

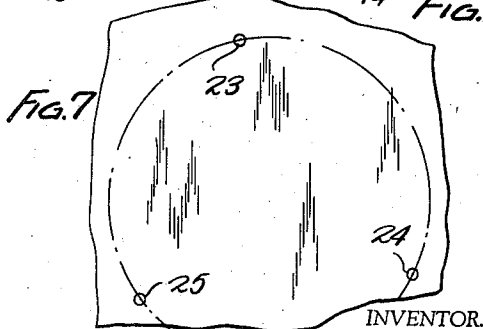
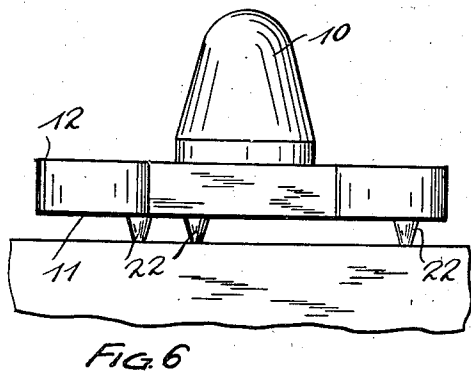
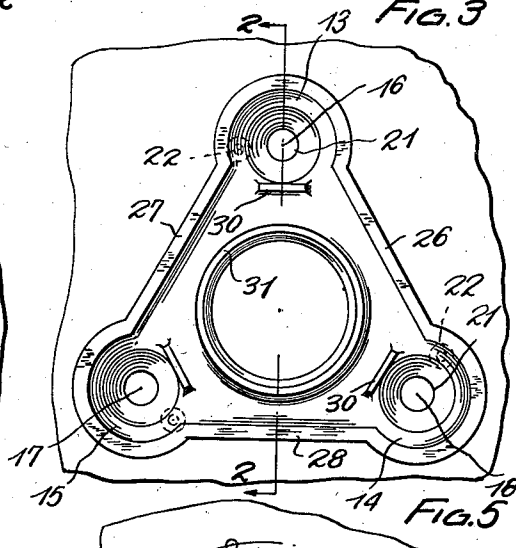
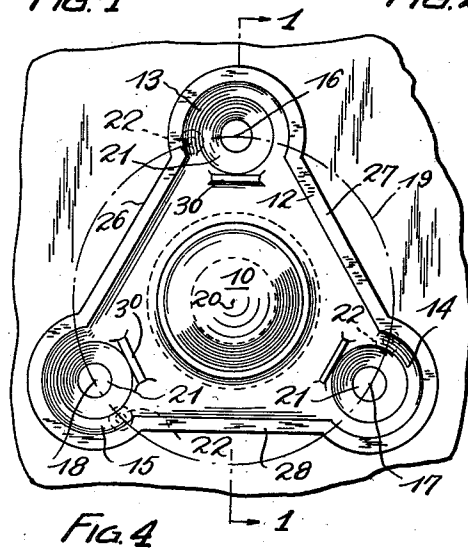
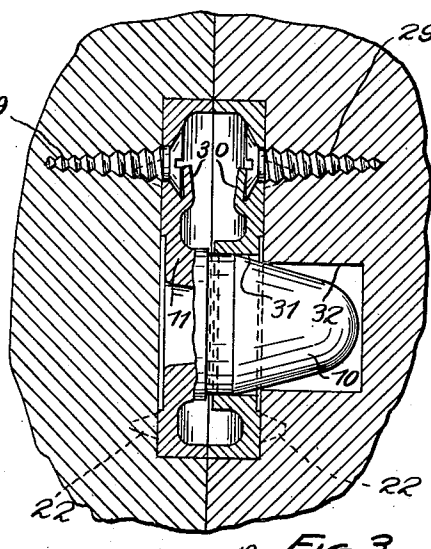
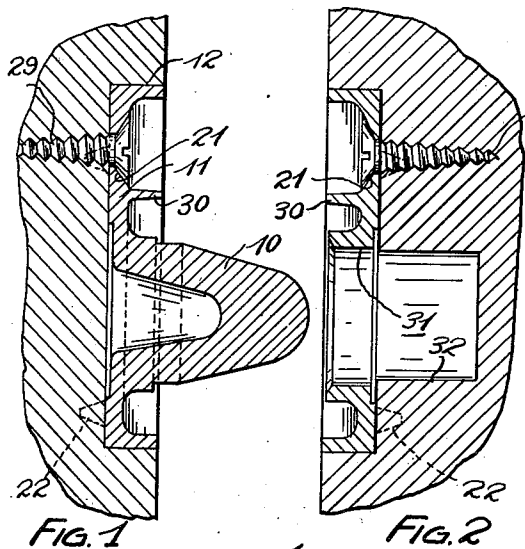
April 29, 1941.

M. T. RUDDY

2,240,268

DOWEL

Filed Oct. 27, 1939



INVENTOR.
MARTIN T. RUDDY
BY *Kewis Hudson & Kent*
ATTORNEYS

UNITED STATES PATENT OFFICE

2,240,268

DOWEL

Martin T. Ruddy, Lakewood, Ohio

Application October 27, 1939, Serial No. 301,646

4 Claims. (Cl. 22-158)

This invention relates to dowels that are used in connection with patterns for making castings. While the invention is particularly applicable to dowels, it is also applicable to other plates for use in connection with patterns, and also for other uses.

It is one of the objects of the invention to provide a dowel and its companion plate that may be attached to a pattern with the minimum amount of time and labor, and that will be so secured that it will withstand the severe service to which such devices are subjected without becoming loose or interfering with the closing of the parts of the pattern.

Other objects of the invention and the features of novelty will be apparent from the following description when taken in conjunction with the accompanying drawing, of which

Fig. 1 is a cross section through a dowel embodying my invention, the section being on the line 1-1 of Fig. 4.

Fig. 2 is a similar view of the companion plate for the dowel, the section being on the line 2-2 of Fig. 5.

Fig. 3 is a transverse section illustrating the parts, shown in Figs. 1 and 2, in assembled relation.

Fig. 4 is a plan view of the dowel.

Fig. 5 is a plan view of the companion plate.

Fig. 6 is a side elevation of the dowel shown in Fig. 4.

Fig. 7 is a plan view of a surface of a pattern and illustrating the manner of attaching the dowel and its companion plate to the pattern.

Referring to Figs. 1 and 4, it will be noted that the dowel proper, which is indicated by the numeral 10, is formed integral with a plate 11 of substantially triangular form and provided with a marginal flange 12. At the corners of the triangular plate 11 there are circular lugs 13, 14 and 15, the centers of which are located at the points 16, 17 and 18, respectively. The centers 16, 17 and 18 are preferably located on a circle 19 having its center at the point 20 which is the axis of the dowel 10. Each of the lugs 13, 14 and 15 is provided with a screw opening 21, the centers of these openings being preferably at the centers 16, 17 and 18, respectively.

On the bottom surface of the plate 11 there are pointed projections or lugs 22 which are symmetrically positioned to one side of the openings 21 and on the circle 19 as will be noted from Fig. 4.

Referring to Fig. 7, the points 23, 24 and 25 represent impressions made in the surface of the

pattern, at the point where the dowel is to be located, these impressions being formed by locating the dowel on the pattern, as shown in Fig. 6, and then striking the dowel 10 with a hammer. The impressions 23, 24 and 25 are then used as centers for boring holes in the pattern, these holes being of the same diameter as the lugs 13, 14 and 15. After the three holes have been bored to the proper depth, the dowel is laid on the pattern with the lugs 13, 14 and 15 in registration with the bored holes, and lines are then drawn on the pattern along the sides 26, 27 and 28. The dowel is then removed and the recess for the plate 11 is completed, the plate positioned in the recess and fastened by means of screws 29 placed in the openings 21. On the upper side of the plate 11, adjacent each of the screw openings 21, there is an upstanding lug or projection 30 and, when the screws 29 are in position, these lugs are bent over the heads of the screws as indicated in Fig. 3, so that the screws 29 are prevented from coming out. Heretofore trouble has been experienced with screws for fastening dowel plates because the jolting that the patterns get in service, particularly in molding machines, has a tendency to cause the screws to work out until they interfere with the closing of the parts of the pattern.

On account of the plate 11 being of triangular or polygonal form, and because of the accuracy with which the recess may be made in the pattern to receive the plate, as above described, the plate will be very firmly secured to the pattern and prevented from moving laterally. In this connection, and as an efficient means for securing accuracy in the size and shape of the recess to receive the dowel plate, the lugs 13, 14 and 15 are preferably made with a diameter the same as that of a standard auger, such as three-fourths inch, one inch, or larger, and since the centers of the lugs are accurately located by means of the projections 22, it is possible to so form the recess in the pattern that the dowel plate will accurately and tightly fit it and thus have lateral support in addition to the support given by the attachment screws 29.

The companion plate shown in Figs. 3 and 5 is similar to the plate of the dowel 10, except that it has the opening 31 to receive the dowel 10.

In order that the parts of the pattern will be held in proper registration by the dowel, it is important that the two plates be accurately located in the two matching parts of the pattern and, in order to accomplish this, the companion plate, shown in Figs. 3 and 5, is first attached to

one part of the pattern in the manner above described with reference to the plate 11. A hole 32 may be bored in the pattern to receive the dowel 10, as shown in Fig. 3. The plate 11 is then placed on the companion plate, as shown in Fig. 3, and the part of the pattern to which the plate 11 is to be attached is placed in accurate registration with its matching part to which the companion plate is attached. The projections 22 are then caused to indent the pattern, by a blow or otherwise, as previously described, and this will accurately locate the centers 16, 17 and 18 so that the procedure, above described, for forming the recess for the plate 11 may then be followed.

While I have illustrated and described what I now consider to be the preferred form of my invention, it will be understood that changes in the details of construction may be made without departing from the spirit of the invention as defined in the appended claims.

Having thus described my invention, I claim:

1. A device of the class described comprising a non-circular plate having a plurality of screw openings therein, said plate having lugs with circular peripheries the centers of which are co-axial with said screw openings, said screw openings having their centers located on a circle, and said plate having pointed lugs projecting from one side thereof and arranged on said circle in the same relative spacing as the centers of said screw openings.

2. A device of the class described comprising a plate having a marginal flange which forms a recess on one side of the plate, said plate having a plurality of screw openings therein and integral lugs in said recess and adjacent said openings, said lugs being adapted to be bent over the heads of screws in said openings to prevent the screws coming out.

3. A device of the class described comprising a plate of substantially polygonal form having circular lugs at its corners, said plate having a marginal flange projecting above the surface of one side of the plate, said lugs having openings therein for screws, and said plate having integral lugs projecting from said surface and located adjacent said openings, said last-mentioned lugs being adapted to be bent over said openings.

4. As a new article of manufacture, a plate for patterns and the like having a substantially polygonal form with circular lugs at its corners provided with screw openings therein, the centers of said lugs being located on a circle, said plate having a marginal flange which projects above the surface of one side of the plate, and integral projections on said surface adjacent said lugs, the other side of said plate having pointed projections located on said circle symmetrically with respect to the centers of said lugs.

MARTIN T. RUDDY.