

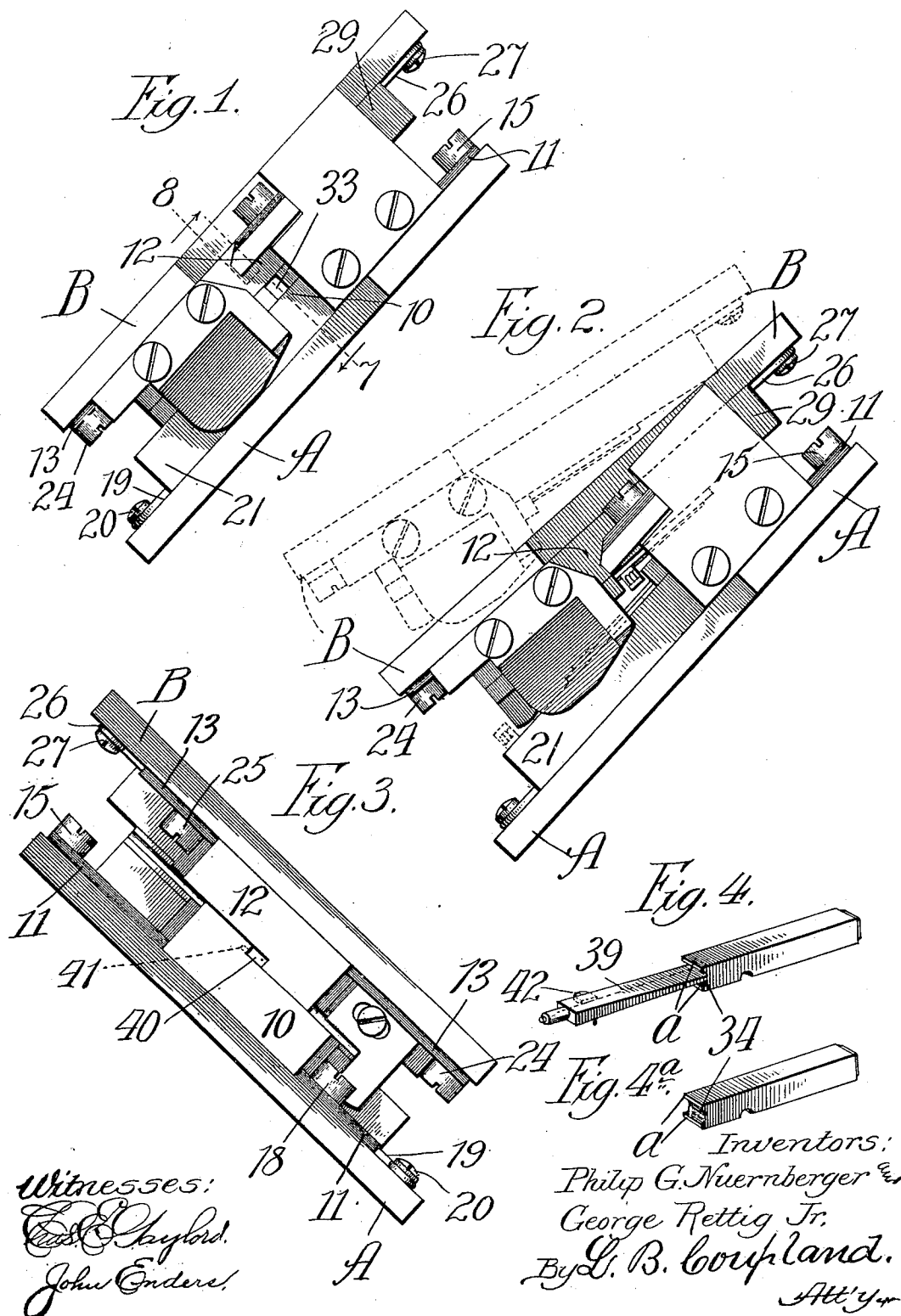
No. 830,358

PATENTED SEPT. 4, 1906.

P. G. NUERNBERGER & G. RETTIG, JR.
TYPE CASTING MOLD.

APPLICATION FILED MAY 15, 1905.

2 SHEETS—SHEET 1.



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No. 830,358.

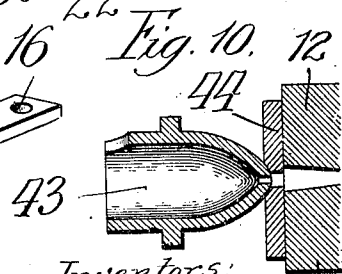
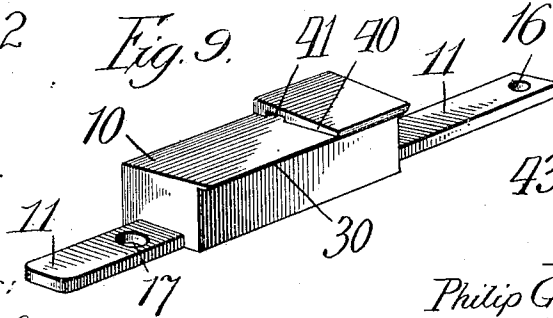
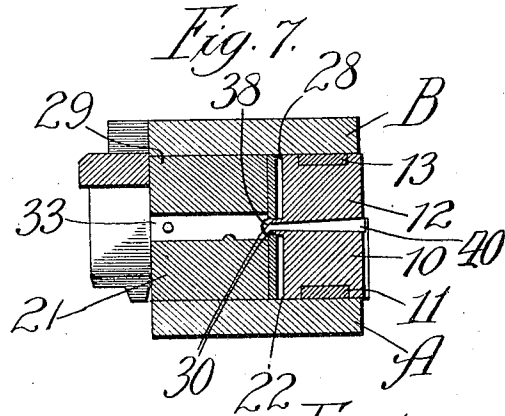
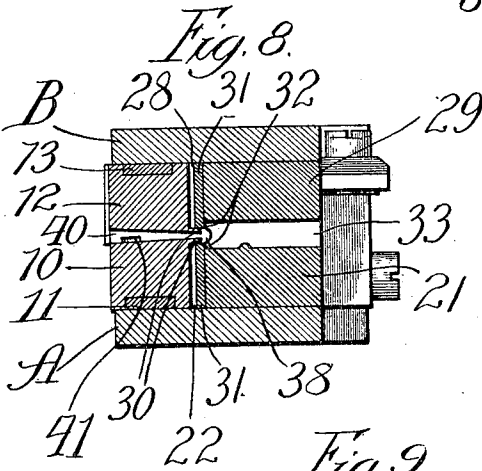
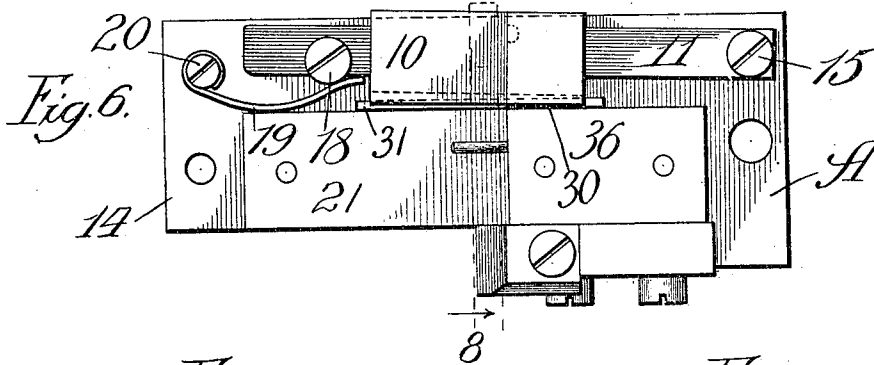
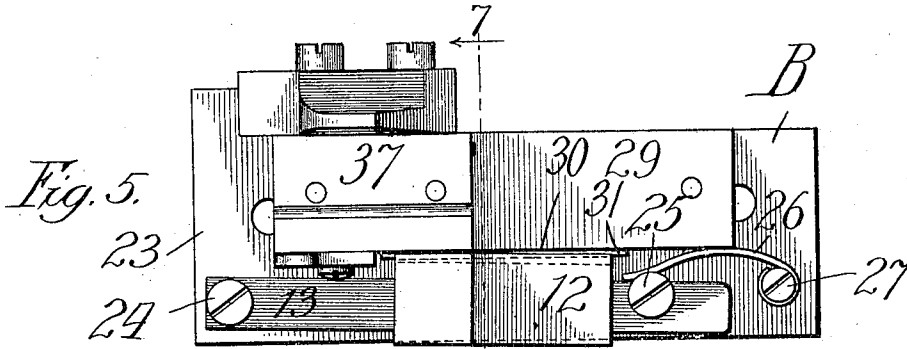
PATENTED SEPT. 4, 1906.

P. G. NUERNBERGER & G. RETTIG, JR.

TYPE CASTING MOLD.

APPLICATION FILED MAY 16, 1905.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

PHILIP G. NUERNBERGER AND GEORGE RETTIG, JR., OF CHICAGO,
ILLINOIS.

TYPE-CASTING MOLD.

No. 830,358.

Specification of Letters Patent.

Patented Sept. 4, 1906.

Application filed May 15, 1905. Serial No. 260,581.

To all whom it may concern:

Be it known that we, PHILIP G. NUERNBERGER and GEORGE RETTIG, Jr., citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Type-Casting Molds, of which the following is a specification.

This invention relates to improvements in molds for casting type, and has for its object to provide a mold embracing means whereby the type are cast and the "jet" separated therefrom in such a manner as to be discharged from the mold a finished product ready for use.

In connection with this improvement reference is made to a pending application, filed April 22, 1905, Serial No. 256,930.

The improvement set forth in this application relates mainly to the means employed in effecting the breaking-off movement of the jet parts and which is different from the means set forth in the application herein referred to.

In the drawings, Figure 1 is a front elevation showing the two mold members in their closed position. Fig. 2 is a similar view showing the mold partly open, the wide-open position being indicated in dotted lines. Fig. 3 is a rear side elevation of the mold in a closed position. Fig. 4 is a view in perspective of a type and jet attached thereto. Fig. 4^a is a view in perspective of a type-body, the jet being broken off. Fig. 5 is an opened-out view of the upper mold member looking at the inside. Fig. 6 is a similar view of the lower member. Fig. 7 is a transverse section of the complete mold on line 7, Fig. 5. Fig. 8 is a transverse section of the complete mold on line 8, Fig. 6. Fig. 9 is a detached view in perspective of one of the jet parts of the mold; and Fig. 10 is a sectional detail showing the relative position of the nipple-plate, the nipple or spout, and the jet parts when the mold is in position to receive a charge of metal.

A may represent the lower member of the mold, and B the upper member. Generally the mold members will be of the usual construction, so that the description will be limited to the improved features and the parts effected thereby. It will be understood that the molds are used in connection with the

ordinary type-casting machine in the same manner common to this class of devices except as to the new features. In the present instance the jet parts or ingate members of each mold member do not occupy a stationary position or form a rigid part of the respective upper and lower mold members, but have an independent movable automatic action in breaking off the jet or refuse bit of metal filling the ingate port or passage and adhering to the base or foot of the type.

The jet part 10 in the lower mold member A is rigidly mounted on a lever or bar 11, and the jet part 12 in the upper mold member is rigidly mounted on a companion lever 13, as shown in Figs. 5 and 6. The pivot end of lever 11 is secured to the bottom mold-plate 14 by a pivot-screw 15, inserted through a hole 16. (Shown in Fig. 9.) The opposite free end of this lever is provided with a slot-aperture 17, elongated transversely. A retaining-screw 18 is inserted through this slot and rigidly secured in the mold-plate 14. By this arrangement the free end of lever 11 and the jet part 10 carried thereby are capable of a slight lateral movement in the arc of a circle and within the limit fixed by the slot 17.

One end of a spring 19 is secured to the mold-plate 14 by a screw 20. The opposite free end of this spring bears against the adjacent free end of lever 11 and normally holds the same and the jet part mounted thereon in the outermost position. (Shown in Figs. 6, 7, and 8.) In this normal position the jet part 10 stands away from the mold-carriage part 21 and is separated therefrom by a space 22, as best shown in Figs. 7 and 8.

The pivot end of lever 13, carrying the jet part 12, Fig. 5, is secured to the top mold-plate 23 of mold member B by a pivot-screw 24. The opposite free end of this lever is provided with a slot (not shown) corresponding to slot 17 in the companion lever 11 and through which is inserted a retaining-screw 25, and thus provides for the slight lateral movement described in connection with the jet part 10 and its lever 11. One end of a spring 26 is secured to the top mold-plate by a pivot-screw 27, the opposite free end bearing against the adjacent free end of lever 13 and holds the same in its outer normal position and leaving a space 28 between the jet part 12 and the mold-carriage part 29.

The companion upper and lower jet parts are each provided on their inner adjacent edges with an overhanging lip or flange 30, as best shown in Figs. 7, 8, and 9. Each of the carriage parts 21 and 29 has a plate 31 rigidly secured to the inner edges thereof. The adjacent edges of these plates 31 project past the walls to which they are secured and form a shoulder or dam 32. When the jet parts are moved inward to their abnormal position, the overhanging flanges 30 extend over the edges of the shoulders 32 and project just far enough into the mold or type chamber 33 to core out a groove or depression 34, Figs. 4 and 4^a, in the base or foot of the type-body 35. The respective inner edges or vertical walls of the body parts 36 and 37 of the upper and lower mold members are provided with a groove 38, Figs. 7 and 8, into which the edges of the overhanging flanges enter when the jet parts are moved inward to their abnormal or casting position, and thus permit of the flanges projecting into the mold-chamber to have the coring-out action in locating the casting and breaking off junction of the jet 39 with the type in the bottom of the groove away from the base or foot of the type and leaving a perfectly level finished end to stand on when discharged from the mold.

The lower jet part, Fig. 9, is provided in the ingate-port 40 with a recess 41, into which a bit of metal from each injection will flow and form a retaining-tongue 42 on the jet and hold the same in place until broken away from the type by the outward movement of the jet parts.

It will be noted that the free ends of companion levers 11 and 13, carrying the jet parts, are located at opposite ends of the mold to equalize the movement of these parts and insure the jet parts being brought up squarely against the mold-carriage when forced inward by contact with the nipple-plate.

When the charge of metal is injected into the mold, it flows in between the overhanging flanges or lips on the jet parts and back against the shoulders 32, formed by the overlapping edges of plates 31. In this way the in-extending edges of the flanges 30 on the jet parts form the groove or depression in the base of the type and the shoulders 32 the finished level base or foot *a*, on which the type stands.

As before stated, the normal or open position of the jet parts mounted on levers 11 and 13 is away from the carriage parts. In practical working when the mold moves up to receive a charge of metal through the nipple or spout 43, Fig. 10, the slightly-projecting jet parts will come in contact with the face of the nipple-plate 44 and be closed inward against the pressure of their respective springs to the casting position before the

charge of metal enters. As the mold moves away and the pressure of the nipple-plate is relaxed the jet parts are forced outward by the action of the springs and the jet broken off before the mold opens, the jet and type being then discharged from the mold in the usual manner.

The two complementary jet parts 10 and 12 constitute a gate forced inward against the resistance of their springs 19 and 26 by the metal-supplying device against which the mold moves at or just prior to the time of casting and automatically forced outward by said springs to break the jet at the time of withdrawal. The movement of said jet parts both ways is in parallel planes and is pivotal by reason of the pivoting of their levers 11 and 13 at 15 and 24. The screws 18 and 25 act as stops limiting such motion. This motion is more effective than a straight pull in breaking the jet when the springs force out the free ends of the levers, and so move the gate away from the mold-cavity. The said jet parts constituting said gate remain throughout the same relative positions and distance, being arranged to be moved equally in the manner described toward and from the mold without their planes of motion approaching or receding from each other. The jet-forming recess formed between them communicates with the mold-cavity when the gate and mold are in contact for casting; but neither part of the gate is a part of the mold or connected in any way to the metal-supplying device.

Having thus described our invention, what we claim is—

1. A type-casting mold provided with a gate, consisting of two complementary jet parts, having a jet-forming recess communicating with the mold-cavity, each of said jet parts being mounted for pivotal motion toward and from said cavity.

2. A type-casting mold, provided with a gate, consisting of two complementary jet parts, having a jet-forming recess communicating with the mold-cavity, each of the said jet parts being mounted for pivotal motion and operating substantially as set forth.

3. In combination with the mold members of a type-casting mold, a pair of jet parts correspondingly and pivotally arranged on said members, in combination with means for automatically turning the said parts outwardly on their pivots and thereby breaking the jet substantially as set forth.

4. In combination with the mold members of a type-casting mold, an inwardly and outwardly movable gate consisting of complementary parts pivotally arranged and moving in parallel planes, in combination with springs for automatically turning the said parts outwardly on their pivots to break the jet and with means for limiting the pivotal movement substantially as set forth.

5. In a type-casting mold, movable jet parts, the companion movement-levers on which the same are mounted, said levers being pivoted in place at one end, the opposite ends having a limited free movement.

6. In a type-casting mold, movable jet parts, the companion levers on which the same are mounted, means for moving said levers and jet parts to their normal open po-

sition and means for returning the same to their closed casting position.

In testimony whereof we affix our signatures in presence of two subscribing witnesses.

PHILIP G. NUERNBERGER.

GEORGE RETTIG, JR.

Witnesses:

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G. E. CHURCH.