No. 716,957. Patented Dec. 30, 1902.

S. H. STUPAKOFF.

METHOD OF APPLYING PATTERNS IN EXACT RELATIVE POSITIONS ON DRAW PLATES OR UPON THE TABLES OF MOLDING MACHINES.

(Application filed Nov. 9, 1899.)

(No Model.)

Fig. 1

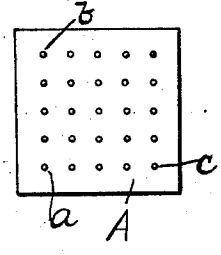


Fig. 2

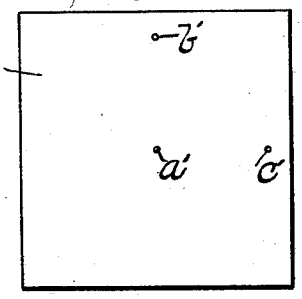


Fig. 3

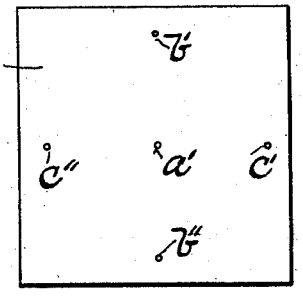


Fig. 4

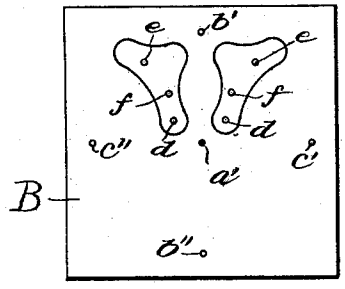


Fig. 5.

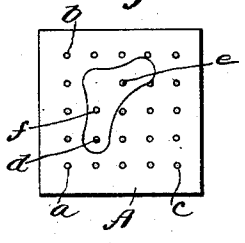
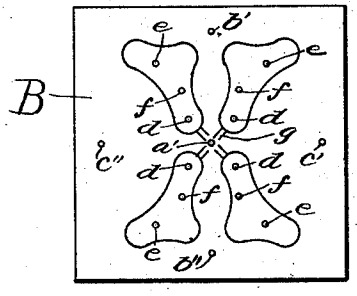


Fig. 6



Witnesses:
James C. Herron.
C. A. Williams

Inventor
Simon H. Stupakoff
By
John A. Roney, Jr.
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

SIMON H. STUPAKOFF, OF PITTSBURG, PENNSYLVANIA.

METHOD OF APPLYING PATTERNS IN EXACT RELATIVE POSITIONS ON DRAW-PLATES OR UPON THE TABLES OF MOLDING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 716,957, dated December 30, 1902.

Application filed November 9, 1899. Serial No. 736,357. (No model.)

To all whom it may concern:

Be it known that I, SIMON H. STUPAKOFF, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered a certain new and useful Method of Applying Patterns in Exact Relative Positions on Draw-Plates or upon the Tables of Molding-Machines, of which the following is a specification.

Heretofore, so far as I am aware, placing patterns of the split variety—*i. e.*, those in which the pattern must be halved—has not only required a very considerable period of time, but the best skill of the best mechanic, and at all times there was danger of failing to place the patterns on the draw-plate or table of a machine so that the halves thereof would not exactly register, producing a casting with a slight fin or projection around the point where the two halves met.

The object of my invention is to obviate this difficulty and to produce a device by the use of which an unskilled person may quickly and accurately locate in exact relative position patterns of this character upon a draw-plate or upon the table of a molding-machine.

I will now describe my invention, reference being had to the accompanying drawings, which form a part of this specification, in which—

Figure 1 indicates a plan view of a jig. Fig. 2 is a plan view of the draw-plate or table of a molding-machine, showing guide or locating holes formed in the right-hand section thereof. Fig. 3 is a plan view of the same, showing the draw-plate or table provided with all the locating or guide holes required. Fig. 4 is a plan view of the same, showing two halves of a pattern located relatively thereon. Fig. 5 is a detail plan view of the jig, showing one-half of the pattern located thereon; Fig. 6, a plan view of a draw-plate or table of a molding-machine, showing four halves of a pattern located in an exact relative position thereon.

Referring to said drawings, A indicates a jig-plate, which I preferably make one-fourth the size and area of the draw-plate or table B, although it can be used to advantage relatively larger or smaller than specified. The said jig is provided with a series of holes, which may be arranged therein in parallel rows, as shown in said Fig. 1. These holes, with the exception of those designated by the reference-letters *a*, *b*, and *c*, are for the guidance of drill or steady pins. The holes *a*, *b*, and *c* are for the purpose of reproducing similar holes in the draw-plate or table of a molding-machine, as hereinafter specified, for the purpose of accurately subdividing the same into sections. The jig or templet A is, as heretofore stated, preferably one-fourth the size of the draw-plate or table, and in using the same for the purpose of relatively locating the position of patterns upon the draw-plate or table the jig is placed in such wise thereon that the hole *a* of the jig registers with the center of the draw-plate or table, and a corresponding hole is drilled into the table or draw-plate, which is designated *a'*, as shown in the drawings. A pin is then inserted through the holes thus formed for the purpose of securing the jig temporarily upon the draw-plate. The jig is then squared upon the draw-plate, and holes similar to *b* and *c* are drilled into the draw-plate, which holes are designated as *b'* and *c'*. When these operations are completed, the pattern draw-plate or the table of the machine is provided with the holes *a'*, *b'*, and *c'*, as shown in Fig. 2. The jig is then removed or reversed upon the draw-plate or table—*i. e.*, the side which formed the face thereof in the first operation is now in contact with the draw-plate, care being taken that the hole *a* in the jig-plate and its hole *a'* in the draw-plate are in exact alinement and secured together. Pins or plugs may also be inserted in the holes *b* and *b'* for the purpose of more securely fastening the jig upon the draw-plate. A hole is then drilled into the draw-plate through the hole *c* in the jig-plate and is designated *c''*. The jig is again reversed, the holes *a* and *a'* being in alinement, as before. The hole *b''* is formed in the draw-plate or table, which upon the completion of these operations presents the appearance illustrated in Fig. 3 of the drawings—namely, that of a plate or table provided with five holes and which if a line were drawn at right angles through the centers of said holes subdivide said plate into four equal

sections. The draw-plate or table is then ready to receive the patterns. Assuming, for the purpose of illustration, that the patterns are of irregular shape and of the split variety, the halves are laid temporarily on one side of the draw-plate in order to approximate their position thereon, as shown in Fig. 4. One of the halves is then placed upon the jig, as shown in Fig. 5, and is positioned thereon by means of the holes *d*, *e*, and *f*, which are certain of already those formed in the jig and by means of which are likewise formed or drilled in one of the halves of the patterns. The half of the pattern provided with these particular holes can be used very conveniently as a jig for drilling similar holes in the second half and other patterns. All patterns being thus prepared are provided with dowel-pins. One hole in each, preferably *f*, may be used for the reception of a screw to secure the same to the draw-plate or upon the table of a machine. When the jig and patterns have been provided with the holes *d*, *e*, and *f*, as specified, the jig is placed upon the draw-plate or table of the machine, as set forth in the above description of the method of forming the holes *a' b' c' b''*, and holes alining with the said holes *d*, *e*, and *f* are drilled in the respective angles or sections of the draw-plate or table of the machine which are included in lines drawn through the center of both *c''*, *a'*, and *c'* and *b'*, *a'*, and *b''*, respectively. In other words, the holes are relatively and exactly positioned upon the four sections of the draw-plate or table of the machine in the same way the holes *b'*, *c'*, *b''*, and *c''* are located, and the patterns, which are provided with similar holes, are positioned upon the draw-plate or table of the machine, as shown in Fig. 6, by means of dowel-pins inserted in said holes *d*, *e*, and *f*. The hole *a'* in the center of the draw-plate or table can be used advantageously for securing the gate *g*, as shown in Fig. 6. The flask is then placed upon the draw-plate or table of the machine and the sand tightly compacted upon the patterns in the usual manner.

What I claim, and desire to secure by Letters Patent, is—

1. The method of preparing patterns for molding, consisting in locating them in exact relative positions to each other on a draw-plate or table by the use of a jig.

2. The method of preparing patterns for molding, consisting in locating on a molding-table or draw-plate, by the aid of a jig, the corresponding parts of each pattern relatively to the other pattern at points equidistant from a line drawn through the center of the draw-plate.

3. The method of preparing patterns for molding, consisting in locating on a molding-table or draw-plate, by the aid of a jig, the members of the pattern in exact relative position in relation to the flask-dowels or steady-pins on the said table or draw-plate.

4. The method of preparing patterns for molding, consisting in locating, with the aid of a jig, their relative position on a draw-plate or table, then drilling holes into the patterns and corresponding holes in the draw-plate, and positioning the patterns on the draw-plate by dowels passed through the holes.

5. The method of preparing patterns for molding, consisting in locating, by the aid of a jig, certain holes in the patterns, and locating corresponding sets of holes, by the aid of the jig, in different parts of a draw-plate or molding-table, disposed in exact relation to a given part of the draw-plate or table, and lastly positioning the patterns on the draw-plate by dowels passed through the holes.

6. The method of preparing patterns for molding, consisting in locating, with the aid of a jig, the relative positions of the patterns on a draw-plate, then applying one of the parts of the pattern to the jig and drilling through guides in the jig into the pattern, next using the same guides in the jig for locating on and drilling corresponding holes in a draw-plate, and lastly, using the first part of the pattern as a jig for drilling corresponding holes in the second part of the pattern.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

SIMON H. STUPAKOFF.

In presence of—
JNO. H. RONEY,
C. A. WILLIAMS.