

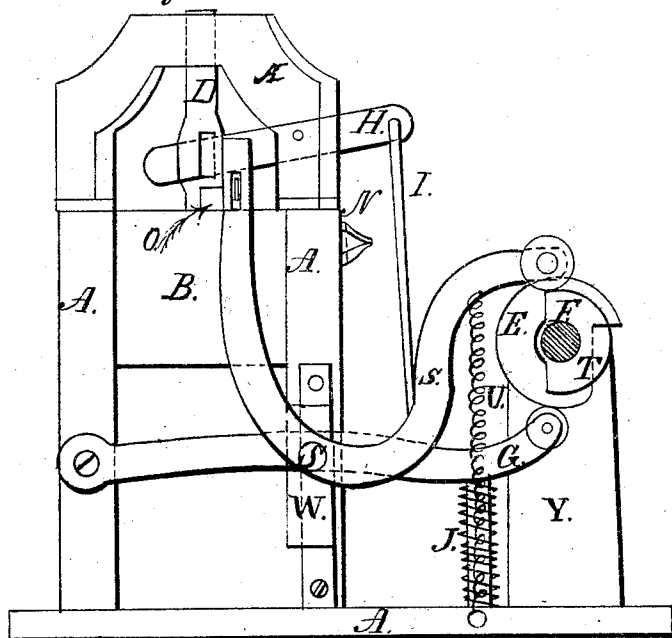
*J. I. Sturgis. Sheet 1. 2. Sheets.*

*Casting Type*

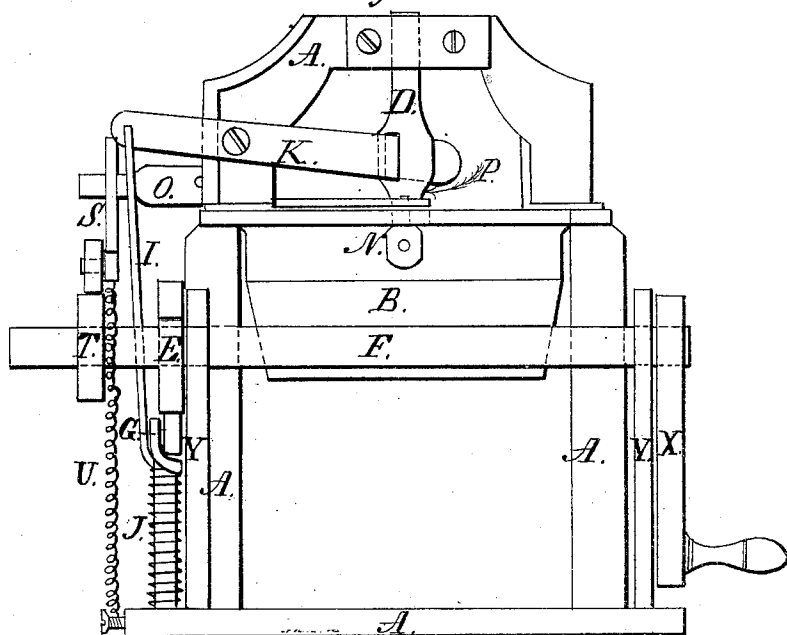
*Nº 6243*

*Patented Mar. 27. 1849.*

*Fig. 1.*



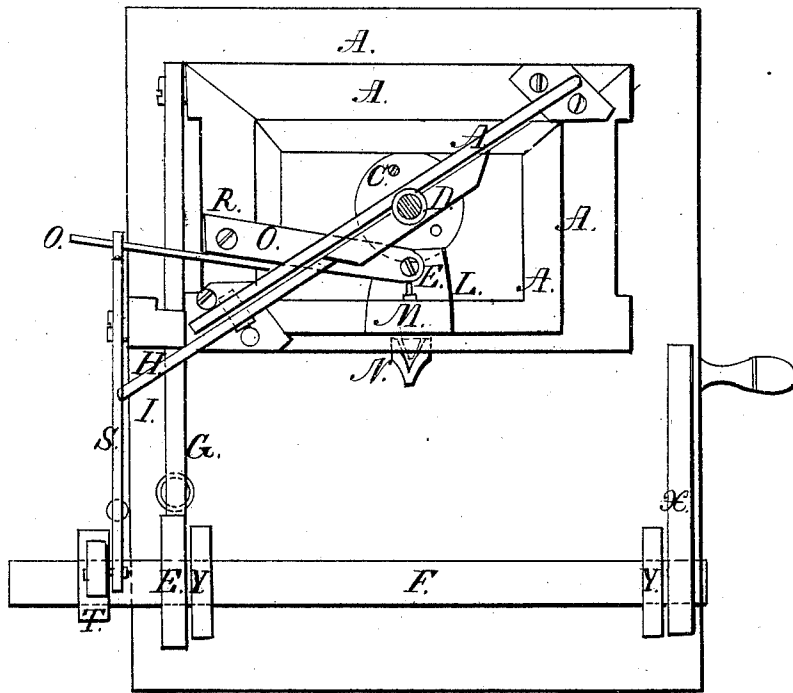
*Fig. 2.*



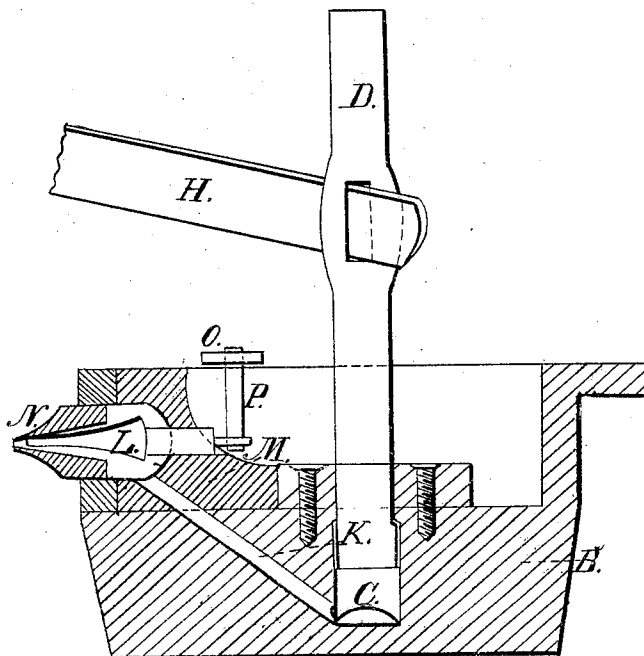
*J. I. Sturgis: Sheet 2 of 2 Sheets*  
*Casting Type.*

*Nº 6243. Patented Mar. 27. 1849.*

*Fig. 3.*



*Fig. 4.*



# UNITED STATES PATENT OFFICE.

JOHN I. STURGIS, OF NEW YORK, N. Y.

## IMPROVEMENT IN TYPE-CASTING MACHINES.

Specification forming part of Letters Patent No. 6,243, dated March 27, 1849; antedated September 27, 1848.

### *To all whom it may concern:*

Be it known that I, JOHN I. STURGIS, of the city, county, and State of New York, have invented a new and useful Improvement in Type-Casting Machines; and I do hereby declare the following to be a full description of the same.

The nature of my invention consists in combining with the nipple of a type-casting machine a conical plug or piston valve, which plug-valve, by means of an arrangement of levers attached to the frame of the machine and connected with the plug-stem and a cam on the driving-shaft, works within a chamber-box forming the back part of the nipple on the inside of the bath.

To describe more particularly my invention I will refer to the accompanying drawings.

Figures 1, 2, 3, and 4 are several views of a type-casting machine having the matrix removed as immaterial to the showing of my invention, the same letters, wherever they occur, having reference to the same parts.

Letters A A, &c., are the bottom board or plate and frame of a type-casting machine; B B, &c., the type-metal bath arranged between the parts of the frame, underneath which the furnace is placed for fusing the metal. In the bath is a well, C C, &c., into which a plunger, D D, works by means of a cam-wheel, E E, on the driving-shaft F, and the levers G and H, as connected together by the rod I, and the spiral spring J, underneath the lever G, for reacting the levers and plunger and ejecting the metal through the canal K and nipple-vent to the matrix when the conical plug or piston valve L has been withdrawn from it. This conical plug or piston-valve is about one inch long, (though it may be made of any required form and size,) and is made to work inside the nipple-chamber formed within the metal bath by combining the chamber-box M with or against the inner side of the bath and the back end of the nipple N. At the lower side of the nipple-chamber is a passage-way or duct, K, leading to the well, and at the back of the chamber another passage-way for the stem of the conical plug to pass through and for the admission of the fused type-metal for charging the well. This opening is a little larger than the stem of the plug, but not as large as the head of the conical plug; there-

fore when the plug is drawn back from the vent of the nipple, so as to allow the ejection of the metal from the well to the matrix, it forms a seat on the passage-way and completely cuts off all ingress of metal to the chamber until the charge from the well has been expelled. To work this conical plug-valve L the stem of it extends beyond the chamber-box and connects to a pin, P, in the end of a lever, O. This lever is secured by a screw, R, (as a working center,) to the top of the frame of the machine, having its outer end connected (through a slot) to the upper end of a U-shaped lever, S, which is fastened to the side of the machine-frame by a screw, S', as a center or fulcrum, and by means of a cam, T, on the driving-shaft E, its lower end is raised or depressed by the revolving of the cam, so as to cause a vibratory motion of the upper end of the lever, and also of the end of the lever O, connected therewith, for the purpose of alternating the motion of the plug-valve within the nipple-chamber and cutting of the ingress and egress of the fused type-metal.

U is a spiral spring attached to the lower side of the lever S and the bottom or plate piece of the machine, for the purpose of reacting the lever after being raised by the cam T, for the purpose of drawing back the plug-valve from the vent of the nipple.

W is a support and guide-piece against the side of the machine for supporting the lever S and guiding the lever G.

X is a crank on the end of the driving-shaft, and Y Y the driving-shaft supporters or rests.

The operation of these several parts, when the machine is put in motion, is that when the cam E depresses the end of the lever G it acts on the end of the lever H, through the rod I, and causes that to be depressed also, and lifting at its opposite end the plunger D, while at the same time the cam T lifts the lower end of the lever S, throwing its upper end back, and the end of the lever O, connected therewith, correspondingly, to open the back passage-way of the nipple-chamber for the ingress of the metal and to close the vent of the nipple. When in this position the metal flows into the chamber and through the duct K to the well, at which time (when the well is charged) the cams have passed their highest points and the plug i,

drawn back from the nipple-vent by the action of the spiral spring U, and closes the ingress of more molten metal, while at the same time the plunger is forced down by the reacting of the spring J into the well, and ejects the metal through the duct and nipple to the matrix.

Having now described my invention and the operation of the same, I will proceed to state what I claim as my invention—

1. The conical plug L and arrangement of the chamber in which it works, in combina-

tion with the nipple and bath and well of a type-casting machine, substantially in the manner and for the purposes herein set forth.

2. In combination with the conical plug L, the arrangement of the levers O and S and cam T, substantially in the manner and for the purposes herein set forth.

JOHN I. STURGIS.

Witnesses:

CHARLES L. BARRITT,  
JOHN RANDEL, Jr.