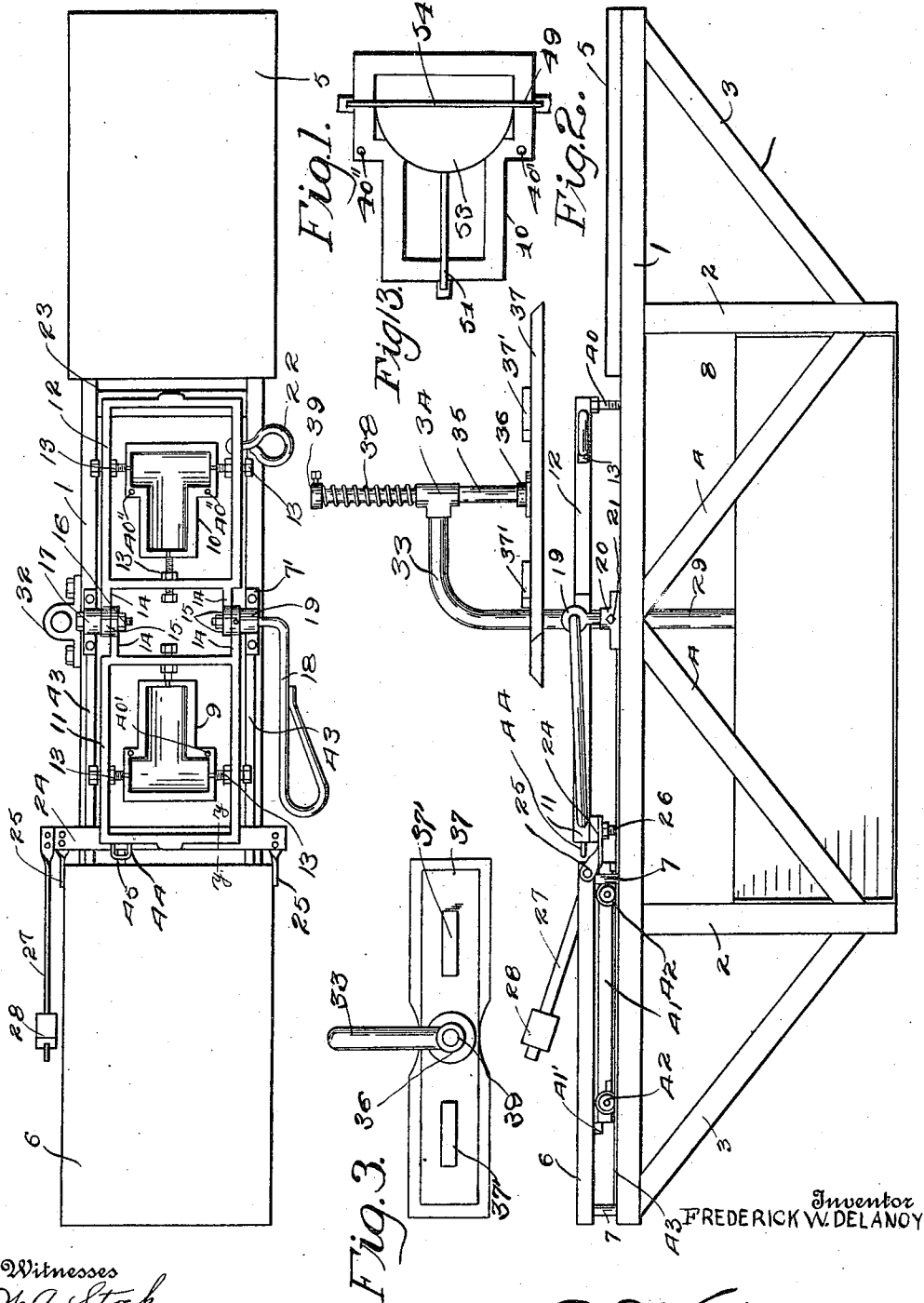


F. W. DELANOY.
CORE MAKING MACHINE.
APPLICATION FILED FEB. 21, 1911.

1,017,039.

Patented Feb. 13, 1912.

3 SHEETS—SHEET 1.



Witnesses
H. A. Stock
H. C. Schroeder

Inventor
FREDERICK W. DELANOY
By E. C. Wooman,
Attorney.

1,017,039.

3 SHEETS—SHEET 2.



Witnesses

W. A. Stock
H. R. Schroeder



Inventor
FREDERICK W. DELANOY

By *E. C. Vrooman*,
Attorney.

F. W. DELANOY.
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3 SHEETS—SHEET 3.

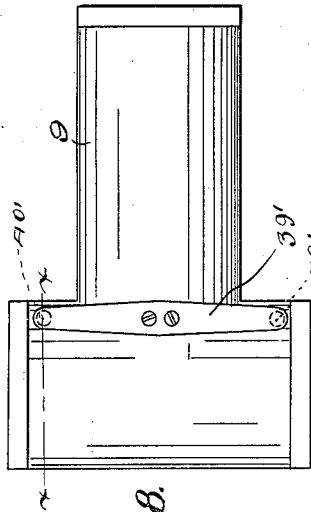


Fig. 8.

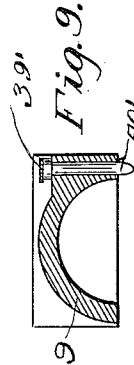


Fig. 9.

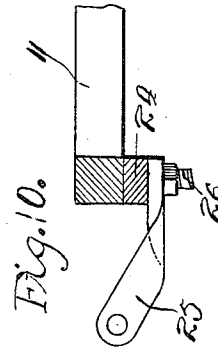


Fig. 10.

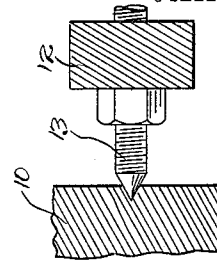


Fig. 12.

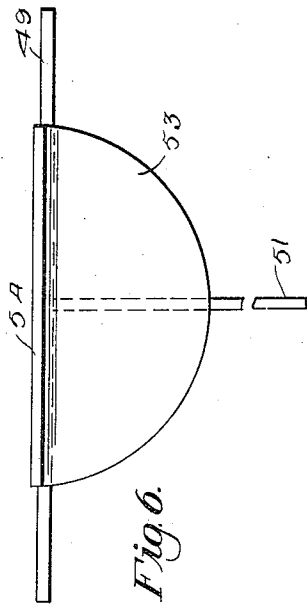


Fig. 6.

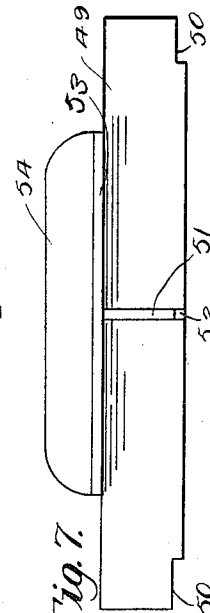


Fig. 7.

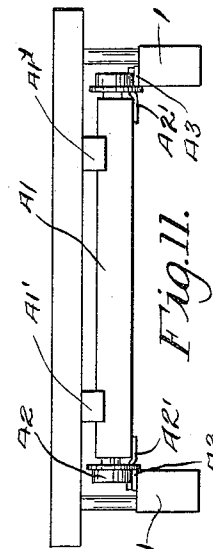


Fig. 11.

Inventor
FREDERICK W. DELANOY.

Witnesses
J. A. Stark
H. C. Schroeder

By E. C. Crooman,
Attorney

UNITED STATES PATENT OFFICE.

FREDERICK WM. DELANOY, OF ALAMEDA, CALIFORNIA.

CORE-MAKING MACHINE.

1,017,039.

Specification of Letters Patent.

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Application filed February 21, 1911. Serial No. 609,977.

To all whom it may concern:

Be it known that I, FREDERICK WM. DELANOY, a citizen of the United States, residing at Alameda, in the county of Alameda and State of California, have invented certain new and useful Improvements in Core-Making Machines, of which the following is a specification.

This invention relates to machines for forming cores, used in molding metal and has for its object to provide an improved machine by means of which the output of cores may be increased and the formation and delivery of the same facilitated.

With these and other objects in view, this invention consists of certain novel constructions, combinations, and arrangements of parts, as will be hereinafter more fully described and claimed.

Referring to the accompanying drawings: Figure 1 is a plan view of an improved machine for forming cores in accordance with this invention. Fig. 2 is a side view of the machine. Fig. 3 is a detail plan view of a tamping device. Fig. 4 is a side view in longitudinal section showing the sections of the core molds brought together. Fig. 5 is a side view in longitudinal section of the machine showing the position of the parts when the completed core is in position for delivery. Fig. 6 is a plan view of a device for forming the vent holes in the core. Fig. 7 is a side view of the device shown in Fig. 6. Fig. 8 is a bottom plan view of one of the sections of the core box. Fig. 9 is a detail view in cross section of a portion of the device shown in Fig. 8 on the line X—X thereof. Fig. 10 is a detail view partly in cross section on the line y—y of Fig. 1. Fig. 11 is a detail view of a portion of the machine at one end thereof. Fig. 12 is a detail view in cross section showing one of the adjustable supporting pins for a core box section. Fig. 13 is a plan view of one of the core mold sections with a vent forming device laid thereon. Fig. 14 is an enlarged detail view in perspective of a portion of the movable platform showing one of its rollers and a wiper.

In carrying out the invention the machine is constructed with a suitable framework as here shown preferably consisting of a pair of longitudinal rails 1, spaced apart from each other and mounted on uprights 2 and having extended portions extending beyond

the uprights 2 and braced by means of diagonal braces 3, the central portion of the framework being braced by means of diagonal braces 4. The framework is provided at one end with a flat table 5 secured thereto in any suitable manner and at its other end with a flat table 6 slightly elevated above the rails 1, by means of pins or uprights 7.

8 indicates a box located beneath the central portion of the framework to receive the sand brushed off from the molds when the same are tamped.

Located in the central portion of the framework are two sections 9 and 10 of a core mold preferably of a T-shape, said sections being mounted respectively in rectangular frames 11 and 12, said mold sections being held in place by means of adjustable screws 13 mounted in the frames 11 and 12, and bearing against the mold sections 9 and 10 as particularly shown in Fig. 12. The inner end of each of the rectangular frames 11 and 12 are formed with short extensions 14, each having an eye 15, said eye bearing against each other, and one pair of said eyes being mounted on a pin or bolt 16 which projects through and is secured in the eye of an eye bolt 17, the other pair of eyes 15 being mounted on a bent arm 18 located at one side of the frame and forming a handle, said arm 18 being secured to the eye 15 of the frame 11, whereby said frame may be swung by means of the handle 18. The arm 18 extends through the eye of an eye bolt 19 which is located in a socket block 20 mounted on one of the rails 1 and held in vertical adjustment thereon by means of a set screw 21. The eye bolt 17 is vertically adjustable by means similar to that by means of which the eye bolt 19 is adjusted. The rectangular frame 12 is provided with a suitable handle, as for example a loop handle 22 projecting from one side thereof. The outer end of the rectangular frame 12 rests on a cross bar 23 mounted in the rails 1 and the outer end of the rectangular frame 11 rests upon a cross bar 24 hinged to the table 6 by means of suitable arms 25 pivoted to the sides of the table 6 at one end thereof. The cross bar 24 rests on adjustable set screws 26 each of said screws being mounted on one of the rails 1. Mounted on one end of the cross bar 24 is an arm 27 having a counterbalance weight 28 at its outer end said weight 28 being held in the

position shown in Figs. 1 and 2 by the frame 11 bearing down upon the cross bar 24 and serving a purpose hereinafter referred to.

In order to tamp the sand in the mold sections 9 and 10, a suitable tamping device is provided, and as here shown preferably consisting of a vertical shaft 29 mounted on one side of the framework at its central portion, and having its lower end located in a socket 30 and adapted to turn therein, said socket piece 30 being mounted on a cross bar 31 of the framework. The shaft 29 projects up through a bracket 32 mounted on the side of one of the rails 1 and serving as a sleeve bearing for the rotary shaft 29, the upper end of said shaft 29 being formed with a horizontal portion 33 as shown in Fig. 2 and having at its end a T-shaped sleeve 34 through which projects a vertically movable rod 35 secured at its lower end to a socket block 36 mounted on the tamping plate 37 provided with handles 37'. The tamping plate 37 is held in the elevated position shown in Fig. 2 by means of a coil spring 38 encircling the upper end of the rod 35, and located between the sleeve 34 and a head 39 on the upper end of said rod. By means of the tamping device, constructed as hereinbefore described, the tamping plate 37 may be swung into different necessary positions above the sections 9 and 10 and pushed down against the sand in either of said sections by pressing down on the upper end of the rod 35, and the spring 38 being pressed thereby automatically lifts the tamping plate 37 to normal position when released from the hand of the operator. The outer end of the frame 12 rests upon an adjustable set screw 40 projecting from the cross bar 23. The frames 11 and 12 are adjusted to the desired height and to the proper position by means of the set screws 40, 26 and the bolts 17 and 19. The sections 9 and 10 of the core box are heaped with the core mixture and the tamping plate 37 is seized by the handles 37' and pulled over the filled mold and the tamping plate 37 is given a number of rapid up and down impulses thereby tamping the sand within the section of the core box. The T-shaped portion of the section 9 of the core box is provided on its under side with a transverse double ended spring strip 39' having at each end thereof a pin 40' which is movable lengthwise through a section of the core box and when the tamping device is pressed down on said section the pins 40' will be pressed down out of the way. When the sand is tamped in the core sections 9 and 10 the frame 11 is swung over on the frame 12 to the position shown in Fig. 4 and the projecting ends of the pins 40' fit into holes 40'' in the mold section 10, thereby serving to hold the section in place. When the frame 11 is swung

over on to the frame 12 the frame 11 will be moved away from the cross bar 24 and the latter is tilted into the position shown in Figs. 4 and 5 by means of the weight 28. The mold section 9 when in the position shown in Fig. 4 is rapped and swung back with the frame 11 to its original position but the cross bar 24 being tilted out of the way, the frame 11 with the core section 9 swings down between the rails 1. Located beneath the platform 6 is a traveling shelf or platform 41 having wheels 42 mounted on track rails 43 on the rails 1 and extending to the center of the framework in order to bring the platform or shelf 41 into position in the space normally occupied by the core section 9, the outer end of the rectangular frame 11 being provided with a loop 44 which when the frame 11 swings down below the rails 1 engages a hook 45 on the forward end of an arm 46 hinged at its rear end to the under side of the shelf 41 and normally held up against the under side of the shelf 41 by a spring 47. When the frame 11 drops down between the rails 1 and engages the hooked end of the arm 46, by pushing down said arm it pulls forward the platform or shelf 41 into the position shown in Fig. 5. A core box section 48, similar to the sections 9 and 10 is placed upon the platform 41 and the frame 12 is swung over on to the top of the section 48, and the mold section 10 is rapped. The core box 9 is then swung back to its normal horizontal position. The section 48 with the finished mold may then be removed and the parts moved back to the normal position shown in Fig. 1. The outward movement of the platform 41 is limited by stops 41' on the under side of the table 6 and the moving shelf 41 is provided with leather strips 42' which project in front of the wheels 42 and keep the track rails 43 clear.

In Figs. 6 and 7 is shown a device for forming the vents through the cores which consist of an oblong narrow strip 49 having a notch 50 at each end of the lower edge thereof and a vertical strip 51 projecting at a right angle from the center of said strip 49 and having a notch 52 at its outer end. Projecting from the top of the strip 49 and over the portion of the top of the strip 50 is a semi-circular plate 53 and from the rear edge of the plate 53 is a vertical strip 54 which serves as a handle for operating the device. When the sand in the mold has been tamped the device is pressed into a section of the core box, the lower edge of the strips 49 and 51 extending below the surface of a half of the core box and leaving an impression in the sand which when the halves are brought together form a desirable vent. In using the device as above described, the notches 50, and 52 thereof fit into recesses 55 in the core box section which limits the

distance into which the parts 49 and 51 of the device enter into the core.

What I claim as my invention is:—

1. In an apparatus of the kind described, 5 a framework, a pair of rectangular frames hinged at their adjacent ends to said framework, and normally located in a horizontal position and adapted to be swung together to a horizontal position, each of said frames 10 having the core mold sections adapted to fit together, a tamping device adapted to be swung horizontally over each of said core mold sections, and vertically movable to tamp the core therein and then swung horizontally out of the way, and means for delivering a completed core from said core section. 15

2. In an apparatus of the kind described, a frame provided with a pair of longitudinal 20 rails spaced apart from each other, a pair of rectangular frames hinged to said rails at their adjacent ends, and normally supported in a horizontal position, each of said frames having a core mold section, said 25 frame being adapted to be swung over to a horizontal position to bring said mold sections together, a horizontally movable shelf movable into position by one of said mold sections, and means for delivering a completed core upon said shelf. 30

3. In an apparatus of the kind described, a framework provided with longitudinal rails spaced apart from each other, a pair of rectangular frames located horizontally

between said rails and hinged at their inner 35 ends, each of said frames having a core section, one of said frames having its outer end resting against a support and the other of said frames having its outer ends resting against a support and automatically out of 40 the way of said end, each of said frames and core sections being adapted to be swung together in a horizontal position, a tamping device for tamping each of said core sections, and means for receiving and delivering a 45 completed core from said core section.

4. In a device of the kind described, a framework having a pair of longitudinal rails, a pair of rectangular frames, each 50 hinged at their adjacent ends to said rails and each provided with a mold section, the outer end of one of said frames resting upon a support, a hinged transverse bar having a counterweight at one end, the outer end of the other of said rectangular frames resting 55 upon said bar, a horizontally movable platform located adjacent to the last mentioned rectangular frame, and means connected with said movable platform adapted to be operated by said rectangular frame to move said 60 platform into position above said rectangular frame.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK WM. DELANOY.

Witnesses:

H. C. SCHROEDER,
E. P. SCHROEDER.