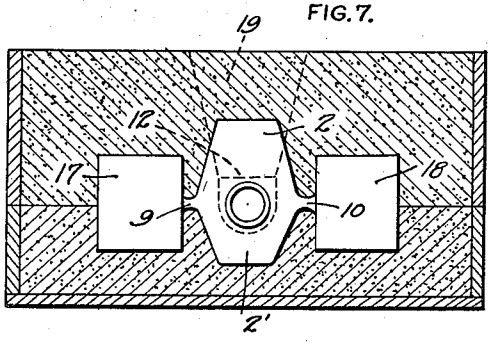
Nov. 24, 1936. R. J. HEBERT 2,061,798

PATTERN GATE CONSTRUCTION

Filed Aug. 15, 1934

FIG. 7.



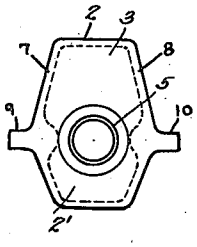


FIG. 2

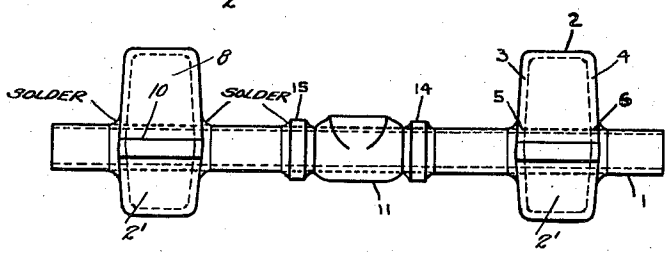


FIG. 1

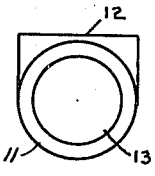


FIG. 4

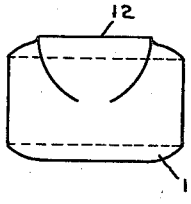


FIG. 3

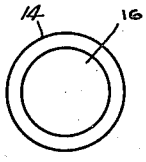


FIG. 6

FIG. 5

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PATTERN GATE CONSTRUCTION

Raoul J. Hebert, Worcester, Mass.

Application August 15, 1934, Serial No. 739,952

8 Claims. (Cl. 22—162)

This invention relates to gate patterns and has particular reference to the runner and its appurtenances.

In the founding of castings, of the same or similar characteristics, in quantities it is customary to attach a number of patterns to a runner and in order to insure sound castings it is necessary to provide feeders in the form of risers and shrink bobs to counteract the gravity shrinkage.

The usual method of attaching the patterns to the runner is to lay the runner on a bench and space the said patterns with their gates attached as closely as conditions permit. The patterns and gates are then soldered to the runner after which suitable feeders or risers are built up of lead or solder until they are large enough to provide the proper amount of molten metal in the mold to take care of the shrinkage in the castings during cooling.

The runners that are in use to-day are, in practically all instances, a solid bronze or brass bar with a fixed enlargement for locating the sprue or pouring funnel and this is a comparatively heavy and expensive component of the completed gate pattern.

Many castings require that the molten metal be strained to remove the slag prior to its entry into the pattern impressions in the mold and provision has been made for means to be attached to the gate whereby an impression will be left in the mold for the reception of the strainer member. With the construction as practiced with this invention the strainer core print can be attached or removed with very little trouble or expense.

It is accordingly the principal object of this invention to provide a runner with adjustable feeders and a sprue spot which will be simple in construction and light in weight.

It is another object of this invention to provide pre-formed feeders which can be attached to a runner in the minimum amount of time.

It is another object of my invention to provide pre-formed feeders with gates to which patterns can be attached prior to assemblying on and fastening to a runner.

It is still another object of this invention to provide a preformed sprue locating spot which can be readily positioned on and fastened to the runner.

It is a further object of this invention to provide means which can be readily attached to a runner which will act as a core print whereby a strainer may be placed in a mold.

Further objects and advantages will more fully appear from the following detailed description which, taken together with the accompanying drawing, illustrates some embodiments of said invention:—

Fig. 1 is an assembly view of a runner showing the feeders or risers, sprue spot and strainer core prints in position.

Fig. 2 is an end view of Fig. 1.

Fig. 3 is a side elevation of the sprue spot.

Fig. 4 is an end view of the sprue spot of Fig. 3.

Fig. 5 is a side elevation of the strainer core print.

Fig. 6 is an end view of the strainer core print of Fig. 5.

Fig. 7 is a sectional assembly view of a mold showing the assembled runner with patterns attached in position.

Like reference characters refer to like parts throughout the drawing.

The runner 1 can be of any shape or size and can be either solid or tubular in cross section. By using a runner of tubular construction as illustrated it is possible to get combined strength and lightness.

The feeders or risers 2 are hollow thin walled members of box construction having side walls 3 and 4 which provide apertures 5 and 6 respectively, said apertures being of suitable shape and size to slidably fit over the gate 1. The risers 2 also provide end walls 7 and 8 having projections or gates 9 and 10 respectively extending outwardly therefrom. It will be noted that the risers 2 provide a depending portion 2' which forms a shrink bob that adds a further supply of molten metal to help take care of the shrinkage. The said gates can either be solid, as illustrated, or slotted. When the gates 9 and 10 are solid the patterns are fastened directly thereto by means of solder but when the gates are slotted the patterns provide a projecting member which fits into the slot and is fastened therein.

The sprue spot 11 provides a circular boss 12, upon which the sprue or pouring funnel rests when making the mold, and has an axial opening 13 of such shape and size as to slidably fit over the runner 1.

The strainer core prints 14 and 15 can be made either solid as shown in Figs. 5 and 6 for use on new pattern assemblies or in two halves for use on old pattern assemblies. The prints 14 and 15 provide central openings 16 to suit the shape of the runner 1.

With the runner and its appurtenances as above described it is a very simple and rapid pro-

cedure to assemble a number of patterns thereto for use in the foundry as it is possible to fasten the patterns to the feeders or risers first and then assemble them on the gate.

During the assembly of the patterns and risers on the runner the sprue spot can be positioned advantageously and at the same time, if required, the strainer core prints can be located adjacent the sprue spot.

The patterns are readily spaced one from the other as required and then the risers, sprue spot and core prints are suitably fastened by soldering them in position on the runner.

Referring now to Fig. 7 is to be noted that the risers 2 are in the upper part of the mold and that patterns 17 and 18 are soldered to the gates 9 and 10 respectively. The sprue or pouring funnel 19 is directly over the sprue spot 12 while the shrink bob 21' is in the lower part of the mold.

By using pre-formed components of the type described for multiple patterns the completed gate pattern is very much lighter in weight and thereby lessens the fatigue of the molder. Also by using the above pre-formed components the cost of gating patterns is considerably reduced and the amount of money tied up in the material which goes into the feeders or risers is reduced to a minimum. This item alone is very considerable and one which every foundry man is anxious to get down as low as possible.

I claim:

1. A feeder pattern, for gate patterns, of substantially hollow construction having means whereby it may be slidably assembled on a runner pattern and further means for attaching patterns thereto.

2. In a gate pattern assembly, a runner pattern, and a pre-formed feeder pattern and shrink bob pattern slidably located on, and fastened to, said runner pattern.

3. In a gate pattern assembly, a hollow runner pattern, and a hollow pre-formed feeder pattern and shrink bob pattern slidably located on, and fastened to, said runner pattern.

4. In a gate pattern assembly, a runner pattern, pre-formed feeder and shrink bobs patterns on said runner pattern, and a pre-formed sprue spot slidably located on, and fastened to, said runner pattern relative to said feeder and shrink bobs patterns.

5. In a gate pattern assembly, a runner pattern, and a pre-formed sprue spot having means whereby it can be slidably located on said runner pattern.

6. In a gate pattern assembly, a runner pattern, and a pre-formed core-print having means whereby it can be slidably located on said runner pattern.

7. In a gate pattern assembly, a runner pattern, a pre-formed sprue spot, pre-formed feeders and shrink bobs patterns on said runner pattern, and pre-formed core-prints adjacent said sprue spot on said runner pattern.

8. A preformed feeder pattern having a shrink bob pattern integral therewith, for gate patterns, which provides gate pattern for attaching patterns thereto prior to assembling on a runner.

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