(No Model.)

# J. L. LEWIS.

## MOLD FOR CASTING METALS.

No. 254,346. Patented Feb. 28, 1882.

Fig. 1

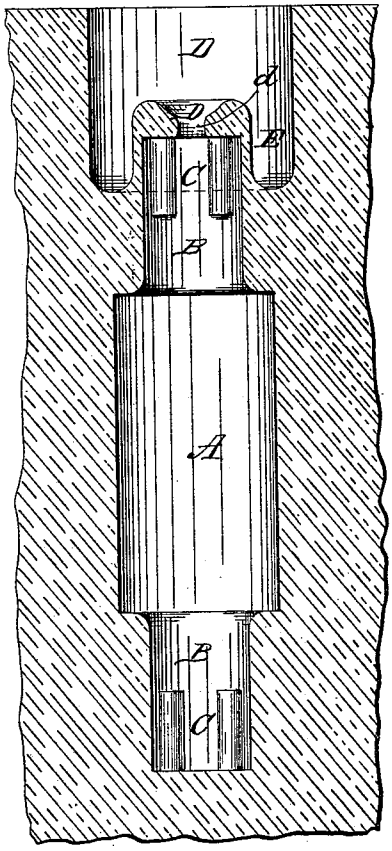
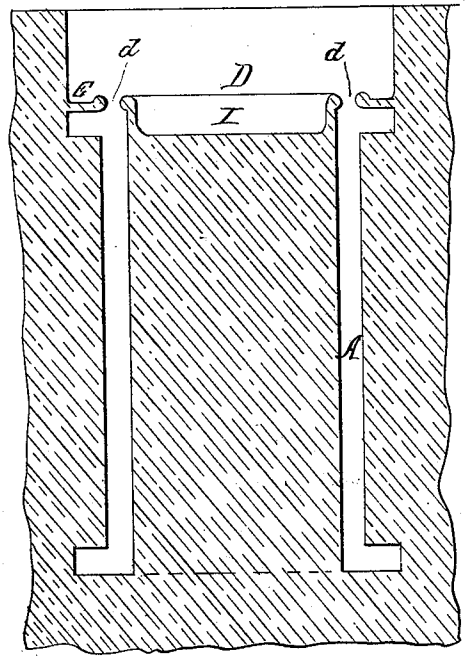



Fig. 2.




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# UNITED STATES PATENT OFFICE.

JOHN L. LEWIS, OF PITTSBURG, PENNSYLVANIA.

## MOLD FOR CASTING METALS.

SPECIFICATION forming part of Letters Patent No. 254,346, dated February 28, 1882.

Application filed June 16, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN L. LEWIS, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in Molds for Casting Metals; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a vertical section of a roll-mold; Fig. 2, a similar view of a cylinder-mold; Fig. 3, a similar view of a glass-mold; Fig. 4, a plan and section of bed-plate, showing my invention by dotted lines. Fig. 5 is a vertical section of a roll-mold, showing two applications of my invention; and Fig. 6 is a vertical section as applied to casting cannon.

This invention relates to molds for casting rolls and other articles that are cast with a breakable sinking-head, and has for its object the provision of means whereby shrinkage is provided for, and for facilitating the removal of said sinking-head after the removal of the casting from the mold.

My invention consists in a mold having an annular chamber surrounding the neck of the sinking-head, whereby, while I am enabled to make the neck so small as to break readily after cooling, the molten metal contained in the aforesaid annular chamber during the operation of casting will maintain the extra metal in the sinking-head at a temperature which will allow it to pass into the mold, and thus compensate for the shrinkage usual in casting. This is illustrated in Fig. 1, which shows a roll-mold wherein are the roll-cavity A, neck-cavities B B, wobbler-cavities C C, and sinking-head cavity D, having, as will be observed, a contracted neck, *d;* but in addition I form the annular cavity E, surrounding the neck *d* of the sinking-head cavity, and communicating therewith or with the gate, but separated from said neck *d* by a slight partition of sand. On pouring the metal the mass in cavity E prevents the neck from solidifying prematurely, and thereby allows the still fluid metal in the sinking-head to pass down and compensate for the shrinkage. By this means the neck *d* may be made so small that when the whole has cooled sufficiently the sinking-head may be quite readily broken off. Similar results follow in casting a cylinder, as shown in Fig. 2. Here the sinking-head D is annular, and I cast therewith a surrounding mass of metal, E, and an internal core of metal, I, and make a very thin neck, *d*, on the sinking-head D, thus again preventing premature cooling and insuring a ready separation of the sinking-head D from the cylinder. Pipes may be treated likewise.

By the usual process of casting and construction of molds the sinking-head must have quite a large neck, if it be intended to provide compensation for shrinkage, and the result is that the article must be placed in the lathe and the sinking-head cut off, which is slow, laborious, and expensive; but by my inventon I insure the requisite compensation and produce a sinking-head which can be readily broken off by a blow or concussion.

I claim as my invention—

A mold having a sinking-head cavity with contracted neck and an annular cavity surrounding the said neck, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOHN L. LEWIS.

Witnesses:

T. J. MCTIGHE,

JAMES J. MCTIGHE.