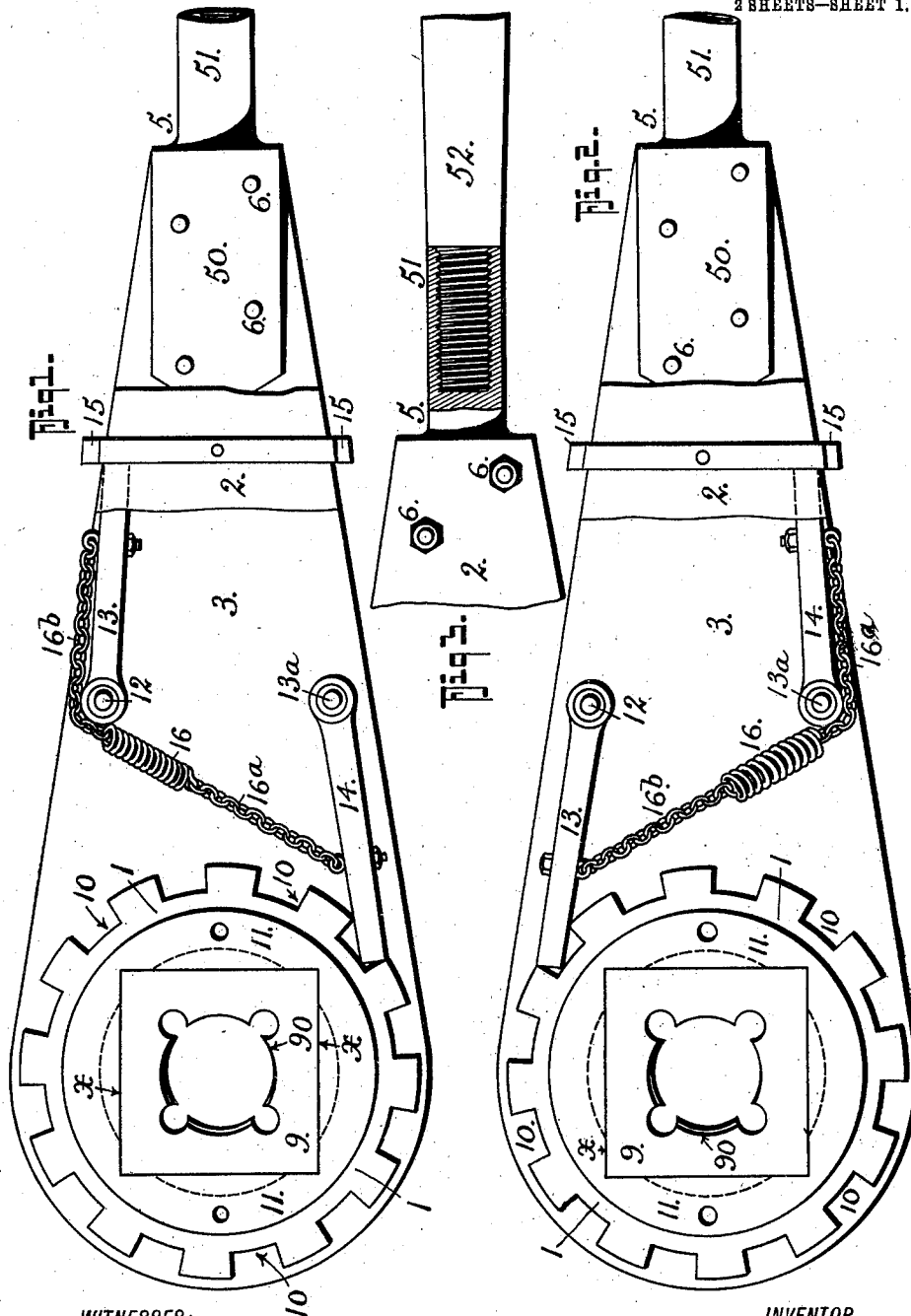


E. M. FULLER.
 RATCHET DIE STOCK.
 APPLICATION FILED JUNE 28, 1908.

963,705.

Patented July 5, 1910.

2 SHEETS—SHEET 1.



WITNESSES:

J. Theodore Schrott.
 Mae E. Immich.

INVENTOR

Ernest M. Fuller.

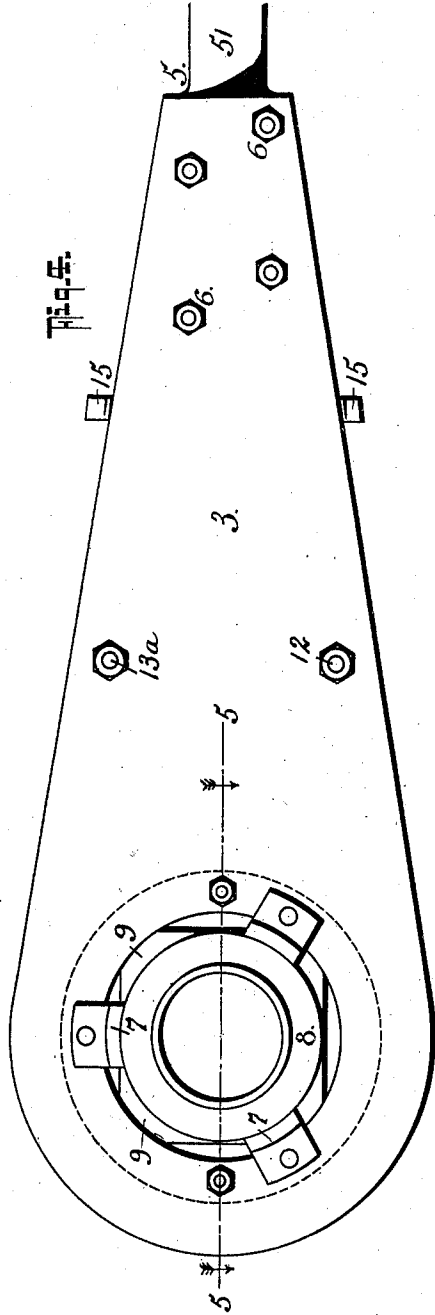
BY
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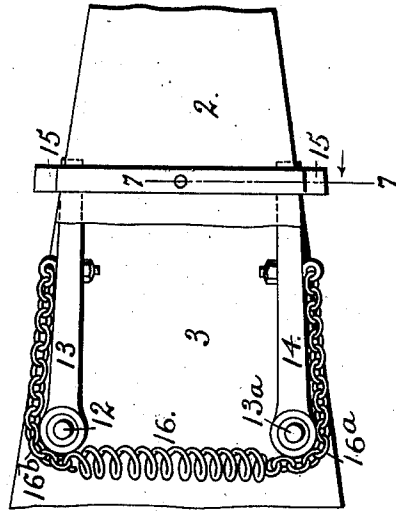


Fig. 5.

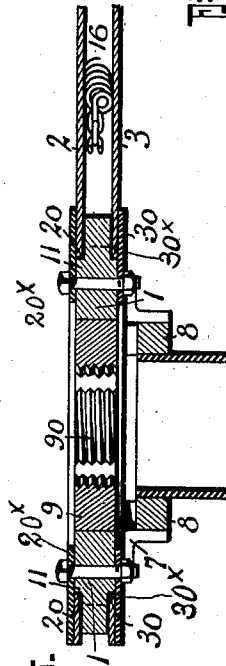


Fig. 6.

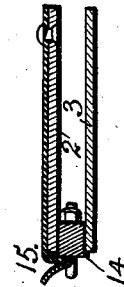


Fig. 7.

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UNITED STATES PATENT OFFICE.

ERNEST M. FULLER, OF GRAND RAPIDS, MICHIGAN.

RATCHET DIE-STOCK.

963,705.

Specification of Letters Patent.

Patented July 5, 1910.

Application filed June 26, 1909. Serial No. 504,543.

To all whom it may concern:

Be it known that I, ERNEST M. FULLER, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented a new and Improved Construction of Ratchet Die-Stock, of which the following is a specification.

This invention relates to that type of tools or implements, known as pipe threading die stocks, used for holding and operating the cutting dies for threading pipe sections, and my invention primarily has for its object to provide a tool or implement of the character stated, of a very simple and economical construction, adapted to hold the regulation sizes of pipe dies now in general use, and that is capable of operating the die so as to cut the threads under either direction of movement of the operating handle.

My invention also has for its object to provide a tool of the character stated, in which a new and improved arrangement of pawls is provided for coacting with the ratchet head of the stock and a single spring controlled means for both pawls or dogs, other details of construction and peculiar arrangement of parts, all of which will be hereinafter fully described, specifically pointed out in the appended claims, and illustrated in the accompanying drawings, in which:

Figure 1, is a plan view of my invention, the top plate being removed, showing the parts in position to cut a right hand thread.

Fig. 2, is a similar view with the parts positioned for cutting a left hand thread. Fig. 3, is a view of the handle connection. Fig. 4, is a bottom plan view of my device. Fig. 5, is a cross section on the line 5—5 on Fig. 4 in the direction of the arrow. Fig. 6, is a detail view showing the ratchet dogs locked out of operative connection. Fig. 7, is a section on the line 7—7 on Fig. 6, in the direction of arrow.

In carrying out my invention, I form the holder substantially as shown in Fig. 1, it comprising a body portion 1 whose peripheral edge is formed into a series of radially disposed ratchet notches 10 and whose central portion is projected beyond the ratchet portion in both directions, whereby to provide the annular seats 11 to fit into the circular seats 20—30 in the top and bottom plates 2 and 3 that are correspondingly shaped, see Fig. 5 and form, as it were, a part of the operating handle or frame, their

rear ends fitting upon and being secured to the flattened head 50 of the handle shank 5 by the screw bolts 6—6, the said shank 5 having a socket like extension 51 that is internally threaded to receive the threaded end of the wooden handle or grip member 52.

7—7 designate angle brackets pendent from the bottom plate, that sustain the tubular pipe guide or holder 8 that forms the bearing for the tool when actuating it to cut the pipe threads and this holder is in line with the pipe passages in the bottom and top plates and with the die 9, which latter is of any of the well-known types of cutters, it having the usual thread cutting members 90 as shown. This die is held in the head stock by having its corners seated in the recess *x* formed in the head stock, that is, held between the top and bottom plates as stated, it being obvious that in assembling the parts the top and bottom plates can be secured by bolt and nut clamp so they can be readily separated when it is desired to change the die.

Coöperating with the rotary ratchet head stock is a pair of dogs or pawls, the peculiar arrangement of which and the means for holding them alternately in engagement with the said head stock forms an essential feature of my invention. Pivoted near the outer edges of the top and bottom plates on studs 12 and 12^a are the ratchet dogs 13 and 14. The two dogs are relatively arranged so that one of said dogs can be readily swung backward out of operative engagement with the ratchet head as the other dog is held to the operative position and for holding the said dogs to their back or inoperative position a snap spring 15—15 is mounted on the top plate at the opposite edges for locking the dogs to the said turned back position as best shown in Fig. 6, by reference to which it will be also noticed a single spring device is used for both dogs or pawls that comprises a stout coil spring 16 and chain members 16^a—16^b secured to the opposite ends of the spring coil, one of which 16^a connects with the front of ratchet engaging member 14 of one pawl or dog and the other 16^b engages with the front member of the other pawl, such arrangement of parts providing for effecting a tensile strain on the spring for holding the pawl member 14 in an operative position when the other dog is swung back and to likewise act on the said

other dog 13 when the dog or pawl 14 is thrown back, the snap springs holding the said dogs firmly to their thrown back positions.

- 5 By arranging the several parts as shown and described, the implement can be readily adjusted for cutting right or left hand threads on the pipe ends by simply shifting the dogs or pawls to the positions desired.
- 10 It will be understood that in practice suitable means is provided for holding the plates 2 and 3 and the rotary carrier or head in a proper operative position, for example, they may be thus held by upper and lower
- 15 clamp plates 20* and 30* that lap over the shouldered edges of the ratchet member or carrier 1 and the plates 2 and 3 as clearly shown in Fig. 5 from which it will be seen that the plates 20 and 30 and the ratchet
- 20 carrier are joined by cross bolts.

Having thus described my invention, what I claim is:

1. A device of the character stated comprising a stock consisting of an upper and a
- 25 lower plate having opposite circular openings, a rotatable carrier having peripheral ratchet teeth mounted in said openings between said plates, means for holding said carrier and said plates in their relative positions, a pair of independently actuating
- 30 pawls pivoted each at one end between said plates and having the other end free to engage said ratchet, a single spring connected with said pawls at a point between the pivot
- 35 and the free ratchet engaging end thereof, means for locking one of said pawls out of

operative position and holding the spring under tension while the other pawl is in engagement with the ratchet, and connections between said spring and said pawls consisting of flexible members, each of said pawls being movable on its pivot through a distance approximately equal to 180° and the locking position of said pawls being approximately 180° from the ratchet engaging position of said pawls, said flexible members being of a length to prevent said spring bending about the pawl pivots when the pawls are in their inactive position.

2. In a device of the character stated, a supporting frame, a rotatable member mounted therein and having a peripheral ratchet face, a pair of pawls each pivoted at one end to said frame having their free ends to engage said ratchet, a coil spring, chains connecting said coil spring with each of said pawls, and means for locking one of said pawls out of engagement with said ratchet to hold said spring under tension while said other pawl is in engagement with said ratchet, each of said pawls being movable on its pivot through a distance approximately 180° and the locking position of said pawls being approximately 180° from the ratchet engaging position of said pawls, said chains each being of a length to prevent said spring bending about the pawl pivots when the pawls are in their inactive position.

ERNEST M. FULLER.

Witnesses:

ART. WALSH,
THEODORE FINDLEY.