Nov. 20, 1951 L. J. NIXON 2,575,829

INGOT HOLDER

Filed Oct. 7, 1947

Fig. 1.

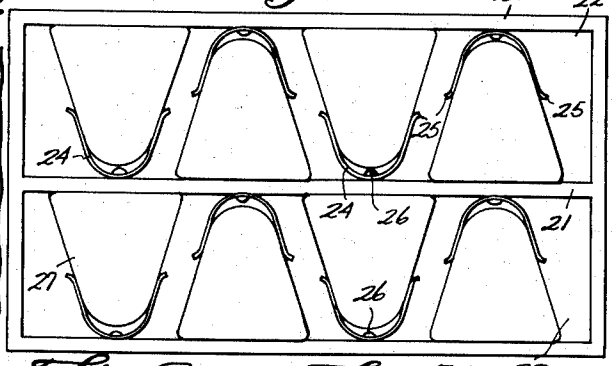


Fig. 2.

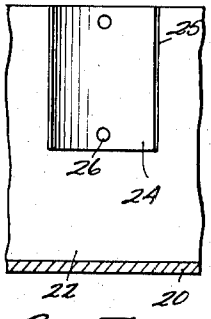


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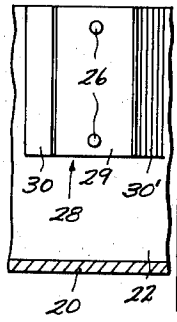


Fig. 3.

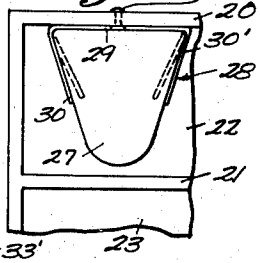


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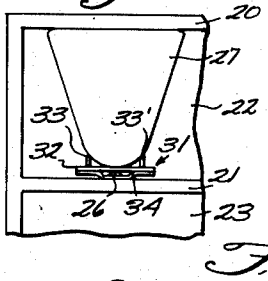


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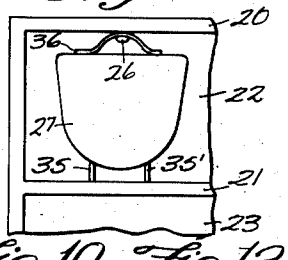


Fig. 6.

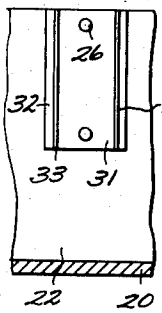


Fig. 8.

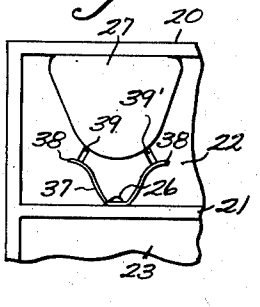


Fig. 9.

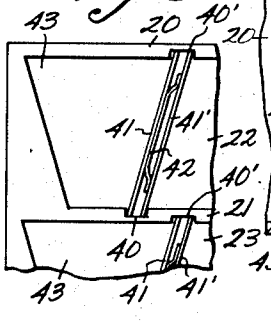


Fig. 10.

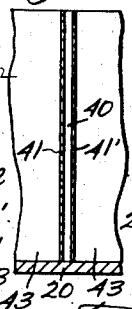


Fig. 12.

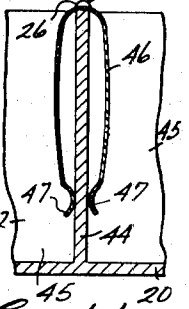


Fig. 11.

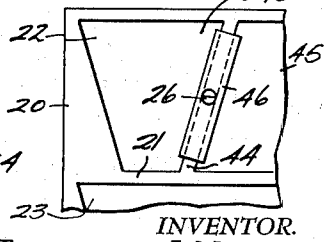


Fig. 13.

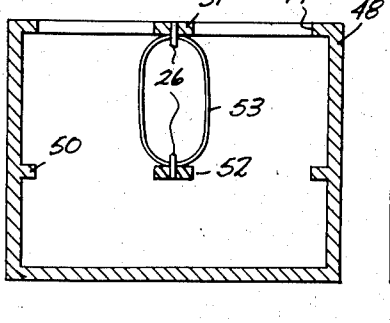
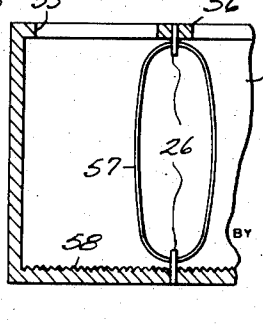


Fig. 14.



INVENTOR.

Lawrence J. Nixon,

BY Victor J. Evans & Co.

ATTORNEYS

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INGOT HOLDER

Lawrence J. Nixon, Pittsburgh, Pa.

Application October 7, 1947, Serial No. 778,304

1 Claim. (Cl. 206—65)

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This invention relates to an ingot holder or storage bin, and more particularly to a device of this character that will retain type metal ingots in a vertical position until used. Thus the ingots may be more easily stored, transported or handled with the greatest possible ease and efficiency.

Ingot molds differ from each other in size and shape so that ingots cast in a small mold would have play or wobble if stored in an ingot holder designed for ingots cast in a large mold. Also, if insufficient molten metal is poured into a mold, an undersized ingot is formed.

The important object of this invention, therefore, is to provide an ingot holder that, regardless of shape or size, will hold an ingot therein in a vertical manner until used, permitting a more expeditious manner and handling of the ingots.

With the above and other objects and advantages in view, the invention consists of the novel details of construction, arrangement and combination of parts more fully hereinafter described, claimed and illustrated in the accompanying drawing in which:

Figure 1 is a plan view of an ingot holder showing one form of ingot retainer forming an embodiment of the invention;

Figure 2 is an elevational view of the form of ingot retaining means shown in Figure 1;

Figure 3 is a top plan view of another form of ingot retaining means;

Figure 4 is an elevational view of the form of ingot retaining means shown in Figure 3;

Figure 5 is a top plan view of another form of ingot retaining means;

Figure 6 is an elevational view of the form of ingot retaining means shown in Figure 5;

Figure 7 is a top plan view of another form of ingot retaining means;

Figure 8 is a top plan view of another form of ingot retaining means;

Figure 9 is a top plan view of another form of ingot retaining means;

Figure 10 is a vertical sectional view of the ingot holder shown in Figure 9;

Figure 11 is a top plan view of another form of ingot retaining means;

Figure 12 is a vertical sectional view of the retaining means shown in Figure 11;

Figure 13 is a vertical sectional view of an ingot holder and another form of ingot retaining means and

Figure 14 is a vertical sectional view of an ingot holder and another form of ingot retaining means.

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Referring more in detail to the drawing, the reference numeral 20 designates a box-like ingot holder having a longitudinally extending central partition 21 which divides the holder into two compartments 22 and 23 respectively.

The ingot retaining means 24 may be termed a U-shaped or a V-shaped piece of spring metal, having out-turned outer edges 25. The retaining means is alternately secured to the inner surface of the side walls and both surfaces of the partition by fastening means 26. The retaining means are spaced from each other for a distance to permit easy removal of the ingots 27, and the retaining means alternately retaining the ingot in the holder in a rigid vertical position. The pressure of the spring formed retaining means prevents wobbling of the ingots. This form of retaining means engages the small end of the ingot.

The ingot retaining means 28 comprises a piece of spring metal having a base portion 29 secured by fastening means 26 to the surface of the sidewalls and partition, as previously described. Formed on the base, at each end thereof, are the inclined arms 30 and 30' respectively, which bear against the sides of the ingot to hold it in place. This form of retaining means engages the bottom of the ingot 27 to prevent wobbling of the ingot.

The ingot retaining means 31 comprises a plate 32 having spaced outwardly disposed blades 33 and 33' which engage on opposite sides of the small end of the ingot 27. Engaging the plate on the opposite side is a curved spring 34 which is secured to the surface of the side walls and partition, by the fastening means 26 as previously described. The pressure of the spring forces the plate into engagement with the ingot to prevent wobbling thereof.

In Figure 7, the ingot retaining means comprises the parallel blades 35 and 35' secured to the surfaces of the sidewalls and partitions as previously described, while a curved spring 36 is secured diametrically opposite to the blades to the surfaces of the sidewalls and partition by the fastening means 26. In this form the spring engages the bottom of the ingot 27 to force the small end into engagement with the blades to prevent wobbling of the ingot.

If desired, in both instances, the blades may be sharpened to dig into the soft metal of the ingot.

In Figure 8, the ingot retaining means 37 is similar to the ingot retaining means 24, being U-shaped or V-shaped, having out-turned ends 38 on which are formed blades 39 and 39'. These blades engage the small end of the ingot 27 to

prevent wobbling of the ingot and these blades may also be sharpened if desired.

In Figure 9, the inner surfaces of the side walls and both surfaces of the partition 21, are provided with vertical slots 40 and 40' respectively, which are in offset relation to each other. Into these slots are placed plates or partitions 41 and 41' respectively, and a curved spring 42 intermediate these partitions, forces the partitions apart into engagement with the ingots to retain each ingot in a separate acute angled pocket 43 in the compartments 22 and 23 to prevent wobbling of the ingots.

In Figures 11 and 12, partitions 44 divide the compartments 22 and 23 into acute angled pockets 45, and the ingot retaining means 46 comprises a U-shaped spring clamp having outer ends 47 which is forced over the upper edge of the partition 44 and secured thereto by fastening means 26.

The spring engages the ingot to force the ingot into the sides of the pockets to prevent wobbling thereof.

The ingot holder 48, shown in Figure 13, is boxlike in formation, but the top edges of the side walls have an inturned right angled flange 49 while a right angled flange 50 replaces the partition 21. Extending longitudinally of the holder 48, at the upper edge of the end walls thereof, is the rail 51, while a second rail 52 is carried by the end walls directly below and parallel to the rail 51. Secured to the rails 51 and 52, intermediate thereof, and spaced relatively to each other by fastening means 26, are the elliptical shaped springs 53 which engage the ingots to prevent wobbling thereof.

The ingot holder 54, shown in Figure 14, is similar to the ingot holder 48 having the integral right angled flange 55 formed at the top edges of the walls of the holder, and the rail 56 which extends longitudinally of the holder. In this instance, the elliptical shaped spring 57 extends the entire distance from the undersurface of the rail to the bottom of the holder 54 and is secured at its ends by fastening means 26 to the rail and holder. The spring engages the ingots and the surface of the bottom of the holder is roughed at 58 to prevent wobbling of the ingots.

The pockets in the holders, the holders and ingots may be of any shape in common use, and the retaining means used are to be the best adapted for the particular ingot and holder to be used.

The principal object of the invention is to retain the ingots regardless of shape or size, in a holder for storing, transportation or handling purposes, so that the ingots can be handled with the greatest possible ease and efficiency.

From the foregoing description, it is believed that the operation, advantages and construction of the various holders and retaining means will be apparent to those skilled in the art, and it is to be understood that changes in the minor details of construction may be resorted to, provided they fall within the spirit of the invention and the scope of the appended claim.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

A device of the character described, comprising a box like holder for ingots and retaining means carried by said holder for retaining said ingots in a spaced vertical relation to each other, and said holder is formed with a longitudinally extending centrally located partition and said retaining means is substantially U or V-shaped in cross-section, having out-turned ends and inwardly directed blades formed thereon inwardly of the out-turned ends thereof and said retaining means are secured to the inner surface of the holder and to both sides of the partition in alternate spaced relation to each other.

LAWRENCE J. NIXON.

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