

THE
REPERTORY
OF
ARTS, MANUFACTURES,
AND
AGRICULTURE.

No. LXIV. SECOND SERIES. Sept. 1807.

Specification of the Patent granted to ANTHONY FRANCIS BERTE, of the Parish of St. Dunstan in the West, in the City of London, Merchant; for Improvements in casting Printers' Types and Sorts, and other Articles of Metal. Communicated to him by a Foreigner residing abroad.

Dated April 15, 1807.

TO all to whom these presents shall come, &c. Now KNOW YE, that, in compliance with the said proviso, I the said Anthony Francis Berte do hereby declare, that the said invention is described in manner following: that is to say: I do construct a vessel of iron, or other fit material for containing type-metal in the fused state, or for bringing it into fusion and keeping it at the proper heat for casting; and I do make in the side or sides of the said vessel, one or more apertures, out of which the fluid type-metal is caused or permitted to flow at the time of casting. The operation of casting is performed by applying a mould for casting letters or types, either singly

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or more than one at the same time, or other articles for Printers' use, unto one of the said apertures, which at that instant, by means of a cock or valve, or any other well known similar contrivance, is opened; in consequence of which the metal suddenly flows, or is driven into the mould, and applies itself to the matrix or matrixes with a force which is greater or less according to the height of the level surface of the type-metal in the vessel first before mentioned, or according to the magnitude of such an additional pressure as may be applied in the manner, or by the means hereinafter to be described.

And I do farther declare, that though the said aperture or apertures, may be made on any side of the vessel, that is to say, at top or bottom, or elsewhere, yet I do give the preference to a surface or face which shall be nearly horizontal, so that the fluid metal shall spout upwards into the mould; and I do prefer, as the most simple and easy method, that each aperture shall be kept closed, when required so to be done, by a plate of metal lying upon the said horizontal surface, and well fitted thereto. And that I do make and fashion the lower part of my mould flat and true, in order that the same may be applied in like manner, and slided along upon the said horizontal surface. And that I do slide the said mould by pushing the same against the said flat plate, until the plate shall become displaced, and the aperture of the mould shall become directly opposite the aperture in the vessel, and shall accordingly receive its charge of metal; after which the mould being again drawn back, the plate of metal by means of a weight, or spring, or other well known agent, suitable to the purpose, is made to follow the mould, and close the aperture by resuming its first situation: and in order that the said motions and effects may be performed and produced without any particular skill

skill or attention in the workman, I do make and apply such guides, sliders, stops or pins, for confining, directing and limiting the said motions, as will be sufficiently obvious and intelligible as to their construction to artists employed in works of that nature: but that in such other construction of the apparatus herein before described as may not require or admit of the said sliding plate for closing and opening the said aperture, I do apply my mould unto the said aperture, either by sliding the same to its place, as aforesaid, or by any other method of opposition: and moreover, in order that the said fluid metal may rise with sufficient force into the mould, I do in general (except as herein after mentioned) make my vessel of such a figure, as that the quantity of type-metal intended to be contained therein at any one time shall have its upper surface sufficiently high above the level of the aperture or apertures before mentioned. And that I do in preference, for the said purposes herein before mentioned, form my vessel of the figure of a box or closed receptacle, having a pipe or tube rising out of the same, so that the pressure afforded by the statical action of the metal in the said pipe or tube shall produce the desired effect at the aperture or place of casting; or otherwise I produce, or increase the said pressure in such vessel, by the statical action of water, or any other fluids which may be used, (by the well known means to compress a body of air), against the surface of the type-metal, for the purposes aforesaid.

And I do farther declare, that one other of my improvements in casting, as aforesaid, doth consist in making the said vessel in which the metal is to be kept in a melted state ready for use, close on all sides, except at the aperture or place out of which it is intended that the said metal shall flow, and also at another larger aperture,

terminating upwards in a tube, pipe, or prismatic cavity, into which I fit a metallic plug or piston, sufficiently well fitted to move up and down with facility therein, without suffering any metal to issue out between the parts in their relative motion. And I do make use of the said plug or piston to produce the extrusion of the melted metal, through the aperture before described, into the mould, when applied thereto; for which purpose I do give a stroke, or apply a suitable pressure to the said plug or piston; or I do permit the said plug or piston to descend by its own weight in the said tube, pipe or prismatic cavity, so as to strike the surface of the melted metal, and impel the same into the mould. And in every case or construction wherein the said plug or piston shall be applied and used, it will not be needful or proper to close the aperture to which the mould is to be applied as aforesaid by a cock, valve, plate or other contrivance; but, instead thereof, I do so regulate the quantity of any metal, or the position of the parts of my apparatus, that the surface of the fused metal shall be accurately, or very nearly, at the upper part or opening of the said aperture beneath the mould: and the said machines, consisting of vessels so fitted up, together with the moulds, and other parts respectively as before described, may be used by one or more workmen to cast letters and sorts, at the same time, from the same mass of metal; but in case different metallic mixtures should be required to be used, or in case local circumstances should render it needful that the workmen should be considerably distant from each other, recourse must then be had to a number of distinct and separate machines of my said invention. And I farther declare that one other of my improvements in casting as aforesaid, doth consist in making the body of the mould (in which the letter or types

types are to be cast) of four adjustable pieces instead of two, as hath heretofore been done; each of which said four pieces hath two external plain faces inclined to each other in the precise angle of a square or right angle, so that all the four convex pieces, when put together with their angular edges in the same line, will fit, and leave no cavity; but, when the several pieces are slid upon each other face to face at right angles to the middle line, or edges upon every one of the touching faces, a square or rectangular cavity will be left, which, instead of being adjustable in one direction only, can be made of any required dimensions so as to admit of changes in the width as well as the thickness of the body of the letter; and when the desired adjustment hath been made, the plates may be fastened together in pairs, and used like the common moulds. And farther I do, when required, make my moulds without nicks or notches, or such parts as shall produce nicks or notches, in the shank of the letter; and I do strike out or expel the cast letter from the mould, by a punch, or proper tool, without opening the mould, as is usually done.

And I do farther declare, that moulds so improved as herein before described may be used along with any other improvements in casting, which are herein before described and specified, as the said improved moulds may be used and applied for casting in the common way.

In witness whereof, &c.

Specification

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Consisting of
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