(No Model.)

T. A. JACKSON.

MOLD FOR CASTING THE TEETH OF DIAMOND SAWS.

No. 387,644. Patented Aug. 14, 1888.

Fig. 1.

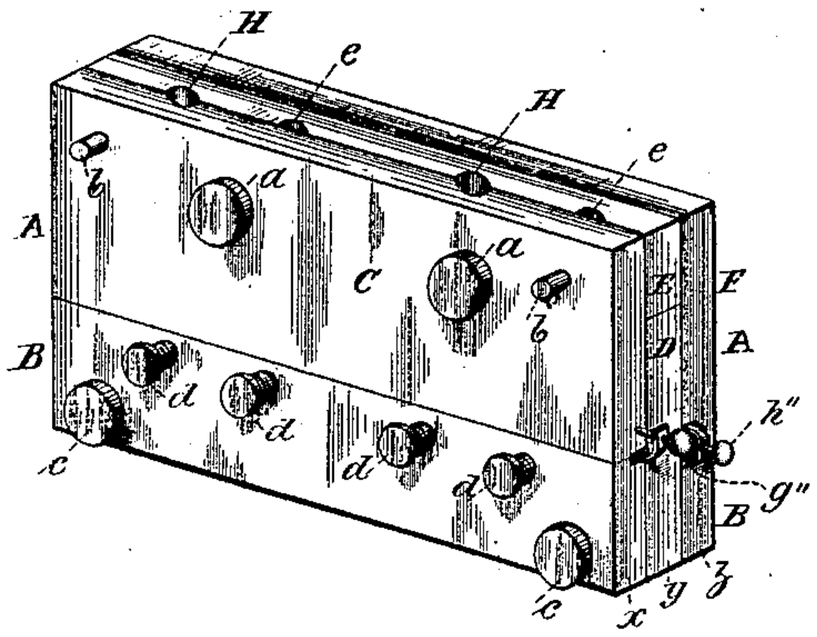


Fig. 2.

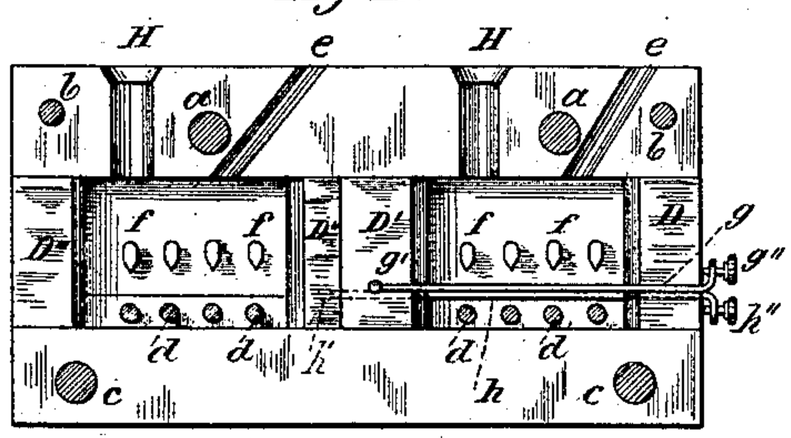


Fig. 3.

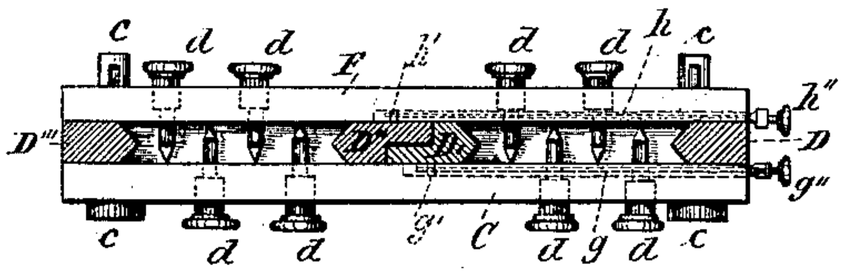


Fig. 4.

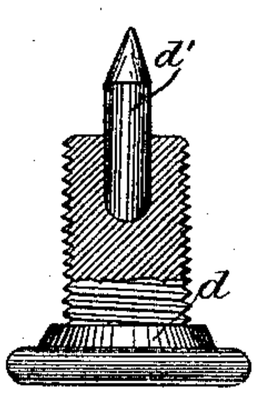
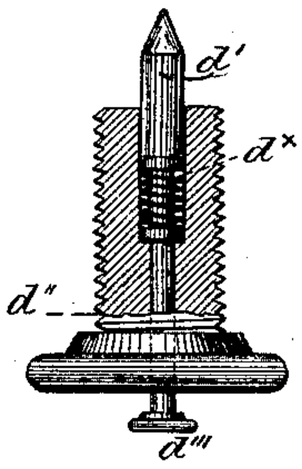


Fig. 5.



WITNESSES:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

THADDEUS A. JACKSON, OF NEW YORK, N. Y.

MOLD FOR CASTING THE TEETH OF DIAMOND SAWS.

SPECIFICATION forming part of Letters Patent No. 387,644, dated August 14, 1888.

Application filed March 26, 1888. Serial No. 268,577. (No model.)

To all whom it may concern:

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

The nature of the invention consists in the details of combination and construction, substantially as illustrated in the drawings hereinafter described, and subsequently pointed out in the claims.

Figure 1 is a view in perspective of the mold when closed and ready for use. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a transverse sectional view of the same. Figs. 4 and 5 illustrate details of the mechanism.

This invention is an improvement upon that for which a patent was granted me on the 12th of April, 1887, No. 361,012. In that patent the movable gages which determine the length of the tooth are adjustably secured with screws and transverse slots, and the pins which hold the diamonds in position while the tooth is being cast are held in place by blade-springs. In practice I found these devices subject to many difficulties and objections. To remedy these I adjust the end gages by means of sliding bars, and the pins which hold the diamonds in place are held by screws and helical springs, as hereinafter fully described.

The mold, which may be made of any proper and convenient metal, consists of two sections, A and B. The upper section, A, consists of three pieces, C, E, and F, which may be held together by the pins *a* and the dowels *b*, or in any other convenient way. The lower section, B, consists of three pieces, *x*, *y*, and *z*, which may be held together by the pins *c* and *c*, or in any other convenient way.

The mold is so constructed that when put together it has within it a rectangular slot or mortise extending through its entire length. In the sides of this mortise are planed grooves, in which work the sliding bars *g* and *h*. In one end of this slot is placed the gage D and in the other the gage D‴. In the middle of the mortise are placed the gages D′ and D″. These gages are notched together, as illustrated, and adapted to slide in the mortise. Each gage has a V-edge arranged as illustrated. The bars *g* and *h* are attached to the gages D′ and D″ at *g′* and *h′*, respectively. These bars *h* and *g*, extending without the mold, are bent to accommodate the screws *h″* and *g″*, which screws bear on the edge of the mold. By moving these bars endwise the gages D′ and D″ may be set at any desired place in the mold to adjust the length of the tooth to be cast. This is accomplished by turning the screws *g″* and *h″*, which control the motions of the bars *g* and *h*. The cores *f f f* may be of any desired size and form, so that they will make the common apertures in the tooth.

In the walls of the mold at convenient places are cut female screws. In these work the male screws *d*. The end of each of these screws is bored to carry the pins *d′*, which are detachably held thereby, and which project into the mold far enough to hold the diamond in place while the tooth is being cast. A modification of this device is illustrated by Fig. 5. *d″* illustrates the screw, which is bored through its entire length. Through the entire length of the bore and without the screw extends the pin *d′*. On the outer end of this pin *d′* is a head, *d‴*. The inner end thereof is conical to accommodate the diamond which it is to hold. The helical spring *d*× within the screw *d″* constantly urges the pin *d′* forward. The upper and lower sections of the mold may be held together by pins, dowels, screws, or in any other convenient way. This mold is also provided with gates H H and vents *e e*.

This mold is to be used for casting the teeth of diamond saws in the common and well-known way. The length of the tooth is to be adjusted by slipping the gages D′ and D″ to the proper places, and the diamonds to be cast in are placed between the ends of the pins *d′* and the walls of the mold, and are held there by the devices hereinbefore described until the tooth is cast, which is accomplished by pouring molten metal into the gates H H. When the metal so poured into the mold has sufficiently cooled, the mold is to be separated to take out the tooth. The pins *a a* and *c c* having been first withdrawn, the part C of the upper section, A, and the part *x* of the lower section, B, are separated together from the body of the mold. The gages D″ D′ are then moved a little together to allow the tooth to

clear them. The tooth is then lifted out. It will be then found that the pins *d'*, which were made of the same metal of which the tooth is cast, having parted from the screws *d*, are embedded in the tooth, so that when the ends of these pins, by which they were held in the screws, are cut off and the sides of the tooth properly finished the part where the pin is embedded will not be distinguishable from any other part, and so at the slight cost of the pin *d'* the part of the tooth back of the embedded diamond is made perfectly solid and homogeneous.

In the example here given two of these molds are shown together, but it is obvious that any desired number of molds may be so arranged together.

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

1. The combination, with the upper section, A, of the mold hereinbefore described, comprising the parts C and E and F, held together by the pins *a* and the dowels *b*, and the parts *x*, *y*, and *z*, held together by the pins *c*, of the V-gages D, D', D'', and D''' within said mold, and the bars *g* and *h*, attached, respectively, to the gages D' and D'' and projecting without said mold to afford facility for adjusting the positions of the said gages D' and D'', substantially as and for the purpose set forth.

2. The combination, with the upper section, A, of the mold hereinbefore described, comprising the parts C, E, and F, held together by the pins *a* and the dowels *b*, and the lower section, B, of said mold, comprising the parts *x y z*, held together by the pins *c*, of the screws *d*, inserted within the walls of said mold, and the pins *d'*, detachably held by said screws, extending within said mold to afford facility for holding diamonds in said mold and to be cast therewith into a saw-tooth, all substantially as and for the purpose set forth.

3. The combination, with the lower section, B, of the mold hereinbefore described, comprising the parts *x y z*, held together by the pins *c* and attached to the upper section of said mold, as hereinbefore specified, of the screws *d*, inserted into the walls of said section of said mold, the pins *d'*, partly within said screws, having heads *d'''*, spring $d^{\times}$, and extending within said mold to afford facility for holding diamonds to be cast into the teeth of a saw, all substantially as and for the purpose set forth.

In witness whereof I hereunto set my hand in presence of two witnesses.

THADDEUS A. JACKSON.

Witnesses:

FREDK. W. RUBIEN,

C. E. MCDONALD.