

(No Model.)

W. F. MYER.

MOLD FOR CASTING TEETH OF DIAMOND SAWS.

No. 387,986.

Patented Aug. 14, 1888.

FIG. 1.

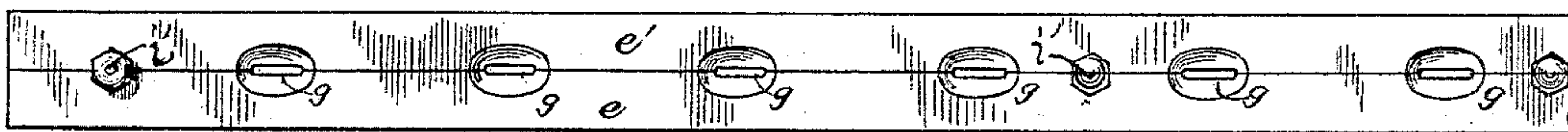


FIG. 2.

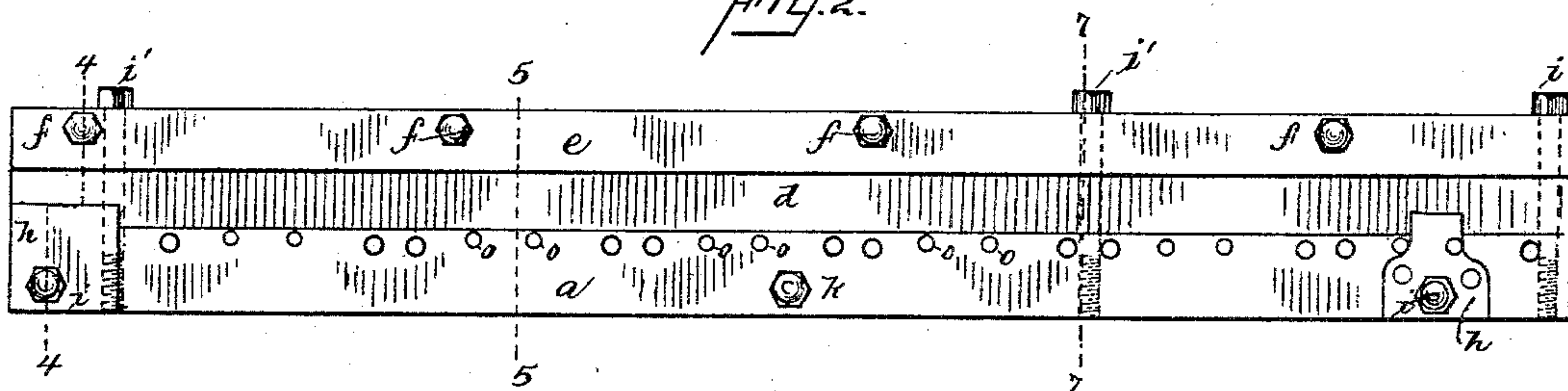


FIG. 3.

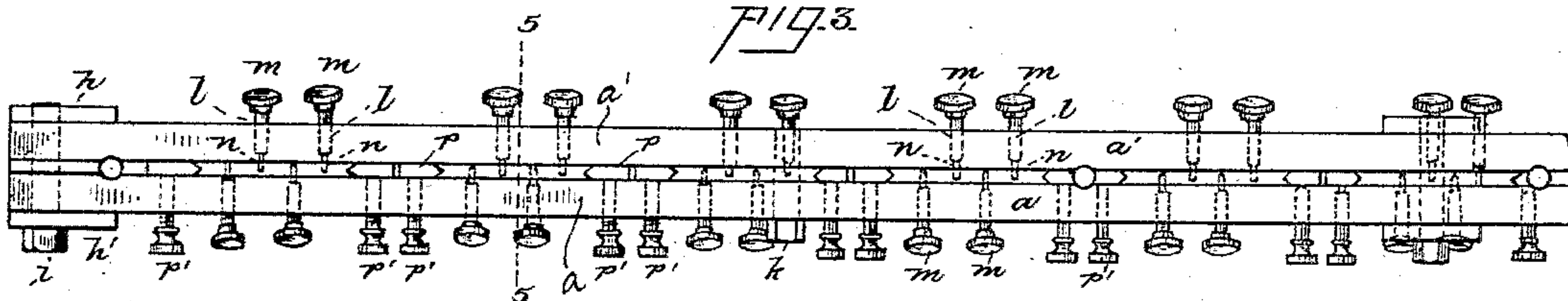


FIG. 4.

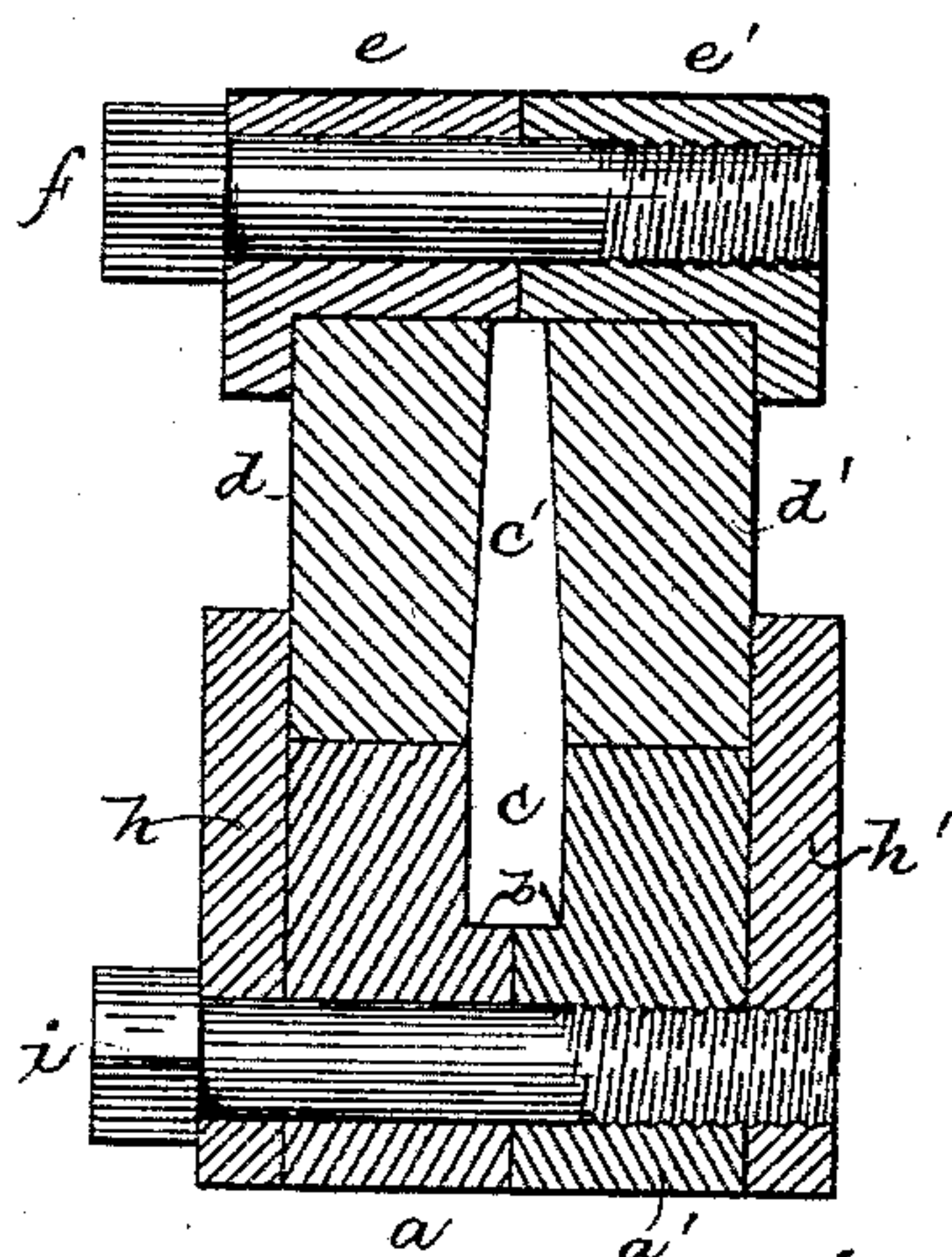


FIG. 5.

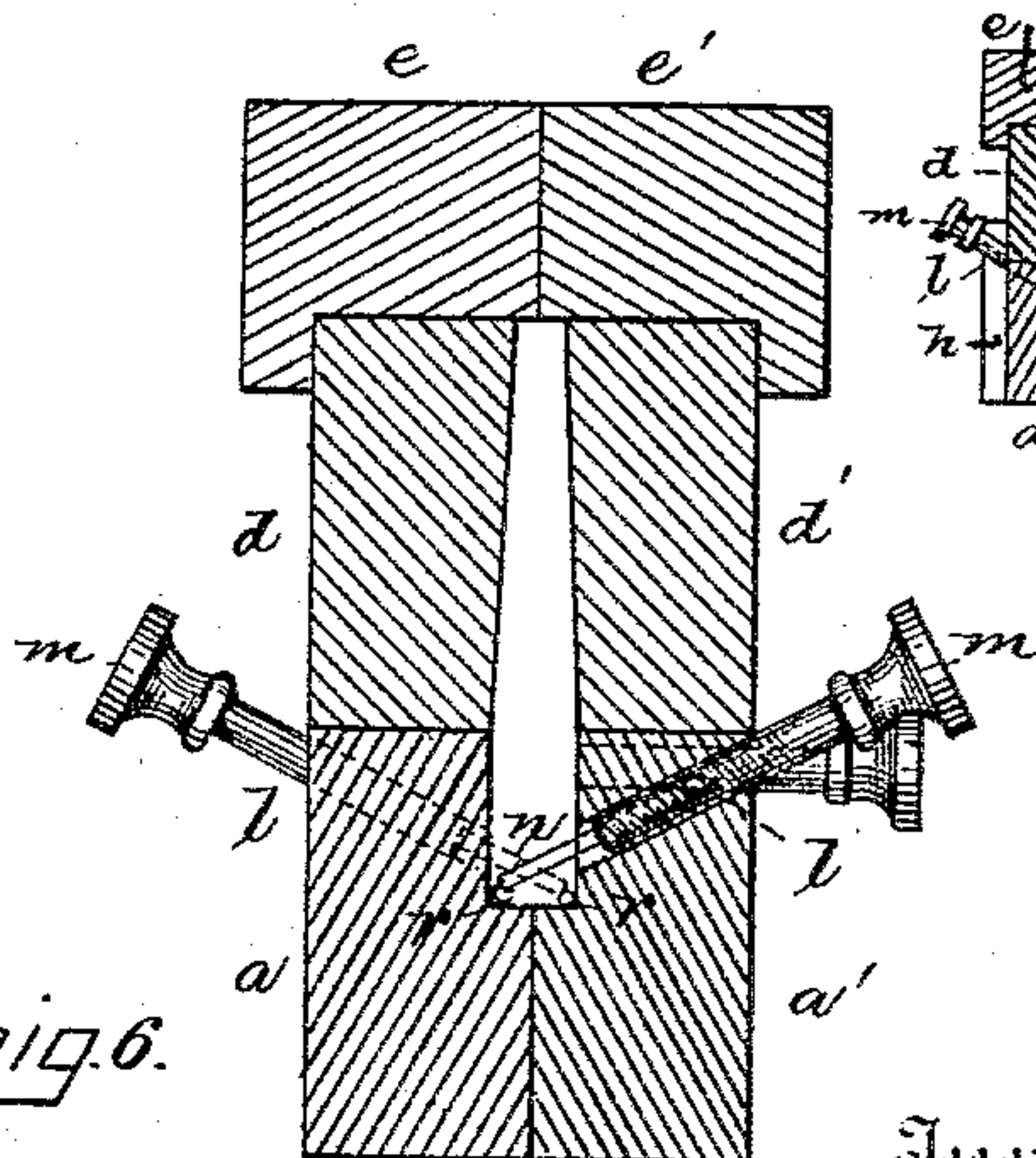


FIG. 7.

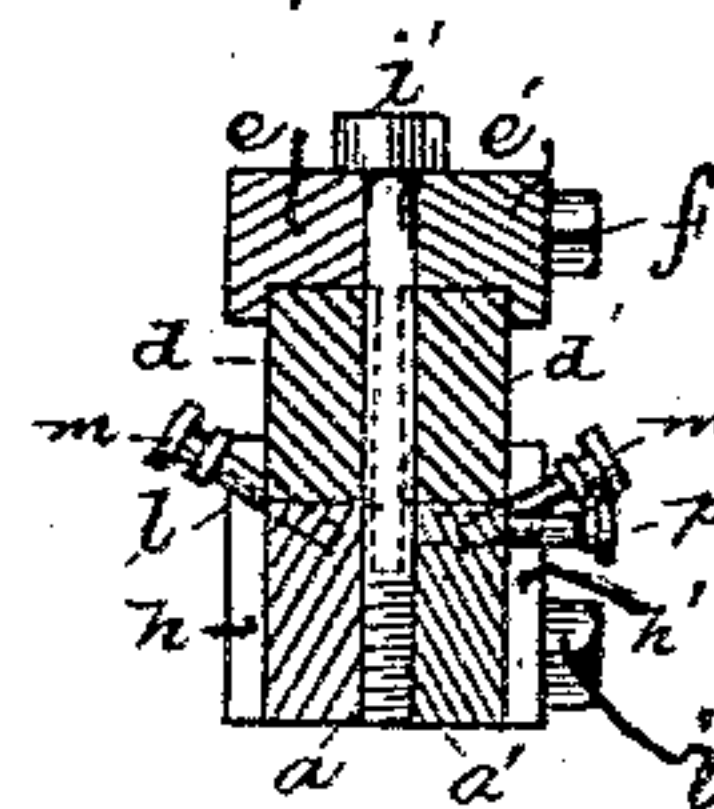
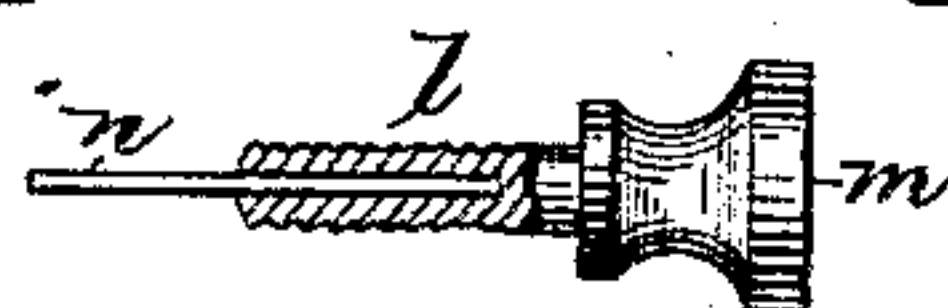


FIG. 6.



Inventor,

Witnesses,

E. C. Rowland.

William F. Myer

William F. Myer.

By his Attorneys

John F. Myer



# UNITED STATES PATENT OFFICE.

WILLARD F. MYER, OF NEW YORK, N. Y., ASSIGNOR TO DAVID TULLOCH,  
OF SAME PLACE.

## MOLD FOR CASTING TEETH OF DIAMOND SAWS.

SPECIFICATION forming part of Letters Patent No. 387,986, dated August 14, 1888.

Application filed February 18, 1888. Serial No. 264,491. (No model.)

### *To all whom it may concern:*

Be it known that I, WILLARD F. MYER, a citizen of the United States, residing at New York, in the county and State of New York, have invented a certain new and useful Improvement in Molds for Casting Teeth of Diamond Saws, of which the following is a specification.

The object of my invention is to provide a simple and efficient mold for casting saw-teeth with diamonds set in them—such as are used for stone-cutting saws—by means of which the diamonds shall be held securely in place, the process of casting shall be facilitated, and a tooth of a more efficient shape than heretofore shall be produced.

My invention consists in the novel devices and combinations of devices employed by me in accomplishing the above-named object, as hereinafter set forth and claimed.

My invention is illustrated in the annexed drawings.

Figure 1 is a top view of the clamping-strips of my improved mold; Fig. 2, a side elevation thereof; Fig. 3, a top view of the lower section of the mold; Fig. 4, a vertical section, on a larger scale, on line 4 4 of Fig. 2; Fig. 5, a vertical section on line 5 5 of Fig. 2 and line 5 5 of Fig. 3; Fig. 6, an enlarged partial elevation and partial section of one of the diamond-holding pins, and Fig. 7 a vertical section on line 7 7 in Fig. 2.

The mold is composed of two main sections—a base or lower section made up of two metal blocks or strips, *a a'*, each having a shoulder at *b*, whereby, when they are placed together, a rectangular space, *c*, is left between them, and an upper part composed of two metal blocks or strips, *d d'*, the inner sides of which are beveled, as shown, so that the space *c'* between them is of a tapering form. The strips *d d'* are held together by the overhanging clamping-strips *e e'*, extending the whole length of the mold and held tightly together by bolts *f f*, placed at suitable intervals. The clamping-strips *e e'* have at suitable points on their inner edges recesses, whereby apertures *g g* are formed for the entrance of the metal.

The lower parts, *a a'*, of the mold are held

together by clamping-plates *h h'*, with bolts *i* at the ends and middle part of the mold, and also, if desired, by intermediate bolts, *k*.

The upper and lower parts of the mold are clamped together by vertical bolts *i'*, placed at intervals back of or between the partitions which divide the mold into chambers for the separate teeth. These bolts *i'* pass down centrally between the meeting faces of the clamping-strips *e e'* and the plates *d d'* and *a a'*. The adjoining faces of these parts are grooved to receive these clamping-bolts; but these grooves are only screw-threaded in the lower parts, *a a'*, the bolts *i'* passing freely through the parts above. It will be seen that, the parts *a a'* being held together laterally by the bolts *i* and *k* and the parts *e e'* being held together laterally by the bolts *f*, the vertical bolts *i'* will bear with their heads upon the parts *e e'*, and, being threaded in the parts *a a'*, will draw all the parts of the mold together. However, when the bolts *i* and *k* are loosened, as they will be directly after metal is poured, the bolts *i'* will be released and the lower parts of the mold *a a'* and *d d'* will fall apart. This construction enables the mold to be readily taken apart to permit the final contraction of the cast metal without cracking and to permit the removal of the teeth.

For holding the diamonds in the mold I employ adjustable inclined pins. Each of these pins consists of a screw, *l*, having a milled head, *m*, having an internal bore, in which is inserted a small wire, *n*. The parts *a a'* have at suitable distances apart and arranged alternately in the two sides inclined screw-holes *o o* for the screws.

I provide, as usual, adjustable partitions *p p*, held by set-screws *p' p'* between the sides of the mold, for regulating the length of the teeth cast therein.

In the use of my invention I first place together the base *a a'* of the mold, secured by the clamping-plates *h h'*. I then insert the partitions *p p* at the required points; but before doing this I place in the lower corners of the space *c* the diamonds *r r* and secure them by the inclined pins screwed into the sides *a a'*. It will be seen that these pins are readily adjusted and



maintained in position for diamonds of any size by screwing in the screws *l* to a greater or less extent in each case.

Heretofore holding-pins for the diamonds 5 have been inserted horizontally against the diamonds. By inserting the pins at an angle, as I do, they are better adapted to secure the diamonds of various sizes which are used, for with horizontal pins a very large diamond is 10 liable to be lifted from the bottom of the mold by the pressure of the pins and a very small one is likely to be crowded aside; but with the inclined pins resting partly at the top of the diamond one of any size is held immovably. I 15 employ for the pin *n* as fine a wire as possible, a wire of steel one twenty-fourth ( $\frac{1}{24}$ ) of an inch in diameter being preferred. The diamonds being placed in position, I now put on the strips *d d'*, secured by the clamping-strips 20 *e e'*, said clamping-strips being tightened upon the strips *d d'*, after they are placed in position, by means of the bolts *f f*, the plates *h h'* assisting to hold the parts in position, and the mold is then ready for casting, which is done 25 by pouring the molten metal into the aperture *g*, there being one of such apertures for each tooth to be cast in the mold. As soon as the mold is filled, I loosen all the bolts *i* and *k*, whereupon the lower portion of the mold falls 30 apart, the teeth being left held by the metal extending up into the apertures *g*. After the teeth are removed from the mold, the tongues formed by the apertures *g* are removed and the wires *n* are broken off and left in the tooth, 35 new wires being inserted in the screws *l* when they are to be used again.

It will be seen that I form a tooth shaped like the space *c c'*—that is, having a tapered upper portion—whereby, when the teeth are 40 set in the saw, the water used for lubrication is allowed to flow readily down to the cutting-surface.

What I claim is—

1. The combination, with the two sides of the mold, of the overhanging clamping-strips 45 having apertures between them to admit the metal and the bolts for securing said clamping-strips together, substantially as set forth.

2. The combination, with the mold consisting of upper and lower sections, of the clamping-plates and bolts for removably holding together the sides of the lower section, said plates 50 extending above the lower section to assist in holding the upper section, substantially as set forth.

3. The combination, with the mold, of the inclined pins passing through the sides thereof for holding the diamonds, substantially as set 55 forth.

4. The combination, with the mold, of the 60 hollow screws passing through the sides thereof and the wires projecting from said screws to hold the diamonds, substantially as set forth.

5. The combination, with the mold, of the hollow screws with wires projecting therefrom, 65 extending through the sides of the mold in an inclined position to hold the diamonds, substantially as set forth.

6. The combination, with the mold formed of parts divided vertically and horizontally, 70 of lateral clamping-bolts and vertical clamping-bolts, such vertical clamping-bolts passing through the parts at their adjoining faces whereby the vertical bolts are released by loosening the lateral bolts, substantially as set forth. 75

This specification signed and witnessed this 16th day of February, 1888.

WILLARD F. MYER.

Witnesses:

DAVID TULLOCH,  
WILLIAM PELZER.