Jan. 18, 1938. G. C. CARNEY 2,105,877

CORE BOX STRIPPING MACHINE

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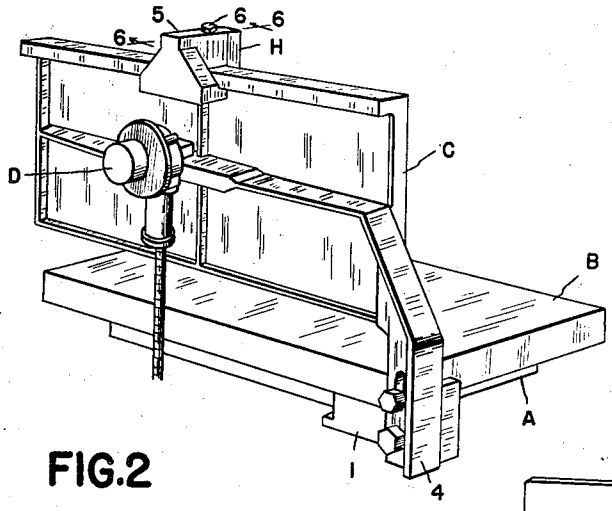


FIG.2

FIG.1.

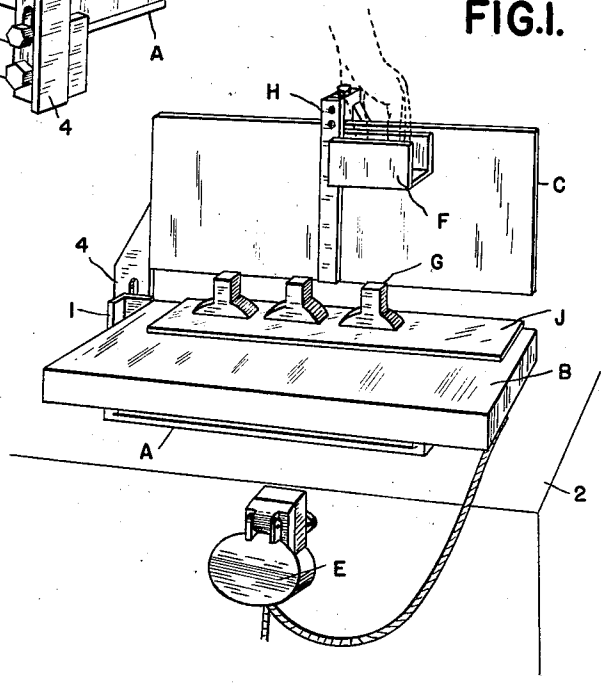
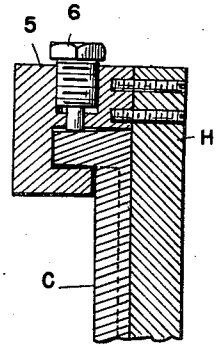


FIG.6.



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FIG.3.

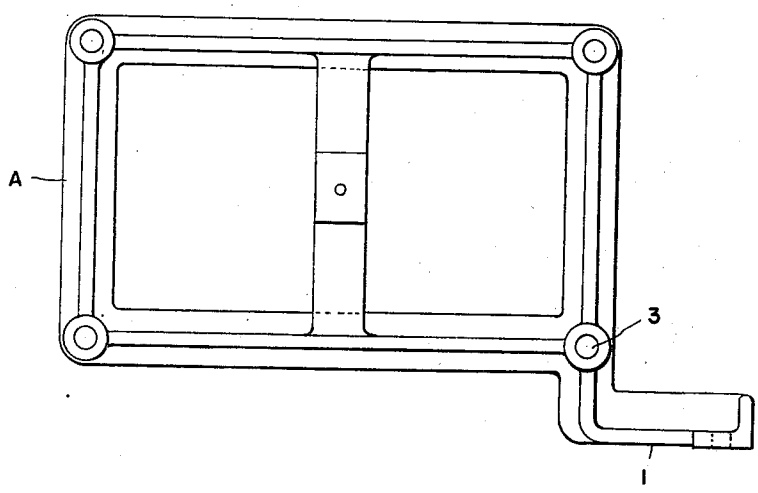
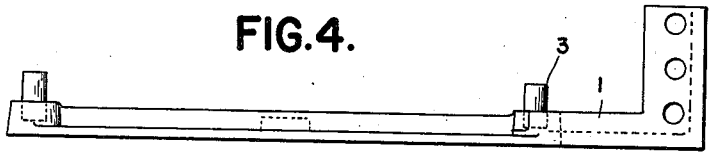


FIG.4.



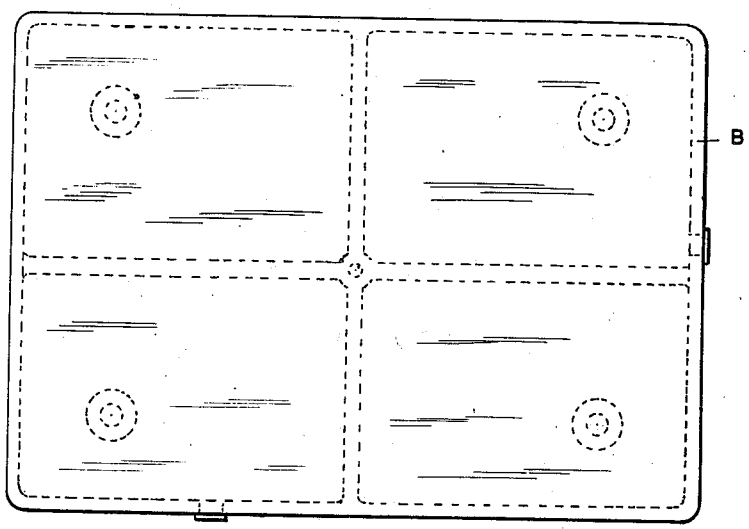


FIG.5.

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CORE BOX STRIPPING MACHINE

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6 Claims. (Cl. 22—10)

This invention relates generally to foundry equipment and refers more particularly to apparatus for making cores used in the manufacture of castings.

One method of making cores used in the manufacture of castings is to mold in a suitable box ordinary sand having a binder mixed therewith. However, the mold is very fragile when it is removed from the box and oftentimes is broken by the vibration necessary to loosen the same from the box. The present practice in foundries is to have the core maker rap the core box with a mallet and then strip by hand the core box from the core. This requires great skill for otherwise the cores might be injured or damaged. After being removed from the box, the mold is usually baked to make it strong enough for casting purposes.

Heretofore the boxes for containing the molds or cores have been either mounted or unmounted. When mounted, such boxes were usually fastened permanently to a core stripping machine, however in foundry production the cost of mounting the core boxes on the core stripping machines is quite an item and is unwarranted. When the boxes are unmounted or loose, considerable skill is required to make properly and accurately the molds or cores without breakage.

Thus, it is an object of the present invention (1) to eliminate the cost of mounting core boxes or core stripping machines, (2) to eliminate skilled labor now used for making cores from loose core boxes, (3) to obtain a longer life for core boxes by the provision of means which obviates the necessity of hammering such boxes, (4) to provide more accurate cores without breakage, and (5) to provide guide means which is so formed that the core box is in engagement with two surfaces at right angles to each other while being raised by hand, thus insuring against rocking or tilting action during such upward movement of the core boxes.

As will be apparent, my invention is primarily for use with unmounted or loose core boxes and is constructed and arranged in such a way that a loose core box may be stripped from the core as accurately and rapidly as if it were mounted on a core stripping machine.

In the accompanying drawings:

Figure 1 is a front perspective view of apparatus embodying my invention;

Figure 2 is a rear perspective view thereof;

Figure 3 is a top plan view of the base;

Figure 4 is an edge elevation of the base;

Figure 5 is a bottom plan view of the core table; and

Figure 6 is a sectional view taken substantially on the line 6—6 of Figure 2.

Referring now to the drawings, A is the base, B is the core table, and C is the core vibrating plate of an apparatus embodying my invention.

As shown, the base A forms a seat or support for the table B and has a lateral extension 1 at one end to which the upright vibrating plate C is secured. Any suitable vibrator D (electric or air) under the control of a knee switch E may be mounted on the back of the plate C to impart vibrator action to the core boxes F as they are lifted by hand from the cores G on the table B along an upright guide H on the front of said plate C. The base A may be mounted upon any suitable support such as the top 2 of a table or work bench, while the knee switch E may be conveniently mounted upon the front thereof.

Preferably the base A and table B are separated by resilient or rubber slugs or blocks 3 so that the table B upon which the cores G rest will be unaffected by the vibration imparted to the plate C by the vibrator D while the box F is being stripped from the cores G. Preferably the vibrating plate C has a depending arm 4 that is adjustably connected to the lateral extension 1 of the base so that the plate C may be moved vertically relative to the table B as desired.

The vertical guide H is slidable over the front of the upright plate C and has a head 5 that embraces and is slidable along the flanged upper edge of the plate C. Any suitable means such as a set screw 6 carried by the guide and engageable with the plate may be used for holding the guide in any adjusted position.

In use, a box F containing a core G is placed on a suitable core plate J on the table B against the upright plate C and guide H. The vibrator D is then started to loosen the core box F from the core G. The operator then raises the core box F by hand over the plate C along the vertical guide H.

Thus, from the foregoing it will be apparent that I have provided an apparatus wherein provision is made for steadying the core boxes F and preventing misalignment and danger of injuring the cores while the boxes are being lifted manually by the operator. Moreover, the apparatus is simple in construction, economical to manufacture and operate, and facilitates rapid removal of the molds or cores without breakage.

What I claim as my invention is:

1. In apparatus of the class described, a sub-

stantially horizontal base, a substantially horizontal core table substantially parallel to said base, yieldable means supporting the table upon and cushioning it from the base, means for guiding a core box when manually lifted from a core on said table, including two upright members having smooth upright guiding surfaces disposed at substantially right angles to each other, one of said members being rigidly fastened to said base, the other of said members being adjustable across the guiding surface of the first mentioned member, and a vibrator connected to one of said members.

2. In apparatus of the class described, a substantially horizontal base, yieldable cushion means carried by said base, a substantially horizontal core table supported upon said yieldable cushion means, an upright core vibrating plate above said table and rigidly connected to said base, said plate having a relatively smooth front face upon which core boxes may slide freely, and adjustable means upon the front face of said plate for guiding a core box when manually lifted from a core on said table.

3. In apparatus of the class described, a stationary base having a lateral extension, an upright vibrating plate mounted upon said extension and disposed at substantially right angles to said base, said plate having a relatively smooth front face upon which core boxes may slide, a vibrator fastened to said plate, a core table mounted upon but resiliently cushioned from said base in front of said plate, and means cooperating with said plate for guiding core boxes as they are moved over said plate including a bar upon the front of said plate having a head embracing and slidably engaging the upper edge of said plate.

4. In apparatus of the class described, a substantially horizontal base having a lateral extension, an upright vibrating plate mounted upon said extension and disposed at substantially right angles to said base, said plate having a relatively smooth front face upon which core boxes may slide, a vibrator fastened to said plate, a core table mounted upon but resiliently cushioned from said base in front of said plate, and means cooperating with said plate for guiding core boxes as they are moved over said plate including an elongated member slidable in an upright position across the front face of said plate.

5. In apparatus of the class described, a substantially horizontal base, an upright vibrating plate mounted upon and disposed at substantially right angles to said base, said plate having a relatively smooth front face upon which core boxes may slide, a vibrator fastened to said plate, a core table mounted upon but resiliently cushioned from said base in front of said plate, and adjustable means carried by said plate for guiding core boxes as they are moved substantially vertically over the smooth front face thereof.

6. In apparatus of the class described, a substantially horizontal base, yieldable cushion elements rising from said base at spaced points thereof, a core table supported upon said cushion elements, an upright core vibrating plate above said horizontal table and rigidly connected to said base, said plate having a relatively smooth front face upon which core boxes may slide freely, and adjustable means cooperating with the front face of said plate for guiding core boxes substantially vertically over said front face including a guide member having a portion slidable along a substantially horizontal portion of said plate.

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