for clinching the staple of the button.

The jaw E, the slot *a*, and the arrangement of die on arm A are identically the same as the hand button-setting instrument patented to Charles H. Eggleston, February 12, 1884, and numbered 298,234, the disk D herein shown acting in the place of the guide shown in that patent.

The grooves in the die C are of peculiar construction, in order to give the required curve to the staple after the attaching of the button. I use two grooves, which may or may not extend the entire length of the die. Between the grooves is the ridge Z, having perpendicular or nearly perpendicular sides, Y Y, which form the inner sides of the grooves. The outer sides of the grooves S S are curved, as shown in Fig. 4. The staple, being held in the guide, has its points directed so as to strike near the top of the incline sides S S, and passing downward by the pressure of the jaws the points pass along the side S S until they reach the sides Y Y, when they are turned upward and pass through the fabric, and are clinched in the form shown in Fig. 4, thus setting the staples in a firm and uniform manner.

H is the button. The staples, with buttons applied to them, are placed in the grooves *a* of the disk D, as shown in Fig. 2, where the springs *e e*, attached to the said disk, hold the buttons in place.

R′ is a set-screw used in adjusting arm B.

d is a set-screw which is used to adjust the arm A′ so as to bring the die C into proper position for setting the button-staple.

N is a rod or shaft attached to shaft F, and connecting F with any suitable power for raising and lowering the same.

I design to use a treadle for raising the shaft F, arms A and A′, and disk D; but the parts will be permitted to drop back by their own gravity. My machine is adapted to be operated by any suitable power; but as I make no claim on the device for raising and lowering the parts, I have not shown any such device in the drawings. On the under side of the disk D are notches, one notch for each slot. Two of these notches are shown in Fig. 2 by J J.

R is a lever provided with the counterweight U, and turning on the fulcrum-screw *f*, extended into an ear of the base M. The lever R may be adjusted as to the extent of its movement by the two set-screws *h* and *g*, which set-screws are not absolutely necessary, but are convenient in adjusting the lever. The upper end of lever R fits into the groove J in such a manner as to lock the disk when raised to the point where the jaws set the staple.

If the machine is nicely constructed and perfectly adjusted, the adjusting-screws *d* and R′ may be dispensed with.

The operation of my invention is as follows: First fill the grooves *a a a*, &c., with buttons having the staples inserted. Then raise shaft F by foot-treadle or other suitable power, and the arms A and A′ are raised, carrying the disk D upward until the jaw E passes into the slot *a* and strikes the upper part of the staple, pressing the staple through the fabric G upon the lower jaw or die, C, and setting the button. Then remove the power from F, and it drops back, and with it the arms A A′ and disk D. As the disk D descends, the lever R, being engaged with the groove J, revolves the disk a sufficient distance to bring another button and staple in position to be attached, when the disk is again raised, and thus the operation is continued until the disk shall have been emptied of buttons. The grooves J are sunk into the under side of the disk in such a shape that the upper end of the lever R fits into the grooves and locks the disk in position as it is raised to receive the jaw E into the grooves or slots *a a a*, and, as the disk descends, first revolves it, as above described, and then disengages, so as to engage with the next groove.

The intermittent rotating disk D is adapted to be used in setting buttons with jaws and dies differing from those herein described, and as to that feature of my invention I do not desire to limit myself to the peculiar form of dies and jaws described herein.

The disk may itself constitute both the jaw and the button-holder.

Having thus described my invention, what I claim to have invented, and desire to secure by Letters Patent, is—

1. The rotating disk D, provided with the grooves or slots *a a a*, for receiving and holding the button, in combination with the arm B, provided with the jaw E, and arm A, provided with die C, the said disk acting as guide and button-holder, while the die C and jaw E set the button, substantially as described.

2. The combination of the shaft F, the arms A and A′, rigidly attached thereto, the disk D, and arm B, provided with jaw E, for the purpose specified.

3. The combination of the lever R, pivoted at the base of the machine, with the disk D, provided with the grooves J J, &c., for the purpose of giving the intermittent rotary motion to the disk, and for locking it in position to receive the jaw E into the slots *a a a*, respectively, substantially as described.

4. The following parts in combination, viz: the disk D, arms A A′, shaft F, cylinder P, and arm B, all substantially as and for the purpose specified.

5. The combination of the set-screw *d* with the arms A and A′ and disk D, for the purpose of adjusting the arm A and die C, substantially as described.

6. In a button-attaching machine, the combination of the rotating disk D, the arms A A′, and lever R, the disk carrying the buttons and moved with intermittent rotary motion, for the purpose of bringing the buttons separately in position for setting, substantially as described.

7. In a button-attaching machine, the intermittingly-rotating disk D, carrying the buttons H, in combination with the die C, supported by an arm or jaw, and with means, substantially as described, for operating the said parts, as set forth.

LUTHER V. MOULTON.

Witnesses:
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EDWARD O. ELY.