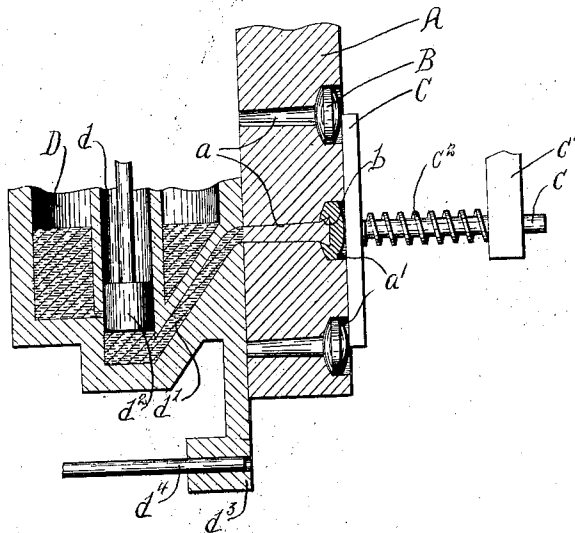


E. SHANTZ.
BUTTON MAKING MACHINE.
APPLICATION FILED OCT. 18, 1907.

Patented Sept. 21, 1909.

934,940.



WITNESSES:

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EDGAR SHANTZ, OF ROCHESTER, NEW YORK.

BUTTON-MAKING MACHINE.

934,940.

Specification of Letters Patent. Patented Sept. 21, 1909.

Original application filed March 3, 1904, Serial No. 196,270. Divided and this application filed October 18, 1907. Serial No. 397,981.

To all whom it may concern:

Be it known that I, EDGAR SHANTZ, of Rochester, in the county of Monroe, in the State of New York, have invented a certain new and useful Button-Making Machine, of which the following is a specification.

My invention has for its object the production of a button-making machine for simultaneously forming and securing shanks or stems to button-heads or blanks, and it consists in the combinations and constructions hereinafter set forth and pointed out in the claims.

The drawing is a sectional view, partly in elevation, of my machine, non-essential parts being omitted.

Buttons having heads or blanks formed of pearl, or other fragile substances, are usually provided with metallic shanks or stems. In the manufacture of such buttons, the shanks or stems have heretofore been secured to the heads by expansion of the metal forming the shanks.

To those skilled in the art, it is well known that when button-heads and shanks are united, as described, a large percentage of the heads is destroyed by breakage, even though slight expanding strain is used, and that the shanks are but insecurely fastened to the heads, and frequently become detached therefrom, especially when in use and subjected to strain, thus rendering the buttons objectionable and tending to decrease the use thereof. By this invention, buttons of the described type are provided with shanks which resist to a maximum any strain tending to detach the same. A button constructed by this machine, is shown in my pending application, Sr. No. 196,270, of which this application is a divisional part.

A is a movable die or mold formed with mold-cavities *a* extending through opposite portions thereof, said die or mold being thus provided with inlet and exit orifices. B B are recessed button-heads or blanks which are presented to the mold-cavities *a* with their recesses *b* opposed to the exit orifices of the mold-cavities *a*. These button-heads B are received in sockets *a'* formed in the die or mold A and communicating with the exit orifices of the mold-cavities *a*, and said heads are supported in the sockets *a'*, especially during the formation of the cast shanks or stems, by a plate or plunger C which is pro-

vided with a stem *c* guided in a stationary bearing *c'* and encircled by a spring *c²*, and acts to firmly press the button-heads or blanks B into the sockets *a'* and against the contiguous surfaces of the die or mold A.

D is a reservoir or melting pot containing fluid material, as molten metal, and also a cylinder *d* communicating with the interior of the reservoir and with an outlet conduit or port *d'* extending from the base of the cylinder *d* through a surface of the reservoir opposed to the face of the die or mold A through which the inlet openings or orifices of the mold-cavities *a* extend. Said face of the die or mold A forms means for closing the exit of the reservoir D. A suitable piston *d²* is movable in the cylinder *d* for compressing the fluid material therein. The reservoir D is provided with a depending arm *d³* which supports a plunger *d⁴* movable endwise at substantially right-angles to the die or mold A, into the mold-cavities *a* for discharging the finished button.

The die or mold A is movable into position to aline the gate or inlet orifice of one of its mold-cavities *a* with the exit of the conduit *d'*, and is then stopped, whereupon the piston *d²* is moved toward the bottom of the cylinder *d* and forces the molten material under pressure from the conduit *d'* into said mold-cavity and the recess *b* in the button-head B in register therewith. After the entry of the molten material to said mold-cavity, the piston *d²* is reversely moved, withdrawing the molten metal from the conduit *d'* into the cylinder *d*. The die or mold A is then advanced to aline the gate or inlet orifice of a second mold-cavity *a* with the exit of the conduit *d'*, after which the molten metal or material is forced into this second mold-cavity and the recess *b* in register therewith, and then the die or mold A is again advanced. As the die or mold A advances step by step, it feeds beyond the plate or plunger C, one of the mold-cavities containing a cast stem or shank and alines said stem with the plunger *d⁴*, after which said plunger is actuated and discharges the button from the die or mold A.

As any suitable means may be used for moving the die or mold into operative position and for actuating the piston *d²* and the plunger *d⁴*, I have deemed it unnecessary to illustrate and describe such mechanism.

What I claim, is—

1. A machine for providing button-blanks with shanks comprising in combination means for supporting the button-blank, and means for simultaneously forming and setting the shank in the button-blank, the same including a receptacle for fluid material, an outlet for the receptacle, and a die or mold for forming a shank on the button-blank, the die or mold being movable into registry with the outlet, substantially as and for the purpose described.

2. A machine for providing button-blanks with shanks comprising in combination a receptacle for fluid material, an outlet for the receptacle, a die or mold for forming a shank on the button-blank, the die or mold having a movement into registry with the outlet in a general direction at an angle to the line of movement of the fluid material through the outlet, and means for supporting the button-blank, substantially as and for the purpose set forth.

3. A machine for providing button-blanks with shanks comprising in combination a receptacle for fluid material, an outlet for the receptacle, means for supporting the button-blank, said means being spaced apart from the outlet, and a die or mold for forming a shank on the button-blank, the die or mold being movable between the outlet and said means, substantially as and for the purpose described.

4. A machine for providing button-blanks with shanks comprising in combination means for supporting the button-blank, and means for simultaneously forming and setting the blank in the button-shank, the same including two members, one a receptacle for fluid material, an outlet for the receptacle, and the other a die or mold for forming a shank on the button-blank, one of said members being movable relatively to the other for registering the die or mold and the outlet with each other, substantially as and for the purpose specified.

5. A machine for providing button-blanks with shanks comprising in combination means for supporting the button-blank, and means for simultaneously forming and setting the blank in the shank, the same including two members, one comprising a receptacle for fluid material and an outlet for the receptacle, and an engaging face through which the outlet extends, and the other comprising a die or mold for forming a shank on the button-blank, said die or mold having a face for engaging the first-mentioned face, and one of said members being movable relatively to the other for registering the die or mold and the outlet with each other, substantially as and for the purpose set forth.

6. A machine for providing button-blanks with shanks comprising in combination

means for supporting the button-blank, and means for simultaneously forming and setting the blank in the shank, the same including two members, one comprising a receptacle for fluid material, an outlet for the receptacle, and an engaging face through which the outlet extends, and the other comprising a die or mold for forming a shank on the button-blank, said die or mold having a face for engaging the first-mentioned face, and said die or mold having a movement into registry with the outlet in a general direction parallel to said engaging faces, substantially as and for the purpose specified.

7. A machine for providing button-blanks with shanks comprising in combination a receptacle for fluid material, an outlet conduit for the receptacle, means for supporting the button blank, said means being spaced apart from the outlet, and a die or mold for forming a shank on the button-blank, the die or mold being movable between the outlet and said means, and said means being movable relatively to the die or mold, substantially as and for the purpose described.

8. A machine for providing button-blanks with shanks comprising in combination means for simultaneously forming and setting the shank in the button-blank, the same including a receptacle for fluid material, an outlet for the receptacle, and a die or mold for forming a shank on the button-blank, the die or mold being movable into registry with the outlet, and means for supporting the button-blank, said means being movable relatively to the die or mold, substantially as and for the purpose described.

9. A machine for providing button-blanks with shanks comprising in combination a receptacle for fluid material, an outlet for the receptacle, a die or mold for forming a shank on the button-blank, the die or mold being movable into registry with the outlet, said die or mold having an outlet, and means for holding the button-blank in registry with the outlet of the die or mold, substantially as and for the purpose set forth.

10. A machine for providing button-blanks with shanks comprising in combination a receptacle for fluid material, the receptacle having an outlet, a die or mold for forming a shank on the button-blank, the die or mold being open at opposite portions and being movable to register the opening in one portion thereof with the outlet of the receptacle, and means for holding the button-blank in registry with the opening in the opposite portion of the die or mold, substantially as and for the purpose described.

11. A machine for providing button-blanks with shanks comprising in combination a receptacle for fluid material, an outlet for the receptacle, a die or mold for forming a shank on the button-blank, the die or

mold being movable into registry with the outlet, said die or mold having an outlet, means for holding a recessed button-blank with its recess in registry with the outlet of the die or mold, and means for closing the outlet of the receptacle, substantially as and for the purpose specified.

12. A machine for providing button-blanks with shanks, comprising in combination a receptacle for fluid material, an outlet for the receptacle, a die or mold for forming a shank on the button-blank, the same having its mold-cavity opening through opposite portions thereof, said die or mold being adapted to register with the outlet of the receptacle, and means for holding a recessed button-blank in position to cooperate with the die or mold in forming the shank, substantially as and for the purpose set forth.

13. In a button-making machine, a support for a button-head formed with a recess for receiving the shank of the button, a die or mold for forming a shank on the button-head, the same having an exit orifice serving to register with the recess of the button-head, and a reservoir for supplying molten material to the die or mold, substantially as and for the purpose described.

14. In a button-making machine, a support for a button-head formed with a recess for receiving the shank of the button, a die or mold for forming a shank on the button-head, the mold having inlet and exit orifices at opposite portions thereof, and a reservoir for supplying molten material to the die or mold, the reservoir having an exit port, and the inlet and exit orifices of the die or mold serving to register, respectively, with the exit port of the reservoir and the recess of the button-head, substantially as and for the purpose specified.

15. In a button-making machine, the com-

bination of three elements, a support for a button-head, a die or mold for forming a shank on the button-head, and a reservoir for supplying molten material to the die or mold, one of said elements being movable relatively to the other elements into and out of operative relation with said other elements, substantially as and for the purpose set forth.

16. A device for casting shanks into button-blanks comprising a melting pot having an outlet, means for controlling the flow of the molten material through the outlet, a die or mold adapted to form a shank and having a gate adapted to register with the outlet, the die or mold being movable into and out of casting position, and means for supporting a recessed button-blank in position to receive molten material discharged into the die or mold, substantially as and for the purpose described.

17. A device for casting shanks into button-blanks, comprising a melting pot having an outlet, means for controlling the flow of the molten material through the outlet, a die or mold adapted to form a shank and having a gate adapted to register with the outlet, the die or mold being movable into and out of casting position, and a plunger adapted to support a recessed button in position to receive molten material discharged into the die or mold, substantially as and for the purpose specified.

In testimony whereof, I have hereunto signed my name in the presence of two attesting witnesses, at Rochester, in the county of Monroe, in the State of New York, this 10th day of October, 1907.

EDGAR SHANTZ.

Witnesses:

B. PAPPERT,
A. G. FISHER.