Oct. 10, 1933. F. T. SPIKERMAN ET AL 1,929,538

FOUNDRY EQUIPMENT

Filed Oct. 14, 1929 2 Sheets-Sheet 1

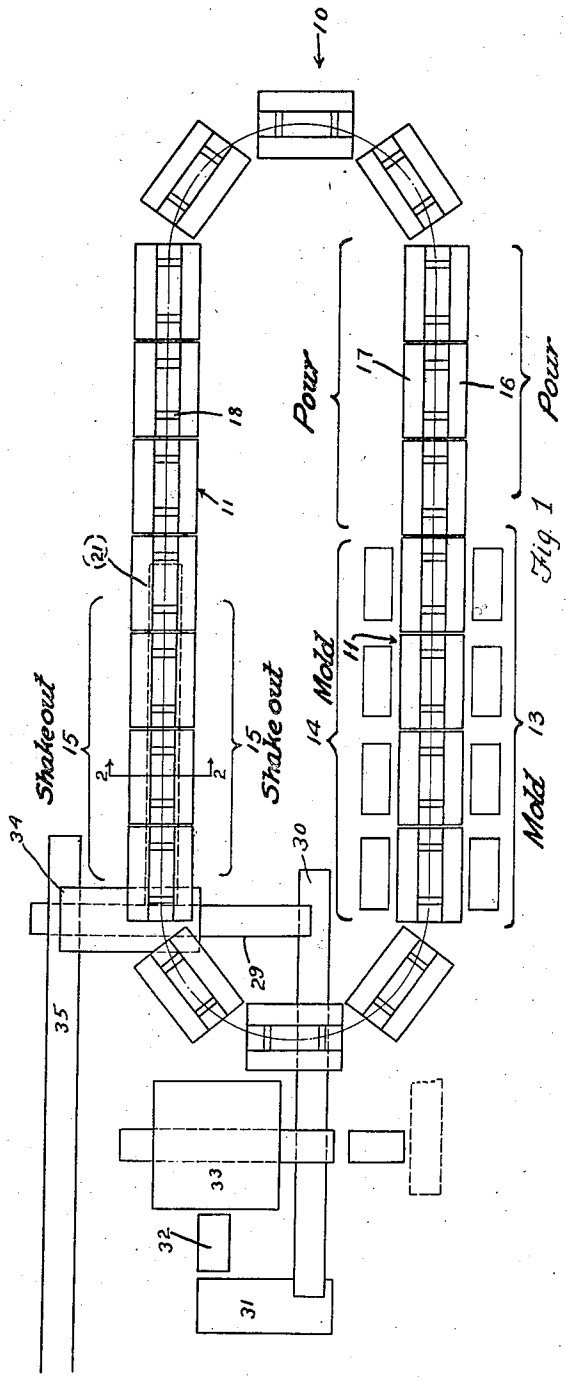


Fig. 1

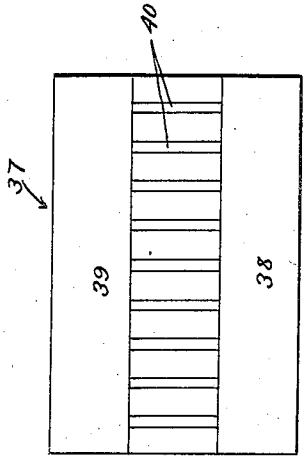


Fig. 5

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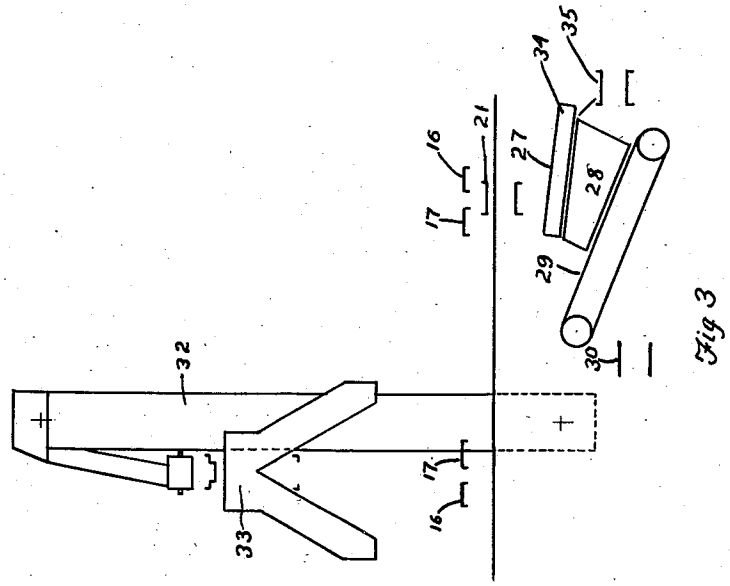


Fig 3

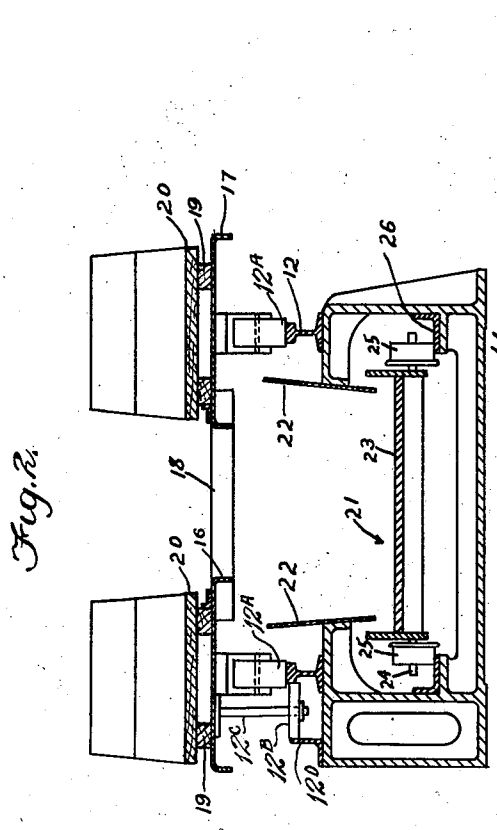


Fig. 2.

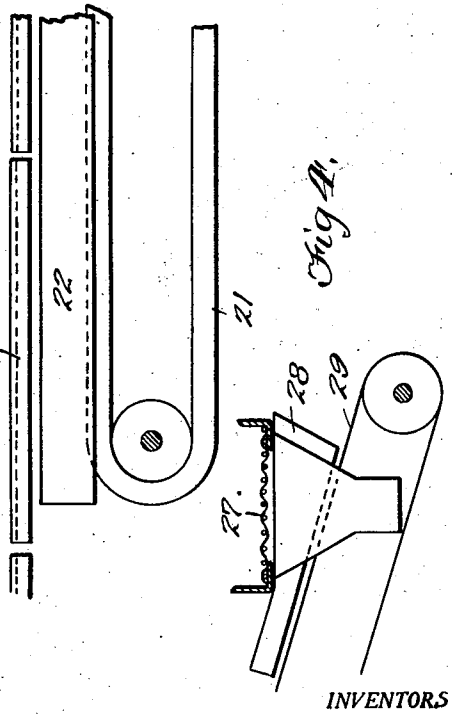


Fig 4.

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1,929,538

FOUNDRY EQUIPMENT

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Application October 14, 1929. Serial No. 399,471

2 Claims. (Cl. 22—1)

The present invention relates, as indicated, to foundry equipment, and has more particular reference to a machine designed to facilitate the handling of molds and castings from the time the same are poured until the handling thereof is completed. Further objects of the invention will appear as the description proceeds. To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings:

Fig. 1 is a plan view of equipment constructed in accordance with our invention; Fig. 2 is a transverse section taken substantially upon the line 2—2 of Fig. 1; Fig. 3 is a diagrammatic elevation of a portion of the device; Fig. 4 is a diagrammatic elevation on a larger scale of the same portion of the device taken at right angles to the plane of Fig. 3; and Fig. 5 is an enlarged plan of a modified form of plate which may be used in our invention.

Referring more particularly to the drawings, it will be seen that I have provided a continuous conveyor indicated generally at 10 and comprising a plurality of articulated plates 11 moving upon a trackway 12, suitable means (not shown) being provided for driving the conveyor. In the form here shown unflanged wheels 12^A support the plates 11, and a guide roller 12^B supported from the plate 11 by a bracket 12^C runs between one of the rails and a guiding angle iron 12^D. This is a matter of detail, and other means could be used for guiding the plates 11 upon the trackway 12. A plurality of molding stations 13 are located outside the trackway adjacent one end thereof, and a similar number of molding stations 14 are located inside the trackway immediately opposite the first series of molding stations. Molders work at each of these two series of stations, and the operators at the stations 13 deposit the finished molds upon the outer edges of the plates 11, while the molders at the stations 14 deposit their completed molds upon the inner edges of said plates.

As the conveyor moves, it brings the molds to a series of pouring stations (not shown) then into a cooling phase, then finally to a shake-out station indicated generally at 15.

Attention may here be called to the fact that each of the plates 11 comprises two spaced sections 16 and 17 secured to each other by transverse tie members 18. Each of said plates 16 and 17 carries spacer blocks 19 upon which the cover boards 20 of the molds are mounted. When the molds reach the shake-out stage, an operator standing outside the trackway can simply lift the outer edge of each cover board 20 as such board reaches him, thus tilting the board and its carried mold and casting to an angle of 45° or 50°, when the mold and casting will slide off said board 20, through the space between the sections 16 and 17 of the conveyor plate and onto a continuous conveyor 21 mounted below the trackway 12. Similarly, an operator stationed inside the trackway 12 can tilt the boards 20 on the plate sections 17 to permit the mold and castings carried thereon to fall onto the conveyor 21. As is clearly shown in Fig. 2, aprons 22 are provided to guard against the possibility of sand falling off the conveyor 21.

The conveyor 21 comprises a plurality of trays 23 mounted upon axles 24 carrying at their outer ends wheels 25 which run upon a trackway 26. Said conveyor 21 carries the sand and castings to the forward end of said conveyor where the sand and castings are dumped onto a vibrating tilted screen 27. As is clearly shown in Figs. 3 and 4, the material carried by the conveyor 21 falls onto said screen 27, and by reason of the vibration of said screen, the sand will fall through said screen and through a hopper 28 onto a continuous conveyor 29. Said conveyor 29 carries the sand to a second conveyor 30 which, in turn, carries the sand to sand treating mechanism indicated generally at 31. Sand discharged from said treating mechanism is picked up by an elevator 32 and carried to a storage and feed hopper 33 whence it may be drawn to supply the molders.

The castings which are discharged onto the screen 27 move, due to the inclination of said screen and to the vibration thereof, toward the end 34 of said screen whence they fall onto a conveyor 35 which carries said castings to a suitable point where they may be sorted for further operations.

As has been indicated in Fig. 5, we may substitute for the plates 11 plates 37, such plates comprising sections 38 and 39 spaced from each other transversely of the length of the plate, and secured together by a plurality of rods or bars 40, such bars forming a grating. If plates 37 are used in our organization, it will be seen that,

when the cover boards are tilted, the sand and castings will fall upon the bars 40. Said bars are spaced apart a sufficient distance so that even comparatively large lumps of sand will fall between them while the castings are retained upon the grating and may be carried upon the conveyor 10 to an operating station where they may be removed by any suitable means.

It will be seen from the foregoing that we have invented a molding apparatus which enables castings to be made by pouring two lines of molds which are transversely separated so that when the molds reach the shakeout station operators at that station push them inward and let them drop through the opening. Thereby the casting and sand are gotten completely away from the conveyor. Except for the push, gravity does all the work. The molds do not have to be lifted. By having the space in the middle the operators can work on each side of the conveyor and one middle space, with one conveyor at the bottom of that space, can take care of all the molds dropped off both lines of conveyors.

In the modified form the molds are inverted on a grating connecting the conveyor sections so that the casting remains on the grating while the sand falls down through the conveyor. Here the economy of space and advantageous disposition of the working force is the same, but the castings must later be removed from the grating.

Other modes of applying the principle of our invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

We therefore particularly point out and distinctly claim as our invention:

1. A foundry conveyor system comprising an upper conveyor train, said train composed of a series of articulated plates each consisting of two side platforms and an intermediate connecting grid therebetween, a second conveyor below said grids, trackways for said conveyors, and guide plates within the upper trackway for guiding material to the lower conveyor.

2. A foundry conveyor system comprising an upper conveyor train, said train composed of a series of articulated plates each consisting of two side platforms and an intermediate connection therebetween, a second conveyor below said series of plates, trackways for said conveyors, and guide plates within the upper trackway for guiding material to the lower conveyor.

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