



# UNITED STATES PATENT OFFICE.

GEORGE H. ZIEGLER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE AMERICAN TYPE FOUNDERS COMPANY, OF NEWARK, NEW JERSEY.

## TYPE-CASTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 523,256, dated July 17, 1894.

Application filed January 9, 1893. Serial No. 457,856. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE H. ZIEGLER, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Type-Casting Machines, of which the following is a specification.

My invention relates to improvements on the casting machine, for which application for Letters Patent was filed by me on June 25, 1892, Serial No. 437,946.

The object of my invention is to so construct the parts that accuracy of fit is insured and adjustments readily made.

In the accompanying drawings:—Figure 1, is a longitudinal sectional view of the machine. Figs. 2 and 3, are detail views of the body piece joint. Fig. 4, is a sectional view of the side slide block joint; and Fig. 5, is a detached perspective view of the slide block and head.

A is the base of the machine on which is mounted a table B, to which is secured the mold D and the platform G.

C is the driving shaft on which are two cams  $c'$ ,  $c''$ . These cams act on arms secured to a bar  $E^3$  which is connected to the body piece E in the following manner: On the body piece is a striker plate  $E'$  in which is screwed one half of a socket for the reception of a ball  $E^2$ , and adapted to screw threads in this socket is a cap  $e$  in which is formed the other half of the socket, and this cap is screwed down on the ball so as to form a neat joint, and on the screw threaded portion of the cap is a jam nut  $e'$ , so that the cap can be locked after adjustment. Passing through the ball is a pin  $E^4$  which is tapped into the bar  $E^3$ , as clearly shown in Fig. 1. Thus the body piece E will accommodate itself to the mold, and irregular cutting of the mold or body piece by friction is prevented. Further, any irregular movement of the bar will not be communicated to the body piece, as it will be understood that the body piece must fit the mold accurately, and be perfectly free to move therein, otherwise there would be a jam and the parts would not register correctly.

The sliding side block F is connected to a bar  $F'$  which is attached to a head  $F^2$  by a

confining screw  $f$ . On each side of the head are flanges  $f'$  forming a pocket for the reception of the bar  $F'$ , and in these flanges are set screws  $f^3$  which bear against the edges of the bar  $F'$  so as to laterally adjust the bar on the head and to throw the side block to or from the apron  $D'$ .

In the lower end of the head  $F^2$  is a socket  $F^3$  for the reception of the ball H, and screwed into the head is a cap  $H'$ , and on the screw threaded portion of the cap is a jam nut  $h$  so as to lock the cap in an adjusted position.

The end of the arm I passes through the ball, and is screw threaded, and upon this threaded portion of the arm are two adjusting nuts  $i$ ,  $i'$ , and between the nut  $i$  and a disk  $d^3$  is a spring  $i^2$ , so that the head can give to accommodate the mold, and the tension of the spring can be regulated as well as the position of the head, by adjusting the nuts on the arm. The adjoining faces of the cap  $H'$  and the washer  $d^3$  are rounded, as are also the adjoining faces of the socket and nut  $i'$ , so as to allow the ball joint to work freely.

The arm I is secured to a rock shaft  $I'$  on which is an arm  $I^2$  having forked ends, as shown by dotted lines in Fig. 1, and in the forked ends of the arms are screw rods against which acts the cam  $C'$  on the shaft C, so that a vertical reciprocating motion is imparted to the block F. At the same time, the block can accommodate itself to the mold, and a fit is always insured between the block and the mold and its apron.

The back of the bar  $F'$  is beveled both vertically and laterally, as shown in Fig. 5, and the end of the platform G is beveled to correspond, so that the block is forced not only against the mold, but also against its apron. This construction is claimed in the application, Serial No. 437,946, noted above. The platform G is vertically adjustable in respect to the table, so that it will align with the mold, and in the table in the present instance, are two screw threaded openings  $b$ , and adapted to these threaded openings in the table are screw threaded sleeves K, and each of these sleeves has a head  $k$  having one or more pin

openings for the reception of a turning pin. By turning the sleeves in the table, the platform can be raised or lowered.

15 Passing through each sleeve K is a bolt L, having a head *l*, which rests against the under side of the table, the screw threaded portion of the bolt passing into the platform, as clearly shown in Fig. 1. After the platform is vertically adjusted by the sleeves, the bolts  
20 are screwed tight, clamping the platform rigidly to the sleeve, and the sleeve to the table, thus any vertical adjustment can be made, and the table can be locked in the adjusted position.

15 At the side of the machine is the melting pot P provided with a pump, and having a nozzle in line with the mold and through which is projected the molten type metal.

20 By the arrangement described, the parts are more quickly and accurately adjusted, and accuracy of fit is insured, as it must be borne in mind that the action of the parts is very quick, and the parts are hot during the operation, therefore the machine must be  
25 accurately made and adjusted, to allow for the difference in temperature and the wear and tear upon the machine.

It will be understood that my invention is applicable for casting spaces and quads, as  
30 well as type.

I claim as my invention—

1. The combination in a type casting machine, of the mold, the body piece adapted to reciprocate therein, a bar, mechanism for reciprocating said bar, a socket in the body  
35 piece, a ball adapted to the socket, an adjustable cap for said socket, a jam nut for locking said cap after adjustment, and a pin passing through the ball and secured to the bar, substantially as described.  
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2. The combination in a type casting machine, of the mold, a body piece, mechanism for actuating said body piece, the side block, a carrier therefor, an adjustable socket and  
45 an adjustable cap adapted to said carrier, a ball mounted between the cap and socket, an operating arm adapted to an opening in the ball, mechanism for moving the arm, substantially as described.

50 3. The combination in a type casting machine, of the mold, the side block, the bar F' carrying said block, a head F<sup>2</sup> to which the bar is attached, and in which it is laterally adjustable, a socket in said head, a ball  
55 adapted to said socket, an arm passing through said ball, and mechanism for mov-

ing said arm so as to raise and lower the block, substantially as described.

4. The combination, in a type casting machine, of the mold, the side sliding block, a  
60 bar to which the block is attached, a head in which the said bar is laterally adjustable, and an arm to which the head is connected, with mechanism for operating said arm, so as to raise and lower the block, substantially as  
65 described.

5. The combination in a type casting machine, of the mold, the side sliding block, carrier therefor, screw sockets in said carrier, a ball adjusted to the sockets, an arm passing  
70 through an opening in the ball, screw threads on said arm, with adjusting nuts on the threaded portions of the arm and situated one on each side of the carrier, substantially as described.  
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6. The combination in a type casting machine, of the mold, the side sliding block, and carrier for said block, a socket in said carrier, a ball adapted to said socket, an arm passing  
80 through the ball, screw threads on said arm, nuts mounted on the screw threaded portion of the arm and on each side of the carrier, with a spring between the carrier and one of said nuts, substantially as described.

7. The combination in a type casting machine, of the body piece, the sliding side block, a table and vertically adjustable platform on  
85 said table, one or more screw threaded sleeves adapted to openings in the table, and resting against the under side of the platform, with  
90 bolts passing through the sleeves and into the platform, and having heads bearing against the under side of the table, substantially as described.

8. The combination in a type casting machine, of the mold, the table, a vertically adjustable platform mounted on the table, said  
95 table having screw threaded openings, screw sleeves adapted to said openings, heads on said sleeves resting against the under side of  
100 the platform, openings in said heads for an adjusting tool, and headed bolts passing through the sleeves and tapped into the platform, the heads of said bolts resting against the under  
105 side of the table, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE H. ZIEGLER.

Witnesses:

HENRY HOWSON,  
JOSEPH H. KLEIN.