

No. 887,458.

PATENTED MAY 12, 1908.

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ADJUSTABLE GUIDE PLATE FOR PATTERN PLATES, VIBRATOR FRAMES,
GATED PATTERNS, AND COPE FLASKS.
APPLICATION FILED APR. 23, 1906.

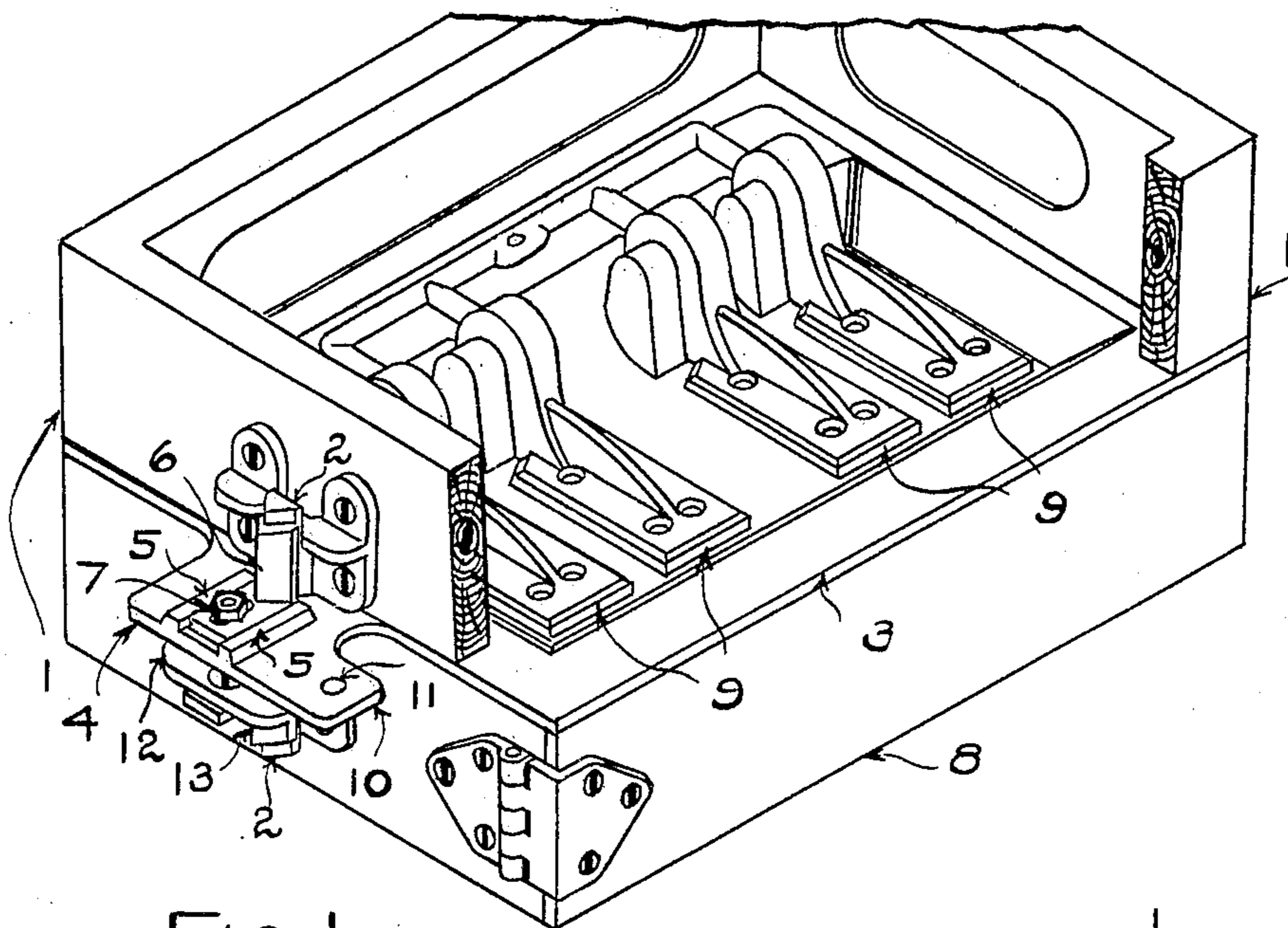


FIG. 1.

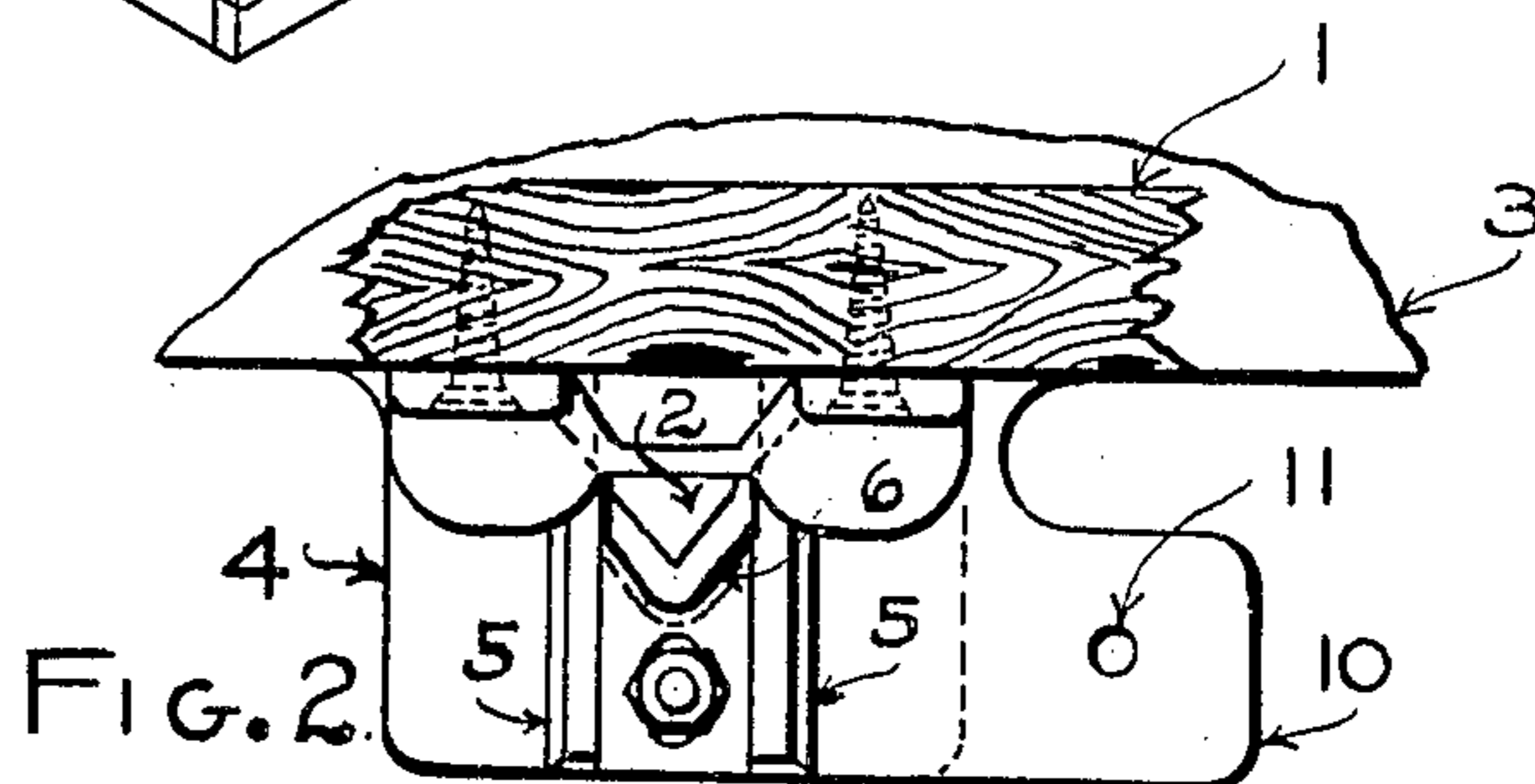


FIG. 2.

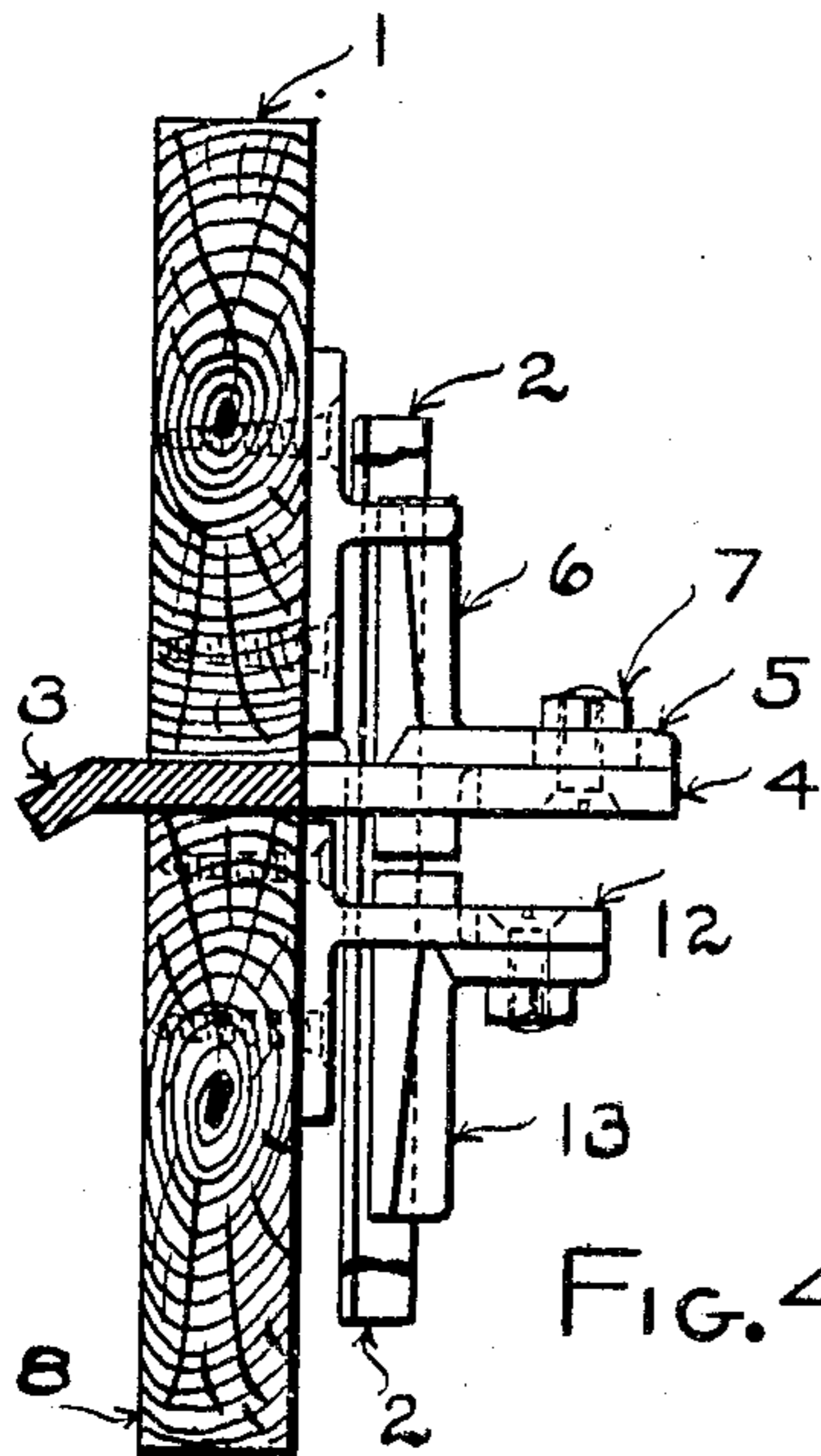


FIG. 4.

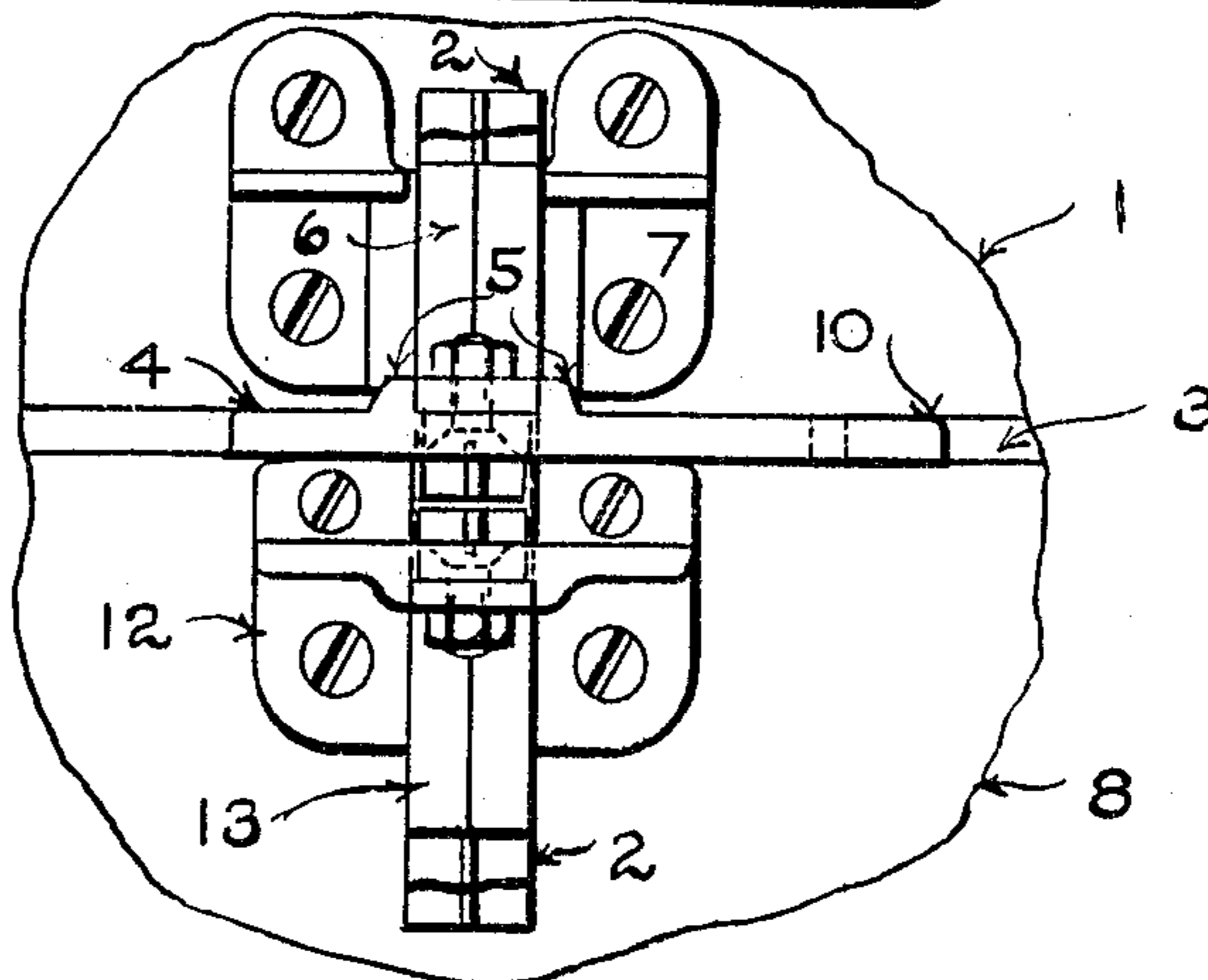


FIG. 3.

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ADJUSTABLE GUIDE-PLATE FOR PATTERN-PLATES, VIBRATOR-FRAMES, GATED PATTERNS, AND COPE-FLASKS.

No. 887,458.

Specification of Letters Patent.

Patented May 12, 1908.

Application filed April 23, 1906. Serial No. 313,169.

To all whom it may concern:

Be it known that we, CHARLES H. BLAU and GEORGE W. KELLY, citizens of the United States, residing at Columbus, in the county of Muscogee and State of Georgia, have invented new and useful Improvements in Adjustable Guide-Plates for Pattern-Plates, Vibrator-Frames, Gated Patterns, and Cope-Flasks, of which the following is a specification, it being understood that slight variations may be made without departing from the spirit of the invention.

This invention relates to improvements in adjustable guide plates for pattern plates, vibrator frames, gated patterns and cope flasks. And the objects of our improvements are,—first, to provide means for guiding out patterns of greater depth than can be done with those now in use; second, to provide a double-ended pin with improved means for adjusting cope flasks, pattern plates, vibrator frames or gated patterns to the same; third, to facilitate molding from patterns mounted on pattern plates, match plates, vibrator frames, gated patterns or boards on flasks, snap flask and machine molding. We attain these objects by the mechanism illustrated in the accompanying drawings, which is a part of this specification, and in which,—

Figure (1) is a perspective view of an ordinary snap flask with the drag side up, showing how our invention is applied and looks when the flask is prepared for “ramming up.” Fig. (2) is a plan view, showing the relation of the guides to the pins and connection of both to the flask. Fig. (3) is a front elevation of sections of the drag and cope flask and pattern plate, showing the relation of the pin and guides to the same. Fig. (4) is a side elevation showing sections of the drag and cope flask, with the pin connected to the drag flask, on the outside of which the pattern plate and cope flask guides rest, which guides are longitudinally adjustable as shown.

Similar numbers represent similar parts throughout the several views.

(1) represents the drag piece of an ordinary snap flask in the proper position for “ramming up” with sand.

(2) is a V-shaped pin which is provided with the necessary flanges, lugs, and screw holes for securing the same to the drag flask; one end of the pin (2) extends above the joint of the flask and may extend to the top

of the cope flask, if necessary, to guide off the said cope flask in making deep and straight “lifts;” the other end of the pin (2) extends below the joint of the flask and toward the bottom of the drag to any length desired, making one continuous double-ended pin extending approximately from the top of the cope flask to the bottom of the drag flask to accommodate the pin guides on the pattern plate or the vibrator frame for making very deep and straight “draws” from the drag of the mold.

(3) is the pattern plate or vibrator frame with the lug (4) projecting at each end of the plate; the said lug being supplied with two ribs (5, 5,) which act as guides for the longitudinal adjustment of the pin guide (6). (6) Being adjusted to the pin by means of a longitudinal slot in its base and held firmly in position by slot head machine or cap screws, (7).

As the pin guide (6) slides vertically on the pin (2) when in operation, it is made to extend through and beyond the plate on which it is fastened; the pattern plate lug (4) and the lifting plate (12) being cut out to allow free movement of the same when it is necessary to adjust it. This extension through and beyond the plate gives an increased bearing surface on the V-shaped pins (2); the said bearing surface being sufficient to eliminate all danger of the cope flask (8) or the pattern plate (3) “hanging” when they are being drawn out or “lifted off,” and forces them to come up straight and even, thus securing what the molder terms a “clean lift.” This is a very essential feature.

(9, 9,) represents patterns which are fastened to, or cast on the pattern plate (3), and is intended to show the great depth of patterns which can be molded on pattern plates by the aid of this invention. The said pattern plate (3) also has a lug (10) which is an offset or extension of the main lug (4), and is provided with a hole (11) for attaching vibrator connections for machine or hand molding.

The lifting plate (12) is attached to the cope flask (8) and carries the guide plate (13) similar to the guide plate (6). The said lifting plate (12) is located far enough above the joint of the flask to allow the operator to insert his fingers for the purpose of “lifting off” the cope flask (8). The guide plate (13) is provided with the necessary means for attaching it to the lifting plate (12), and is ad-

justable the same as the guide plate (6). It also extends through and beyond the lifting plate (12) and serves the same purpose as the extension on the guide plate (6), previously described.

The objection to the usual style of devices of this kind is that the pin is fastened to the pattern plate or vibrator frame and is continually getting loose, caused by "rapping" or jarring the mold to loosen the patterns, and because of the fact that the guide plates of the drag flask usually work on the pin of the pattern plate or vibrator frame, while the guide plates of the cope flask work on the outside of the drag flask pin, they are very difficult of adjustment when once they become loose, there being so many parts to bring into alinement. This is a very serious objection, as when the device is in this condition, it is almost impossible to get a "clean lift" as previously described in this specification, or to draw the pattern plate from the mold successfully. While with our improvement this trouble is eliminated, as the pin is fastened securely to the drag flask, and both the lifting plate on the cope flask and the lug on the pattern plate or vibrator frame carry guides with longitudinal slots, and both guides having a bearing surface on the V-shaped pins, they can be adjusted almost instantly. Another advantage this invention has over the ordinary device of this kind, is that the pin is fastened rigidly to the drag flask, thus its entire length acts as a guide in "lifting off" the cope flask and drawing off the pattern plate or vibrator frame. This long pin also enables us to mount patterns on pattern plates that could not be molded on pattern plates before our invention. Owing to their great depth and the pattern plate itself having guide plates fastened to it, we can lift off the pattern plate independent of the cope flask; whereas with those now in use the pattern plate usually must be lifted off with the cope—a slow and risky method. Still another advantage of this invention is, that in ramming the cope and drag flask on ordinary molding machines at one operation, the pattern plate is held firmly in position while the flask is being rolled over.

Having thus described our invention what we claim as our own, and desire to secure by Letters Patent is,—

1. In a device of the character described the combination with a mold comprising a drag portion and a cope portion, of a pattern

plate adapted to be located between said portions, a member carried by said pattern plate and projecting beyond the end of the mold, a fixed guide member carried by one of the mold sections, a guide member carried by the projecting member of the pattern plate and adapted to engage said first named guide member, a guide member carried by the other portion of the mold and also adapted to engage the first named guide member and means for adjusting both the guide member of the pattern plate and the last named guide member toward and from the first named guide member.

2. In a device of the character described the combination with a mold comprising a drag portion and a cope portion of a pattern plate adapted to be located between said portions, a fixed angular faced guide member carried by one of the portions of the mold, a second angular faced guide member carried by the pattern plate and adapted to engage the first named guide member, means for adjusting the second guide member toward and from the first named guide member, and a third angular faced guide member carried by the other section of the mold and adapted to engage the first named guide member and means for adjusting the third guide member toward and from the first named guide member.

3. In a device of the character described the combination with a mold comprising a drag portion and a cope portion, of an angular faced guide member fixed to the drag portion of the mold, a pattern plate adapted to lie between the cope and drag portions of the mold, an angular faced guide member mounted upon the pattern plate and adapted to engage the fixed guide member of the drag portion of the mold, means for adjusting the guide member of the pattern plate toward and from said fixed guide member, an angular faced guide member carried by the cope portion of the mold and means for adjusting the last named guide member toward and from the fixed guide member of the drag portion of the mold.

In testimony that we claim the foregoing as our own, we have affixed our signatures in presence of two subscribing witnesses.

CHAS. H. BLAU.
GEO. W. KELLY.

Witnesses:

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RALPH S. KING.