

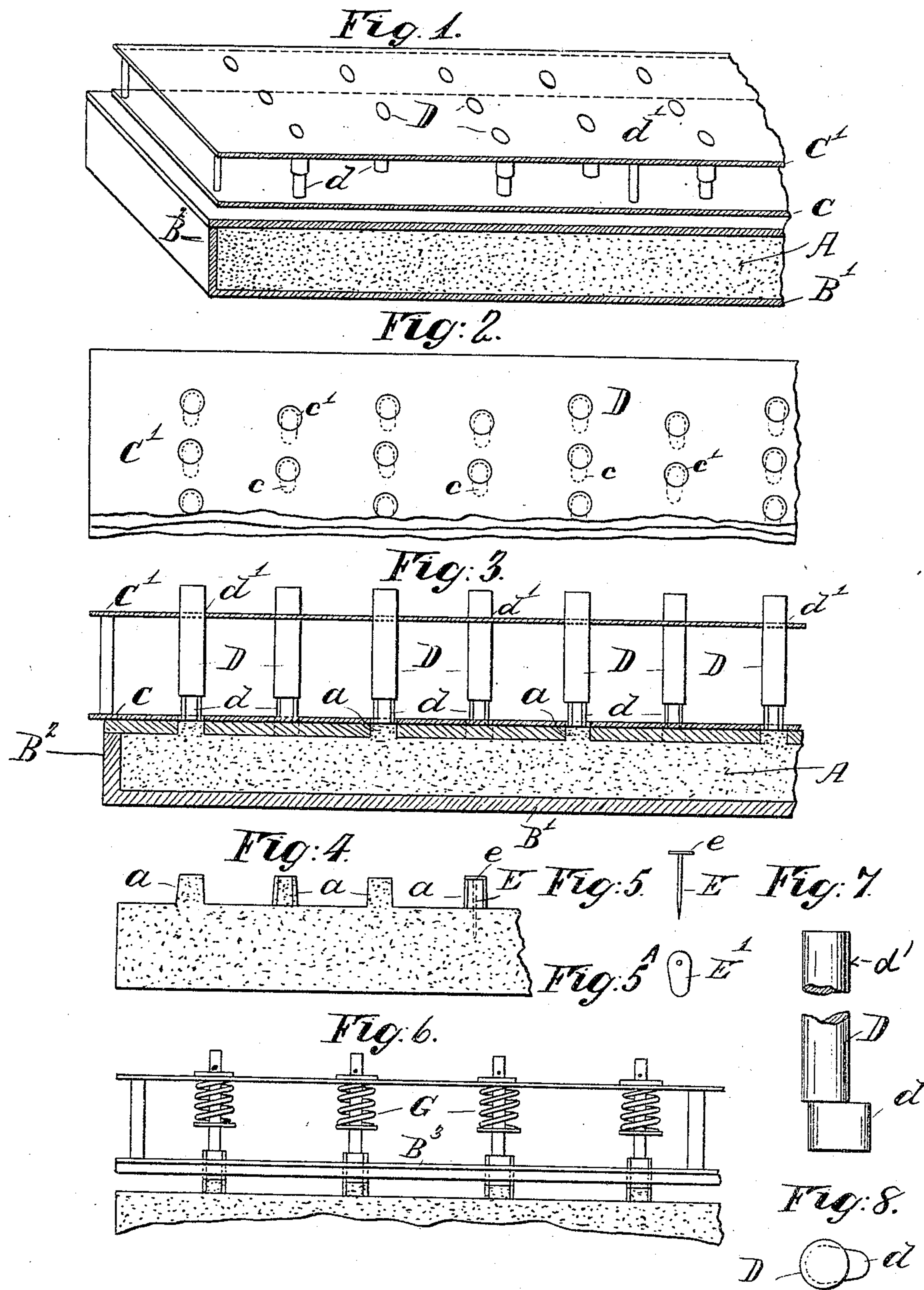
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A. SCOTT.
CORE BOX FOR FOUNDERS' USE.

APPLICATION FILED MAY 7, 1900.

NO MODEL.



Witnesses *J. A. Mays*
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UNITED STATES PATENT OFFICE.

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CORE-BOX FOR FOUNDERS' USE.

SPECIFICATION forming part of Letters Patent No. 773,994, dated November 1, 1904.

Application filed May 7, 1900. Serial No. 15,796. (No model.)

To all whom it may concern:

Be it known that I, ADAM SCOTT, a subject of the Queen of Great Britain and Ireland, and a resident of 5 Canonbury Place, Canonbury, in the county of Middlesex, England, have invented a certain new and useful Core-Box for Founders' Use, of which the following is a specification.

This invention relates to core-boxes such as are used by founders in making molds for casting iron and other metals; and it consists of additions to such core-boxes by the use of which the parts of the core-box can be separated when filled with the loam without danger of breaking away projecting parts, as is commonly the case when the ordinary method is employed.

It is not infrequently necessary to bore or otherwise form numerous holes in cast-iron plates and the like. To drill these after casting is extremely expensive, and therefore when possible the holes are produced by the employment of cores which project into the body of the mold and round which the molten metal runs, leaving as it cools orifices occupied by the cores. The production of castings with the holes already formed is of greater importance when the orifices required are of irregular shape, as in this case it is difficult to pierce these holes by any ordinary engineers' machine-tools. Cores for the purpose of producing these orifices in castings are in general formed integrally with a body-core which is of larger dimensions, and it is the breaking away of the projecting cores from the body-core which is prevented by the use of my invention. The cover of the core-box is perforated with a number of orifices of the same shape as the required orifices in the casting, and it is for the purpose of enabling this cover to be lifted, leaving the projecting cores intact, that my invention is applied.

It consists in forming a frame in which any required number of weights are free to slide up and down a short distance, the lower ends of these being of the same shape as the upper ends of the projecting cores. The weights are so arranged that each comes over an orifice in the core-box cover. Consequently when

the core-box cover is lifted each of the weights presses upon the top of the corresponding core and by tending to press it downward prevents it from breaking away from the body-core and rising with the cover. In order to render this action more certain, I in some cases employ a thin tin or other suitable plate of the same shape and dimensions as the top of each projecting core underneath the end of the superincumbent weight. These plates are pierced and are attached to the projecting cores by means of a suitable pin or tack, or the plates may be formed integrally with the tack. The weights may be formed integrally with one or both of the plates, and it is obvious that in either case springs may be substituted for weights.

In order that my invention may be fully understood and ascertained, I append drawings, in which—

Figure 1 is a perspective view, Fig. 2 a plan, and Fig. 3 a sectional elevation, of part of an apparatus according to my invention. Fig. 4 is a section of part of a core. Figs. 5 and 5^a show nails and plate. Fig. 6 is an elevation of a modification. Fig. 7 is an elevation, and Fig. 8 a plan of the weights.

In Figs. 1, 2, and 3, A indicates the body-core which is to be used in the mold, and *a* the projecting small cores which form the holes in the casting. These small cores are molded in holes cut or formed in the upper part or cover B of the core-box, the bottom of this being indicated by the letter B' and the end by the letter B². It will be understood that this is the ordinary method of making core-boxes. To the upper part or cover B of this core-box a frame of any convenient and suitable description is applied, which enables a number of weights to be fitted to it, so as to be capable of sliding freely in a vertical direction. In the figures shown this frame consists of a lower plate C, which rests upon the core-box, and an upper plate C', the two being connected in any convenient manner, so as to retain them at a suitable distance apart. In the upper plate C' a number of round holes *c'* are formed, and in the lower plate, underneath the holes *c'*, corresponding holes *c* of a shape similar to that of the upper part

of the projecting cores *a*. In each of these pairs of holes slides a weight D, the upper part *d'* of which is round, while its lower end *d* is of a similar shape to that of the hole *c* in which it fits. In both plates the holes *c* and *c'* are of such size as to enable the weights D to be moved freely up and down through a short distance, which may be limited by any convenient means. The weights D are shown separately in Figs. 7 and 8. The holes *c* and *c'* in the plates C and C' are so placed that the weights coincide with and rest upon the tops of the projecting cores *a*, and being free to descend it is obvious that when the cover B is raised the weights will press upon the tops of the projecting cores *a* and tend to push them out of the holes in the cover B, in which they were formed. As is well known, cores are formed of loam or green sand, and consequently are liable to break away from the body-core when the cover of the core-box is raised. The pressure of the weights prevents this and secures a solid and homogeneous core. In order to render this more certain, I in some cases insert a nail E through each core, the head *e* being of the same shape as the top of the projecting core *a*, or a plate E, as shown in Fig. 5^a, may be employed and attached by means of an ordinary wire tack. Where these nails or plates are used, they are inserted in position before the frame and weights are placed upon the cover of the core-

box, the lower ends of the weights then resting upon the plates. The action of the weights in this case serves the same purpose as before. 35

In Fig. 6 springs G are substituted for the weights D, but otherwise the operation is the same as before described.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is— 40

1. In apparatus for pressing cores out of the holes in which they are formed, the combination of plates C and C' held at a constant distance apart, holes *c* and *c'* formed in such plates, and weights D adapted to slide vertically in such holes, and normally pressed downward upon the tops of the projecting cores *a*, substantially as described and shown. 45

2. In apparatus for pressing cores out of the holes in which they are formed, the combination of plates C and C' held at a constant distance apart, holes *c* and *c'* formed in such plates, and weights D adapted to slide vertically in such holes, and normally pressed upon the tops of the projecting cores *a* by their weight, substantially as shown and described. 55

In witness whereof I have hereunto set my hand in presence of two witnesses.

ADAM SCOTT.

Witnesses:

N. LAWSON,
JOSEPH LAKE.