

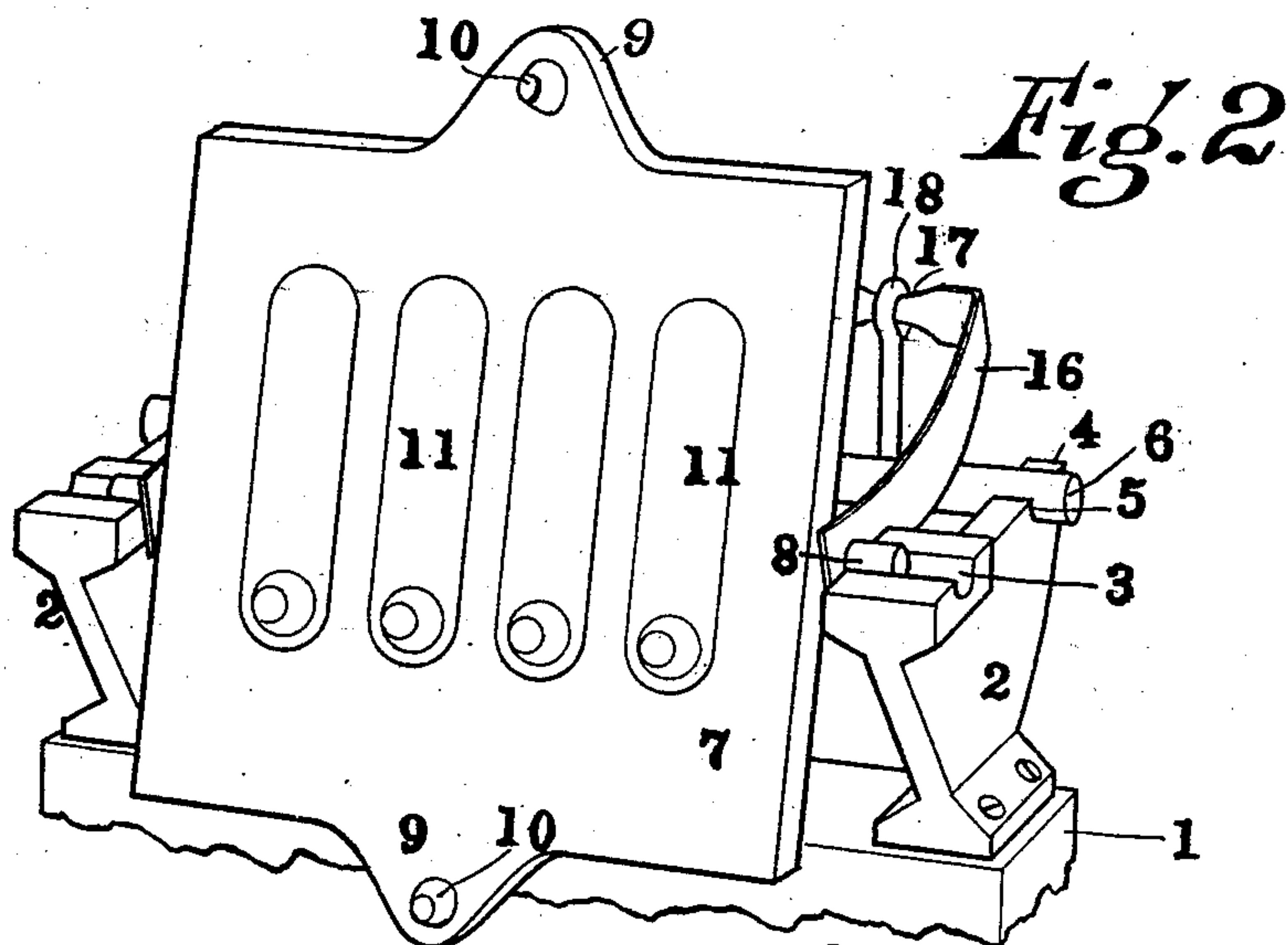
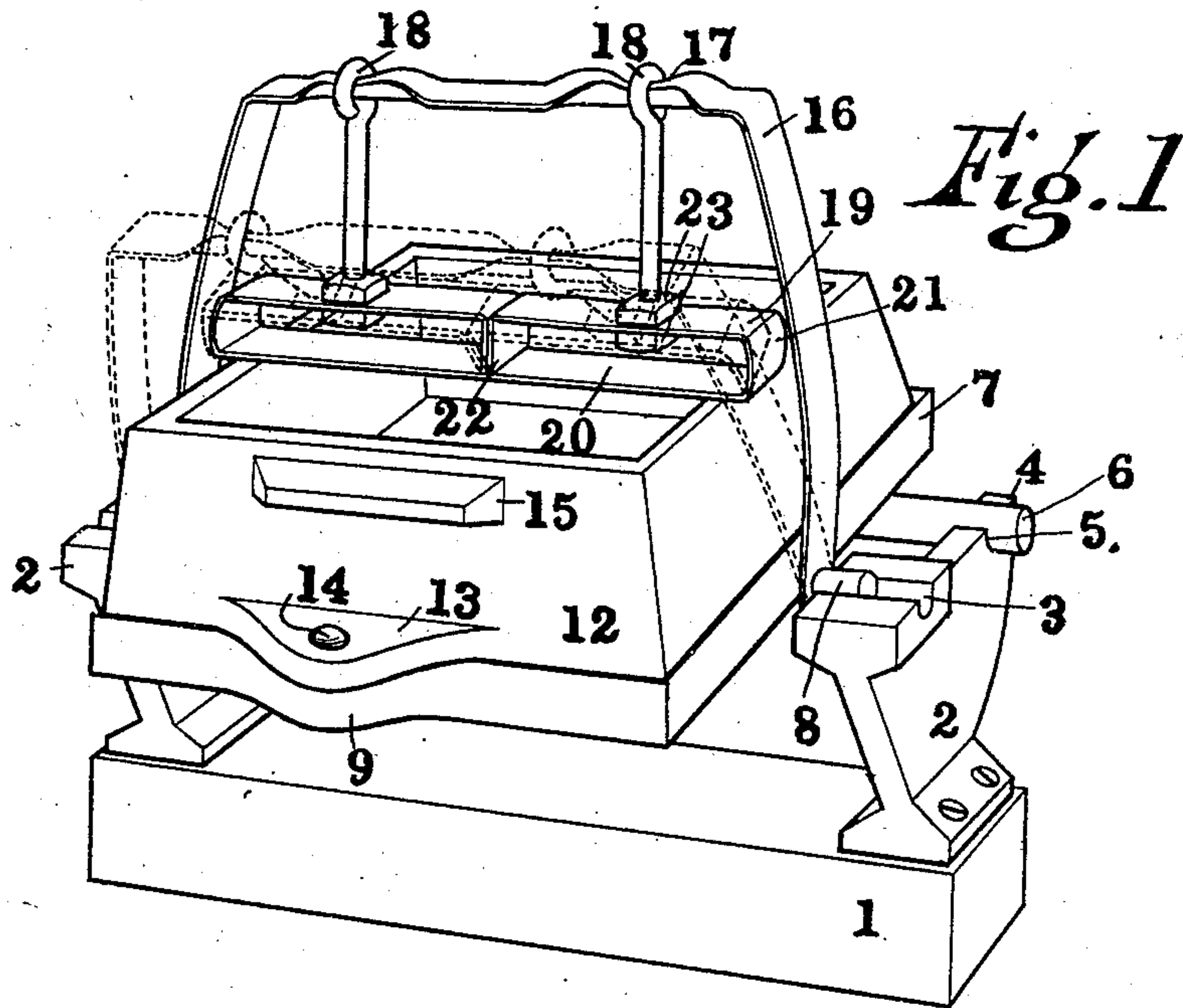
G. BAUER.

MOLD.

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*Witnesses:*  
*Evelyn Plinn,*  
*Glenara Fox*

INVENTOR-  
*George Bauer,*  
BY *C. E. Humphrey*  
ATTORNEY.



# UNITED STATES PATENT OFFICE.

GEORGE BAUER, OF AKRON, OHIO.

MOLD.

No. 912,528.

Specification of Letters Patent.

Patented Feb. 16, 1909.

Application filed September 3, 1908. Serial No. 451,528.

*To all whom it may concern:*

Be it known that I, GEORGE BAUER, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented new and useful Improvements in Molds, of which the following is a specification.

This invention relates to molding flasks and the object thereof is to provide a molding flask having suitable supports whereby the same, after casting, may be tilted to empty the contents therefrom, and also to provide new and improved means for quickly and securely uniting the cope to the drag, said means being of such construction that suitable pressure may be brought to bear upon the cope to hold it firmly upon the drag and yet be easily removable to enable the separation of the parts of the flask to permit removal of the cast articles therefrom.

With the foregoing and other objects in view, the invention consists in the novel construction, combination and arrangement of parts constituting the invention to be hereinafter specifically referred to and illustrated in the accompanying drawings which form a part hereof, wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings, in which similar reference numerals indicate like parts in the different figures: Figure 1 is a perspective view of a device embodying this invention with the clamp for holding the parts of the flask in operative position; and, Fig. 2 is a perspective view of the device showing the drag tilted to dump the cast articles therefrom.

Referring specifically to the drawings, 1 is a supporting bench on which are mounted a plurality of housings 2, 2, each provided near its upper front portion with a bearing 3 and with a rearwardly-extending portion 4 in which is a recess 5 to receive a bar or pipe 6 for a purpose to be later described.

The flask consists of a drag 7 provided with laterally-extending trunnions 8 positioned on the drag at a point in front of the center thereof so that the portion of the drag which is in the rear of the trunnions will outweigh the portion in front thereof and the flask be supported upon the pipe or bar

6. The drag 7 is provided with forwardly and rearwardly-extending lugs 9 from which project upwardly, dowel pins 10. The drag is also preferably provided with depressions 11 adapted to register and coöperate with suitable depressions in the mold sand carried by the cope to be hereinafter described.

Adapted to be mounted on the drag 7 is a cope 12 preferably in the form of a hollow truncated pyramid provided with projecting lugs 13 having openings 14 to receive the dowel pins 10 of the drag and also provided with handles 15 for convenience in manipulating the same. Pivotaly-mounted on the trunnions 8 is a spring bail 16 ordinarily constructed of a strip of flat material the side portions of which are preferably formed upon curvilinear lines for a purpose to be later described. The transverse portion of the bail is bent or pinched together at the points indicated by the reference numeral 17 to receive eye-bolts 18 which are bent thereabout and pivotaly-mounted thereon. The lower ends of the eye-bolts 18 are preferably threaded and are adapted to sustain a member 19 preferably constructed of a continuous strip of resilient sheet metal having a base portion 20 with lateral portions 21 and with the ends thereof extending inwardly parallel with the base portion and downwardly-turned at 22 in abutting relation with each other, the ends adapted to rest on the base portion 20. The eye-bolts 18 are adapted to pass through perforations in the upper portions of the member 19 and securely retain the same by means of lock nuts 23 carried by said eye-bolts 18 placed on both sides of this portion of the member 19 thereby clamping the same securely and adjustably in position thereon.

In operation the drag is placed in a horizontal position with the rear portion thereof resting upon the bar or pipe 6 and the bail 16 swung rearwardly and downwardly so as to leave unobstructed access thereto. The cope which has been previously placed over a pattern (not shown) and filled with sand properly tamped is then placed on the drag in such a position that the openings thereof will receive the dowel pins 10 of the drag thereby properly positioning the depressions or molds in the sand of the cope in registering relation with the depressions 11 of the drag. The bail 16 is then swung upwardly past the vertical central line of the trunnions into the position indicated in



dotted lines in Fig. 1 until the member 19 is positioned on the top of the cope immediately above the trunnions 8 and then the bail is swung slightly rearwardly until it is in vertical alinement with the trunnions 8 which causes a clamping action of the bail and bolts thereby forcing the cope downwardly into tight engagement with the drag. The clamping action of the bail 16 is due to the fact that the distance between the transverse portion of the bail 16 and the top of the cope is slightly less than the length of the bolts 18 and the thickness of the member 19 and as the bail 16 is composed of resilient material the swinging rearwardly of the same causes it to be distended or bent sufficiently to permit of the seating of the member 19. The parts just described are so adjusted that it is necessary to exert some force to cause the member 19 and bail to assume this position and as the sides of the bail are formed upon curvilinear lines a spring or resilient action of the same is permitted. It will also be noted, that, as the member 19 is composed of two parallel portions, each constructed of resilient material, a slight yielding of the parts of this member is permitted, under the influence of the downward pressure caused by the bolts 18 under the resilient action of the bail 16. After the molten metal has been cooled in the flask, the bail 16 is swung forward, as shown in dotted lines in Fig. 1, which releases the member 19 from engagement with the cope and the bail with its connected mechanism is then swung rearwardly, as shown in Fig. 2, which permits the free removal of the cope, leaving the sand and the cast articles reposing on the drag. The drag is then tilted forward into the position shown in Fig. 2 which empties it not only of the cast articles but of the sand. It will be noted that the trunnions 8 do not entirely fill the grooves or bar 3 in the housings 2 and this is done in order to permit the placement of the trunnions of an adjacent flask therein.

From the foregoing it will be seen that this device affords a remarkably quick-acting and easily manipulated mold flask for small articles, enabling the operator to use the drags almost uninterruptedly, as it will be seen that as quickly as the drag has been emptied, another cope filled with sand may be placed thereon and the clamping bail swung into position and the flask will be ready for use and this process may be kept up repeatedly and uninterruptedly as long as a sufficient supply of copes filled with sand having proper molds formed therein to correspond with the molds in the drag, are supplied.

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

1. A device of the class described comprising a housing provided with bearings

and further provided with a recess to support a bar, a bar mounted in said recess constituting an abutment, a flask consisting of a drag provided with oppositely-disposed laterally-extending trunnions adapted to be mounted in said bearings, said trunnions positioned at one side of the vertical center of said drag, the major portion of said drag adapted to rest on said abutment and a spring clamp pivotally-mounted on said trunnions adapted to temporarily hold a cope in operative engagement with said drag.

2. A device of the class described comprising a housing provided with bearings and a recess, said recess adapted to sustain a bar constituting an abutment, a flask comprising a drag provided with oppositely-disposed trunnions positioned to one side of the vertical center thereof, the major portion of said drag adapted to rest on said abutment, a cope adapted to be positioned on said drag, a clamp having the ends thereof pivotally-mounted on said trunnions and also provided with a transverse portion extending above said cope, a pair of members provided with looped upper ends surrounding the transverse portion of said clamp, and a resilient member carried by said looped members adapted to be sprung into operative engagement with the upper face of said cope for temporarily forcing the same into operative engagement with said drag.

3. A device of the class described comprising a housing provided with a bearing and a recess to receive a bar constituting an abutment, a flask comprising a drag provided with oppositely-disposed laterally-extending trunnions of such a length as to partially fill the bearings in said housing whereby a space is left therein for the trunnion of a juxtapositioned drag, a cope adapted to be mounted on said drag, a clamping member comprising a pair of resilient arms pivotally-mounted on said trunnions, said arms united by a transverse portion extending above said cope, bolts pivotally mounted on said transverse portion and a resilient member adapted to engage the upper face of said cope secured on said bolts for temporarily holding said members in position on said drag, said clamping member adapted to be rocked for disengaging said resilient member from engagement with said cope to permit the removal thereof.

4. A device of the class described comprising a housing provided with bearings and further provided with means to support a bar, a bar mounted on said housing constituting an abutment, a flask embodying a drag provided with oppositely-disposed laterally-extending trunnions adapted to be mounted in said bearings, said trunnions positioned at one side of the vertical center



of said drag, the major portion of said drag adapted to rest on said abutment and a spring clamp pivotally-mounted on said drag adapted to temporarily hold a cope in operative engagement with said drag.

5 5. The combination of a device of the class described, of a housing provided with bearings, a member carried by said housing constituting an abutment, a flask embodying a drag provided with oppositely-disposed laterally-extending trunnions adapted to be mounted in said bearings, said trunnions positioned to one side of the vertical center of said drag, the major portion of said drag adapted to rest on said abutment, a cope arranged to be positioned on said drag and a spring clamp consisting of a pair of approximately parallel arms pivotally-mounted on said drag and having a transverse member extending between said arms provided with means for resiliently-engaging said cope for temporarily holding the latter in engagement with said drag.

20 6. The combination in a device of the class described, of a housing provided with bearings, a member carried by said housing adapted to constitute an abutment, a flask embodying a drag provided with oppositely-disposed laterally-extending trunnions adapted to be mounted in said bearings, said trunnions positioned to one side of the vertical center of said drag, the major por-

tion of said drag adapted to rest on said abutment, a cope adapted to be temporarily positioned on said drag, a spring clamp 35 consisting of two upwardly-extending members pivotally-mounted on said drag united at their outer ends by a transverse portion and a resilient member carried by said transverse portion adapted to temporarily secure said cope in position on said drag. 40

7. The combination in a device of the class described, of a housing provided with bearings, a flask embodying a drag provided with oppositely-disposed laterally-extending 45 trunnions adapted to be mounted in said bearings, a cope adapted to be positioned on said drag, a spring clamp comprising a bail the ends of which are pivotally-mounted on said drag and of such a length that the transverse portion of said bail will clear the edges of said drag when swung in one direction and a resilient member pivotally-carried by the transverse portion of said bail adapted to be sprung into operative en- 50 gagement with said cope for holding the latter in position on said drag. 55

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE BAUER.

Witnesses:

C. E. HUMPHREY,  
GLENARA FOX.