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PATENTED SEPT. 29, 1903.

H. M. RADCLIFFE.

AUTOMATIC FEED FOR BUTTON ATTACHING OR OTHER MACHINES.

APPLICATION FILED MAY 14, 1903.

NO MODEL.

- 2 SHEETS-SHEET 1.

FIG. 1

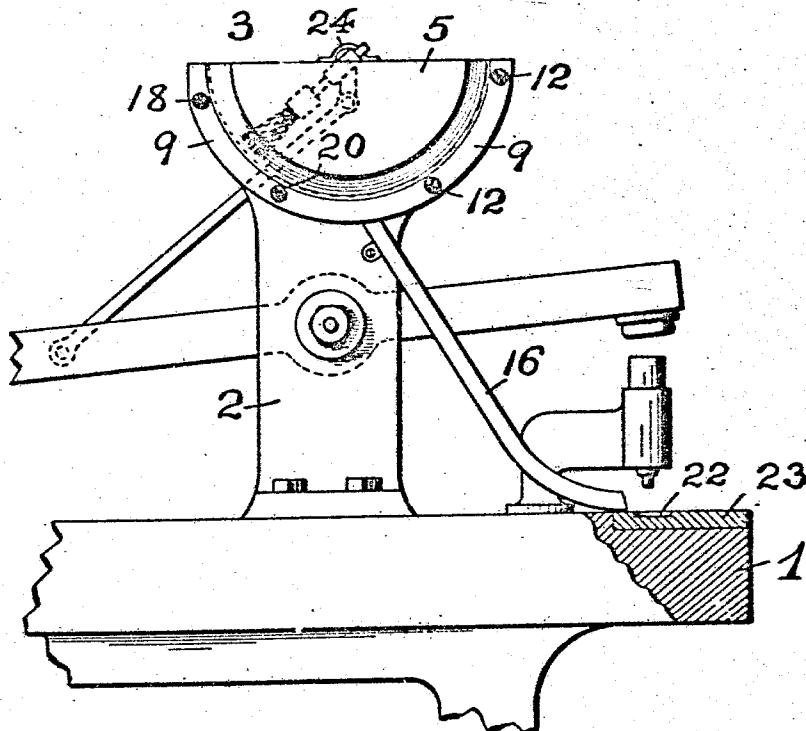
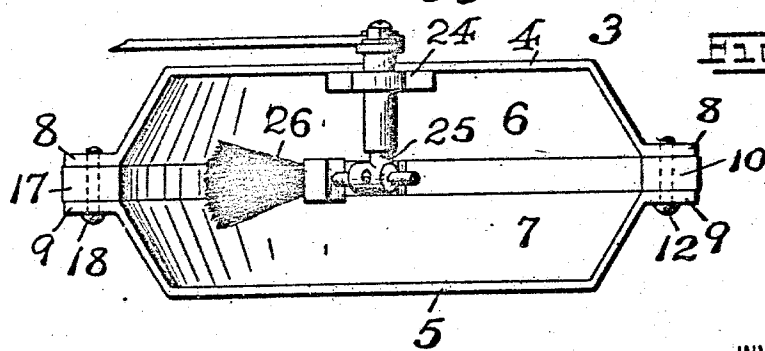


FIG. 2



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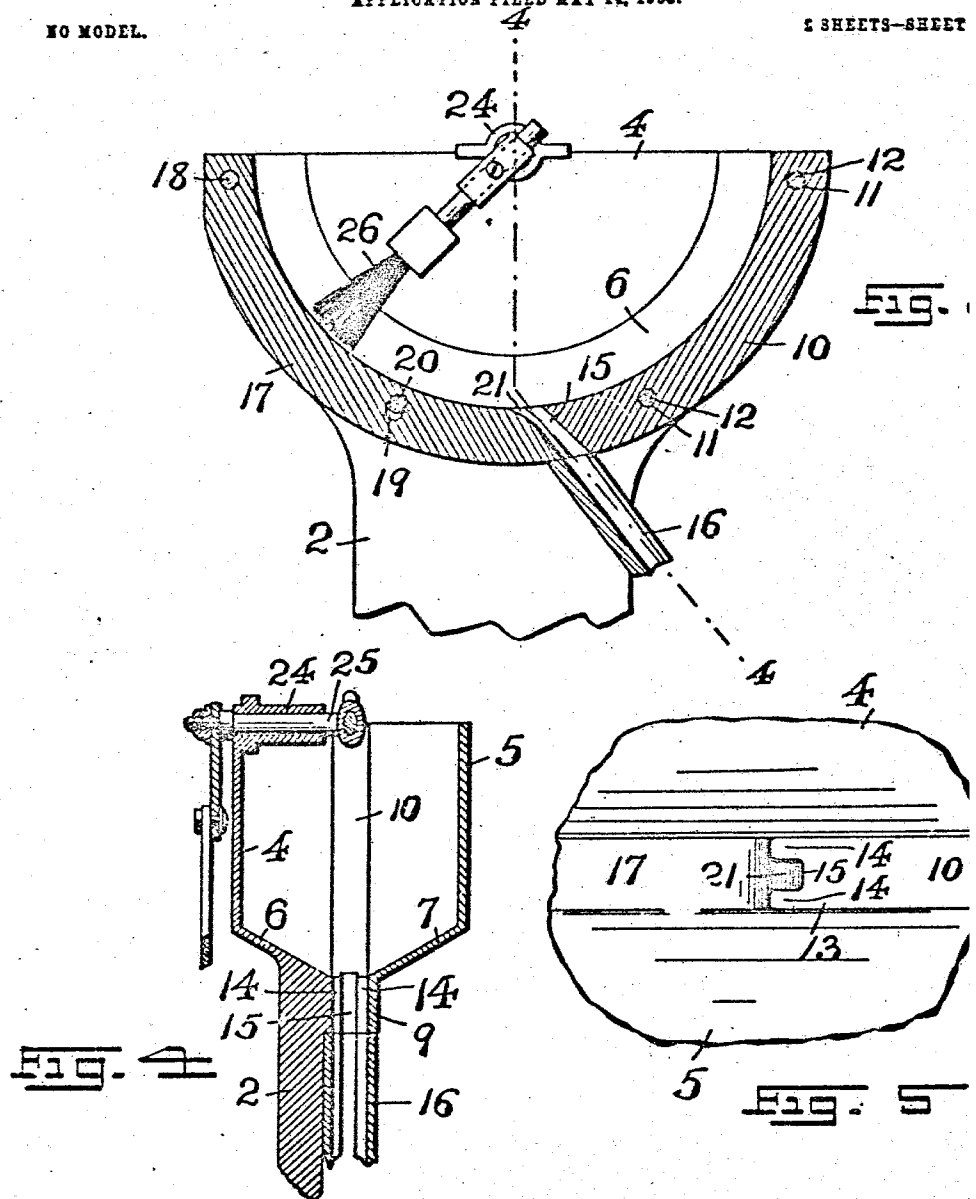
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UNITED STATES PATENT OFFICE.

HARRY M. RADCLIFFE, OF IRVINGTON, NEW JERSEY.

AUTOMATIC FEED FOR BUTTON-ATTACHING OR OTHER MACHINES.

SPECIFICATION forming part of Letters Patent No. 740,177, dated September 29, 1903.

Application filed May 14, 1903. Serial No. 157,052. (No model.)

To all whom it may concern:

Be it known that I, HARRY M. RADCLIFFE, a citizen of the United States, residing at Irvington, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Automatic Feed for Button-Attaching or other Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in devices for automatically feeding the parts employed in the manufacture of buttons to their proper positions upon a piece of goods previous to the assembling of the shell and the back-plate and its post into a complete button firmly attached to the material, and which may also be used for similarly feeding other small articles or parts of a similar nature—such as rivets, eyelets, washers, nuts, or disks of the various shapes—to other parts of machines used in the various arts.

My present invention therefore has for its principal objects to provide a practical and efficient feeding device or attachment for button-machines or for any other machine or apparatus in which small parts are placed in a hopper or other suitable receptacle from which the parts are fed one at a time to other parts of the machine or apparatus to be assembled into a complete article of manufacture or to be attached to some other article, as an article of wear.

The invention therefore consists in the construction of feed hopper or receptacle for button-machines or for machines for use for various other purposes; and the invention consists, furthermore, in the combinations and constructions of the various parts hereinafter more fully described and then finally embodied in the clauses of the claim, all with a view of providing a convenient and practical feeding device for the purposes stated.

The invention is clearly illustrated in the accompanying drawings, in which—

Figure 1 is a side view of a portion of a button-attaching machine provided with a

feeding device embodying the principles of my present invention. Fig. 2 is a top or plan view of the feeding device or hopper. Fig. 3 is a central longitudinal section of the same. Fig. 4 is a transverse vertical section taken on line 4 4 in said Fig. 3; and Fig. 5 is a plan view of a portion of the feeding device or hopper, representing one form of mouth outlet from the hopper to a delivery-chute raceway employed in connection therewith.

Similar characters of reference are employed in all of the said views to indicate corresponding parts.

As has been stated, the main purpose of this invention is to provide a novel feeding device or hopper which may be used with various constructions of machines, but which is especially adapted for use in connection with any construction of button-machine for feeding either the shell of the button to the back-plate with the post to be forced through the material to that part of the machine where said parts are secured in their assembled positions as complete buttons upon the cloth or garment.

In practice in button-machines two hoppers or feeding devices are usually employed, one from which the shells are fed and the other from which the back-plates and the posts are fed. In the drawings herewith accompanying I have represented but one hopper or feeding device, since the general construction and arrangements of the parts of each hopper are alike, the only difference being in the shape of the discharge-opening of the hopper, the said opening conforming to the general outline to either the general construction of the shell of the button or to the general configuration of the combined back-plate and post, or such opening may be of any other shape in its cross-section, according to the shapes of the parts which are to be fed into the raceway which is connected with the discharge-opening of the said feeding device or hopper.

In the said drawings the reference character 1 indicates any suitable stand or table which is provided with any form of operating mechanism for securing the parts of the button in their assembled and operative positions upon the cloth. Secured upon the stand or table 1 is a standard or foot 2,

standard or foot preferably forming a part of the feeding device or hopper by being cast integral with one of the shells or sections of the hopper or by being secured thereto in any other suitable and convenient manner. The said hopper or feeding device is indicated by the reference character 3, and it consists, essentially, of a pair of side shells or sections 4 and 5, the said shells or sections being respectively provided with the inwardly-tapering or other suitably-formed bottom portions 6 and 7 and with the outer marginal and preferably semicircular formed or shaped flanges 8 and 9, substantially as illustrated. The said side shell or section 4 is connected with the said standard or foot 2 by being cast integral therewith or by being secured thereto in any other suitable manner. Arranged between the oppositely-located flat surfaces of the said flanges 8 and 9 is a correspondingly-shaped member or plate 10, which is provided with holes 11, corresponding with similarly-located holes in the flanges 8 and 9 for the reception of the usual screws or bolts 12 for rigidly and securely connecting these parts in their assembled positions when the said screws or bolts 12 are tightened. From an inspection of Figs. 3 and 5 it will be seen that the inner edge portion 13 of the said plate 10 is made in the present case with a pair of forwardly-extending fingers or projections 14, having a recess 15 between them, the said parts 14 and 15 being of any desired shape as may be selected and forming a suitable guide for the article or part to be fed into the raceway or delivery-chute 16. In like manner there is secured between the remaining flat surfaces of the said flanges 8 and 9 an arc-shaped member or plate 17, the said member or plate being pivotally secured in place between the said flanges upon a screw or bolt 18, and the said member or plate 17 having an elongated hole or opening 19, so as to be capable of an oscillatory motion upon a pin or bolt 20 between the said flanges 8 and 9. Thus it will be seen that before the screws or bolts 12, 18, and 20 are tightened the said plate or member can be properly adjusted to bring its inner curved end portion 21 closer to or farther away from the parts 14 and 15 of the plate 10, whereby the delivery-mouth can be made smaller or larger, and the hopper is practical for use in feeding various sizes or shells or other similar parts. After the member or plate 17 has been arranged in its properly-adjusted position between the flanges 8 and 9 the screws or bolts 12, 18, and 20 are tightened and the plate 17 is held in its fixed position against movement between the flanges 8 and 9 while the hopper is in use. As has previously been stated, the discharge-opening thus formed by the portions 14 and 15 of the plate 10 and the portion 21 of the plate 17 is such that the shells are fed into the opening in successive order, one after the other, and are always in the proper position while entering the said opening and while being

fed through the chute or raceway 16 to the receiving member 22 in a plate 23 in the table 1, as illustrated in Fig. 1 of the drawings. One of the said side shells or sections, as 4, is provided with a suitable bearing 24, in which there is a spindle 25, having an oscillating motion, and upon the said spindle is a brush 26 for brushing or sweeping the shells, plates, or the like past the discharge-opening in the hopper 1 into the said opening to be properly delivered into the raceway or chute 16. The cross-section of this chute or raceway is made to correspond to the shape of the said discharge-opening, these shapes varying according to the shapes of the articles or parts to be fed to other parts of the machine.

I am aware that some changes may be made in the construction of the hopper or feeding device without departing from the scope of this invention. Hence I do not limit my invention to the exact arrangements and combinations of the parts as described in the foregoing specification and as illustrated in the accompanying drawings, nor do I confine myself to the exact details of the construction of the said parts.

Having thus described my invention, what I claim is—

1. A feeding device for feeding parts or buttons or other articles to a raceway, comprising a hopper-shaped body, and a bottom plate in said hopper-shaped body, said plate being adjustably arranged and forming with a part of the hopper a discharge-opening substantially as and for the purposes set forth.

2. In a button-attaching or other similar machine, a feed-hopper, comprising, a pair of side shells, and a pair of bottom plates secured between portions of said shells, said plates being arranged to leave a space which forms a discharge-opening in the bottom of said hopper, substantially as and for the purposes set forth.

3. In a button-attaching or other similar machine, a feed-hopper, comprising, a pair of side shells, a pair of bottom plates secured between portions of said shells, said plate being arranged to leave a space which forms a discharge-opening in the bottom of the hopper, and a raceway secured beneath said discharge-opening, substantially as and for the purposes set forth.

4. In a button-attaching or other similar machine, a feed-hopper, comprising, a pair of side shells, a pair of bottom plates secured between portions of said shells, said plate being arranged to leave a space which forms a discharge-opening in the bottom of said hopper, and a raceway secured beneath said discharge-opening, all combined with a bearing on one of said shells, a spindle in said bearing, and a brush on said spindle, substantially as and for the purposes set forth.

5. In a button-attaching or other similar machine, a feed-hopper, comprising, a pair of side shells having inclined bottoms, perf

rated flanges connected with said shells, a pair of perforated bottom plates between said flanges, screws in the perforations of said flanges and bottom plates for securing said plates in position, said plates being arranged to leave a space which forms a discharge-opening in the bottom of said hopper, substantially as and for the purposes set forth.

6. In a button-attaching or other similar machine, a feed-hopper, comprising, a pair of side shells having inclined bottoms, perforated flanges connected with said shells, a pair of perforated bottom plates between said flanges, screws in the perforations of said flanges and bottom plates for securing said plates in position, said plates being arranged to leave a space which forms a discharge-opening in the bottom of said hopper, and a raceway beneath the said discharge-opening, substantially as and for the purposes set forth.

7. In a button-attaching or other similar machine, a feed-hopper, comprising, a pair of side shells having inclined bottoms, perforated flanges connected with said shells, a pair of perforated bottom plates between said flanges, screws in the perforations of said flanges and bottom plates for securing said plates in position, said plates being arranged to leave a space which forms a discharge-opening in the bottom of said hopper, and a raceway beneath the said discharge-opening, all combined with a bearing on one of said shells, a spindle in said bearing, and a brush on said spindle, substantially as and for the purposes set forth.

8. In a button-attaching or other similar machine, a feed-hopper, comprising, a pair of side shells having inclined bottoms, perforated flanges connected with said shells, a bottom plate 10 between said flanges, screws for securing said plate in place, a second bottom plate 17 and a screw 18 for pivotally securing said plate 17 between said flanges, said plate 17 having an elongated opening 19, and a screw 20 in said side flanges and extending through said opening 19 to limit the pivotal

movement of said plate 17, said plates being arranged to leave a space which forms a discharge-opening in the bottom of the hopper, substantially as and for the purposes set forth.

9. In a button-attaching or other similar machine, a feed-hopper, comprising, a pair of side shells having inclined bottoms, perforated flanges connected with said shells, a bottom plate 10 between said flanges, screws for securing said plate in place, a second bottom plate 17 and a screw 18 for pivotally securing said plate 17 between said flanges, said plate 17 having an elongated opening 19, and a screw 20 in said side flanges and extending through said opening 19 to limit the pivotal movement of said plate 17, said plates being arranged to leave a space which forms a discharge-opening in the bottom of the hopper, and a raceway secured beneath said discharge-opening, substantially as and for the purposes set forth.

10. In a button-attaching or other similar machine, a feed-hopper, comprising, a pair of side shells having inclined bottoms, perforated flanges connected with said shells, a bottom plate 10 between said flanges, screws for securing said plate in place, a second bottom plate 17 and a screw 18 for pivotally securing said plate 17 between said flanges, said plate 17 having an elongated opening 19, and a screw 20 in said side flanges, and extending through said opening 19 to limit the pivotal movement of said plate 17, said plates being arranged to leave a space which forms a discharge-opening in the bottom of the hopper, and a raceway secured beneath said discharge-opening, all combined with a bearing on one of said shells, a spindle in said bearing, and a brush on said spindle, substantially as and for the purposes set forth.

In testimony that I claim the invention set forth above I have hereunto set my hand this 12th day of May, 1903.

HARRY M. RADCLIFFE.

Witnesses:

FREDK. C. FRAENTZEL,
GEO. D. RICHARDS.