C. F. FORSTER.

CASTING PATTERN.

APPLICATION FILED AUG. 3, 1908.

985,154. Patented Feb. 28, 1911.

Fig. 1.

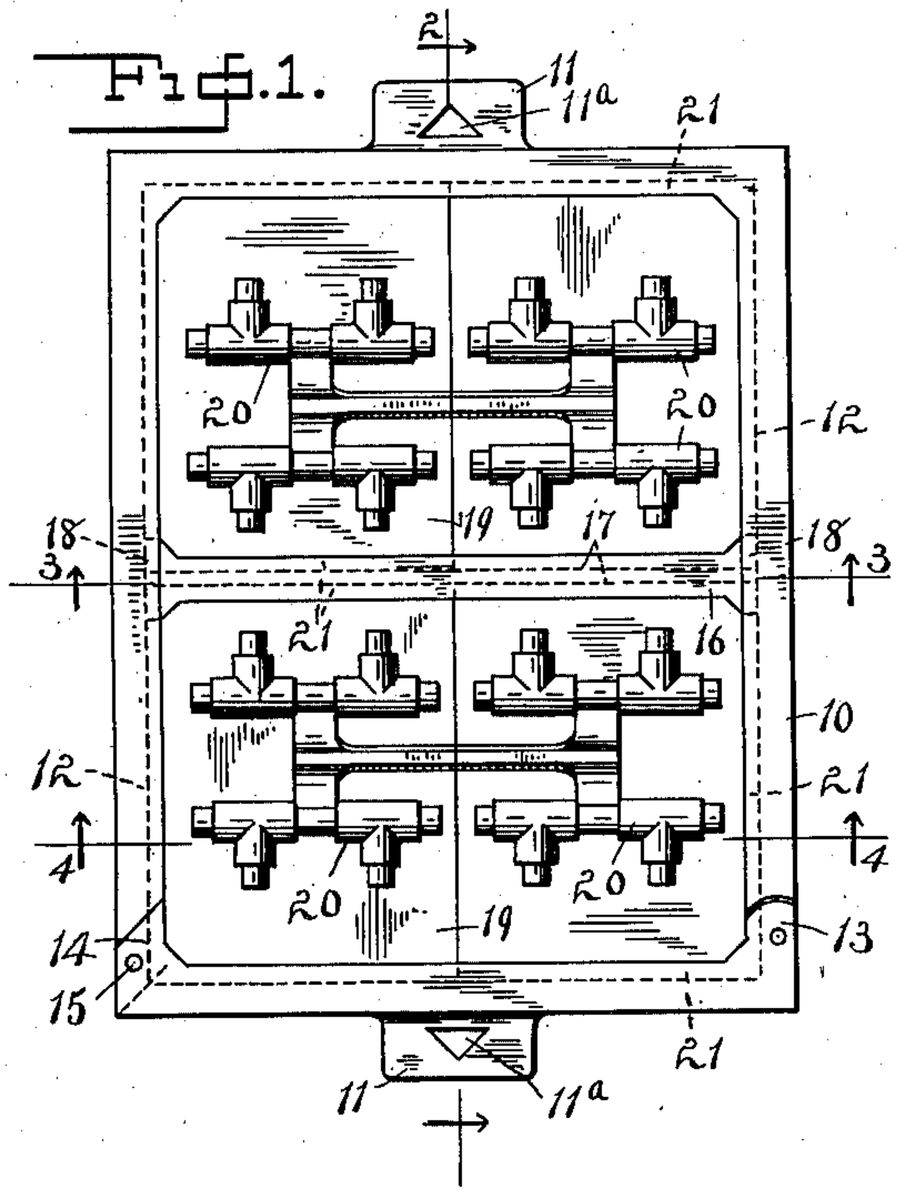


Fig. 2.

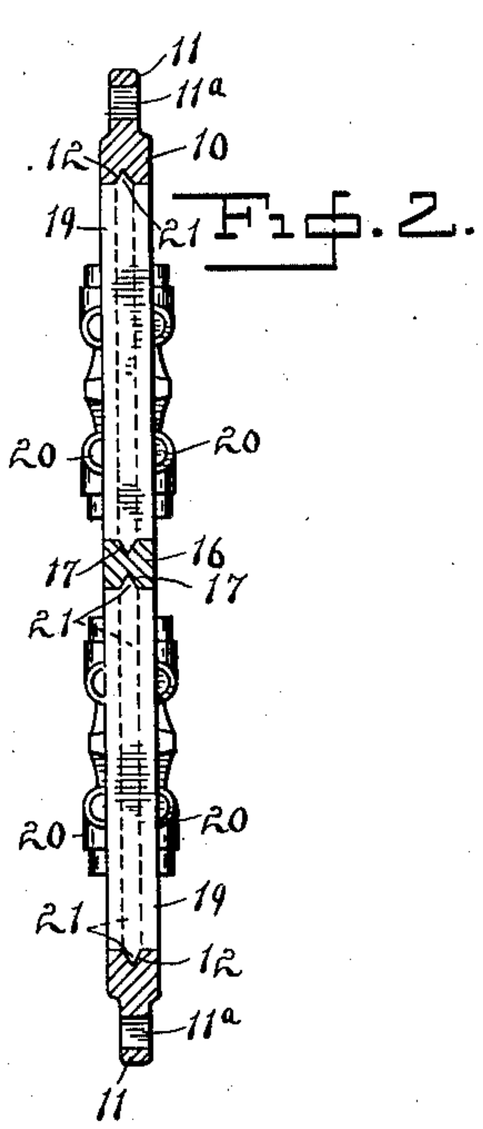


Fig. 3.

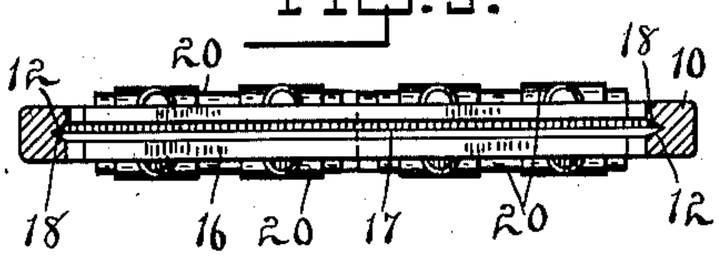


Fig. 4.

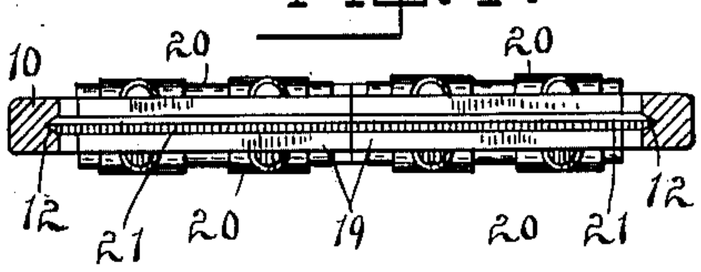


Fig. 5.

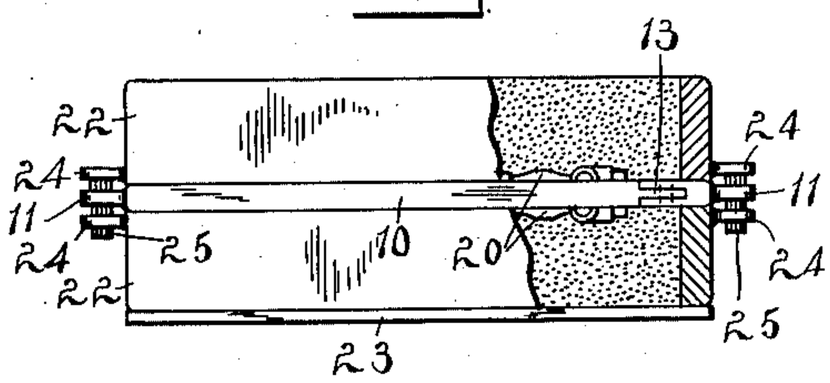
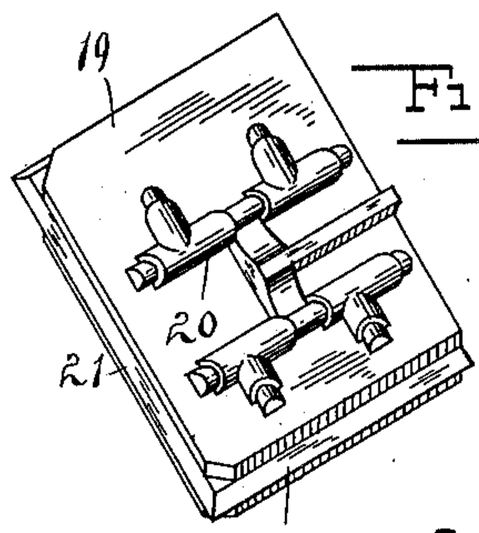


Fig. 6.



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CASTING-PATTERN.

985,154. Specification of Letters Patent. Patented Feb. 28, 1911.

Application filed August 3, 1908. Serial No. 446,741.

To all whom it may concern:

Be it known that I, CHARLES F. FORSTER, citizen of the United States, residing at Franklin Park, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Casting-Patterns, of which the following is a specification.

This invention relates to improvements in the art of making metal castings and especially to the manner of making patterns from which the castings are molded.

The especial object of the invention which forms the subject matter of this application is to provide a molding plate or composite pattern in which a plurality of individual patterns, either of like or different design may be grouped or joined to facilitate the casting at a single operation of a number of small pieces.

A further object is to dispense with the more or less expensive gates and produce castings with such accuracy as to save the waste from spoiled castings incident to the operations as carried on under present methods and with the appliances in general use.

A further object of my invention is to save the making of the usual metal patterns where a number of small castings are to be made from a single pattern, and to eliminate to a considerable degree the hand-work required in the production of patterns under existing methods.

In the accompanying drawings I have illustrated the manner of carrying out my invention with devices which may be varied in form and arrangement without affecting the essential principles involved.

In the drawing:—Figure 1 is a plan view of a composite pattern produced according to my invention and a suitable holder or frame therefor; Fig. 2 is a vertical section on the line 2—2 of Fig. 1; Fig. 3 is a cross-section on the line 3—3 of Fig. 1; Fig. 4 is a cross-section on the line 4—4 of Fig. 1. Fig. 5 is a view partly in elevation and partly in section, of a flask and pattern used in carrying out my invention; Fig. 6 is a perspective view of a pattern section or unit according to my invention.

Referring to the details of the drawing 10, represents a rectangular frame made preferably of metal though any suitable wood may be used if desired. At each end of the frame is an ear 11 having a hole 11ª to receive the flask pins 25 when the parts are assembled. In the inner edge of the frame is a V-shaped groove 12. One of the end bars of the frame is hinged as at 13, and detachably secured at its other end by a pin 15 which engages a hole in the rabbeted end 14 of the opposite side-bar.

16 represents a partition strip or bar which extends transversely of the frame and is formed with enlarged ends 18 and with longitudinal V-shaped grooves 17 which extend along its opposite edges. This bar is removably arranged in the frame and may be slid back and forth in the grooves 12, and several may be employed in a single frame if desired.

19 represents a pattern plate which is especially adapted to coöperate with the improved frame or holder described. This plate is preferably produced from aluminum though any suitable metal may be used. It is formed with beveled edges 21 on three of its margins and with a plane edge on its other margin. This plate 19 forms a foundation for the pattern 20 which is made in two complementary half sections and the sections rigidly secured to opposite faces of the plate so that they register perfectly, or the pattern and plate may be cast integral if desired.

22 represents the cope and drag of an ordinary molder's flask, 23 the bottom board, 24 the lugs or ears on the ends of the cope and drag, and 25 the pins which hold the cope and drag in their superimposed relation.

In the use of the parts described I first prepare a pattern of the part from which castings are to be made, such pattern to be made in two parts. The plate 19 is then formed and the parts secured to its opposite sides so that they register perfectly. From this initial or primary pattern as many castings as may be needed may be made, each comprising a plate 19 with its beveled edges 21, and these duplicates are preferably made from aluminum and serve as the patterns from which the commercial castings are produced. As many individual patterns or parts will be superimposed on a single plate as convenience in handling and the size of the part will indicate, and the usual runners will be formed.

As shown in the drawing, I have provided a frame in which four plates 19 are placed, but it will be understood that there may be six or eight plates. It will be also under-

stood that should it not be convenient to use an even number of pattern plates, a blank plate may be inserted as a filler in order to lock the plates securely in the frame.

In utilizing the parts described, the first set of plates are slid into position from the end of the frame from which the hinged bar 21 has been swung back, the tongues 21 fitting the grooves 12, the bar 16 is then pushed into place until its groove is engaged by the tongues of the plates *in situ* and the second pair of plates is inserted in the same manner as the first, and when in place, the gate bar 21 is closed and fastened by the pin 15. The composite pattern member described, is now ready to be used in producing castings. It is placed between the cope and drag with the pins 25 passing through the openings 11ª, and the sand placed and tamped on the upper side in the usual manner. When the cope has been filled the board 23 is placed over the cope and the entire form reversed and the other or drag side is filled and tamped. The form is then returned to its initial position and the cope removed, then the pattern is taken out and the cope returned to the drag and the metal poured into the mold thus formed.

It will be noted that there is no possibility of non-registry of the complementary parts of a pattern when formed by my improved method, care having been taken that said parts are secured to the plate 21 in perfect registry.

It will be apparent that various constructions may be adopted for the plate holding frame and that the plate itself may be modified in details without departing from the essential features described.

What I claim is:—

1. In a molding appliance, a frame having grooves in its inner edges, one side of said frame being pivoted at one end and detachably connected at its opposite end.

2. In a molding appliance, a pattern holding frame having a cross-bar removably arranged thereon, said bar and frame having grooves in their edges, and one side of said frame being detachable from the adjacent members.

In testimony whereof I affix my signature in the presence of two witnesses.

CHARLES F. FORSTER.

Witnesses:

H. De Los Higman,

F. Benjamin.