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WITNESSES
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STOP FOR TRACKWAYS

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This invention relates to trackway stops and more particularly to means for temporarily arresting movement of cylindrical objects, such as pipes or pipe flasks, rolling on skids or rails.

In moving such objects from station to station in a pipe foundry, particularly where the trackway is inclined downwardly to permit the objects to roll therealong by gravity, it is desirable to employ a stop at which a series of flasks or pipes will momentarily be halted in their travel and beyond which the flasks or pipes may be released individually for further movement.

The object of the invention is to provide in combination with a trackway for cylindrical objects a stop of this character together with mechanical actuating means for swinging the stop to alternate positions.

More specific objects and advantages characterizing the invention will become more fully apparent from the description hereinafter of one example or embodiment of the invention as applied to the movement of cylindrical flasks in a pipe foundry, the description having reference to the accompanying drawings, whereof:

Fig. I represents a side elevation of a trackway and transfer car embodying the invention; and,

Fig. II represents an end elevation of the trackway.

In the drawings there is shown a trackway for cylindrical pipe flasks 1 comprising generally, skids 2 in the form of rails supported in parallel spaced relation by means of suitable pedestals 3, the rails being elevated to a considerable distance above the floor 4. It may be assumed that the trackway is employed for moving pipe flasks 1 in succession from a centrifugal casting station to a mold disintegrating station, and that the transfer car, comprehensively designated at 5, is adapted to receive flasks discharged at the end of the trackway and to transport them to an additional parallel trackway leading to the mold disintegrating station. A slight downward inclination to the rails 2 may be provided so that the pipe flasks may be caused to roll by gravity from the centrifugal cast-

ing station towards the transfer car 5 in the direction indicated by the arrow.

To guide the movement of the pipe flasks 1 upon the trackway, the rails 2 at one side thereof are disposed in close proximity to them the annular flanges 6 of the pipe flasks. Thus as the pipe flasks 1 are rolled along the trackway their axes are maintained substantially transverse to the parallel rails 2. Near the end of the trackway, stops 7 are provided at each side thereof, the stops being mounted for pivotal movement on a shaft 8 which is supported by brackets 9 beneath the inner set of rails 2, and which extends from one side of the trackway to the other. Each stop 7 includes an arm or projection 10 which normally extends above the top surfaces of the rails 2, and an additional arm 11 which is normally below the rails in a substantially horizontal position. The arm 11 includes a flat top edge 12 which, when the stop 7 is swung about the shaft 8, strikes the body of the first of the series of pipe flasks and causes the same to be discharged from the end of the trackway onto the transfer car 5. The arm 11 also includes a curved side edge 13 which, while the first flask is being discharged from the trackway, moves upward to engagement with the next succeeding flask and arrests its movement.

The actuating mechanism for swinging the stops 7 about the axis of the shaft 8 comprises, in the example shown, a cylinder 14, a plunger 15, and a linkage including a toggle joint pivotally connected to the stops 7 by a pin 16. Any suitable pressure medium may be employed at the cylinder 14 to cause reciprocatory movement of the plunger 15. On the plunger 15 there is provided a cross head 17 engaging a cross head guide comprising parallel rods 18. The cylinder 14 and cross head guide rods 18 are mounted, by means of brackets designated respectively at 19 and 20, on a plate 21 which is secured to channel beams 22 extending from one pedestal 3 to another. Joined to the cross head 17 there is a connecting rod 23, the outer end of which is pivotally connected by a pin 24 to toggle links 25 and 26. As shown in Fig. II,

the lower toggle link 25 is fixed to a rock shaft 27 which extends from a pedestal 3 at one side of the trackway to a similar pedestal at the other side, and which is rotatably mounted in brackets 28. At the side of the trackway opposite to that on which the cylinder 14 is mounted, a similar toggle joint comprising links 29 and 30 and a pivot pin 31, is provided. The top link 26 of the toggle joint, at the one side of the trackway, and the top link 30 of the toggle joint at the other side of the trackway, are pivotally connected to the stops 7 by the pins 16.

In an obvious manner reciprocatory movement of the plunger 15 causes swinging movement to be transmitted to the toggle links 25 and 26 at the one side of the trackway, and, through the rock shaft 27, a corresponding movement is transmitted to the links 29 and 30 at the other side of the trackway. Accordingly, with each stroke of the plunger 15, the stops 7 are simultaneously swung about the axis of the shaft 8 to effect alternate depression and elevation of their arms 10 and 11.

The transfer car 5 comprises generally a rectangular frame, made up of channel beams 32 which support a pair of parallel rails 33, and wheels 34. The wheels 34 engage the transfer car rails 35 which are transverse to the rails 2 of the flask trackway and which are elevated from the foundry floor 4 by means of a support 36. With the transfer car in the position shown in Fig. 1, its rails 33 are in registry with the stationary rails 2 of the trackway.

The operation of the apparatus is as follows: Assuming that a series of flasks 1 has been rolled by hand or by gravity to the end of the trackway and that they are assembled there in contiguous relation with the first flask engaging the stops 7, and assuming that the transfer car 5 occupies the position shown, the operator desiring to discharge a flask onto the transfer car turns a valve or operates other means controlling the pressure cylinder 14 to effect a double stroke of the plunger 15. With the first stroke of the plunger 15, the arms 10 of the stops 7 are caused to be depressed beneath the rails 2; and the arms 11 are caused to be elevated to engage the first flask and move the same, by reason of the engagement of the top edges 12 with the flask bodies, off the ends of the rails 2 onto the rails 33 of the transfer car 5. At the same time the curved side edges 13 of the stops 7 are projected above the rails 2 into engagement with the next succeeding flask to arrest its movement. With the reverse stroke of the plunger 15 the arms 11 of the stops 7 are depressed and the smoothly curved edges 13 permit disengagement from the second flask. As the top edges 12 of the arms 11 assume their normal horizontal position, the second flask will roll forward and strike the arm 10,

which has meanwhile been elevated above the rails 2. Accordingly, with each double stroke of the plunger 15 a flask is automatically discharged from the stationary trackway onto the transfer car 5. By obvious manipulation of the control means for the cylinder 14, any desired number of flasks may be discharged onto the transfer car.

While I have described a particular mechanism, including toggle joints, for imparting swinging movement to the stops 7, it will be apparent that the particular mechanism employed for this purpose admits of a wide range of variation. It will be apparent, also, that numerous changes may be made in the form of the apparatus herein described without departing from the spirit of the invention as defined in the claims hereto annexed.

Having thus described my invention, I claim:

1. In combination with a trackway for cylindrical objects, a stop pivoted alongside said trackway having an arm normally projecting above the trackway to arrest movement of the first of a series of cylindrical objects thereon, and having an additional arm normally below the trackway adapted when the stop is swung about its pivot with depression of the first mentioned arm to be elevated to arrest movement of the next succeeding cylindrical object.

2. In combination with a trackway for cylindrical objects, a stop pivoted alongside said trackway having an arm normally projecting above the trackway to arrest movement of the first of a series of cylindrical objects thereon, and having an additional arm normally below the trackway adapted when the stop is swung about its pivot with depression of the first mentioned arm to advance the first object along the trackway while arresting movement of the next succeeding object.

3. In combination with a trackway for cylindrical objects, a stop pivoted along said trackway having an arm normally projecting above the trackway to arrest movement of the first of a series of cylindrical objects thereon, and having an additional arm normally below the trackway, said latter arm including a top edge adapted when the stop is swung about its pivot with depression of the first mentioned arm to advance the first object along the trackway and including also a curved side edge for arresting movement of the next succeeding object while the first object is being advanced.

4. In combination with an inclined trackway for cylindrical objects, a stop pivoted alongside said trackway at the end thereof, said stop having a projection normally extending above the trackway to arrest gravity movement of the first of a series of cylindrical objects thereon, and having surfaces normally below the trackway adapted when the

stop is swung about its pivot with depression of said projection to permit gravity discharge of the first object from the trackway while arresting movement of the next succeeding
5 object.

5. In combination with a support having a trackway for cylindrical objects, a stop pivoted alongside said trackway having a projection normally extending above said trackway to arrest movement of the first of a series of cylindrical objects thereon, and having surfaces normally below the trackway adapted when the stop is swung about its pivot with depression of said projection to
10 be elevated to arrest movement of the next succeeding object, a toggle joint having one link connected to the trackway support and another link connected to said stop, and means connected to the center of said toggle joint for actuating the same to swing the stop
15 to its alternate positions.

6. In combination with a stationary trackway comprising rails for carrying pipe flasks or like objects, a stop pivoted alongside said
25 rails at the end thereof, and a transfer car movable transversely of said trackway having rails thereon adapted for registry with said stationary rails, said stop having an arm normally projecting above the trackway
30 to arrest movement of the first of a series of objects thereon, and having an additional arm normally below the trackway adapted when the stop is swung about its pivot with depression of the first mentioned arm to advance the first object onto the transfer car
35 while arresting movement of the next succeeding object.

In testimony whereof, I have hereunto signed my name at Florence, New Jersey,
40 this 17 day of July, 1931.

LOUIS A. CAMEROTA.

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