No. 812,075. PATENTED FEB. 6, 1906.

W. J. McKIMMEY.

SCREW CONNECTING DIE AND STOCK.

APPLICATION FILED MAR. 23, 1905.

Fig. 1.

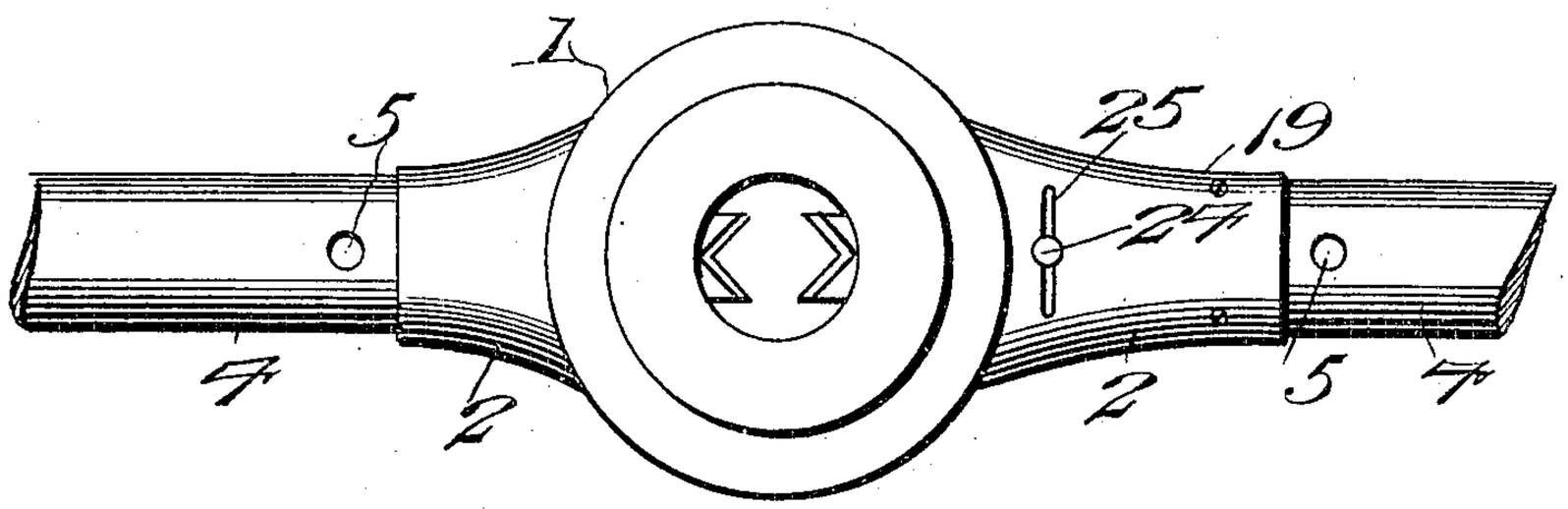


Fig. 2.

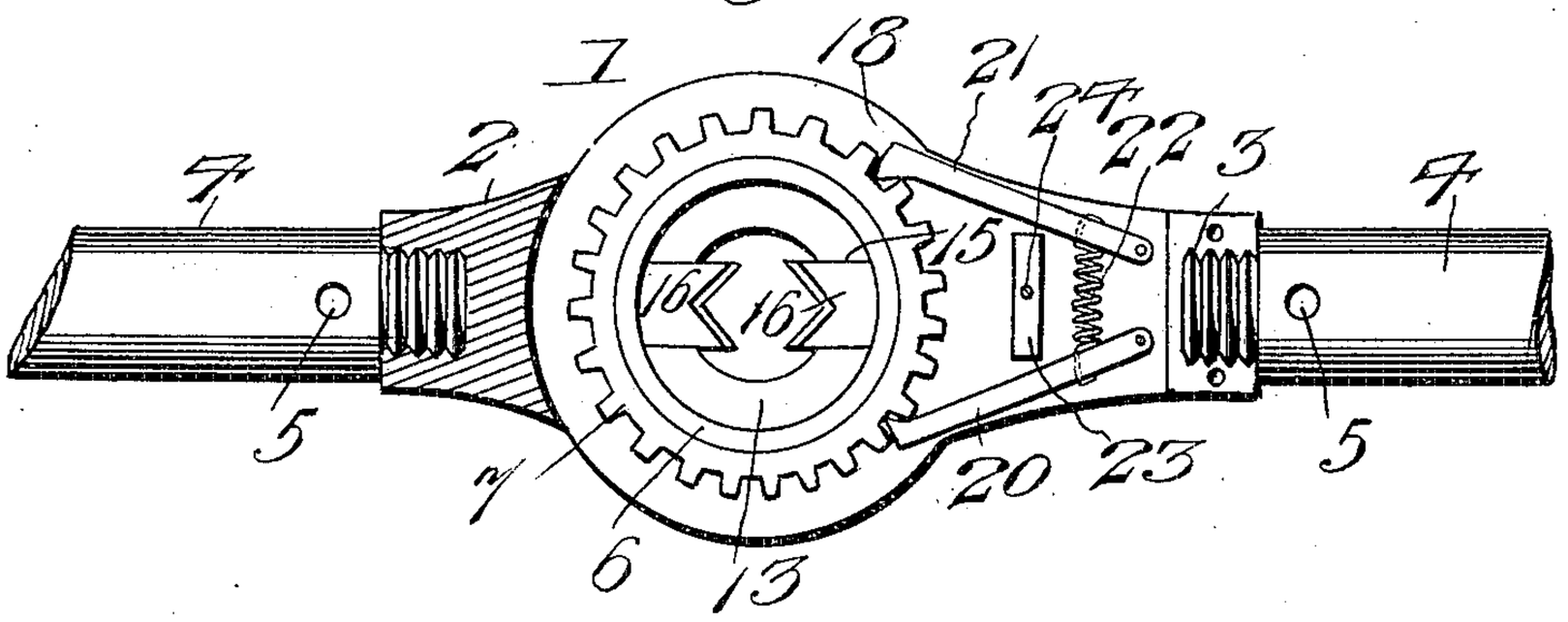
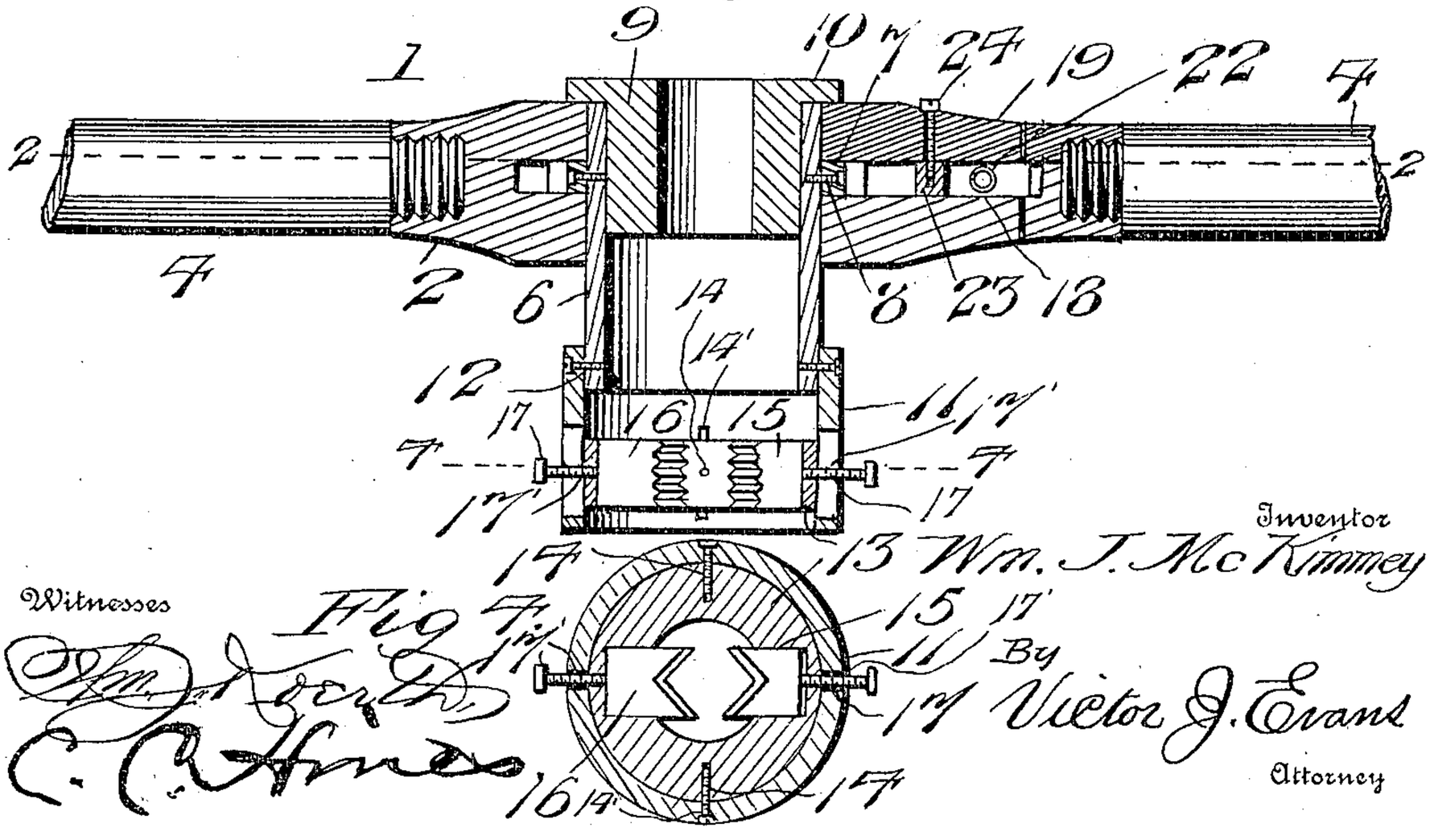


Fig. 3



Witnesses

Fig. 1.

Fig. 2.

Fig. 3.

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SCREW-CONNECTING DIE AND STOCK.

No. 812,075. Specification of Letters Patent. Patented Feb. 6, 1906.

Application filed March 23, 1905. Serial No. 251,646.

To all whom it may concern:

Be it known that I, WILLIAM JAMES McKIMMEY, a citizen of the United States, residing at Barnett, in the county of Montgomery and State of Illinois, have invented new and useful Improvements in Screw-Connecting Dies and Stocks, of which the following is a specification.

This invention relates to screw-threading dies and stocks, and has for its object to provide a construction wherein the dies are conveniently adjustable to operate upon different sizes of work and wherein ratchet means are provided to enable the threading operation to be carried out by an oscillatory motion of the stock in either direction.

The preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a die-stock embodying my improvements. Fig. 2 is a longitudinal section of the same, taken on the line 2 2 of Fig. 3. Fig. 3 is a longitudinal section taken on a plane at right angles to Fig. 2, and Fig. 4 is a cross-section through the die-holder and its containing-collar on the line 4 4 of Fig. 3.

Referring now more particularly to the drawings, the numeral 1 designates a die-stock of ordinary form and construction, except as hereinafter described, the same being provided with the usual oppositely-projecting arms 2, having threaded sockets 3 to receive the threaded inner terminals of operating-handles 4. These handles are provided, preferably, with openings or recesses 5 for the reception of a suitable tool to facilitate their application and removal.

In the bore of the stock 1 is fitted a tubular rotary die-carrier 6, which is provided with a ratchet-tooth ring 7, which may be integral therewith or formed independently thereof and fastened thereto by suitable securing devices, such as screws 8. This ring is mounted for rotation between the side members of the stock 1 and is adapted to impart rotary motion to the carrier 6. One end of the carrier 6 receives a bushing 9, provided with a bore of properly-restricted diameter to hold and center the part which is to be threaded, and this bushing is provided at its outer end with a flange 10, which abuts against one end of the carrier and the adjacent side of the stock. The other end of the carrier projects beyond the stock and has fitted thereon a collar or cuff 11, which is removably fastened thereto by screws 12. This collar forms a chamber for the reception of a die-holding ring 13, which is removably fastened therein by screws 14, said screws being adjustable in longitudinal slots 14′ formed in the carrier to adapt the holding-ring 16 to be adjusted toward and from the stock. In diametrically opposite sides of the ring are formed sockets 15, which receive oppositely-arranged taps or dies 16, which are adjustable therein by means of adjusting-screws 17, working in threaded openings in the ring, so as to enable the dies to be radially adjusted to suit the size of the work which is to be threaded thereby. The screws 17 are arranged to slide in slots 17′ formed in the carrier to permit the carrier-ring 16 to have free movement when adjusted through the action of the screws 14 toward and from the stock. This adjustability of the carrier-ring toward and from the stock is of prime importance. The tool is especially adapted and has been designed for threading extremities of irregular bolts, such as staple bolts or forks fixed in close places and which vary to some extent in length. By making the carrier-ring adjustable toward and from the stock the ring is adapted to be positioned for threading the shanks of bolts of this character which vary in length, thus enabling bolts to be conveniently threaded where the stock as a whole cannot be adjusted for operating upon very short bolts. Where the bolt projects from a wall or other surface and the bushing 9 abuts against the wall, it will be readily understood that the adjustability of the carrier-ring renders the device exceedingly useful in threading the shanks of short bolts, since the wall will prevent the adjustment of the stock bodily to project the bolts to the desired extent through the tool.

One of the arms 2 of the stock is formed with a chamber or recess 18, closed by a suitable form of cover-plate 19. In this chamber are arranged pawls 20 and 21, which are pivotally mounted for lateral movement on the arm and are adapted to be thrown into engagement with the ratchet-ring 7 by means of an interposed coil-spring 22. These pawls are provided with oppositely-arranged operating portions to engage the ratchet-teeth and respectively control the movement of the ratchet-ring in opposite directions. Between the pivoted and free ends of the pawls is a sliding retractor-block 23, which is adjustable by means of a set-screw 24, which screw

has its shank projecting to the exterior through a transverse slot 25, formed in the cover-plate 7, with its head arranged to bind against the outside of said cover-plate. By means of this screw the block 23 may be adjusted in one direction or the other to move one of the pawls out of engagement with the ratchet-ring and to permit the other to be thrown into engagement therewith by means of the spring 22, the block being fastened in adjusted position by tightening up the screw. By this means the pawl-and-ratchet mechanism may be operatively connected to permit the rotary carrier to be intermittently rotated to the right or left while the stock is being continuously oscillated and to prevent retrograde movement of the carrier during the reverse or backward movement of the stock. Right or left threading may therefore be accomplished with equal ease by a continuous oscillatory movement of the stock, thus doing away with the necessity of rotating the stock entirely about its axis or changing the positions of the parts for such adjustment.

From the foregoing description, taken in connection with the accompanying drawings, the construction and mode of operation of the invention will be understood without a further extended description.

Changes in the form, proportions, and minor details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

Having thus described the invention, what I claim as new is—

1. In a threading-tool, the combination of a stock, a rotary carrier held by the stock, said carrier being provided with sets of longitudinal slots, a holding-ring within the carrier, adjusting-screws connecting the ring to the carrier and adjustable in one set of slots to permit the ring to be adjusted toward and from the stock, radially-adjustable dies mounted in the carrier-ring, screws carried by the carrier-ring for radially adjusting said dies, said screws being adjustable in the other set of slots in the carrier, and means for rotating the carrier.

2. In a threading-tool, the combination of a stock provided with a chamber in one of the arms thereof, a cover for said chamber provided with a transverse slot, a rotary die-carrier held by the stock, said carrier being provided with ratchet-teeth, pivoted pawls mounted within the chamber and provided with portions to engage the ratchet-teeth to rotate the die-carrier in opposite directions, a spring arranged between and acting on said pawls to normally throw them into engagement with the ratchet-teeth, a transversely-sliding block arranged within the chamber and adapted to be adjusted in one direction or the other to throw the pawls alternately into and out of operation, and an adjusting member connected with the block and projecting exteriorly through and movable in the transverse slot in the cover, said adjusting member comprising a screw, whereby the block may be clamped in adjusted position.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM JAMES McKIMMEY.

Witnesses:

H. H. RICHARDSON,

J. H. YOWELL.