

S. H. LUNNEY.
CORE MAKING DEVICE.
APPLICATION FILED SEPT. 28, 1910.

988,579.

Patented Apr. 4, 1911.

Fig. 1.

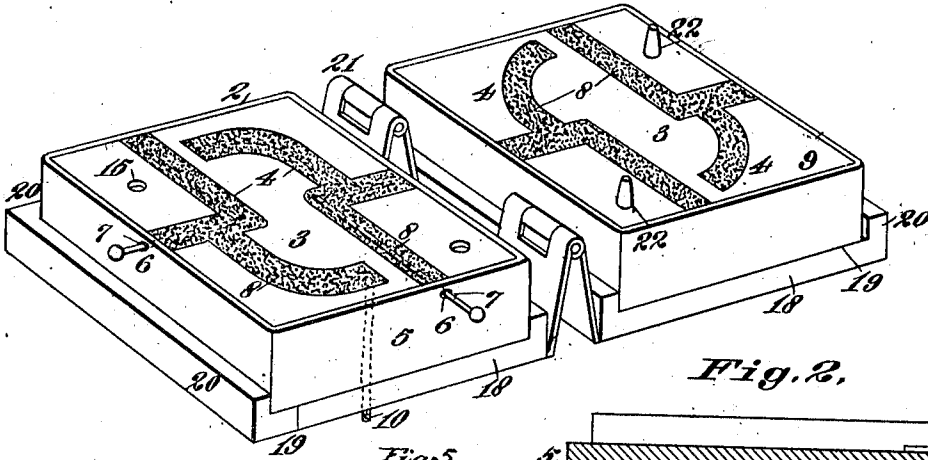


Fig. 2.

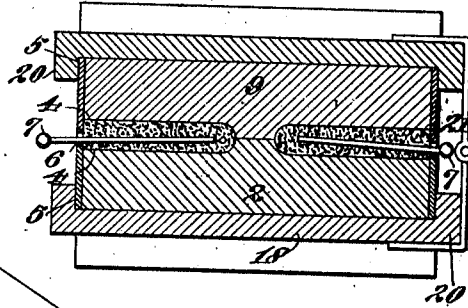


Fig. 3.

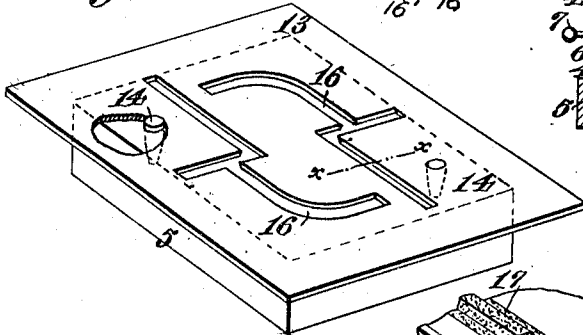


Fig. 5.

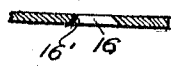
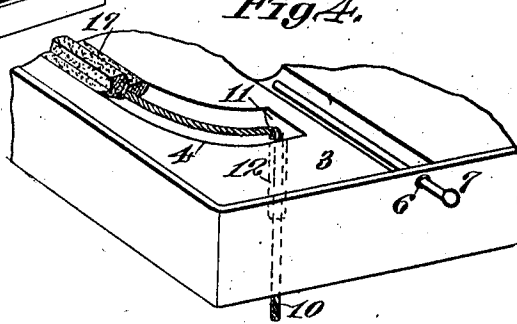


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

STEWART H. LUNNEY, OF SAN FRANCISCO, CALIFORNIA.

CORE-MAKING DEVICE.

988,570

Specification of Letters Patent.

Patented Apr. 4, 1911.

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To all whom it may concern:

Be it known that I, STEWART H. LUNNEY, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Core-Making Devices, of which the following is a specification.

My invention relates to core making devices and particularly to sectional, foldable core-print boxes.

With the apparatus at present in common use in foundries and molders' rooms, it is possible to make only one core-print at a time. This is because, in attempting to form more than one core in the core box, it has been found difficult to trowel out more than one.

It is the object of this invention to construct a print or core box which will facilitate the making of a plurality of cores at one time; to provide in combination with the core box means for facilitating the locating of the vent wires and reinforcing wires; and to provide in combination with the core box a heaping plate and a hinged foldable casing and a tray or drier plate, all adapted to form operative and important elements of the core making apparatus.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which;

Figure 1 is a perspective view of the core box sections in place upon the hinged closable receiver or casing showing the sections as filled with core material. Fig. 2 is a transverse vertical section through the closed apparatus. Fig. 3 is a perspective view of the pin section and heaper plate, the latter being partly in section.

Fig. 4 is a detailed sectional view of the pin carrying section showing the methods of placing the vent wires and threads. Fig. 5 is a cross-section on line *x-x* of Fig. 3.

In the present embodiment of my invention, I employ a core box section 2 of wood, iron or any other suitable material and of any appropriate form and proportion; the upper surface 3, of which is substantially plane and has recesses, 4 of such configuration as is desired to produce the form of core to be made. The area of this section or block 2 manifestly will be sufficient to allow for the formation of any number of core

making recesses 4 and the section 2 may be bound with a metallic or other strap 5 having perforations 6 for the reception of vent wires 7 which will be of suitable shape and adapted to lie in the core sand, represented at 8 and which is tamped or suitably packed in the recess 4 of the box 2.

The core maker usually places the section 2 and the complementary block 9 upon a bench before him and fills the recesses 4 of each of the sections with suitable sand, and trowels off the surplus material until the sand is substantially flush with the top smooth surfaces 3. He then inserts the vent wires 7 through the perforations 6 of the binding strap 5 so that the vent wires may be depressed slightly into the smooth surface of the exposed core sand.

In the event that any portion of the desired core is curved and that there should be many independent core making recesses 4 in the molds, I have found it expedient to employ vent-forming threads 10, which being flexible may be readily made to conform to the curvature of the parts of the desired core, and another important reason for employing threads to form vents is that when one terminus as 11, of a core recess, does not extend to the binding strap 5, the thread may be carried down through a perforation 12 made in the mold block, and out at the bottom. The threads when used, are inserted in a suitable needle, which is passed through the perforations 12, and the core maker then holds one end of the thread upon the surface 3 of the section 2 and pulling the needle through the perforation 12, thus draws the thread through the block. The core maker then places that end of the thread which he has retained upon the surface of the core sand, as indicated in Fig. 4. Having thus prepared the sand in the first block 2, he next places a heaping plate 13 on top of this section or block 2 bringing these two parts into proper relative position by inserting dowel pins 14 projecting from the plate 13 into the dowel holes 15 of the member 2.

The dowel plate is formed with slots 16 which have the same general contour as the print recesses 4 in the block. The walls 16' of the slots 16 in the heap plate are preferably tapered outwardly toward the bottom of the plate as indicated in Figs. 3 and 5, so that the wider portion of the slots 16 lie substantially upon the troweled surface of

the sand in the mold recesses, though the width of the slots 16 at their wider portion is not so great as the width of the top of the recesses 4 of the mold block 2. In actual

5 practice, I have found that by utilizing a heaping plate 13 with a thickness of approximately an eighth of an inch, though this may be more or less, that by filling the slots 16 of this plate with core sand and
10 properly tamping the sand, I may then lift the heaping plate 13 from the block 2, leaving a substantial rib, ridge or heap 17 upon the smoother surface of the half core-print.

It is because of the difficulty of troweling
15 up this bonding heap that it is difficult to make more than one core at a time with the apparatus now commonly used. Even the most expert of core makers, when making intricate cores, inadvertently destroy a heap
20 17, which they have carefully made upon the half section of the core, even when making a single core-print.

With my apparatus, it is possible to make as many core recesses as desired in the blocks
25 2 and 9 and the only troweling which is necessary is to trowel off all the surplus sand on each of the blocks until the sand in the recesses is substantially flush with the surfaces 3 of the blocks. It will thus be seen
30 that if the two sections 2 and 9 were now closed, face to face, then the core would be made complete by the material retained in each of the blocks but these complete halves of the cores would not substantially unite
35 with each other, and it is for the purpose of causing a close union or bond of the two halves of the cores, when the mold blocks are closed face to face, that the core maker forms the binding heaps 17 upon either one
40 or the other of the mold blocks, and it is to facilitate this making of heaps that I employ the slotted heap plate 13, which when placed in position, is not easily moved and the recess of which may be quickly filled with core
45 sand and the latter tamped, the surplus sand being troweled off. By using the heaping plate 13, there is less likelihood of the core maker dislodging the vent forming wires 7 or the vent threads 10, because he does not
50 have to trowel or "pinch" up the heap by handling at all, the plate 13 being substantial and rigid allows him to quickly fill the recesses 16 and firmly press the sand therein without any danger of dislodging the wires 7.
55 Having in this manner formed on one of the sections, as 2, one-half of a core and a heap 17 and having formed on the complementary section 9 a complete one-half of a core, he may then remove these independent sections
60 to a receiver or case composed of leaves 18, having recesses or depressions 19, the walls 20 of which are adapted to embrace the binding straps 5 of the core-print molds 2 and 9 and the leaves being pivoted or hingedly
65 connected as at 21 whereby after the mold

blocks 2 and 9 have been placed upon the open leaves 18, these may then be quickly closed about their hinges 21 so as to throw the two faces 3 of the core molds quickly together, thus forcing or intruding the heap
70 17 of the one-half core into the opposite half of the core in the mold block 9, forming then a complete core. As soon as this operation has been completed, the core maker pulls the vent wires 7 and the vent threads 10 from
75 the molds, leaving the continuous vents in the core, after which the leaves 18 may be opened, and the block 9 which is provided with dowel pins 22 for registration with the dowel holes 15 of the member, may be lifted
80 therefrom. This leaves exposed upon the core block 2, the complete core as indicated at 10. The next operation is to remove the complete cores 10 from the mold block 2 so that they may be carried to a baking oven
85 where they are baked to a suitable hardness.

Having thus described my invention, what I claim and desire to secure by Letters-Patent, is;

1. A core making apparatus, comprising 90 a pair of coöperative core box sections, each having recesses, which when filled, will form a complete one-half of a core, means whereby the two independent sections may be closed face to face, to form a complete mold, 95 and an interposed channeled heap forming plate.

2. A core making apparatus, comprising mold sections, each provided with recesses adapted to be brought into close juxtaposition, to make a complete core and means 100 whereby a bond heap may be formed upon the core sand contained in the recesses of one of the mold boxes.

3. A core making apparatus, comprising 105 mold sections, each provided with recesses adapted to be brought into close juxtaposition to make a complete core, means secured to one of said sections to temporarily retain vent forming wires and means whereby a
110 bonding heap may be formed upon the core material contained in the recesses of one of the mold boxes.

4. A core making apparatus, comprising mold sections, each provided with recesses 115 adapted to be brought into close juxtaposition to make a complete core, means secured to one of said sections to temporarily retain vent forming wires and means whereby a bonding heap may be formed upon the core
120 material contained in the recesses of one of the mold boxes, said means comprising a plate adapted to be temporarily secured upon its coöperative mold sections, said plate being provided with slots conforming
125 in configuration to the recesses in the mold box.

5. In a core making apparatus, complementary core box sections having recesses formed in their contiguous faces, means 130

whereby the independent sections may be moved so as to bring the mold recesses into substantial registration to complete a core and means for making a bonding heap upon
5 one of the mold sections, said means including a plate provided with dowel pins adaptable for insertion into holes in one of the sections, said plate being provided with a perforation or perforations, conforming in
10 outline to the shape of the recesses in the

sections, the walls of the perforation in the heaping plate being flared toward its co-operative sections.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

STEWART H. LUNNEY.

Witnesses:

W. E. PARK,

WM T. SCHINDLER.