

(No Model.)

W. D. BRADT.

ROUTER BIT.

No. 281,442.

Patented July 17, 1883.

Fig. 1.

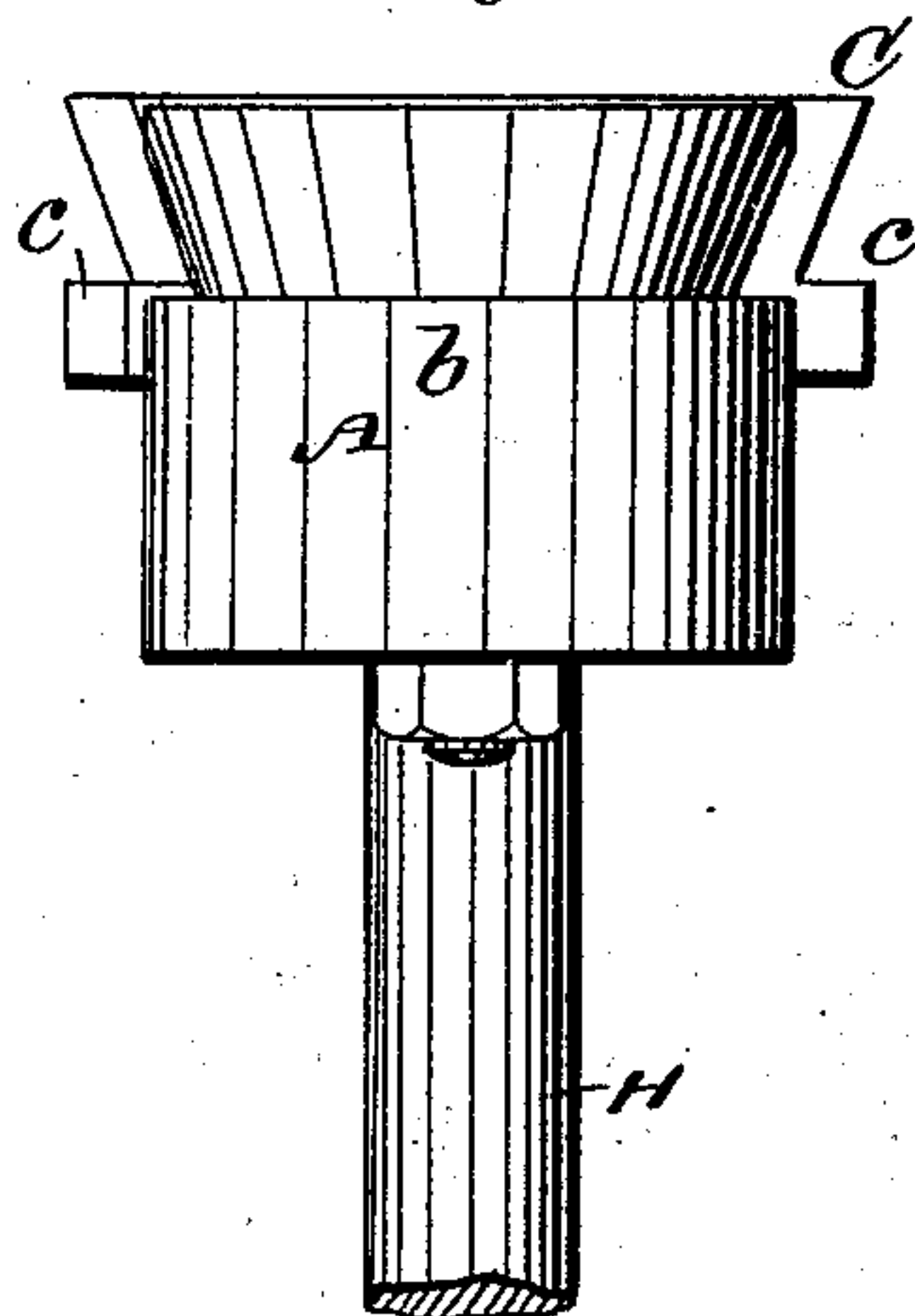


Fig. 2.

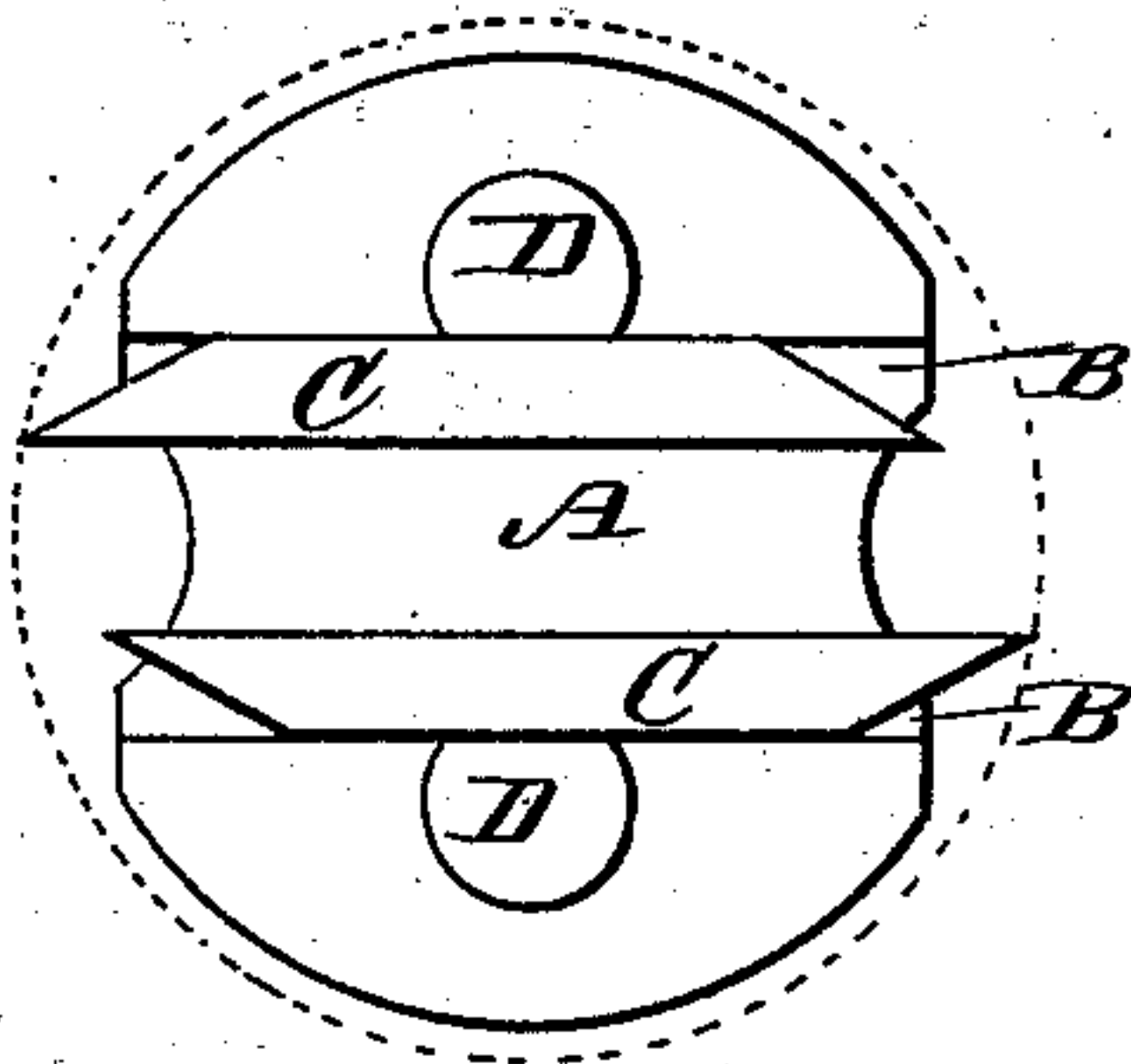


Fig. 3.

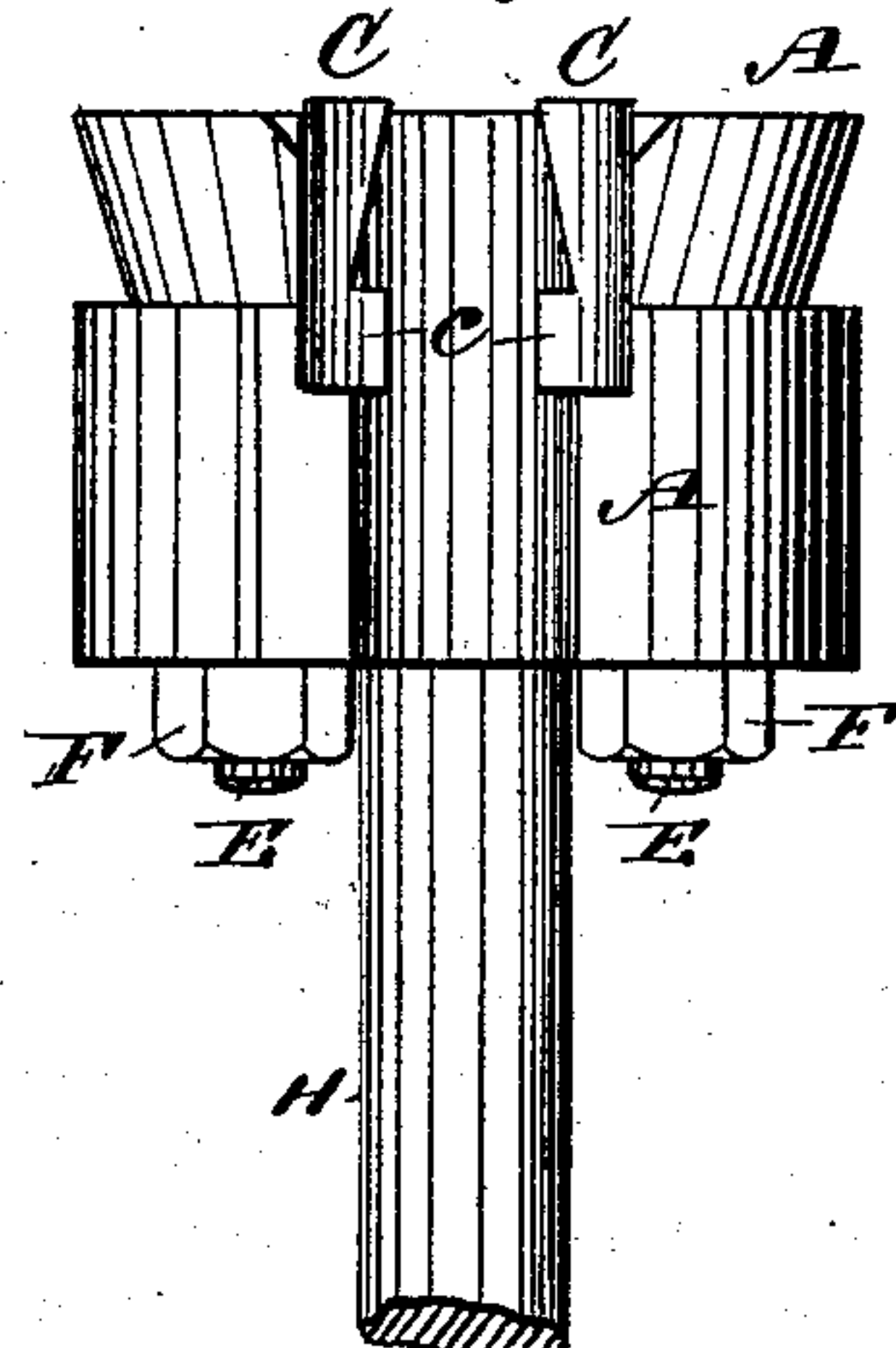


Fig. 4.

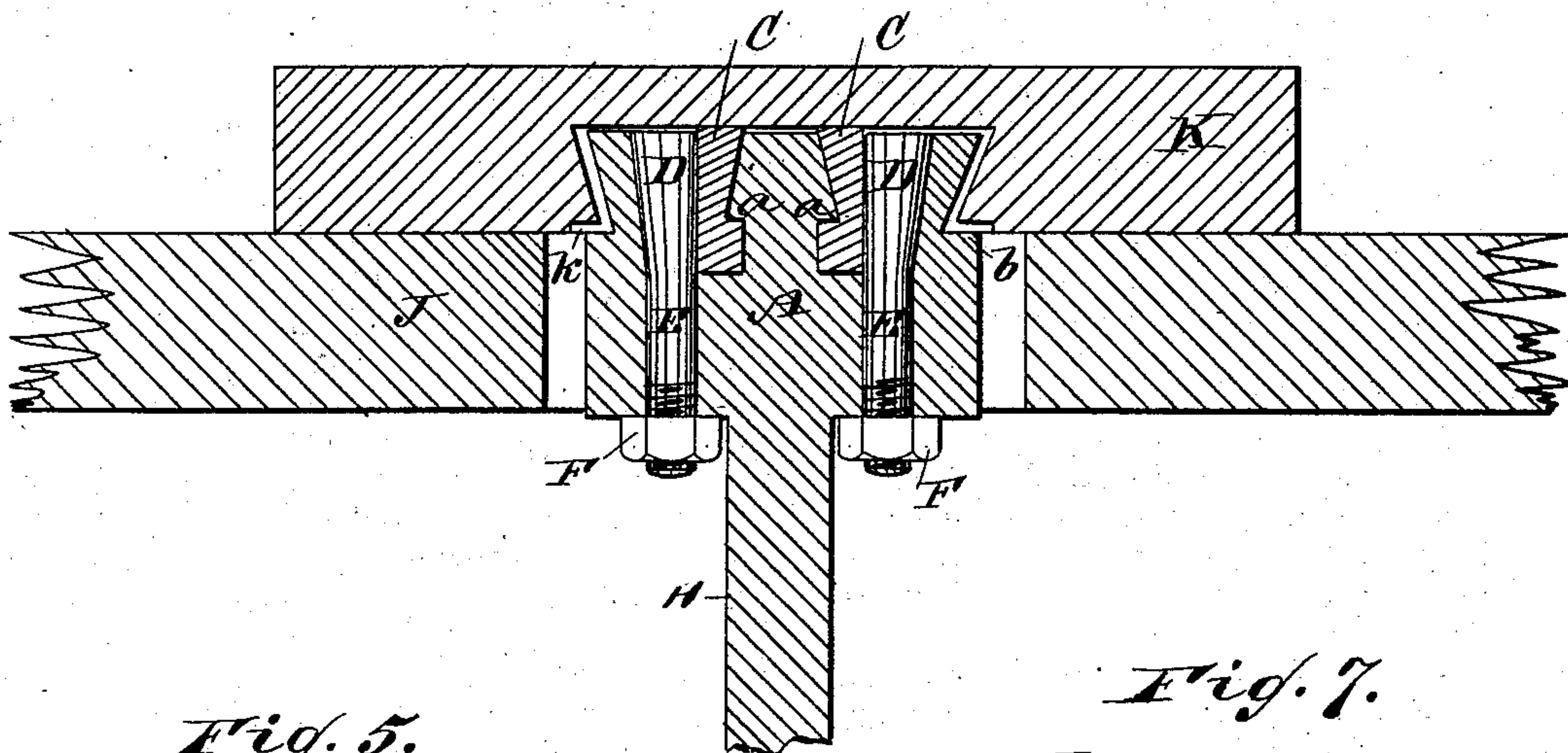


Fig. 5.

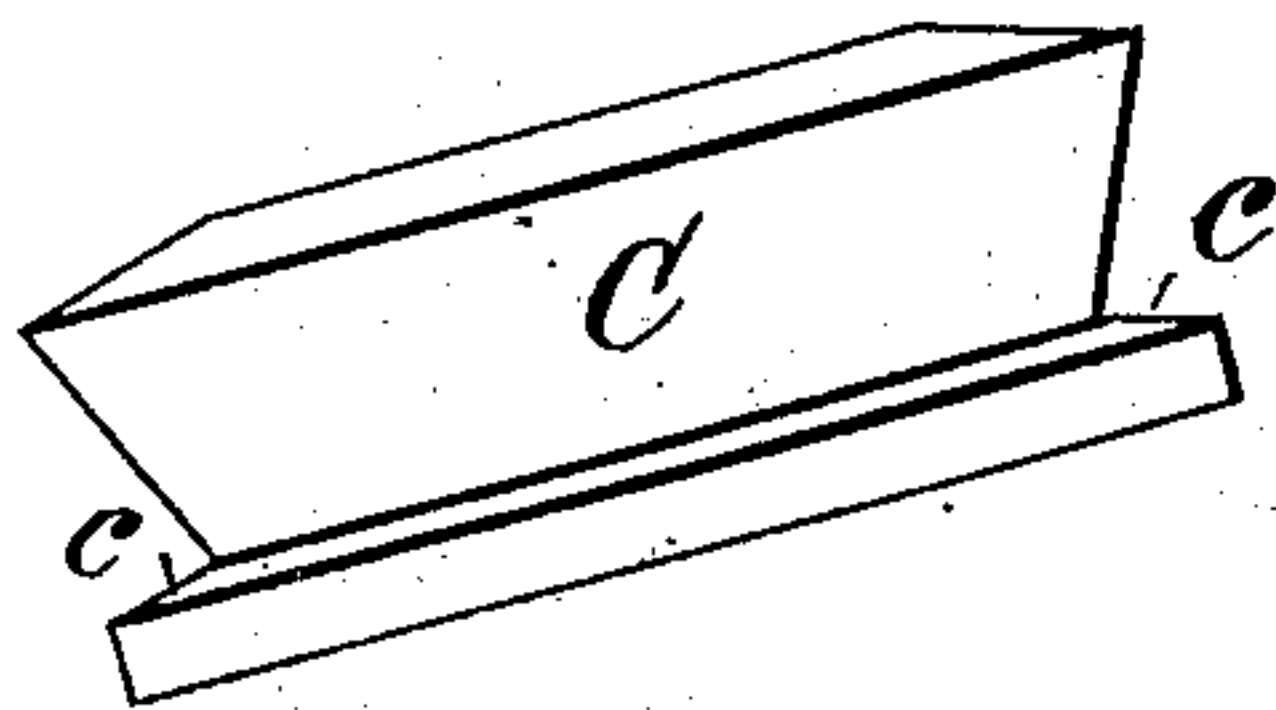


Fig. 7.

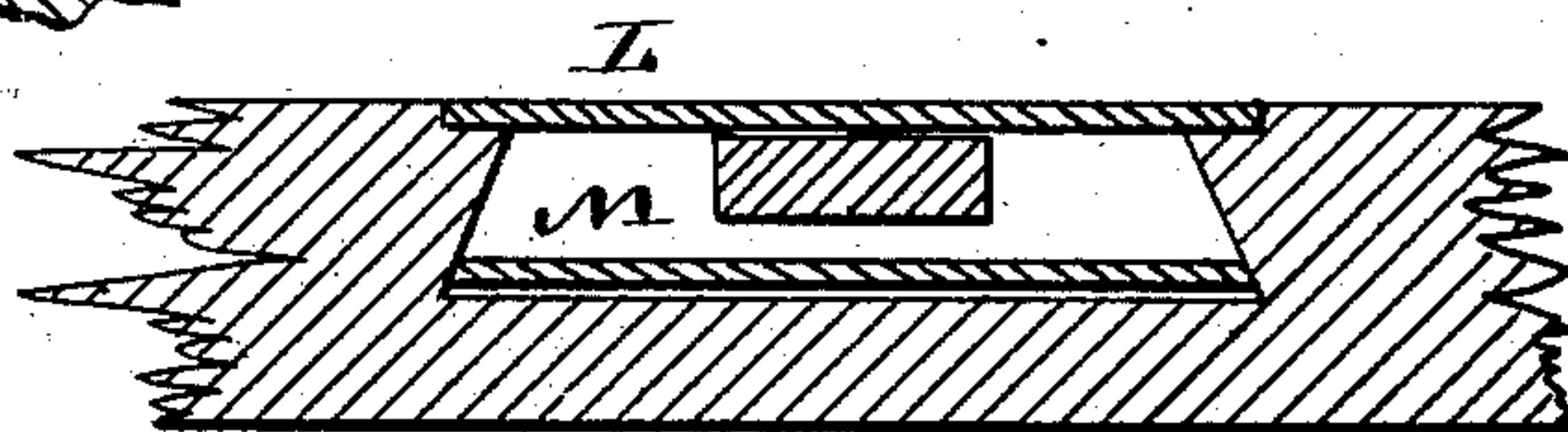
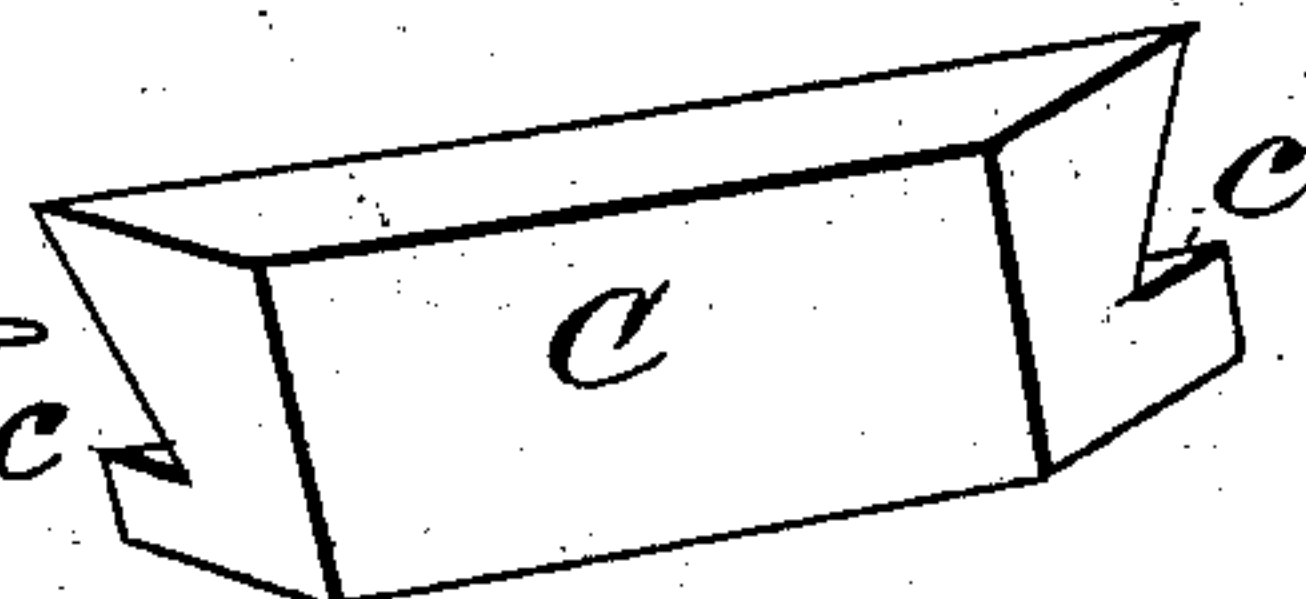


Fig. 6.



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# UNITED STATES PATENT OFFICE.

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## ROUTER-BIT.

SPECIFICATION forming part of Letters Patent No. 281,442, dated July 17, 1883.

Application filed April 12, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM D. BRADT, of Jackson, in the county of Jackson and State of Michigan, have invented a new and Improved Router-Bit, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved router-bit for forming dovetailed mortises in the fronts of drawers, &c., for receiving that class of drawer and cupboard locks which are held in place, not by screws, but by wedge-shaped or dovetailed projections on the inner surface of the frame of the lock.

The invention consists in a head beveled inwardly from its upper edge, whereby an annular shoulder will be formed a short distance from the upper edge, which head is provided with two transverse grooves having shoulders, in which grooves cutter-blades having shoulders are held by the said shoulders, and by wedges attached to the upper ends of screws passed vertically through the head and held in the same by means of nuts screwed on the lower ends of the said screws.

The invention also consists in various parts and details of construction, as will be fully described and set forth hereinafter.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal elevation of my improved router-bit. Fig. 2 is a plan view of the same. Fig. 3 is an end view of the same. Fig. 4 is a cross-sectional elevation of the same, showing the manner in which it forms the mortises in the drawers. Fig. 5 is a perspective view of one side of one of the cutter-blades. Fig. 6 is a perspective view of the other side of one of the cutter-blades. Fig. 7 is a cross-sectional elevation of a lock, showing it in place in the mortise in the front of the drawer or cupboard.

A cylindrical or like head, A, is provided with two transverse parallel grooves, B, equidistant from the middle, which grooves extend downward from the upper surface of the head, and are provided with the shoulders *a* on their inner surfaces. The outer surfaces of

the grooves B are vertical, and the inner surfaces are inclined from the longitudinal central line of the head downward and outward to the shoulders *a*. The grooves B are adapted to receive cutting-blades C, having both ends beveled and sharpened, and provided with shoulders *c*. The cutting-blades C have the surfaces that are to rest against the outer surfaces of the grooves straight, and those surfaces of the cutters which rest against the inner inclined surfaces of the grooves B are beveled from the upper edge inward to the shoulder *c*, so that the cross-sections of the cutter-blades C will be the same as the cross-sections of the grooves B. Both ends of each cutter-blade C are beveled from the smooth toward the inclined surface, as shown in Figs. 5 and 6. The ends of the cutter-blades C must be beveled in the manner shown, so as to produce the desired contour of the edge or side of the mortise to be made in the front of the drawer or cupboard. The head A is provided with an aperture adjoining the outer edge of each groove B, which apertures are adapted to receive wedges D, made integral with screws projecting down through the head A, and having nuts F screwed on their lower ends, whereby, by drawing the nuts F up tightly, the wedges D will be pressed firmly against the outer surfaces of the blades C, and will press the said blades firmly against the ridge running between the two grooves B and hold the cutter-blades in the desired position. As soon as the wedges are loosened, the blades C can easily be adjusted as may be desired. The opposite ends of the two cutter-blades project from the opposite sides of the cutter-head, as shown. As either end of the blades can be projected from the cutter-head, the router can easily be adjusted for operating in either direction, and the router can also be adjusted to cut mortises of a greater or less width, as may be desired. The blades can easily be removed in case they are to be sharpened, can be sharpened on a grindstone in the usual manner, and do not require fitting after they have been sharpened, as they have the same section throughout, all that is necessary being to give them the required bevel. The cutters last a long time, as they can be reground and sharpened repeatedly, and can be used as



long as there is sufficient length left to enable the wedges D to hold the blades in place. The cutter-head A is inclined inwardly from its upper edge down to an annular shoulder, *b*, which is slightly below the shoulders *a* and *c* of the grooves B and the cutter-blades C. The cutter-head A is attached to a spindle, H, which is connected with suitable devices for rotating it. The spindle H stands vertically, and the cutter-head projects through an opening in a table, J, in such a manner that the shoulder *b* will be flush with the upper surface of the said table J. The board K, in the surface of which the mortise is to be cut, is pushed forward until it comes in contact with the cutter-head, and then the ends of the cutter-blades C will cut into it, and if the board is pushed forward far enough the said cutters will cut a mortise which has a semicircular lower end. As the cutting-edges of the blades C are beveled upward and outward, they will form a dovetailed mortise in the board K; but the remaining parts of the ends of the cutting-edges of the blades—that is, the parts below the shoulder *b*—are straight, and the upper edges of the shoulders *c* of the cutter-blades are slightly above the shoulders *b* of the head A. As the upper surface of the table J is flush with the shoulders *b*, the shoulders *c* of the blades C will be slightly above the level of the table, and if the board K, which rests on the table, is pushed forward to meet the cutter-head, the straight parts of the cutting-edges of the blades—that is, the parts below the shoulders *b*—will cut a shoulder, *k*, around the edge of the mortise. The depth of the said shoulder *k* is equal to the thickness of the face-plate L of the lock, so that if the lock is placed in the mortise formed by the router, the surface of the face-plate L will be flush with the surface of the board K. It will be understood that the distance that the shoulders *c* project above the shoulder *b* must be governed by the thickness of the face-plate of the lock. The lock is provided on the back of its face-plate with a transverse dovetailed piece, M, which is passed into the mortise from the open end of the same, and then a tack is driven into the lower end of the lock to prevent the same from being withdrawn. The ends of the dovetailed piece M rest against the edges of the dovetailed mortise formed by the router, and prevent the lock from being withdrawn from the mortise. The lock can thus be held in the mortise without the use of screws or nails, can be attached or detached very rapidly, and is held firmly and securely.

If desired, the head A can be constructed with that part only between the grooves B—that is, the side pieces between the grooves and

the circular edges of the cutter-head can be removed, and the cutter-blades can be held on the remaining central ridge by bolts passed transversely through the said central ridge and the cutter-blades.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A router-bit constructed substantially as herein shown and described, and consisting of a head provided with one or more transverse beveled grooves provided with shoulders, and beveled cutter-blades provided with shoulders, secured in the grooves of the head, as set forth.

2. The combination, with a router-bit having transverse beveled grooves provided with shoulders, of cutter-blades held in the said grooves, and of wedges for holding the blades in place in the grooves, substantially as herein shown and described, and for the purpose set forth.

3. In a router-bit, the combination, with a head having transverse grooves, of cutter-blades in the same, and of wedges made integral with screws passing vertically through the cutter-head, substantially as herein shown and described, and for the purpose set forth.

4. In a router-bit, the combination, with a cutter-head provided with transverse grooves for receiving cutter-blades, and with vertical apertures adjoining the grooves, of wedges fitting in the apertures adjoining the grooves, which wedges are made integral with screws passing vertically through the cutter-head, and with cutter-blades held in transverse grooves, substantially as herein shown and described, and for the purpose set forth.

5. In a router-bit, the combination, with the cutter-head A, provided with an annular shoulder, *b*, on the outer surface, which cutter-head is provided with transverse grooves B, of the cutter-blades C, fitting in the grooves B, and provided with shoulders *c*, and devices for holding the cutter-blades in the grooves, substantially as herein shown and described, and for the purpose set forth.

6. In a router-bit, the cutter-head A, provided with transverse grooves B, having shoulders *a* in the corresponding sides, and of the cutter-blades C, provided with shoulders *c*, adapted to rest against the shoulders *a* of the grooves B, and of devices for holding the cutter-blades in place, substantially as herein shown and described, and for the purpose set forth.

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Witnesses:

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JOHN WATTS.