M. H. STEVENS.

TOOL.

APPLICATION FILED OCT. 15, 1908.

912,752.

Patented Feb. 16, 1909.

Fig. 1.

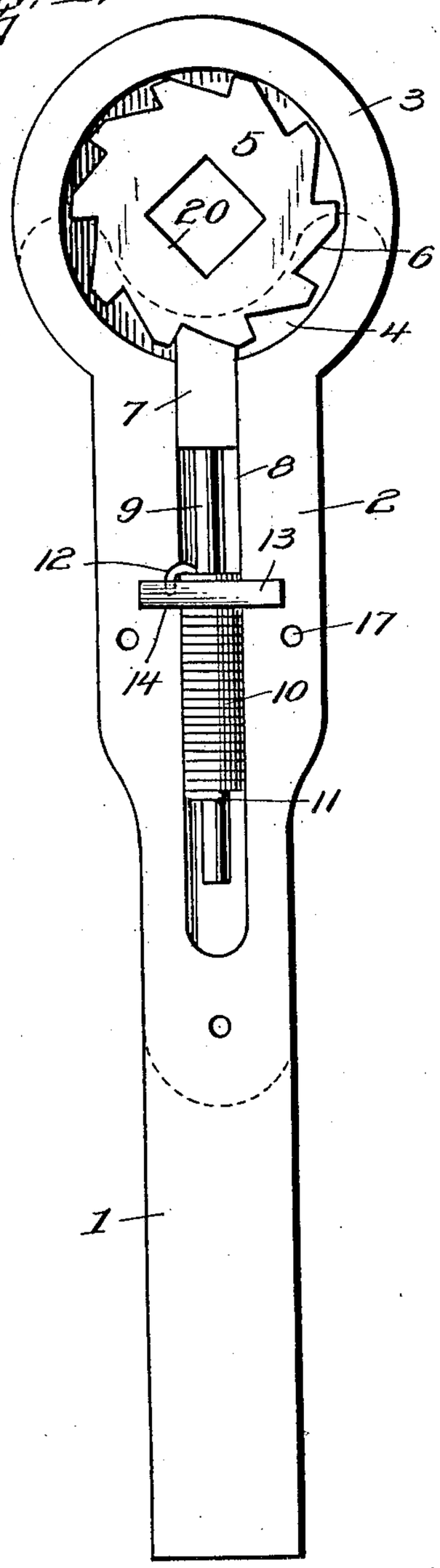



Fig. 2.

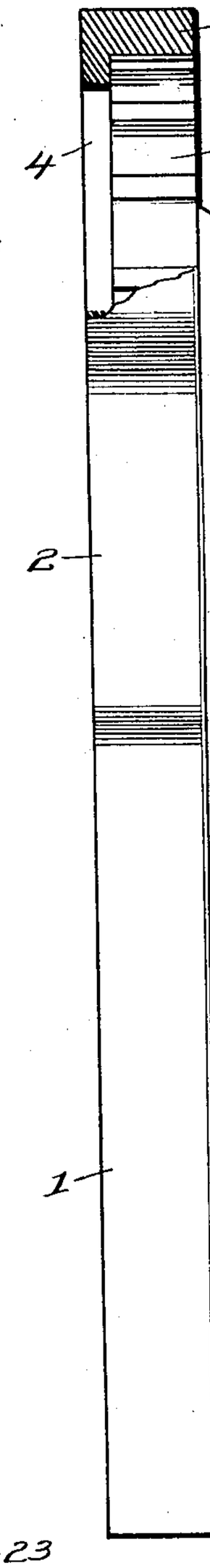
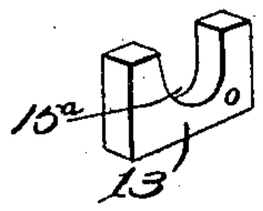



Fig. 4.



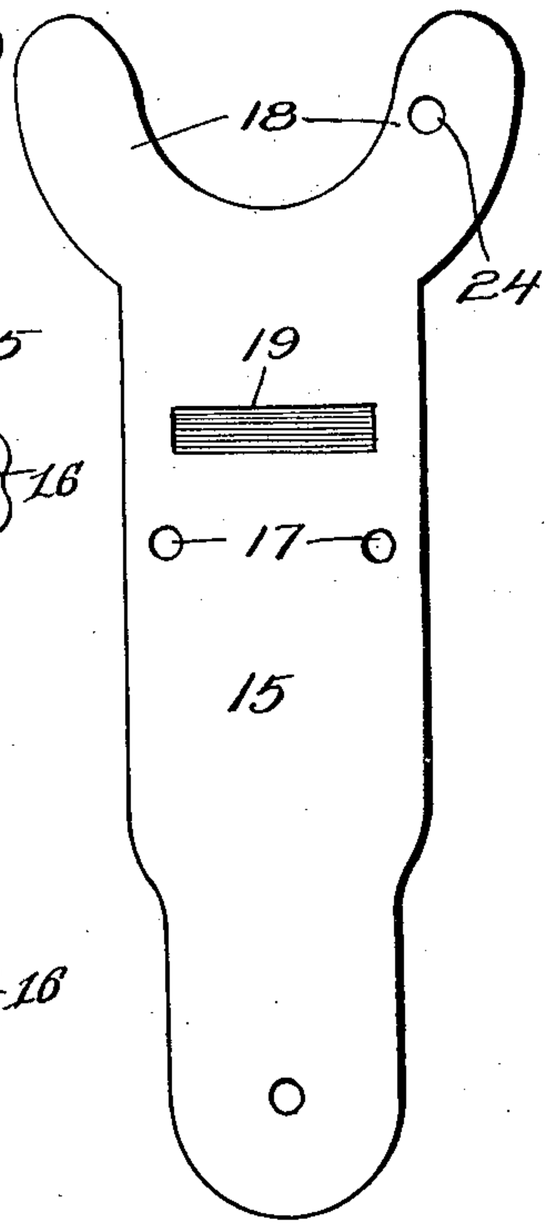




Fig. 3.

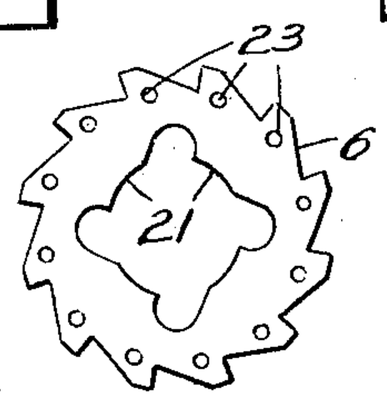



Fig. 5.

Witnesses

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# UNITED STATES PATENT OFFICE.

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## TOOL.

No. 912,752. Specification of Letters Patent. Patented Feb. 16, 1909.

Application filed October 15, 1908. Serial No. 457,909.

*To all whom it may concern:*

Be it known that I, MILTON H. STEVENS, a citizen of the United States, residing at Kansas City, in the county of Wyandotte and State of Kansas, have invented new and useful Improvements in Tools, of which the following is a specification.

This invention relates to combined wrenches and pipe threaders, and has for one of its objects to provide a tool of this character which is extremely simple and inexpensive to manufacture, and so designed as to be readily manipulated and to enable pipes to be threaded or nuts to be applied or removed with despatch.

Another object of the invention is the provision of a tool provided with sets of ratchet wheels in the form of thread-cutting dies or nut-engaging elements, in connection with a simple and convenient means for holding any wheel removably in the head of the tool.

With these objects in view and others, as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one embodiment of the invention, Figure 1 is a plan view of the tool with the cover plate removed. Fig. 2 is a side view of the tool partly broken away. Fig. 3 is an under plan view of the cover plate. Fig. 4 is a perspective view of the spring and pawl-holding block. Fig. 5 is a plan view of one of the thread-cutting dies.

Similar reference characters are employed to designate corresponding parts throughout the views.

Referring to the drawing, 1 designates the handle of the tool which is a continuation of the shank 2, and formed on the shank is an annular head 3 that has an internal annular flange 4 that constitutes a shoulder on which the ratchet wheel 5 bears. This ratchet wheel is provided with teeth 6 with which engages a spring-pressed pawl 7 that is disposed in a channel or guideway 8 extending longitudinally in the shank 2 of the tool. The pawl has a stem 9 on which is a helical extension spring 10, which spring is connected with the stem at 11. The opposite end 12 of the spring engages an abutment or holder 13 which extends transversely to the channel 8 and sets into recesses 14 in the closed walls of the channel. This holder is in the form of a block which has a central recess 15ª in its bottom, as shown in Fig. 4, to span the stem 9 and spring 10, the end 12 of the spring being bent outwardly to engage in front of the abutment 13. The spring 10 permits the pawl 7 to yield inwardly as the ratchet wheel 5 turns. On the side of the shank having the channel 8 is a cover plate 15 that is removably secured to the shank by thumb screws 16 that enter the openings 17 in the cover and shank, and this cover plate is bifurcated at one end to provide arms 18 that extend partially over the ratchet wheel 5 to form retainers for the latter whereby the wheel can turn in the head 3 without lateral displacement. The under face of the cover plate 15 has a transverse recess 19 which receives the portion of the member 13 that projects out of the shank 2. With the tool, a plurality of ratchet wheels are provided, some of which have square or other openings 20 of different sizes to fit different nuts and some wheels are formed into dies having thread-cutting teeth 21, as shown in Fig. 5. In order to substitute one ratchet wheel for another, it is merely necessary to loosen the cover plate by taking out the screw 16 so as to move the arms 18 out of the way. With a tool of this character, a nut can be applied or removed, or a pipe threaded by a back and forth movement of the tool, thus connecting the latter very serviceably where the space around the work is limited. To prevent the ratchet wheel from turning when removing the die from a pipe after being threaded, a clamping screw 22 is arranged in one of the arms 18 to engage in any one of the depressions 23 in the side face of the die-carrying ratchet wheel, as shown in Fig. 5. The screw 22 is threaded in an opening 24, Fig. 3, and by turning the screw to cause the inner end thereof to enter one of the depressions 23, the die-carrying ratchet wheel can be unscrewed from the threaded pipe by the turning of the tool.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have

described the principle of operation of the invention, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention, what I claim is:—

1. A tool of the class described comprising a handle, a shank thereon, an annular head on the shank, a ratchet wheel in the head, a pawl arranged in the shank to engage the ratchet wheel, a spring for holding the pawl yieldingly in engagement with the wheel, a cover plate removably disposed over the ratchet to hold the same in place, arms on the cover plate extending over the ratchet wheel for holding the latter in the head, and a finger screw on one of the arms arranged to engage the wheel in the head to prevent relative turning of the wheel.

2. A tool comprising a handle having a longitudinal channel, a chambered head communicating with the channel, a ratchet wheel in the head, a pawl disposed in the channel and engaging the ratchet wheel, a stem on the pawl disposed in the channel, a spring on and secured to the stem, a block extending across the channel and having its ends set into recesses in the opposite walls of the latter, said block being recessed to span the stem, means for engaging the opposite end of the spring with the block, a cover plate secured over the channel for retaining the block and pawl therein, said cover plate being arranged to hold the ratchet wheel in the head, and means for removably securing the cover plate in position.

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

MILTON H. STEVENS.

Witnesses:

GRACE WILSON,

GEORGE MCGREW.