April 3, 1951 P. C. VOGEL 2,547,293

FOUNDRY CONVEYER PAN

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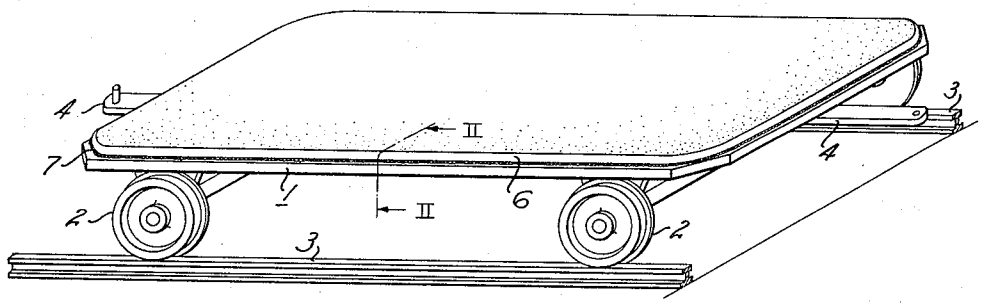


Fig. 1

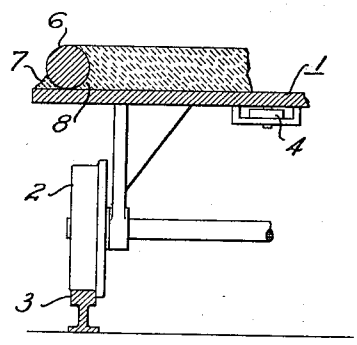


Fig. 2

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FOUNDRY CONVEYER PAN

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3 Claims. (Cl. 22—90)

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This invention relates to improvements in foundry mold conveying equipment, more particularly of the type in which a mold flask is placed upon a conveyer pan for movement to and from a pouring station.

An object of the invention is to provide a simple, inexpensive, readily removable, flat protective surface for the conveyer element, on which to rest the mold.

Prior to the present invention it has been customary to employ conveying equipment in foundries consisting of a train of cars or pans operating on a track. The cars or pans proper have ordinarily been protected by use of flat steel plates or trays to form a working surface on which the mold is placed. It is essential that this working surface be kept reasonably flat and true, but the spilling of molten metal, and the intense heat to which the surface is exposed after pouring, ordinarily will warp and crack the protective plate or tray, necessitating frequent and costly repairs and replacement of the steel plates or trays used.

The present invention concerns a novel use of a refractory facing for the conveyer pan or car, cast in situ upon the upper surface of the car or pan, and formed and retained by a fixed rim around the car or pan surface.

This invention can be carried into practical effect as fully described hereinbelow with reference to the accompanying drawing, in which:

Fig. 1 is a perspective view of a conveyer car or pan equipped according to the invention; and

Fig. 2 is a fragmentary enlarged cross section taken on line II—II of Fig. 1.

In the drawing, a conveyer pan is indicated by the reference character 1. This pan 1 may be attached to wheels 2 in a manner to form a conveyer car running on tracks 3 (as shown); or pan 1 may be a removable plate or tray detachably resting upon any other suitable known conveyer element (not shown) as will be clearly understood by any person skilled in the art. A series of car or pan units may be linked together, as by links 4, and drawn along any suitable path past a pouring station (not shown).

The pan is prepared according to the invention by providing an upstanding rim 6 arranged to border a substantial area of the flat, metallic base plate. As shown, the rim extends entirely around the upper surface of the base or pan 1, near its edges, and is made by bending a round rod to the proper form and welding the same to the upper surface of the pan at points along its outer side, as shown at 7. This provides a rim

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of uniform height which overhangs an adjacent portion of the surrounded area by reason of the round cross-sectional shape of the rod, as shown at 8.

The working surface is formed by casting in situ, in the form provided by the pan 1 with rim 6, that is, in the space surrounded by rim 6, a protective covering of a suitable, commercially obtainable, refractory, casting cement, and striking off all excess cement poured, while still plastic, by passing a straight edge over the pan in contact with the crest of rim 6. Care should be taken in pouring and striking off the cement to work or puddle the cement sufficiently so that no voids will be left unfilled and the cement will fill the space overhung by the bordering rim 6 as shown at 8.

It will be seen that a fair, flat surface, flush with the rim 6, is readily obtainable; and that the cement, when set, will be locked securely in place by the portion of the rim overhanging the bordered area and will form a good working surface.

The monolithic, refractory coating of the invention is readily replaced when worn or damaged by breaking out the cement with a hammer and casting a new coating, striking off to form a flat surface in the manner described above.

The refractory material of applicant's invention will effectively prevent warping and cracking of the steel pan 1 and it has been found in actual practice that a conveyer pan according to the present invention will greatly outlast an unprotected, steel plate; and that great savings are made in conveyer upkeep by employment of the present invention by reason of the small replacement cost of the refractory, protective, working surface as compared with the cost of maintaining and replacing unprotected, steel plates used previously.

As an example of a suitable castable refractory, it has been found in actual practice that a commercial, refractory, casting cement mixture, readily obtainable from manufacturers of refractory materials and composed chiefly of finely divided, refractory materials and a suitable known binder such as sodium silicate, forms a durable and satisfactory surface.

While but one form of conveyer pan according to the invention has been specifically described and illustrated herein, it will be understood that applicant's invention is readily applicable to the protection of other styles of conveyer pans; and that the invention includes such modifications and equivalents as may readily oc-

cur to persons skilled in the art within the scope of the appended claims.

It is claimed and desired to secure by Letters Patent:

1. A foundry mold conveyer pan comprising a generally flat surfaced metallic base, a metal rim projecting from a flat surface of said base and bordering a substantial area of said flat surface on all sides and a monolithic filling of refractory cement cast in situ in the space bordered by said rim and having its surface in a plane flush with said rim.

2. The device of claim 1 in which said rim is formed in overhanging relation to portions of said surrounded area of said base adjacent said rim on opposite sides of said surrounding area to lock said filling in place on said base.

3. The device of claim 2 in which said rim is round in transverse cross-section and secured in

tangent relation to said flat surface of said base by welding along its outer side.

PAUL C. VOGEL.

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