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W. T. FISHER ET AL

MAGAZINE SPANNER

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Fig. 1.

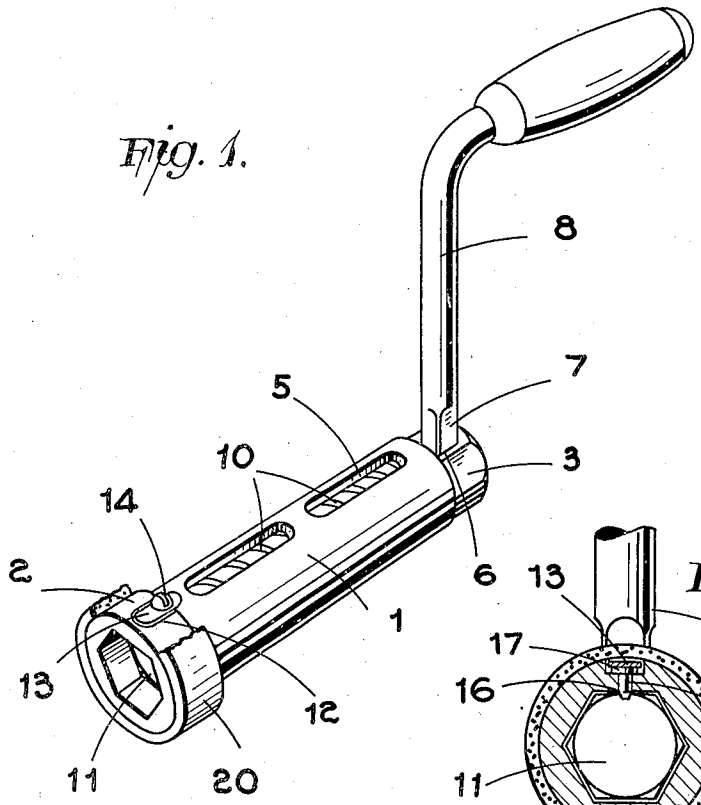
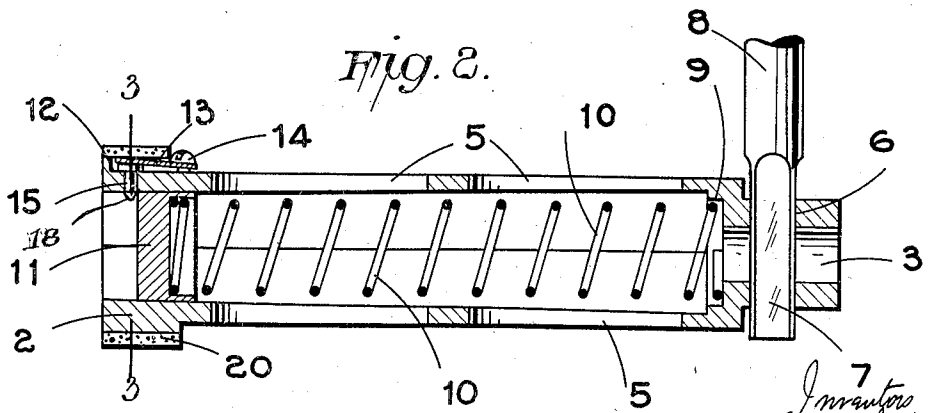


Fig. 3.

Fig. 2.



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UNITED STATES PATENT OFFICE.

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MAGAZINE SPANNER.

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The primary object of the present invention is to provide an improved construction such that the spanner will incorporate all the conceivable desirable features for a magazine spanner in such a manner that it can be manufactured in an extremely economical manner with a minimum of separate parts that can be most readily assembled.

Particular objects of the present invention are to form as many parts of the spanner as possible integrally with the casing, and in such a casing to form the mouth so that the spanner can be used with very tight nuts without resulting in a distortion or rounding of either the spanner or said nuts, and at the same time to obviate any possibility of the nuts jamming within the casing.

A further object of the present invention is to provide a retaining device at the mouth of the casing of the simplest possible character, which is at the same time thoroughly reliable and effective in use and will neither become worn out with constant usage, nor damage by rough handling or exposure to dirt and wet.

Referring to the drawings:—

Figure 1 is a perspective view showing the exterior of a spanner constructed in accordance with our invention.

Figure 2 is a longitudinal section.

Figure 3 is a transverse section on line 3—3 of Figure 2.

In the construction illustrated the casing 1 is formed as a one piece casting having a thickened portion 2 at the mouth and having an integral hexagonal extension at the opposite end which is shown at 3.

The exterior of the main part of the casting 1 is substantially cylindrical, while its interior is of a sectional shape to suit the nuts for which the spanner is intended. In the construction illustrated, the sectional shape of the interior is hexagonal and is of gradually increasing width or diameter from the mouth end to the rear end. This arrangement avoids any possibility of the nuts getting wedged or jammed in the interior as they travel along the casing.

The casing is formed with as little machining as possible, and no machining is necessary for the interior which is formed by coring. In order to support the core more efficiently, and also in order to provide means for the inspection of the interior, holes or slots 5 are formed in the main part of the casting, these holes or slots being formed in the act of casting.

Square or other non-circular holes 6 are formed in the hexagonal part 3 for the reception of the non-circular portion 7 of a handle 8.

The rear end of the casing is provided with a recess 9 for receiving the inner end of a coiled spring 10, the forward end of which abuts against a recessed block 11.

In the external surface of the mouth or thickened portion 2 of the casing is formed a longitudinally arranged recess 12 of a sufficient depth to form a housing for a flat longitudinally arranged plate spring 13. This spring is preferably attached to the casing by a screw 14, or a rivet or other securing means at or near one end, while the other or free end acts upon the head of a sliding pin 15 which constitutes a retaining member for the nuts and is separate from the spring and is mounted in a radial hole 16 in the barrel or casing near its end. This pin is provided with an enlarged head 17 upon the outer side of the casing or barrel, so that it cannot pass wholly into the barrel. When it has moved inwardly as far as its head will allow, the opposite end projects sufficiently into the interior of the barrel to engage with the corners or faces of the nuts, so as to serve to retain any nuts which have passed within the barrel.

The nose 18 of the pin 15 is preferably conical or partially conical or domed, or it may have the side nearest the end of the barrel and the opposite side formed as inclines. The provision of the conical or inclined parts allows the nuts to pass the pin without undue difficulty. Instead of using a radial pin, such as 15, we may use a ball or a plain or shouldered roller, or a pin arranged substantially tangentially to the barrel.

The recess formed upon the exterior of the end of the casing is of a depth sufficient to allow of the short movement necessary by the spring to permit of the outward displacement of the nut-retaining members as the nuts pass them. The walls or sides of the recess upon the exterior of the barrel may extend completely around the recess and

the nut retaining mechanism may be partially, as shown, or entirely enclosed by mounting on the end of the barrel, an elastic, rubber or other band 20 of a width somewhat greater than the length of the recess. This elastic or other band forms a buffer to prevent damage to paint by the appliance, and it also serves to protect the nut-retaining means against damage. The elastic or other band, however, is preferably supported entirely by the metal of the barrel or casing itself, and does not exert any pressure upon the springs or nut-retaining elements.

The outer or open end of the barrel or casing may be made sufficiently thick to provide room for the formation of the recess within the thickness of the metal, as shown in the drawings, or the outer or open end of the barrel or casing may be thicker adjacent the point, where the recess is provided, than at the remainder of its periphery. If desired, a number of inwardly extending pins, such as 15, may be provided.

What we claim then is:—

A magazine spanner comprising in combination a tubular casing of cast metal, there being a tapering internal surface to said casing which converges towards the mouth thereof, longitudinal openings in the walls of the casing, and an integral externally projecting reinforcement at the mouth of the casing, a plate spring secured to the external surface of the casing by a single screw, there being a recess in said externally projecting reinforcement forming a guide and a housing for the free end of the plate spring, a retaining member separate from the plate spring but in engagement with the free end thereof and extending inwardly through a hole in the casing, a band of rubber around the mouth of the casing and forming both a self securing cover for the recess and a buffer at the operative end of the spanner, a helical ejecting spring within the casing, a recess at the rear of the casing for receiving one end of the helical spring, a sliding plunger within the casing and engaged by the other end of the helical spring, there being a non-circular extension at the rear of the casing and a non-circular transverse hole in said extension, and a cranked handle having an end adapted to fit said non-circular hole.

In witness whereof we affix our signatures.

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