(No Model.)

T. McKINLEY.

INJECTOR FOR TYPE CASTING MACHINES.

No. 268,513. Patented Dec. 5, 1882.

Fig. 1.

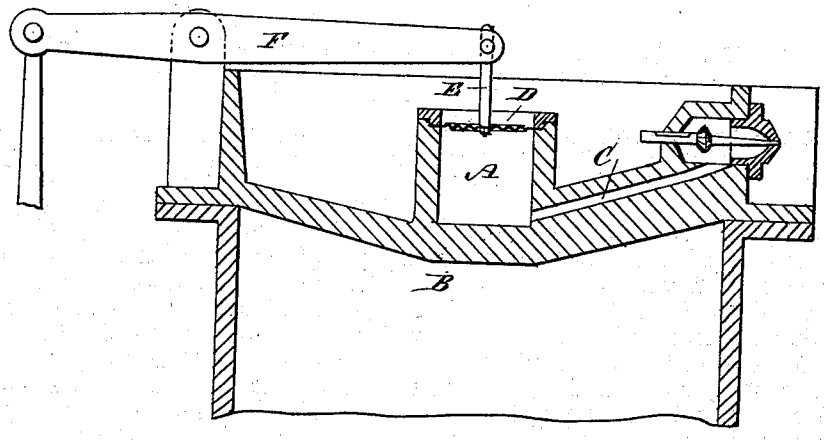


Fig. 2.

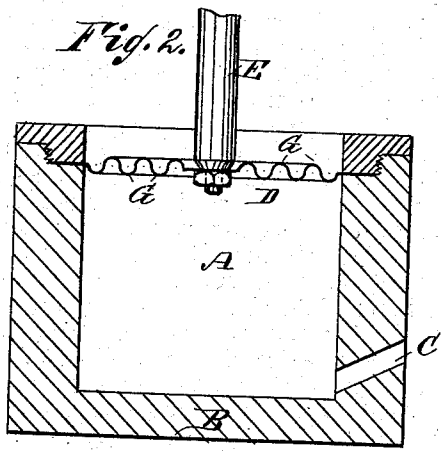


Fig. 3.

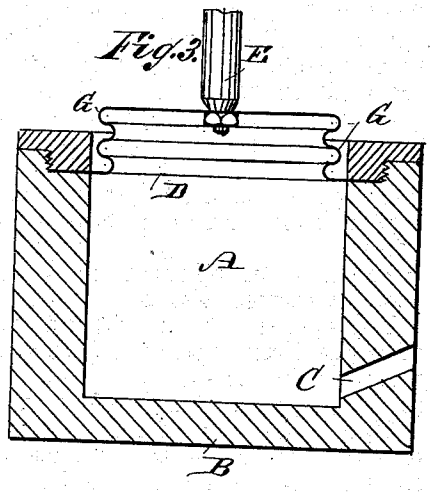
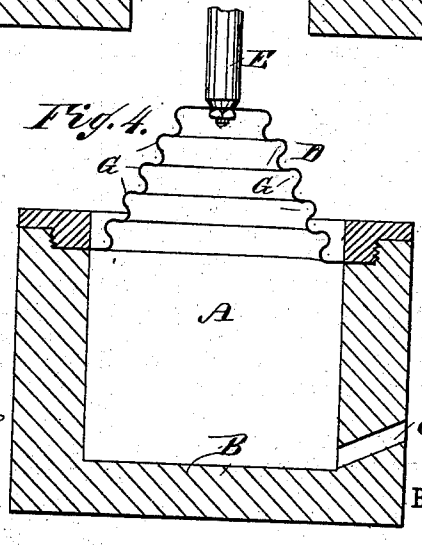


Fig. 4.



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UNITED STATES PATENT OFFICE.

THOMAS McKINLEY, OF NEW YORK, N. Y.

INJECTOR FOR TYPE-CASTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 268,513, dated December 5, 1882.

Application filed March 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, THOMAS MCKINLEY, of the city, county, and State of New York, have invented a new and Improved Injector for Type-Casting Machines, of which the following is a full, clear, and exact description.

The type casting machines made heretofore have been constructed with an iron cylinder or well in which a plunger works. It is very difficult to fit the plunger so accurately that it will work well in the cylinder, and as the cylinder is heated the plunger will be too large or too small, and the plunger will be packed and jammed in the cylinder, or it will be so loose that the molten metal will escape between the plunger and the cylinder, and there will not be sufficient pressure to force the molten metal into the molds to produce type of uniform solidity.

The object of my invention is to avoid the above-mentioned defects.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal sectional elevation of my improved injector for type-casting machines. Fig. 2 is a detail sectional elevation of the well or cylinder and diaphragm. Figs. 3 and 4 are cross-sectional elevations of the same, showing modifications of the diaphragm.

The cylinder or well A, of the usual construction, is secured on a plate, B, resting above a fire-box, and in this plate a channel, C, leads from the bottom of the well or cylinder A to the type-casting mold, through which channel the molten metal must be injected into the molds. A diaphragm, D, made of sheet metal, is secured on the upper edge of the cylinder A, and is provided at its center with an upwardly-projecting rod, E, the upper end of which is pivoted to a pivoted lever, F, which is worked up and down or rocked by means of a cam or some other suitable device. The diaphragm D is provided with a series of corrugations, G, as shown in Figs. 1 and 2; or the corrugations G may be arranged at the edges of the diaphragm, the middle portion of which is made flat, as shown in Fig. 3; or the diaphragm can be made conical and the sides of the cone provided with the corrugations, as shown in Fig. 4. If the diaphragm is raised, a vacuum will be formed in the cylinder A, and molten type-metal will pass from the reservoir on the plate B through the channel C into cylinder A. When the diaphragm is depressed the air in the cylinder is compressed, and the metal is forced through the channel C into the mold. The outer end of the channel C is provided with an automatic valve of the usual construction. The pressure on the molten metal will always be the same for each descent of the diaphragm, and the types will have uniform solidity. The heat required to keep the metal in a molten state will not affect the diaphragm, and the injector will not require adjustment or packing, and is not apt to get out of order.

If desired, a double diaphragm may be used in place of the single diaphragm.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a type-casting machine, the combination, with the pump-cylinder or other formed box serving the same purpose, of a sheet-metal diaphragm closely secured at its edges to said cylinder or box, and admitting of sufficient vibration of its area within said edges to act as a piston to draw in and expel the amount of metal required by means of a suitable handle or piston-rod attached to its center, as shown and described.

THOMAS MCKINLEY.

Witnesses:

OSCAR F. GUNZ,

C. SEDGWICK.