(No Model.)

W. E. BENNETT.

FEEDING MECHANISM FOR BUTTON SEWING MACHINES.

No. 259,996. Patented June 27, 1882.

Fig. 1.

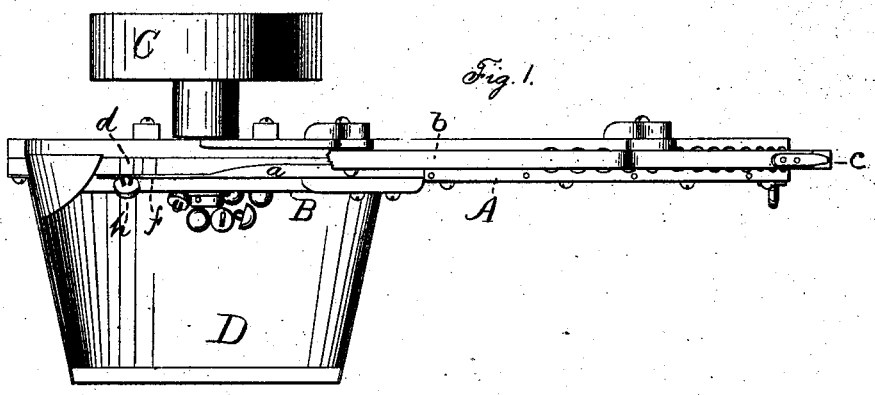


Fig. 2.

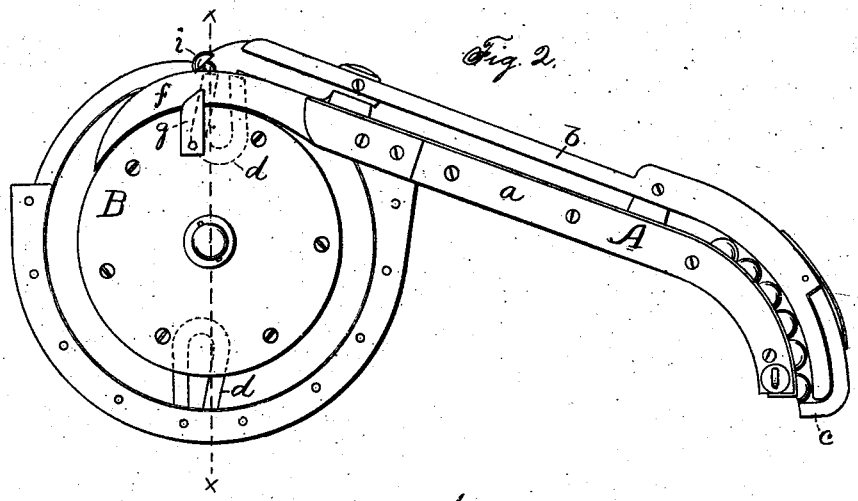
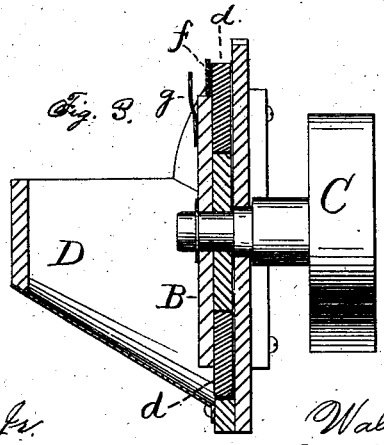


Fig. 3.



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FEEDING MECHANISM FOR BUTTON-SEWING MACHINES.

SPECIFICATION forming part of Letters Patent No. 259,996, dated June 27, 1882.

Application filed February 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, WALTER E. BENNETT, of New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Feeding Mechanism for Button-Sewing Machines, of which the following is a specification.

My invention relates to feeding mechanism for button-sewing machines (or other machines requiring an analogous feeding device) in which a magnet, a hopper, and a feeding-trough are combined so that the movement of the magnet raises the buttons from the hopper and deposits them in the feeding-trough; and the objects of my invention are to produce a feeding mechanism which shall be simple in construction, convenient and efficient in operation, and which can be made at a small cost. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view, Fig. 2 a side elevation with the hopper removed, and Fig. 3 a vertical section on line *x x* of Fig. 2.

The feeding mechanism, if employed upon a button-sewing machine, will be mounted thereon in such position as to feed the buttons to a convenient point of the machine for further operation in any ordinary manner. As such machines constitute no part of my invention, I consider it unnecessary to represent the same.

The feeding-trough A is substantially the same as in other button-feeding mechanisms. Its lower member, *a*, has a groove in its upper edge, flaring outward at its mouth (see Fig. 1) to receive the shank of the button and allow it to pass flatwise through the groove, while the body of the button rests upon the upper edge of *a*, as shown in Figs. 1 and 2. Its upper member, *b*, is elevated sufficiently above the lower member to allow the buttons to pass through, as shown. They are stopped by the spring-hook *c*, and are let out as fast as wanted by removing the hook away from under the lower end of the trough, all as in prior machines.

The novelty of my feeding mechanism resides in the parts for feeding the buttons to the trough A.

At the upper end of the trough I arrange a wheel, B, mounted so as to revolve on a suitable shaft provided with the pulley C or other suitable means for driving said wheel. By the side of said wheel B is a hopper, D, made semicircular in cross-section, but with the end or side toward the wheel larger than the opposite side, whereby the hopper slants toward the wheel, as shown most clearly in Fig. 3. Upon the wheel B, I place one or more magnets, *d d*, with their ends about flush with the periphery of the wheel B and in line with the slot through the trough A, and also so as to leave the ends of the magnets exposed for a short distance upon the side of the wheel which faces the hopper. Extending from the upper end of the trough, at the top edge of the wheel, there is a wiper, *f*, which lies close by the side of the wheel, near its edge. One or more agitators, *g*, are secured to the body of the wheel B for the purpose of stirring the buttons within the hopper. The buttons for which this feeding mechanism is designed are generally made of paper with iron shanks, and therefore only the shanks will be attracted by the magnets. The wiper *f*, the trough A, the hopper, and the body of the wheel should be of brass or some other non-magnetic material. The buttons are placed promiscuously in the hopper and the wheel revolved in such a direction as to carry the top of the wheel toward the trough. When the magnet is moving within the bottom of the hopper only its sides near the ends are accessible to the buttons. The shanks of the buttons are attracted by the magnet and the buttons (one or more of them) are carried upward while clinging to the sides of the magnet until they come in contact with the wiper *f*, as shown at *h*, Fig. 1.

The upper edge of the wiper at its highest point projects slightly above the upper edge of the wheel and ends of the magnets. While the magnet is carrying a button from the point represented at *h*, Fig. 1, to the point represented for the button *i*, Fig. 2, the wiper moves the button upward from the sides of the magnet over and upon the ends thereof, and on further forward movement the button is drawn along by its shank into the trough. When the magnet is carried away from the trough by the revolution of the wheel the buttons are pulled off the magnet and are free to slide down the trough, as in other feeding mechan-

isms. The operation is repeated nearly every time that a magnet passes through the hopper and by the wiper, thereby depositing one or more buttons in the trough. When the trough is full the buttons are carried upward, as before, but fall back into the hopper, so that it is only necessary to have the wheel move fast enough to keep the trough supplied, and if it feeds faster than required no harm will result.

If desired, instead of making the hopper so as to cover the edge of the wheel and ends of the magnets, it may be enlarged from a point near the bottom up to that edge which is on the wiper side, so that after the magnets pass the bottom the buttons can cling to the ends of the magnets as well as to their sides.

I have herein shown a hopper upon only one side of the wheel; but, if desired, a like hopper might be placed on the other side of the wheel and the magnets exposed therein in like manner.

Other kinds of buttons may be fed by this machine—as, for instance, those with heads or bodies of any non-magnetic material and with shanks of iron or other magnetic material.

The machine may also be employed for feeding buttons or analogous small articles which are made of magnetic material throughout, as well as those in which only part of the article is magnetic.

I prefer to mount the magnet or magnets to move within the hopper upon a revolving wheel; but it is evident that the same result may be attained by mounting the magnet to move on an oscillating or reciprocating arm or other magnet-carrier.

The feeding-trough, instead of being the one that the button-sewing machine will come in direct connection with, may be merely a chute to convey the buttons to such a trough or to any other trough or machine. The upper end of the trough, which receives the buttons from the magnets, is therefore the only part which is essential to my invention.

I claim as my invention—

1. The combination of the feeding-trough, the hopper, the magnet, and mechanism for moving the magnet within the hopper and presenting it to the trough, substantially as described, and for the purpose specified.

2. The combination of the feeding-trough, the wheel with magnets mounted thereon, and the hopper placed at one side of said wheel, substantially as described, and for the purpose specified.

3. The combination of the feeding-trough, the hopper, the magnet-carrier, and the wiper, substantially as described, and for the purpose specified.

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Witnesses:
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