No. 700,606. Patented May 20, 1902.

J. S. BARNES.

MOLD FOR COLLAR BUTTONS.

(Application filed May 14, 1900.)

(No Model.) 2 Sheets—Sheet 1.

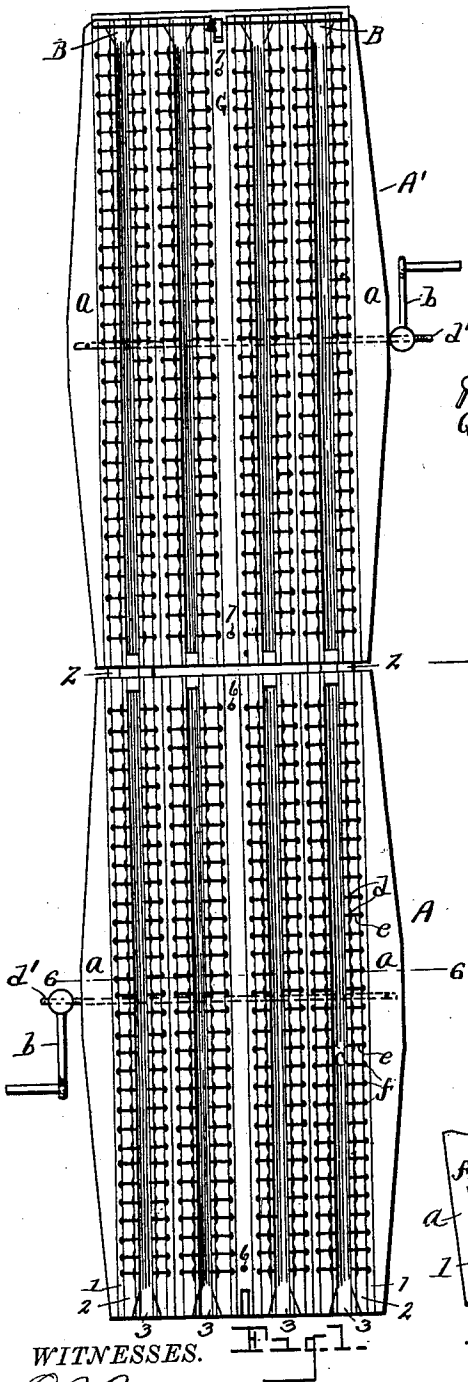


Fig. 1.

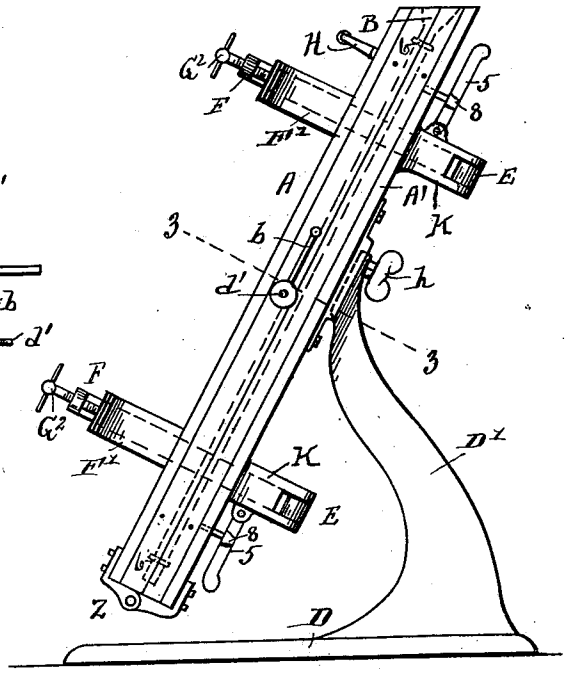
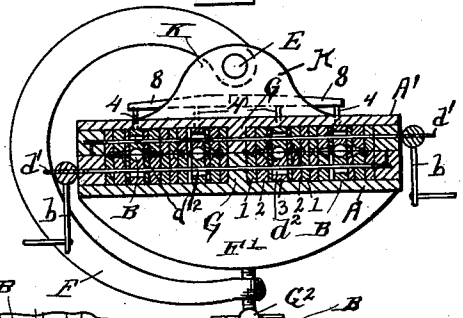


Fig. 2.

Fig. 3.



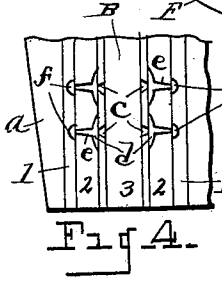


Fig. 4.

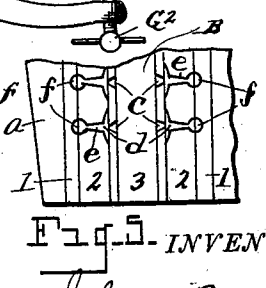


Fig. 5.

WITNESSES.

O. B. Barringer.

Hattian Bruce.

INVENTOR.

John S. Barnes

by T. J. Benson Butler,

Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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Fig. 6.

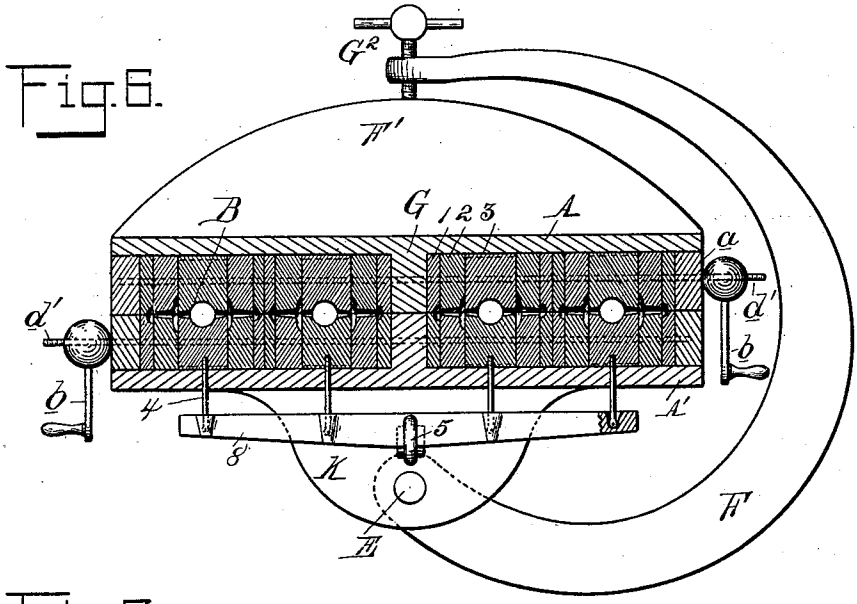


Fig. 7.

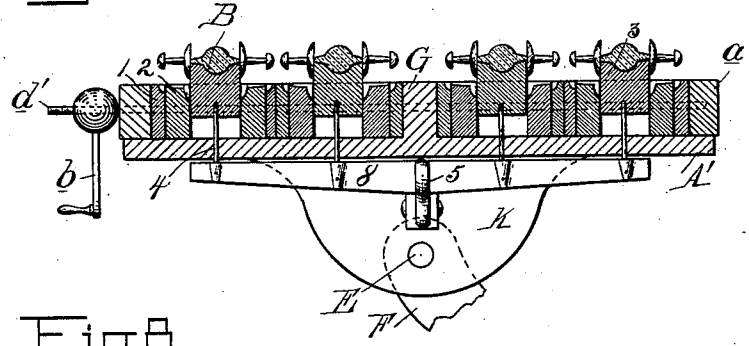
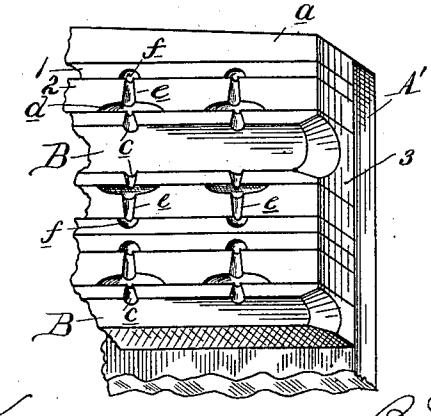


Fig. 8.



WITNESSES.

L. E. Flanders

Joseph A. Noelke

INVENTOR.

John S. Barnes,

By Bartlett & Bartlett

Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN S. BARNES, OF DETROIT, MICHIGAN.

MOLD FOR COLLAR-BUTTONS.

SPECIFICATION forming part of Letters Patent No. 700,606, dated May 20, 1902.

Application filed May 14, 1900. Serial No. 16,572. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. BARNES, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Molds for Collar-Buttons, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in molds for collar-buttons or other articles having an irregular outline; and it consists in providing a flask for holding the mold, which flask is in two parts, the drag being supported in an inclined position upon a rigid arm and the cope hinged to the drag at one end and provided with suitable clamps, and in providing molds for said flask formed of longitudinal strips or bars, each bar having a series of like depressions to form a mold for one part of a collar-button, the adjacent bars being each formed with a like series of depressions to form other parts of the button and bars longitudinally grooved to form gates and provided with lateral runners leading therefrom to conduct the molten metal into the molds proper; and its object is to provide a mold for casting a large number of small articles at one time, which is so constructed that it may be cheaply made and will readily release the articles when cast and to provide means for forcibly ejecting the articles from the molds when cast and also to provide certain other new and useful features, hereinafter more fully described, and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of the flask opened out and showing the inner faces of the mold. Fig. 2 is a side elevation of the flask when closed; Fig. 3, a section of the flask and molds on the line 3 3 of Fig. 2. Fig. 4 is an enlarged detail showing a portion of the molds in plan view. Fig. 5 is the same showing a mold for casting a modified form of button. Fig. 6 is an enlarged section on the line 6 6 of Fig. 1 of the flask and mold when closed. Fig. 7 is a like section on the same line of the drag of the flask and its half of the mold, illustrating the manner in which the cast articles are ejected therefrom. Fig. 8 is a perspective view of a portion of the drag and its half of the mold.

Like characters refer to like parts in all of the figures.

A and A′ are the castings, forming the flask for holding the bars 1, 2, and 3, which form the molds, the part A being the upper removable part or cope, which is hinged to the part A′ or drag at Z. The base D, which may be bolted to the floor or other suitable foundation, is provided with an upwardly-extending curved arm D′, the upper end of which is adjustably secured to the back of the drag A′ of the flask, and said flask is thereby rigidly supported in a position inclined from the perpendicular.

The cope A and drag A′ are each provided with a longitudinal rib G, and at each side of this rib are laid the bars 1, 2, and 3, said bars being provided with recesses or depressions and conjointly form the mold, the bars on the cope being the counterpart of those on the drag and when brought face to face by closing the flask form a complete mold for the reception of the molten metal. The bars 3 are provided with longitudinal semicircular grooves B, forming gates or conduits for the metal, and leading from the gates B are the lateral grooves or runners *c*, which taper to a small opening at the edge of the bar. The bars 2 are each provided with a series of recesses *d* at one side to form the mold for base of the button, and leading from these recesses are the tapered recesses *e*, which form the shank of the button, and a corresponding series of recesses *f* is provided in each of the bars 1 to form the head of the button. Each half of the mold is provided with four gate-bars 3, the gates being closed at their lower ends and made flaring at their upper ends, the upper end of the flask being also beveled to facilitate the pouring of the metal into the gates, and adjacent to each of the bars 3 are the bars 2, one at each side, with the recesses *d* in communication with the small openings of the runners *c*, the tapering recesses *e* each communicating with the recesses *f* in the bars 1, one of which bars lies adjacent to each bar 2, and thus each gate B communicates with two rows of molds, and eight rows of buttons are formed at each operation. To hold these

bars forming the molds in place, clamping-bars *a* are provided, which form the outer sides of the cope and drag, and a transverse opening is provided near the middle of these bars and also through the ribs G and mold-bars, through which openings extend the rods *d'*, said rods being secured at one end in one of the clamping-bars *a* and at their opposite ends screw-threaded and provided with a crank-handle *b*, having an internally-screw-threaded head to engage the outer surface of said clamping-bar and force said bars *a* toward each other to clamp the molds.

On the back of the drag A' are the lugs K, to which the curved clamping-arms F are pivoted at E, and on the cope A are the ribs F', adapted to be engaged by the clamping-screws G^2 on the ends of the said arms F. To the lugs K are pivoted levers 5, each of which levers is provided with a transverse bar 8, extending across the flask and formed with sockets in which the outer ends of pins 4 are pivoted, said pins being extended through the drag A' and provided on the inner ends with screw-threads to engage screw-threaded sockets in each of the bars 3. The opening in the bars 3, through which the rod *d'* passes, is extended laterally, as shown in Fig. 3, to allow the said bars to be moved outward, so that their inner faces will be above the surface of the mold.

To insure perfect alinement of the two halves of the flask, pins 6 are provided on the cope, adapted to engage openings 7 in the bed of the flask, said pins and openings being in the ribs G near their ends.

The operation of my device is as follows: The parts being in the position shown in Fig. 2, with the clamping-screws G^2 firmly pressing the halves of the flask together and the cranks *b* being turned to force and hold the bars of the mold firmly in contact, the molten metal is poured into the upper open ends of the gates B, and from them it flows laterally through the runners *c* into the recesses formed in the bars 2 and 1 to form the buttons. When the metal has cooled sufficiently, the clamping-screws G^2 are released and the arms F turned back out of the way. The crank *b* is then turned to allow the mold-bars in the cope A to spread apart, thus releasing the metal in that half of the mold, which half or cope is then removed by grasping the handle H and turning the cope on its pivot, leaving the metal all in the drag. To remove the buttons from the drag, the crank *b* is turned to allow the bars of the drag to move, loosening the buttons, and the levers 5 are depressed, thus forcing the pins 4 inward, which in turn move the bars 3 of the mold, projecting the face of each above the plane of the bars 1 and 2 and lifting the buttons from the molds, said buttons being still attached to the sprue, the sprue-bar lying in the gate B. If it is desired to make some other form of button, the bars 1 and 2 may be removed and others put in their places having recesses differently formed, as is shown in Fig. 5, a button having a round head being provided by changing the bar 2 only.

What I claim as my invention is—

1. In a two-part mold consisting of duplicate halves, a central longitudinal bar in each half in which are formed the gate and runners, bars in each half adjacent to said bar and having a series of recesses and grooves forming molds each connected with one of said runners, and means for clamping the two parts of the mold together.

2. In a two-part mold consisting of duplicate halves hinged together at one end, a series of sets of longitudinal mold-bars in each half, each set consisting of a central bar in which are formed a gate and runners, and bars at each side of said bar having a series of recesses forming molds, one opposite each of said runners, clamping-bars engaging the outer bars of each half of the mold, means for drawing said clamping-bars toward each other to clamp the mold-bars, and curved clamping-arms pivoted to one half of the mold and adapted to engage the other half to hold the faces of the mold in contact.

3. In a mold for irregular forms, a flask formed with a central longitudinal rib on the face of the cope portion thereof, and a corresponding rib on the drag; bars having recesses forming the molds, extending parallel with said ribs and at each side thereof; clamping-bars engaging the outer mold-bars and forming the sides of the cope and drag; rods secured to the clamping-bars at one side of said flask, extended through the mold-bars, the ribs, and the clamping-bars at the opposite side of the flask, and screw-threaded at their opposite ends; and crank-handles having internally-screw-threaded heads to receive the rods and engage the clamping-bars.

4. In a two-part mold, a series of longitudinal bars forming each half and provided with recesses forming the molds, and gate-bars longitudinally grooved to form gates and grooved laterally to form runners, a two-part flask to receive and hold said mold and gate bars, and pins extending through said flask and engaging said gate-bars to raise the same above the surface of the mold and eject the cast articles.

5. In a two-part mold, sets of longitudinal mold-bars forming each half of the mold, gate-bars longitudinally grooved to form gates adjacent to each set of mold-bars, a two-part flask adapted to receive said mold and gate bars, pins secured to the bottom of said gate-bars and extending through openings in the drag of the flask, a bar having recesses to receive the outer end of said pins, extending transversely across the drag, and levers pivoted to the drag to actuate said bars.

6. In a two-part mold, a flask consisting of a drag portion, means for rigidly supporting said drag in a position inclined from the vertical, a cope portion hinged to the drag at its lower end, clamping-bars on the cope and drag forming the sides of the flask and

provided with transverse openings, curved clamping-arms pivoted to the drag at one end and provided with clamping-screws at their opposite ends to engage ribs on the cope and hold the halves of the flask together, and a mold portion consisting of central longitudinal ribs provided with transverse openings, on the drag and cope, sets of bars at each side of said ribs consisting of a central gate-bar longitudinally grooved to form a gate and provided with an elongated transverse opening, and mold-bars at each side thereof provided with transverse openings, rods secured at one end within the openings in said clamping-bars at one side of the flask and extended through the said openings in said ribs, mold-bars, elongated openings in said gate-bars and the said openings in the clamping-bars at the opposite side of said flask, crank-handles on the outer ends of said rods, pins secured at one end to the gate-bars and extended through the drag, transverse bars having recesses to receive the outer ends of said pins, and levers pivoted to the drag and adapted to operate the said pins.

JOHN S. BARNES.

Witnesses:
HATTIAN BRUCE,
JNO. C. TOBIAS.