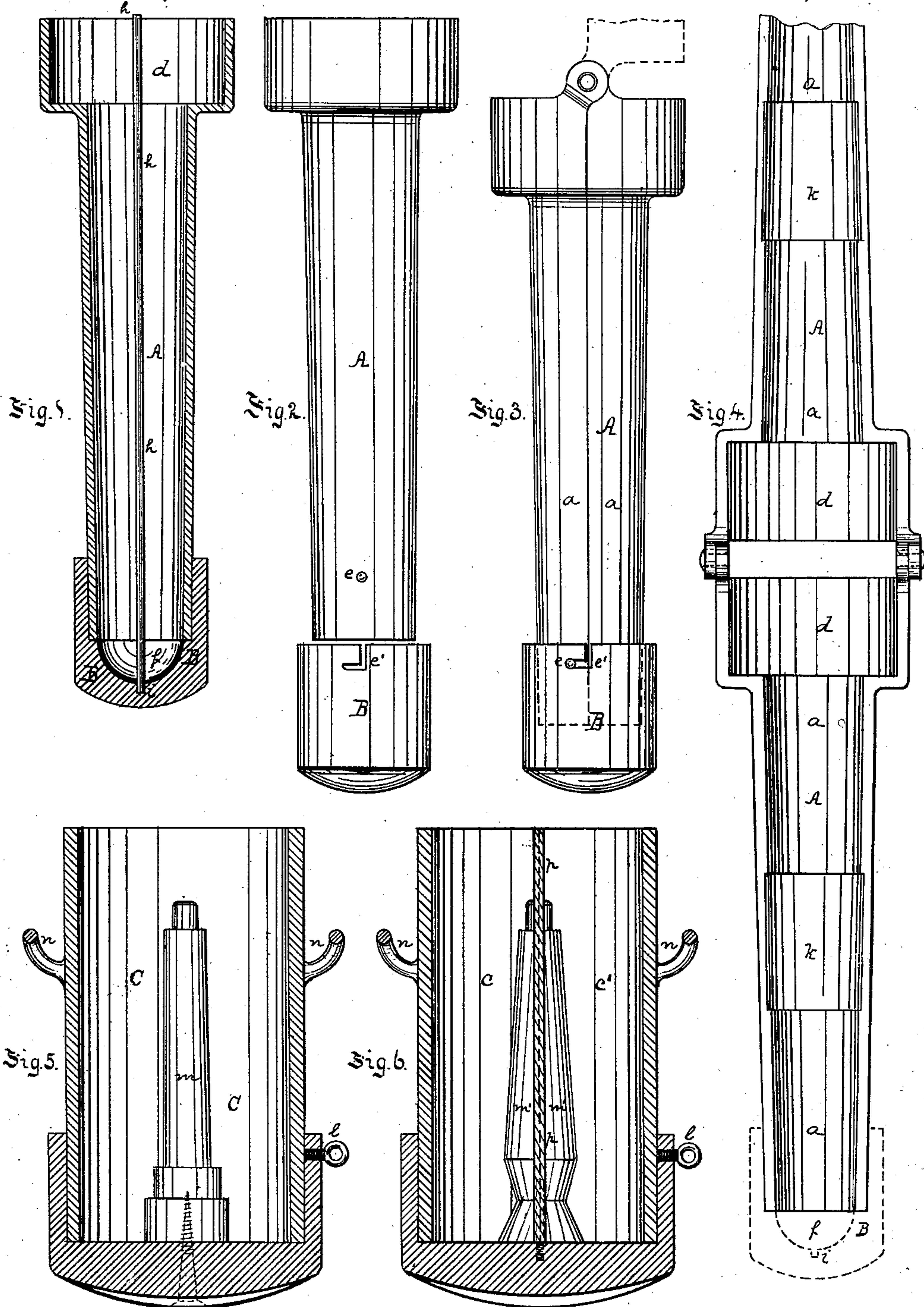


(No Model.)

S. J. ADAMS.

Jarring Block for Core Boxes and Flasks.  
No. 243,482.

Patented June 28, 1881.



Witnessed.

J. G. May

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# UNITED STATES PATENT OFFICE.

S. JARVIS ADAMS, OF PITTSBURG, PENNSYLVANIA.

## JARRING-BLOCK FOR CORE-BOXES AND FLASKS.

SPECIFICATION forming part of Letters Patent No. 243,482, dated June 28, 1881.

Application filed March 18, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, S. JARVIS ADAMS, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Jarring-Blocks for Core-Boxes and Flasks; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a vertical central section, and Fig. 2 a side view, of a one-part core-box illustrating my invention. Fig. 3 is a side view of a partible core-box illustrating the same. Fig. 4 is a view of the partible core-box open; and Fig. 5 is a vertical section of a one-part flask; and Fig. 6 a like view of a partible flask illustrating my invention.

Like letters of reference indicate like parts in each.

My invention relates to certain improvements in apparatus to be used in connection with core boxes and molds by the jarring process.

In forming the larger cores and molds by jarring the core-boxes and flasks have generally been placed on jarring-tables which were raised by cam mechanism and dropped on a stationary block, thus imparting the jar to the core-box or flask and packing the sand therein. In forming the smaller cores the base of the core-box was made closed, being cast with the box, and the box was raised by hand and dropped on a block or table, the closed end thus taking the jar in forming the core. In forming long narrow cores, and all small cores in these core-boxes with closed ends, difficulty was constantly experienced, on account of their liability to clog or gum up with the sand and flour or other materials used in forming the cores and the labor in cleaning them. Some of the core-boxes were twenty-four inches deep and not over two inches wide, and the brush used for cleaning them could not be made to clean off the dirt at the base of the core-box when closed at one end, and it was almost impossible to keep them clean in the regular line of work. They would therefore gradually gum up and reduce the size of the core at the end;

so that imperfect castings were made. The seat for the core-supporting rod would also fill, and the rod could not be properly centered in the core.

The object of my invention is to overcome these difficulties in the core-boxes, and also to arrange the flasks so that molds can be formed in them without the use of the jarring-table.

To this end my invention consists in a removable jarring-block arranged to be secured at the base of the core-box or flask to receive the shock or blow when the core-box or flask is raised and dropped upon a stationary block to impart the jar to the sand.

To enable others skilled in the art to make and use my invention, I will describe its construction and operation.

In the drawings, A represents a core-box, of any desired construction, with which my improved jarring-block B is used.

In forming cores which have no enlargements on their surface I employ what is termed a "solid" or "one-part" core-box, as shown in Figs. 1 and 2, and draw the core out at the larger end of the box after it is formed. The interior of the core-box is made the exact shape of the desired core, and is generally made with an enlargement, *d*, at the top, to form the cope-print of the core.

The jarring-block B is made of cast metal for the smaller sizes of cores, and of wood where a metal block would be too heavy. It is generally secured on the one-part core-box by wedging, a piece of thin paper being placed around the end of the box, if necessary. It may also be secured by many different means, such as by a bayonet-joint, *e e'*, as shown, by a set-screw, as shown in Figs. 5 and 6, by hooks, by a lug and cam, or it can be screwed either within or over the box.

The jarring-block is generally formed with a curved or approximately semispherical depression, *f*, in which the end of the core is formed, this shaped depression giving to the core a rounded end, which is adapted to center itself more easily in the core-print, formed for its reception at the base of the mold, and presents no sharp corners to catch upon or de-face the body of the mold. In the center of



the curved depression *f* is the seat *i*, for the reception of the core-supporting rod or wire *h*, the base of the rod being held in the center of the core-box by this seat during the formation of the core.

In forming cores in a solid or one-part core-box the core-supporting rod *h* is placed in the box and held in the center of the seat *i*, and the sand and flour from which the core is made is fed in at the top by the operator, he at the same time raising the core-box and allowing it to drop upon a stationary table or block, to impart the jar to the sand, and continuing the operation until the core is formed, using, if desired, a sand-reservoir above the core-box, as described in Letters Patent granted to me December 3, 1878, though this is not necessary in forming small cores, as the pressure of the hand on the top of the core-box during the jarring is sufficient to pack the top sand firmly. The finished core is then drawn endwise out of the box by means of the rod *h* in the usual way, and baked, if necessary, for use.

If the core-box becomes clogged, all that is necessary is to remove the jarring-block *B*, when the box can be rapidly and perfectly cleaned by a brush, being open at both ends. The depression in the jarring-block and seat for the rod *h* can also be easily cleaned, as it is not necessary to work through a long narrow box. Another advantage in the use of this removable jarring-block is found where the core-box is lifted off the core, in which case the jarring-block can be removed after the formation of each core and enable the operator to see the end of the core and to guard against touching the core in lifting the core-box off, and hence prevent his defacing or bending the core.

In forming cores having rings or other enlargements on the surface it is necessary to use a partible core-box, as shown in Figs. 3 and 4, the box being divided into two parts, *a a*, and either hinged at the top, as shown, or hinged at the side or secured together in other suitable way. The jarring-block *B* is secured at the base of the box, and when the box is hinged at the top serves to hold it together. The core-box has suitable depressions, *k*, forming the enlargements in the core. The core is formed in this box in the same manner as in the one-part box, and the jarring-block then removed, the core-box opened, the core lifted out, and the box again secured together by the jarring-block, when it is ready to form another core.

When the jarring-block is used with flasks it is generally formed of wood, as a metal block

would be too heavy. It is secured at the base of the flask *C* by a set-screw, *l*, as shown in Figs. 5 and 6, or by other suitable means, as set forth above.

When the pattern has no enlargements it can be drawn out of the mold and only a one-part flask is used, as shown in Fig. 5. In this case the pattern *m* is secured to the jarring-block, and the sides of the jarring-block extend up around the flask, so as to act as a guide when the set-screw is loosened, and the flask and finished mold withdrawn. The flask is provided with handles *n*, by which it is lifted and dropped upon a stationary block.

A sand-reservoir, as described in the Letters Patent above referred to, may be employed with the flask, if desired.

When the pattern has rings or enlargements upon its surface, as shown in Fig. 6, which prevent its being drawn endwise out of the mold, a two-part flask, *c c'*, is employed and the pattern is divided in two halves, *m' m'*, and mounted on a match-plate, *p*, and the sand is jarred on either side of the match-plate in the manner above described.

The pattern on the match-plate is loosely secured to the flask or jarring-block by pins or otherwise, and after the formation of the mold the jarring-block is removed, the flask opened, the pattern lifted out, and the flask put together and secured in the usual manner.

The removable jarring-blocks are more especially adapted for use with the smaller flasks, and will be found very useful, dispensing with the expensive machinery necessary to impart the jar to the flask and the cost of keeping it in order.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A removable jarring-block adapted to be secured to core-boxes or flasks and receive the jar during the formation of the core or mold, substantially as set forth.

2. A removable jarring-block adapted to be secured to a core-box, and provided with a depression to form the base of the core, substantially as set forth.

3. A removable jarring-block adapted to be secured to a core-box, and provided with a seat for the core-supporting rod, substantially as and for the purposes set forth.

In testimony whereof I, the said S. JARVIS ADAMS, have hereunto set my hand.

S. JARVIS ADAMS.

Witnesses:

JAMES I. KAY,  
F. G. KAY.