(No Model.) 2 Sheets—Sheet 1.

C. B. HATFIELD.

BUTTON FLY SCALLOPING MACHINE.

No. 347,105. Patented Aug. 10, 1886.

Fig. 1.

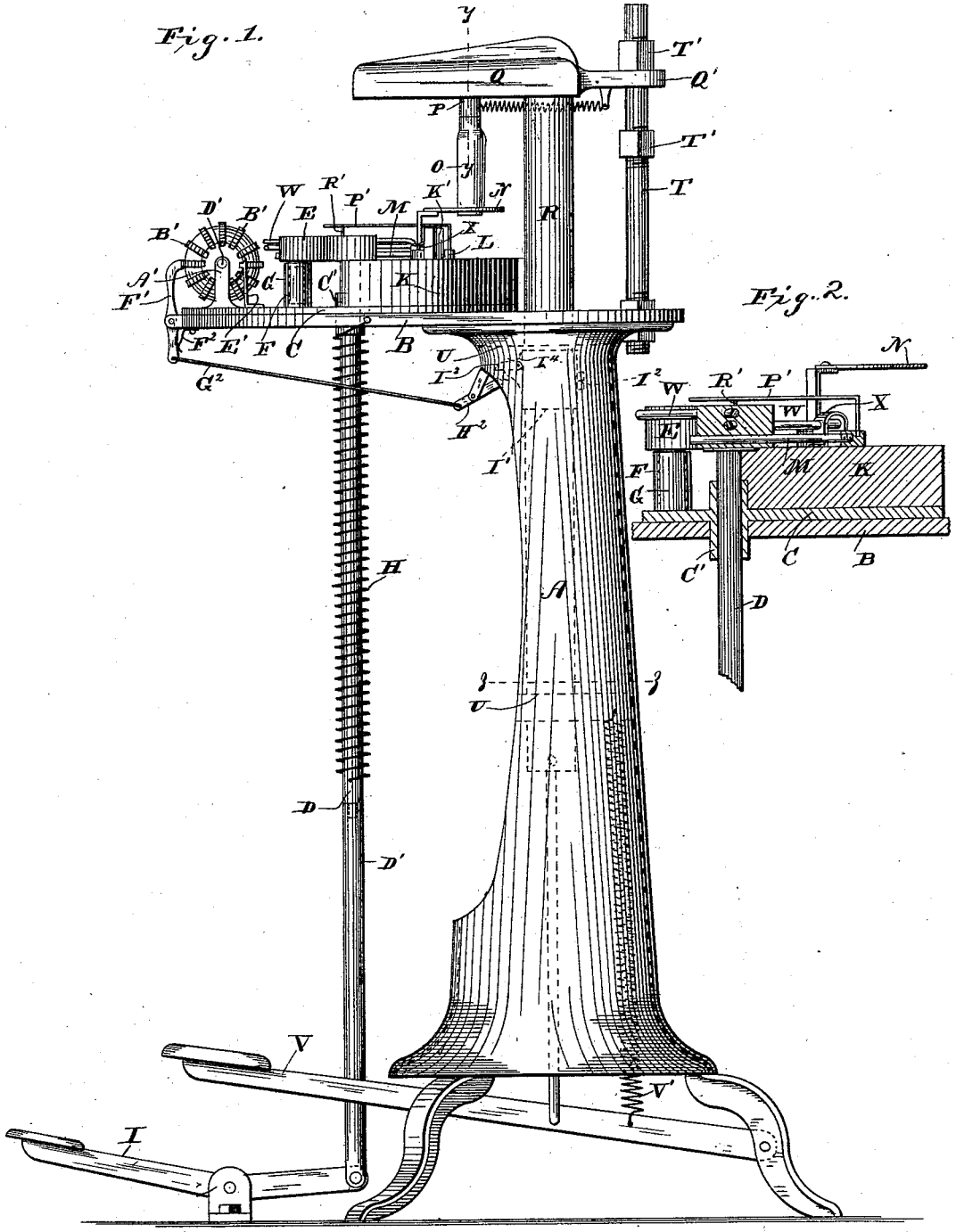

Fig. 2.

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Fig. 3.

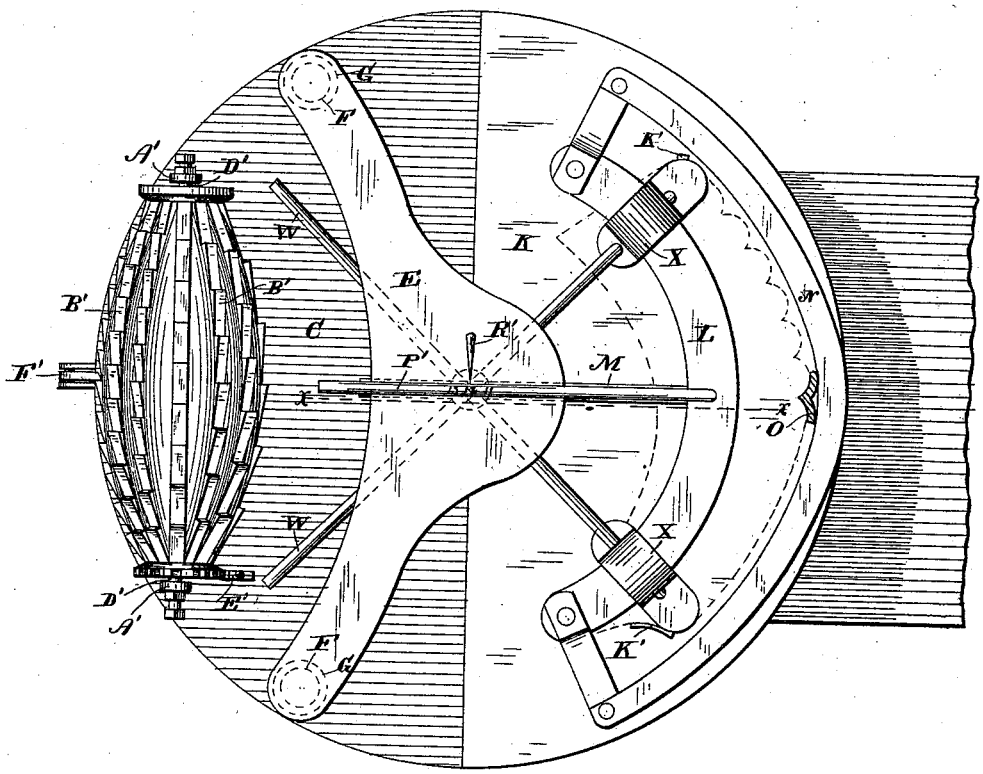


Fig. 5.

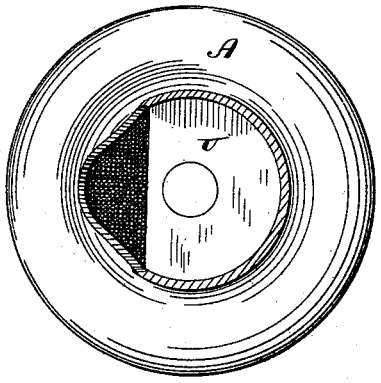


Fig. 4.

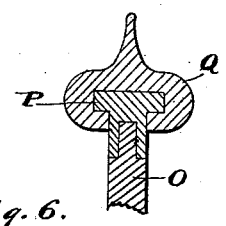
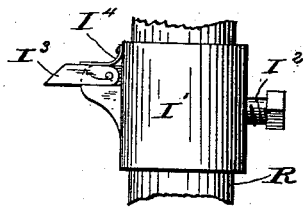


Fig. 6.



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UNITED STATES PATENT OFFICE.

CHARLES B. HATFIELD, OF ROCHESTER, NEW YORK.

BUTTON-FLY-SCALLOPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 347,105, dated August 10, 1886.

Application filed April 15, 1886. Serial No. 198,977. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. HATFIELD, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Button-Fly-Scalloping Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

My present invention relates particularly to that class of machines for which Letters Patent of the United States No. 338,665 were granted to me on the 23d day of March, 1886; and it consists in certain novel improvements, which I will first describe, and then point out particularly in the claims at the end of this specification.

Referring to the accompanying drawings, Figure 1 is a side elevation of my improved machine. Fig. 2 is a sectional view taken on the line *x x*, Fig. 3. Fig. 3 is a top plan view with the chisel-supporting devices removed. Fig. 4 is a sectional view taken on the line *y y*, Fig. 1. Fig. 5 is a sectional view of a standard, taken on the line *z z*, Fig. 1, and showing one of the bearings of the plunger through which motion is communicated to the chisel. Fig. 6 is a view of the tripping device on the plunger.

Similar letters of reference in the several figures indicate the same parts.

The letter A represents the standard or main body of the machine, preferably mounted on suitable legs, as shown.

B is a fixed bed-plate secured firmly to the standard.

C is a movable bed-plate, formed with a central hub, C′, extending above and below it, the lower portion of said hub being fitted into a corresponding aperture formed in the fixed bed-plate B, and serving as a pivot upon which said movable bed-plate may be turned.

D is a shaft, the upper end of which extends through the hub of the movable bed-plate, and has secured to it a head or stop, E, as shown. This head or stop is provided with pins or projections F, which enter corresponding sockets, G, formed upon the movable bed-plate. By this construction the turning of the shaft also turns the bed-plate. A spring, H, connected at one end to the shaft D and at the other to the stationary bed-plate of the machine, tends to turn the shaft and the parts attached to it in one direction. The lower end of the shaft D is jointed to another shaft, D′, so that the turning of one shaft will not affect the position of the other. Shaft D′ is in turn connected to a foot-treadle, I.

K is a block, of wood or other light material, mounted upon the movable bed-plate C, and serving as a support for the work and as a bed for the chisel to work against.

L is a presser-bar, mounted upon an arm or slide, M, that passes transversely through the head or stop E, as shown in Figs. 1, 2, and 3. This presser-bar is adapted to clamp the button-flys down upon the block K, and to hold them securely while they are being operated upon by the chisel. It has attached to it a guide, N, against which the back of the cutting-chisel O rests. The cutting-chisel is shaped in cross-section, as represented in Fig. 3. Its shank at its extremity is made cylindrical and is inserted in a corresponding opening in sliding block P, that is adapted to slide back and forth in an arm, Q, secured to the upper end of the plunger R. (Shown in Fig. 1.) A spring, connected at one end to a projection on a rear extension, Q′, of the arm Q, and at the other to the chisel-socket P, serves to keep the back of the chisel pressed at all times against the guide N. The plunger R is mounted in bearings U U, preferably of Babbitt metal, arranged in a hollow standard, A, and is adapted to be moved downwardly, so as to cause the chisel to descend by the operation of the foot lever or treadle V, connected thereto by a rod, as shown, and to be automatically raised again after pressure is removed from the foot-lever by the operation of a spring, V′, connected to said foot-lever, as shown in Fig. 1. For the purpose of preventiong the plunger from turning on its vertical axis, a rod, T, secured to the fixed bed-plate B, is caused to pass through the rear extension, Q′, of the arm Q, and in order to limit the extent of the vertical movements of said plunger adjustable nuts or stops T′ are provided on said rod T above and below said extension.

B′ B′ are a series of racks or gages mounted

so as to turn upon common pivots D′ in bearings A′ A′, secured to the movable bed-plate C. Each of these rack-bars or gages has a different number of teeth, and one or the other of them is employed, accordingly as it is desired to cut more or less scallops in the button-flies. A spring-catch or other contrivance, E′, is employed for locking the rack-bars at the desired point.

F′ is a pawl pivoted to the stationary bed-plate B, and F² a spring which operates to keep said pawl normally engaged with one or the other of the racks or gages. A rod, G², is connected at one end to the lower end of the pawl F′, and at the other end to a pivoted lever, H², as shown in Fig. 1.

Upon the plunger R is arranged a collar, I′, adapted to be secured at the proper point by a set-screw, I². This collar bears a pivoted latch, I³, which is normally held in a horizontal position by a spring, I⁴, though it is capable of being swung upwardly when sufficient pressure is applied beneath it to overcome the force of the spring.

The spring H, mounted on the shaft D, tends to rotate the movable bed-plate C, as before stated, and each time the pawl F′ is moved out of engagement from the rack or gage with which it happens to be co-operating, and is then released, the said spring H will cause the movable bed-plate, and with it the work-supporting block, to be rotated under the cutting-chisel the distance of one tooth. Now, the latch I³ on the plunger R is so arranged that each time the plunger is caused to descend and bring the chisel down upon the work said latch will be raised or tripped by the lever H², and each time the plunger is allowed to rise, so as to elevate the chisel, said latch will turn the lever H² on its pivot and, through the rod G², cause the pawl F′ to be momentarily disengaged from the rack-bar or gage, thus accomplishing the automatic feeding or rotation of the work beneath the chisel. In my former patented machine this feeding movement had to be done by hand.

W W are two rods passing through guide-openings in the stock or head E, and each connected at its outer end to an indicator or pointer, X, which embraces the presser-bar L and extends slightly beyond the same, as shown in Fig. 3. The rods W, it will be observed, are located on lines radiating from the center of motion of the work-support, and are the same number of degrees apart as would be radial lines drawn from said center of motion through the extremes of the toothed portions of the rack-bars or gages, and whether said rods are forced inward or outward by the adjustment of the presser-bar, the indicators denote the extremes of movement of the work beneath the chisel as controlled by the rack-bars or gages. So far as described these rods and indicators are the same as those shown in my former patent. My present improvement upon them consists in providing one or both of them with a guide or flange, K′, against which the end or ends of the flies to be scalloped are placed, so as to insure their proper location.

Secured to the presser-bar L is a bar, P′, having marks or graduations upon it numbered to correspond to the size of the flies to be operated upon. This bar projects rearwardly over the head or stock E, and with it co-operates a pointer or indicating-finger, R′, mounted on said head or stock, as shown in Fig. 3.

In the use of the machine two adjustments have to be made before commencing operations—that is to say, an adjustment which shall adapt the machine to the size or length of the flies proposed to be operated upon, and an adjustment which shall determine the number of scallops to be made in such flies. The adjustment as to size is effected by moving the presser-bar L inwardly or outwardly till the pointer R′ stands opposite the number on the graduated bar P′ corresponding to the size of the flies to be scalloped, and the adjustment as to number of scallops is effected by bringing the rack or gage having a number of teeth corresponding to the number of scallops desired to be formed on the flies into co-operation with the pawl F′. It will of course be understood that the position of the presser-bar and indicators does not at all change the effect of any given rack or gage, but that the same number of scallops upon the flies will be produced by a given rack or gage, whether said flies be of the largest or shortest size. The requisite adjustments having been made, the operator presses on the treadle I, so as to raise the presser-bar above the block K. He then places a pile of flies beneath the presser-bar, taking care that the end or ends of the same shall abut against the flange or flanges K′. Upon removing his foot from the treadle I the presser-bar will descend and hold the pile of flies in position. Then commencing with the pawl F′ in engagement with the first tooth of the appropriate rack or gage, he depresses and releases the treadle V the number of times necessary to complete the work. At each depression the chisel will descend and make a scallop in the superposed flies, and at each release the pawl will be automatically operated and the work-support advanced the distance of one tooth of the gage, as before explained, and so on till the scalloping is completed. To increase or diminish the number of the scallops, it is only necessary to bring another rack or gage into operation, and to change the adjustment for flies of different length the presser-bar need only to be moved out or in until the proper graduation on the rod or bar P′ comes opposite the pointer R′.

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

1. In a buton-fly-scalloping machine, the combination, with a cutting-chisel, of a movable support for the work, means—such as a spring—for automatically moving said support, and a gage for regulating the number of

times the support is to be arrested in its movement, substantially as described.

2. In a button-fly-scalloping machine, the combination, with a cutting-chisel, and means, substantially as described, for operating the same, of a movable support for the work, means—such as a spring—for automatically moving said support, a gage for regulating the number of times the support is to be arrested in its movement, and a tripping device actuated by the chisel-operating mechanism for permitting the advance of the support step by step, substantially as described.

3. In a button-fly-scalloping machine, the combination, with a cutting-chisel, of a movable support for the work, a series of different gages rotating on a common axis different from that of the work-support for regulating the number of times the said support is to be arrested, and a stop for co-operating with said gages, substantially as described.

4. In a button-fly-scalloping machine, the combination of a movable support for the work, a presser-bar for holding down the work, a cutting-chisel adjustable laterally of the work-support, and a guide for determining the lateral position of the chisel with respect to the work, substantially as described.

5. In a button-fly-scalloping machine, the combination of a movable support for the work, a presser-bar for holding down the work, a laterally-adjustable cutting-chisel, a guide for determining the lateral position of the chisel with respect to the work, and means—such as a spring—for holding the chisel against the guide, substantially as described.

6. In a button-fly-scalloping machine, the combination of a rotatable support for the work, indicators adjustable on lines radiating from the center of motion of the work-support, and having guides for determining the proper position of the work, substantially as described.

7. In a button-fly-scalloping machine, the combination of a rotatable support for the work, a presser-bar, indicators adjustable on lines radiating from the center of motion of the work-support, and also on the presser-bar, and having guides for the proper adjustment of the work, substantially as described.

8. In a button-fly-scalloping machine, the combination of the reciprocating plunger having the horizontal guiding-arm with the chisel-socket and the spring, substantially as described.

9. In a button-fly-scalloping machine, the combination of the reciprocating plunger having the horizontal guiding-arm with the chisel-socket, the spring, the chisel adjustable in the socket, and the chisel-guide, substantially as described.

10. In a button-fly-scalloping machine, the combination, with the reciprocating plunger carrying the chisel, and having the rearward extension, of the guide-rod passing through said rear extension, and the adjustable stops mounted on said guide-rod, substantially as described.

11. In a button-fly-scalloping machine, the combination, with the rotatable bed-plate having the sockets, of the shaft or plunger, the head or stock secured to the upper end of said shaft, and having the pins for entering the sockets on the bed-plate, substantially as described.

12. In a button-fly-scalloping machine, the combination of the rotatable bed-plate, the divided vertical shaft having the head or stock at its upper end connected to the movable bed-plate by the pin-and-socket connection, and the spring connected at one end to the said shaft and at the other to the stationary part of the machine, substantially as described.

13. In a button-fly-scalloping machine, the combination of the movable bed-plate, and means, substantially as described, for rotating it, the toothed gage mounted thereon, with the pivoted spring-pawl, the tripping-lever pivoted to the standard, the connection between said rod and tripping-lever, and the projection on the chisel-actuating plunger, substantially as described.

14. In a button-fly-scalloping machine, the combination of the rotatable support for the work, the head or stock, a presser-bar adjustable toward and from said head or stock, the radially-adjustable indicators, and the graduated bar for indicating the extent of movement necessary to adapt the machine to different-sized flies, substantially as described.

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