April 5, 1949. E. S. WALKER ET AL 2,466,650

MOLD DUMPING DEVICE

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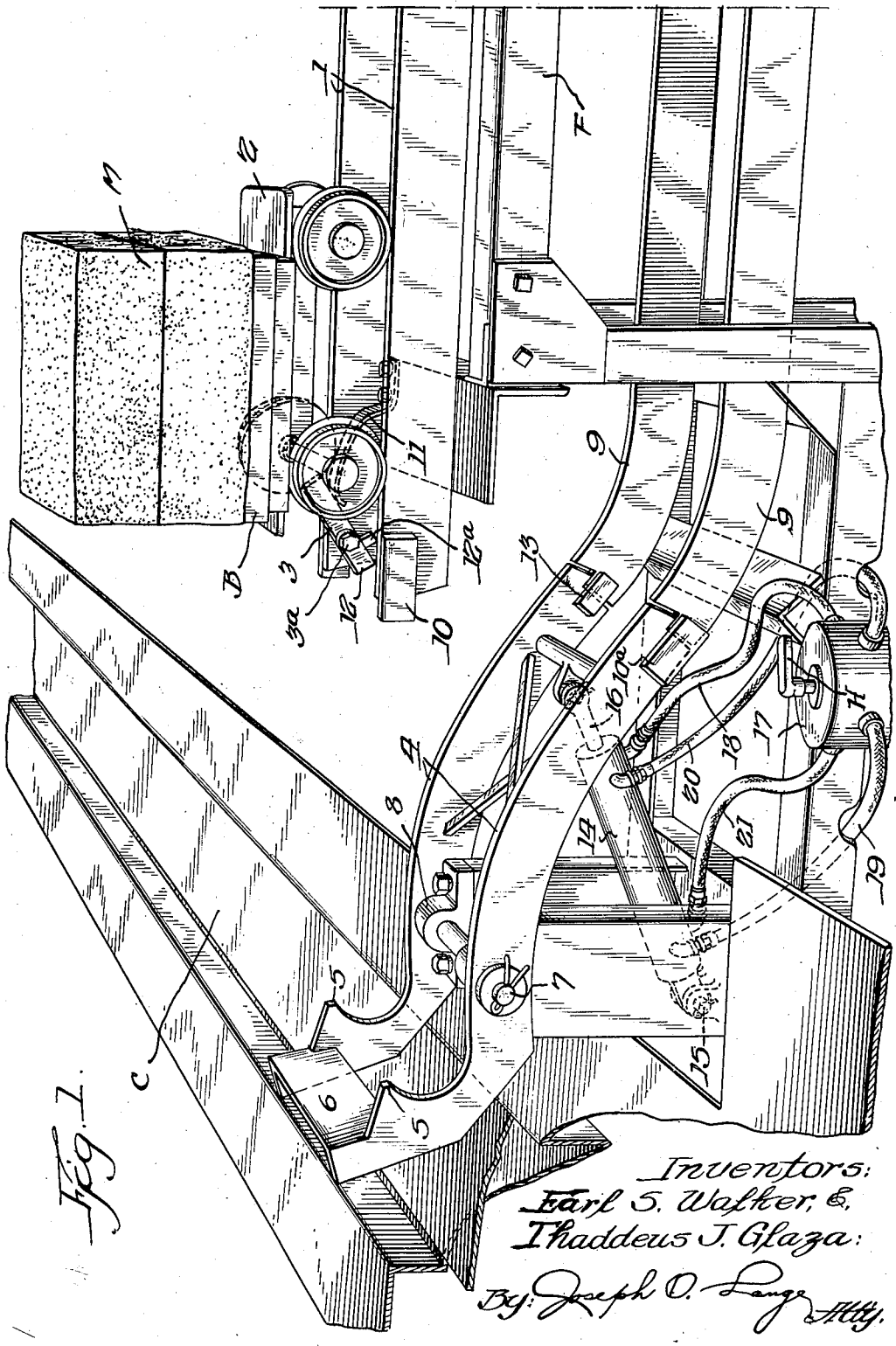


Fig. 1.

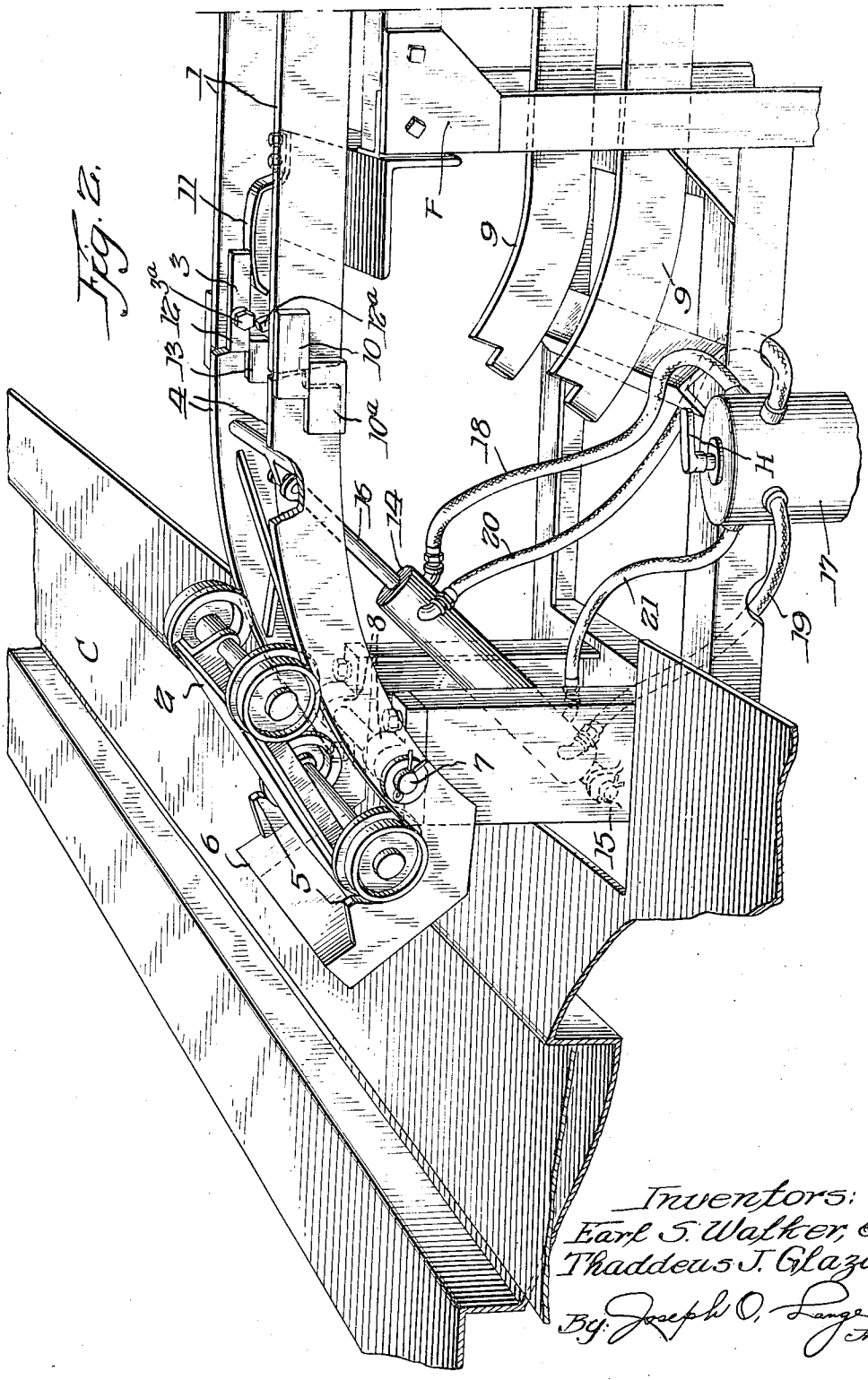
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Fig. 2.



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MOLD DUMPING DEVICE

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3 Claims. (Cl. 214—50)

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This invention pertains to a novel mold dumping device, and more particularly it pertains to a device in which a simple means is accomplished for mechanically dumping sand molds or the like from the conveying dollies or cars onto combined sand and casting conveyors and then providing for the return of the conveying cars to a molder's station.

This invention provides for a device which greatly lessens manual labor, speeds up the operations involved and saves man hours in accomplishing a procedure for making molds and returning them to the original station of fabrication.

A further object is to provide a device which is relatively simple, compact, streamlined and is semi-inclosed thereby minimizing mechanical hazards and break-downs.

A further important object is to provide a device in which the mechanical operation thereof is easily maintained under the control of the operator, and which in the hands of a trained person such operation becomes practically automatic in its application.

Other important objects of the invention will hereinafter become readily apparent in the following description in which reference is made to the accompanying drawings.

In the said drawings:

Fig. 1 is a fragmentary perspective view of an application of our invention applied to a molder's conveyor in the non-dumping position.

Fig. 2 is a fragmentary perspective view of an application of our invention applied similarly in the dumping position.

Similar reference characters refer to similar parts throughout the several views.

Referring to Fig. 1, the upper track 1 mounted on the frame or platform F leads from any source from which articles to be dumped are conveyed and in the present embodiment the track is used to carry a completed mold for dumping and removal of the casting after the latter has been poured, the mold being mounted upon the roller carrier 2 provided with suitable flanged wheels for engagement with the track 1. The latter may be either horizontal or pitched slightly in the direction of the car stop generally designated 3. When the curved track portion or continuation 4 of the track 1 is pivotally moved to the connected position shown in Fig. 2, the car stop 3 preferably pivoted at 3a is automatically tripped and lowered to the release position indicated. The mold roller carrier 2 is then permitted to move down the curved incline 4 and to strike

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against the abutting stop 5 to permit the mold and the bottom board B to strike against the backstop 6, causing the molding board B to stop thereagainst with the sand and the contained castings moving en masse over the top of the backstop 6 onto the conveyor C. After thus dumping the mold, the curved track 4 which is pivoted upon the pin 7 journaled in the trunnion 8 is lowered, thus causing the roller 2 to move downward onto the lower curved track extension 9, which is directly beneath the track 1. The momentum gained by moving down such incline preferably permits the car 2 to move to the opposite end (not shown) of the conveyor track and back to the molder's station.

As shown in Fig. 2, the novel car stopping device preferably bears against a leaf spring 11 which is tripped at 12 to chock the wheels of the carrier 2 by striking the abutting stop 13 of the track 4, the lower lug 12a serving to prevent the lever 12 from being overthrown by impact with the carrier. Abutment of the stop 10a against the stop 10 serves to provide alignment of the track extension 4 with track 1. Actuation of the pivotally mounted curved track 4 may of course be manually operated by means of suitable levers operated by a foot pedal or the like, or else as illustrated in the instant embodiment a fluid operated plunger 14 suitably pivoted at 15 may be used, employing an air cylinder (not shown) connected to a connecting rod 16 which upon extension or retraction raises or lowers the pivotally mounted curved track 4, controlled by suitable actuation of the four-way valve 17 provided with the handle H. The valve is provided with the inlet connections 18 and 19 leading to opposite ends of the plunger 14, and having the exhaust lines 20 and 21, respectively. Thus it is clear that a simple and convenient method for dumping molds has been provided, eliminating a large amount of manual labor in lifting molds to be dumped, in addition to facilitating greater production.

We are aware that several types of car dumping apparatuses have been used in the past as, for example, in connection with dumping the contents of mine cars and the like, but so far as we know no one has previously devised a similar type of automatic conveyor suitable for use in a foundry in handling the dumping of molds or other types of material in which such convenient dumping and return are accomplished.

It is realized too that the particular form of construction may vary substantially from that illustrated and described. Therefore it is the

desire not to be limited to the precise construction, arrangement and operation of parts as hereinabove shown and described, since it is manifest that numerous variations or modifications in the detailed structure and arrangement may be employed, without departing from the spirit and scope of our invention. Reservation of the right is therefore made to all such variations and modifications as properly fall within the scope of our improvements and terms of the following claims.

We claim:

1. The combination of a mold dumping device comprising a frame carrying rail sections suitable for receiving a mold carrier provided with wheels or the like, the said frame being substantially fixed, a second rail portion below the said first named rail section, a rail extension of the said frame alternately connectable with and pivotably movable relative to said first named rail sections, stop means on the said rail extension, resilient means cooperating with the said stop means, the said extension being downwardly inclined from the said frame and being movable from carrier dumping position to a position in which the carrier is movable to connect with the said second rail portion, means for selectively moving the said rail extension from connection with the first named rail sections of the said frame and with the said second rail portion, the said stop means bearing against said resilient means, the latter means thereby being tripped to chock the wheels of the said carrier by striking said stop means, the angle of inclination of the said extension providing for the discharge of molds or the like from the carrier upon occurrence of said impact of the latter with the said extension stop and whereby when the pivotal extension is connected with the said second rail portion the carrier is permitted to move by gravity onto the second rail portion.

2. Mold dumping means comprising a frame carrying rail sections suitable for receiving a mold carrier or the like, the said frame being substantially fixed, a second rail portion below the said first named rail sections, an extension of the said frame alternately connectable with and pivotably movable relative to said first named rail sections, stop means on the said extension, the said extension being downwardly inclined from the said frame and being movable from carrier dumping position to a position in which the carrier is movable to connect with the said second rail portion, means for selectively moving the said frame extension from connection with the first named rail sections of the said frame and with the said second rail portion, the said selective means including a connecting rod and actuating means therefor, the extension on movement of the said connecting rod raising or lowering the said pivotally mounted extension of the frame, the inclination of the said extension providing for the discharge of molds or the like from the carrier upon impact of the latter with the said extension stop when the extension is in communication with the said frame and whereby when the pivotal extension is connected with the said second rail portion the carrier is moved by gravity onto the said second rail portion.

3. A mold dumping device comprising a frame carrying rail sections suitable for receiving a mold carrier or the like, the said frame being substantially fixed, a second rail portion below the said first named rail sections, an extension of the said frame alternately connectable with and pivotably movable relative to said first named rail sections, stop means on the said extension, the said extension being downwardly inclined from the said frame and being movable from carrier dumping position to a position in which the carrier is movable to connect with the said second rail portion, means for selectively moving the said frame extension from connection with the first named rail section of the said frame and with the said second rail portion, the angle of inclination of the said extension providing for the discharge of molds or the like from the carrier upon impact of the latter with the said extension stop when the extension is connected to the said frame and whereby when the pivotal extension is connected with the said second rail portion the carrier is permitted to move by gravity onto the said second rail portion.

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