

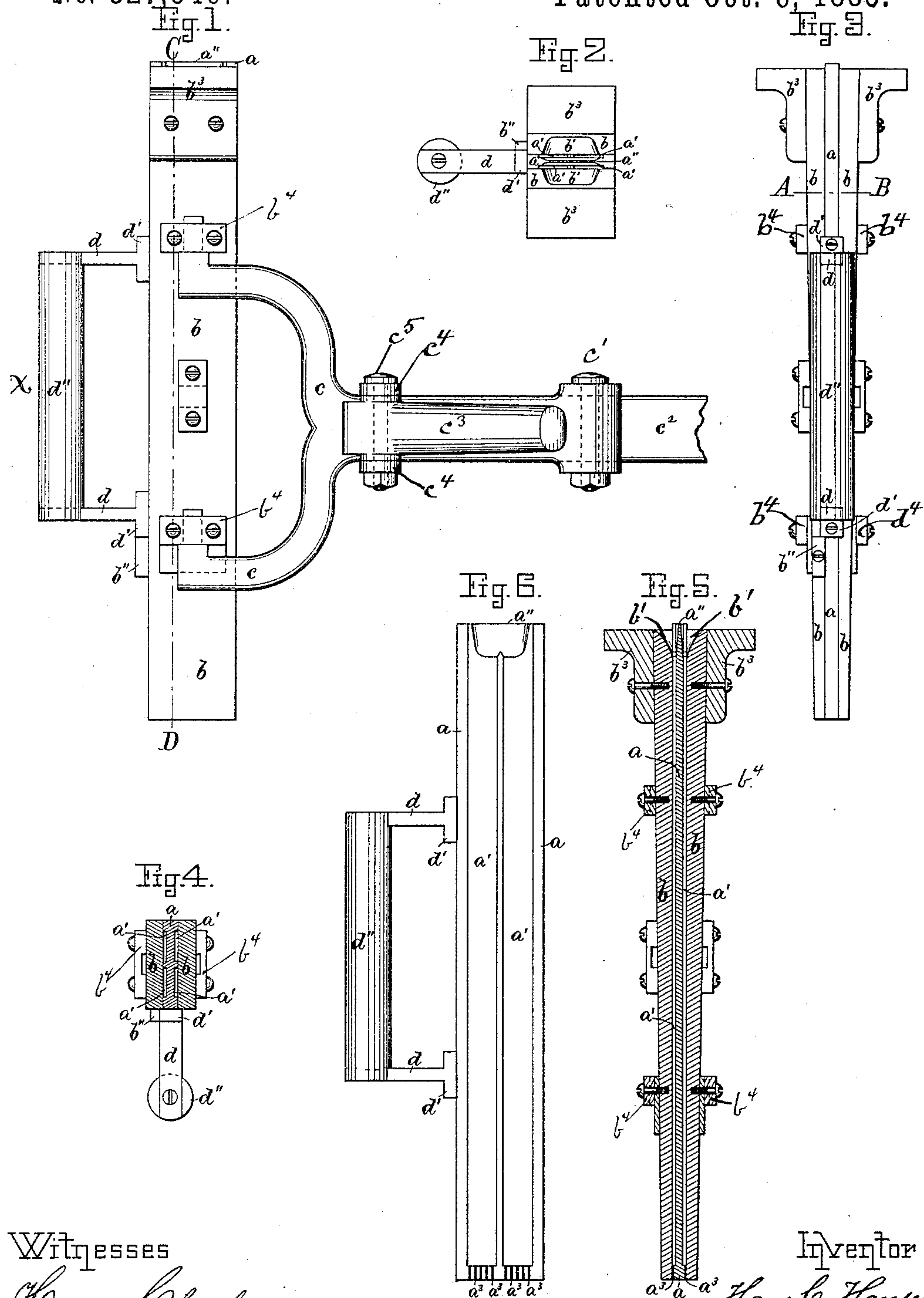
(No Model.)

H. C. HANSEN.

MOLD FOR CASTING PRINTERS' LEADS.

No. 327,546.

Patented Oct. 6, 1885.



Witnesses

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UNITED STATES PATENT OFFICE.

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MOLD FOR CASTING PRINTERS' LEADS.

SPECIFICATION forming part of Letters Patent No. 327,546, dated October 6, 1885.

Application filed April 14, 1884. Serial No. 127,915. (No model.)

To all whom it may concern:

Be it known that I, HANS C. HANSEN, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Molds for Casting Printers' Leads; and I do hereby declare that the same are fully described in the following specification, and illustrated in the accompanying drawings.

This invention relates to improvements in molds for casting printers' leads, &c., and it is carried out as follows, reference being had to the accompanying drawings, where—

Figure 1 represents a side elevation of the improved molds, shown as supported in a suitable bracket. Fig. 2 represents a plan view. Fig. 3 represents a front view, seen from X in Fig. 1. Fig. 4 represents a cross-section on the line A B shown in Fig. 3. Fig. 5 represents a vertical section on the line C D shown in Fig. 1; and Fig. 6 represents a side elevation of the middle mold, shown as being detached from the side molds.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

Heretofore printers' leads have been cast in molds divided vertically in two equal parts, held together by means of a suitable clamping device during the act of casting the leads, &c., and after the leads are cast and partially cooled the molds are separated and the leads removed from the molds, and in so doing it is usually necessary to use a pair of nippers to take hold of the upper end of the lead and pull it out of the mold. This is objectionable and is one of the effects that I obviate by the use of my improved molds. Another objection to the ordinary molds for this purpose is that they are liable to cool too rapidly at their lower ends and thereby preventing the leads from being successfully cast. By the use of my improved molds the capacity for doing the work is materially increased, as will now be more fully shown and described.

My improved molds are made in three separate parts, viz: a central or middle one, *a*, and a pair of side molds, *b b*, as shown, the latter being supported in a suitable bracket or rest, *c*, of any of the usual forms, constructed in such a manner as to permit said side

molds to be moved in a lateral direction to and from each other, and the central mold, *a*, held between them, and to be clamped firmly against opposite sides of said central or middle mold, *a*, during the process of casting the leads.

The expansive bracket or clamping-rest is preferably composed of a pair of forked arms, *c*, that are hinged at *c'* to a stationary support, *c''*. The forward ends of the forked arms *c c* are inserted in bearing-pieces *b⁴ b⁴*, secured to the outside of the side molds, *b b*, as shown. In this manner the side molds, *b b*, may be expanded from each other by swinging the forked arms *c* around the fulcrum *c'*, so as to permit the center mold, *a*, to be removed. During the operation of casting the leads the center mold, *a*, is confined between the side molds, *b b*, by means of a cam or lever, *c³*, (shown in Fig. 1,) or in any other well-known manner. Lugs *c⁴* are attached to one of the forked arms *c*, and the cam *c³* is hinged in these lugs by means of a pin, *c⁵*, the other forked arm *c* being situated between this cam and the first-mentioned arm *c*. Operation of the cam forces the arms toward each other.

I wish to state that the expansive bracket or clamping-rest *c* forms no part of my present invention, as such a bracket is well known in the art, and I therefore do not wish to confine myself to the particular kind of bracket shown in Fig. 1, as any of the ordinary kind may be used with my improved molds. The interior face of each side mold *b* is made perfectly smooth and plain, without any grooves or recesses, as shown in Figs. 4 and 5, except at the upper end, where each side mold *b* is made with a flaring mouth, *b'*, to facilitate the molten metal being poured into the spaces between the side and central molds. The central mold, *a*, has on its opposite faces one or more vertical recesses, *a' a'*, each of the proper width and depth for the desired size lead that is to be cast. In the drawings two such recesses *a' a'* are shown on each face of the central mold, *a*, but more or less may be used, according to circumstances. The central mold, *a*, terminates in its upper end as a dividing edge or wall, *a''*, projecting a little above the upper ends of the side molds, *b b*, so as to prevent the metal poured in at the top of the molds from uniting at this place,

and thus to keep the leads cast on opposite sides of the central mold, *a*, separate from each other.

The lower end of the central mold, *a*, is provided with a series of grooves or perforations, *a³ a³*, (shown in Figs. 5 and 6,) to permit the air to be forced out freely at this place when the metal is poured in from above. To the front edge of the central mold, *a*, are secured the metal bars *d d*, having enlargements *d' d'* nearest to the front edge of said central mold, as shown in Figs. 1, 2, 4, and 6, such enlargements serving as stops against the front edges of the side molds, *b b*, to enable the operator to place the central mold in its proper position corresponding to that of the side molds when the apparatus is to be used, and when in such position one of the projections *d'* is made to rest on a projection, *b''*, secured to the front edge of one of the side molds, *b*, as shown in Figs. 1 and 3.

d'' is a wooden handle attached to the outer ends of the metal bars *d d*, for the operator to take hold of while manipulating the central mold, *a*.

I prefer to make the outside of the side molds, *b b*, tapering, as shown in Figs. 3 and 5, so as to retain a uniform and proper heat during the operation of casting the leads; but I do not wish to confine myself to this exact shape of said side molds.

The upper end of each side mold *b* is provided with a head or projection, *b³*, of a suitable size and form. Such head may be cast in one piece with its respective side mold, or riveted or otherwise secured to it, as may be desired, such projection being made for the purpose of increasing the mass of each side mold at or near its upper end, and thereby to distribute the desired heat more uniformly and to aid in cooling the leads in a rapid manner at such upper end after being cast in the molds.

In using my improved molds I proceed as follows: We will suppose that the molds are smoked on their insides, as usual, and heated to the desired temperature. I then insert the central mold, *a*, between the side molds, *b b*, and clamp them together in position, as shown in Figs. 1, 2, 3, 4, and 5. I then pour the molten metal into the mouths *b' b'*, causing the recesses *a' a'* on opposite sides of the central

mold, *a*, to be filled, the air and a small portion of the metal escaping through the bottom holes or grooves, *a³ a³*, as usual. As soon as the metal is sufficiently cooled, I release the side molds, *b b*, from contact with the central mold, *a*, and expand the former sufficiently to enable the central mold, *a*, and the leads cast in its recesses *a' a'* to be readily disengaged from the side molds, and by taking hold of the handle *d''* I turn the central mold over, first on one side and then on the other, and shake out the leads from opposite sides of said central mold without the need of pulling them out by means of nippers or equivalent tools. As soon as the leads are disengaged, as above, from the recesses *a' a'*, in the central mold, *a*, I reinsert the latter in position between the side molds, *b b*, and clamp the three molds together, as at first, and continue to cast another set of leads, and so on.

It will be seen that with my invention I double or more than double the capacity of the molds for doing the work, and I dispense with the use of nippers or other tools for disengaging the leads from the molds, thus saving a great deal of unnecessary labor.

By the construction of the side molds, *b b*, with upper enlargements, *b³ b³*, as described, I am able to retain a uniform temperature of said molds, and thus prevent the casting of imperfect leads.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent, and claim—

1. In combination, the side molds, *b b*, and the central mold, *a*, having one or more recesses, *a'*, on its opposite faces, and a handle, *d''*, secured to its front edge, as and for the purpose set forth.

2. In combination, the central mold, *a*, having one or more recesses, *a' a'*, on each side, and an upper dividing-edge, *a''*, projecting above the top of the side molds, with the side molds, *b b*, and the flaring mouths *b' b'* in their upper ends, substantially in a manner and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HANS C. HANSEN.

Witnesses:

ALBAN ANDRÉN,
HENRY CHADBURN.