(No Model.)

J. H. HINES.

DIE STOCK.

No. 332,801. Patented Dec. 22, 1885.

FIG. 1.

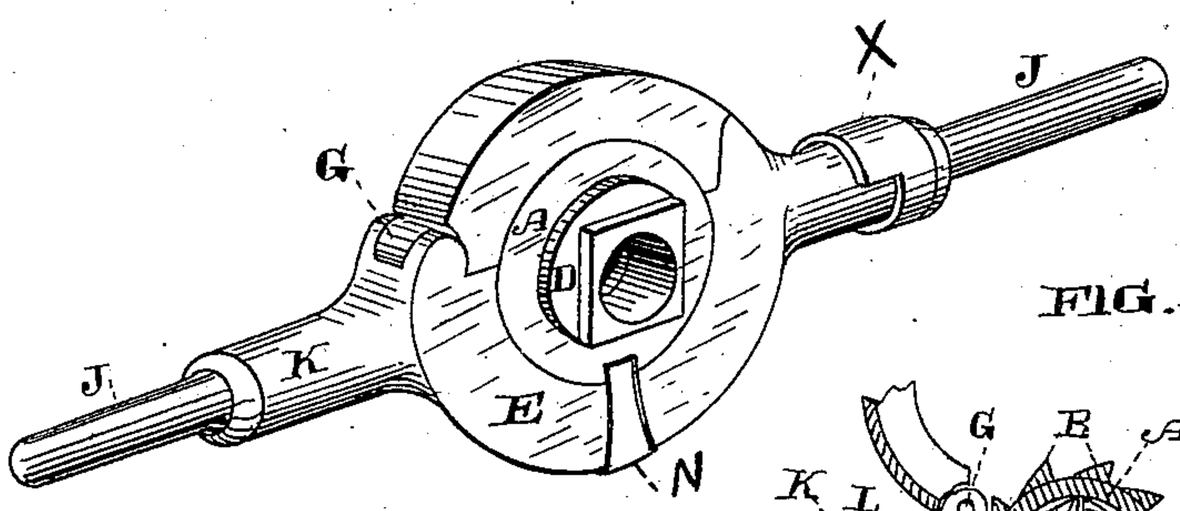


FIG. 4.

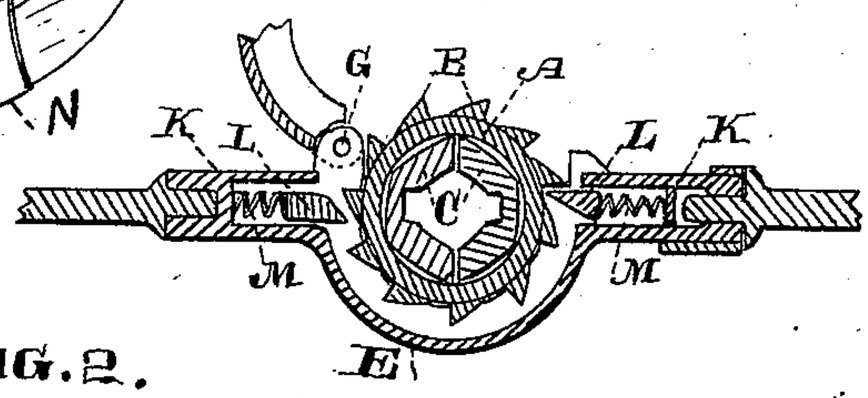


FIG. 2.

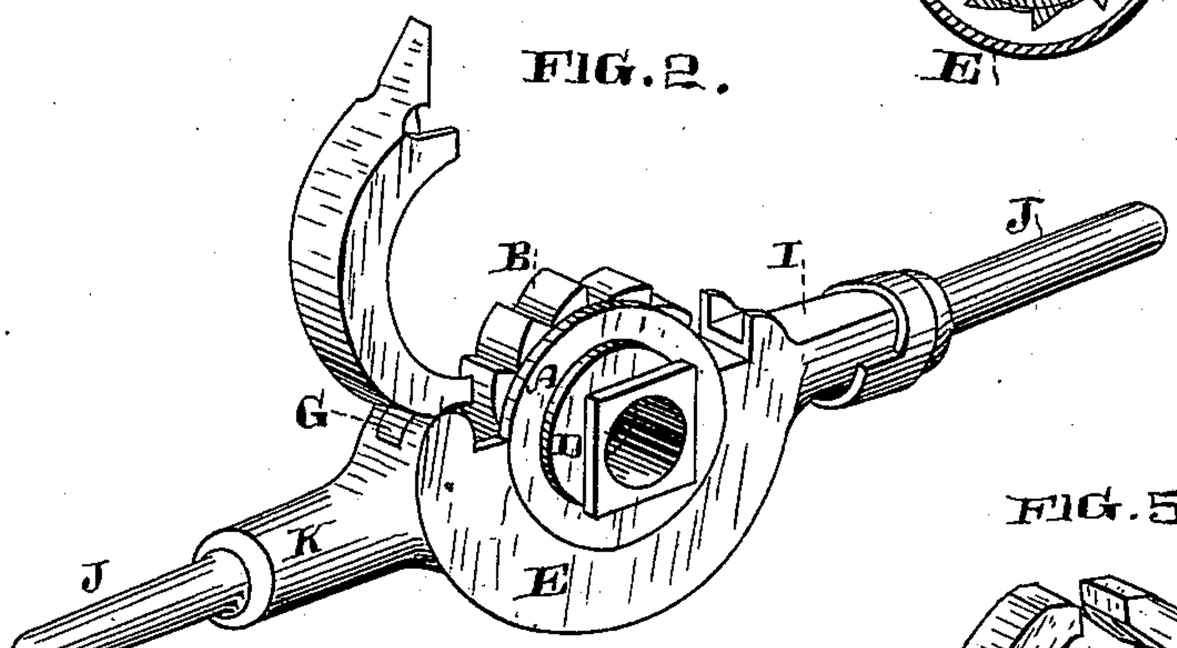


FIG. 5.

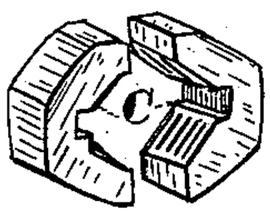
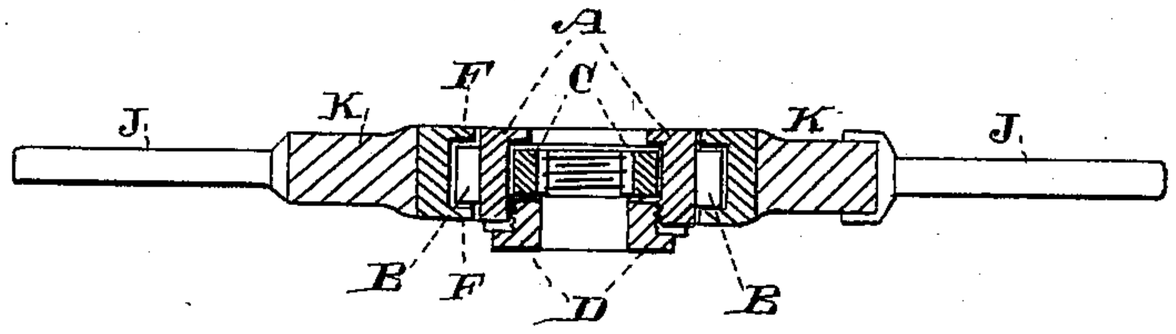


FIG. 3.



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UNITED STATES PATENT OFFICE.

JOSEPH H. HINES, OF CALISTOGA, CALIFORNIA.

DIE-STOCK.

SPECIFICATION forming part of Letters Patent No. 332,801, dated December 22, 1885.

Application filed August 7, 1885. Serial No. 173,877. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. HINES, of Calistoga, Napa county, State of California, have invented an Improvement in Screw-Cutting Die-Stocks; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a device for cutting screws; and it consists of dies with an inclosing head or case, having ratchet-teeth upon its exterior periphery, a chambered stock, within which this ratchet is fitted, and a means for retaining it therein, handles extending on opposite sides of this stock, and provided with spring-pawls, which engage the ratchet-head upon opposite sides, and a sliding key or lock, by which the ratchet-head is prevented from revolving at will.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is an exterior view of my device. Fig. 2 is a view showing the stock opened. Fig. 3 is a section taken through the ratchet-head and the dies. Fig. 4 is a longitudinal section. Fig. 5 is a view of the dies.

A is a cylindrical head having ratchet-teeth B upon its exterior periphery, and having the interior chambered, so as to receive the dies C, which are fitted therein. These dies are made in two parts in the usual manner, having the inner faces screw-threaded, so as to cut a corresponding thread upon a bolt or rod. The exterior of the dies are made so as to present an octagonal form when placed together, the angles of the octagon standing opposite the angles of the interior spaces through which the chips or cuttings escape. By this construction the dies are made strongest at the point where they would be weak if made circular, and at the same time I avoid the weight and clumsiness which would be given them if they were square. The chamber in the head A, into which these dies fit, is also made octagonal, so that they may be held in it and prevented from turning, and it is of sufficient size to allow the dies to separate to as great an extent as may be desired for the largest work. In order to regulate them for smaller work, small plates may be introduced behind them, so as to cause them to approach each other. These dies are held in place in the head A by a screw-plug, D, which fits into one end, this plug having a hole through it large enough to admit any size bolt or rod, upon which a screw-thread is to be cut, and the opposite end of the part A is also similarly perforated, leaving a flange sufficient to hold the dies in place.

E is the stock, having a chamber formed in its central portion, into which the ratchet-head A may fit. This chamber has flanges F upon its sides, which fit against collars formed upon the head at each side of the ratchet-teeth, and of smaller diameter, so that the head is held securely in place, and is allowed to revolve within the stock. In order to introduce this ratchet-head, or remove it, one side of the stock is hinged, as shown at G, to turn upon one of the projecting ends or handles, having a portion cut away, as shown at I, so that when this part is brought opposite the hinged portion of the stock the latter may be opened, and when the collar X is turned, so as to cover this hinged portion, it holds it firmly in place. Handles J extend in opposite directions from each side of the stock, and are secured in extensions K, which are formed with the stock. These extensions are hollow, and pawls L extend inwardly through these extensions, so that their inner ends will engage with the teeth of the ratchet-head. Springs M serve to press these pawls inward against the periphery of the ratchet, and the pawls are so arranged that when one engages with the tooth upon one side of the ratchet, the other pawl will stand midway between the teeth upon the opposite side.

When this device is to be used, it is placed so that the rod or bar upon which the screw-thread is to be cut will extend through the holes in the ratchet-head and into the die within it. When there is plenty of room to swing the holding-case with its levers, it may be turned entirely around until the thread is cut; but when the work is being done in a smaller or cramped space it will only be necessary to move the levers a short distance from side to side in an oscillatory manner, and the ratchet-head will be advanced one or more teeth at each movement of the exterior case. The friction or bite of the die upon the rod or bar which is being cut will be sufficient to hold

it while the handles are being turned backward, and the pawls will slip over the teeth of the ratchet to get a new hold. By this construction I am enabled to cut screw-threads in places otherwise difficult of access. When the thread has been cut as far as may be desired, and it is necessary to turn the die backward, so as to remove it from the rod, the ratchet may be locked, so that it will turn with the holding-case and levers by means of a sliding key, N, which fits in a dovetailed slot in one side of the case, and may be made to enter a corresponding notch in the ratchet-head when desired, so as to lock the two together.

It will be manifest that the whole device may be used for turning a tap by having a square hole through the ratchet-head, which will fit upon the square end of the tap, the operation being similar.

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

1. The combination, with the case and the ratchet-head secured therein, of screw-cutting dies, whose outer faces correspond to the configuration of their inner faces, and a screw-cap for retaining the dies in place, substantially as herein described.

2. In a screw-cutting device, the combination, with a cylindrical case and a ratchet-head secured therein, of the dies C, within an interior chamber in the head, and whose outer and inner faces have a like configuration, the perforated screw-cap, whereby the dies are held in place, and the spring-pawls extending into the central compartment of the case from opposite sides, substantially as herein described.

3. A screw-cutting device consisting of a cylindrical ratchet-head having a central compartment within which dies are secured, in combination with an exterior case having a central chamber within which the ratchet-head may rotate, spring-pawls extending into said chamber, to hold the ratchet-head, a hinged side to the exterior case, through which the ratchet-head may be introduced or removed, and a locking ring or clasp, substantially as herein described.

In witness whereof I have hereunto set my hand.

JOSEPH H. HINES.

Witnesses:

GEO. H. STRONG,

S. H. NOURSE.