April 19, 1927. A. W. STAUPE 1,625,227

SCREW DRIVER ATTACHMENT

Filed Dec. 7, 1925

Fig. 1.

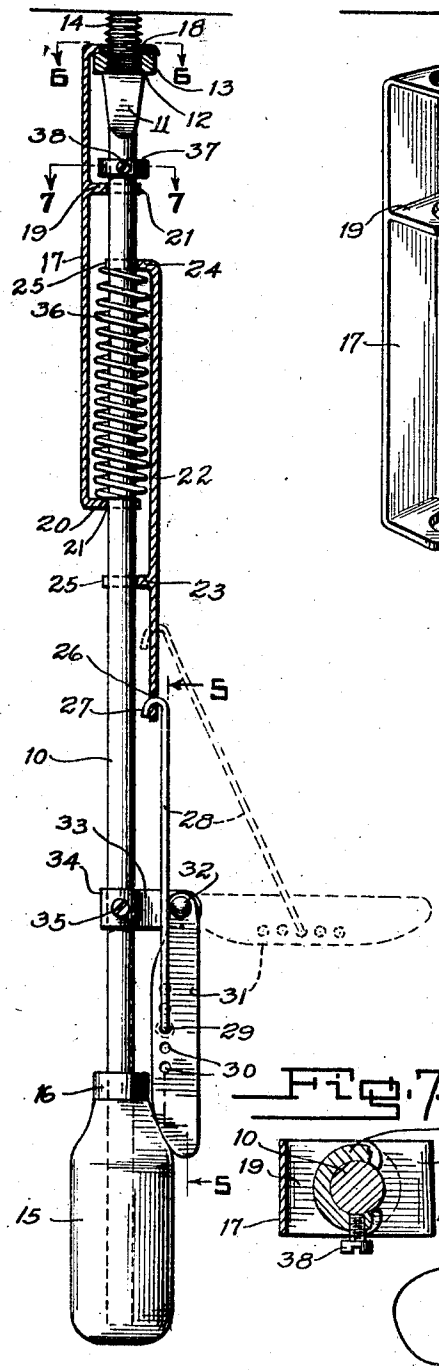


Fig. 3.

Fig. 4.

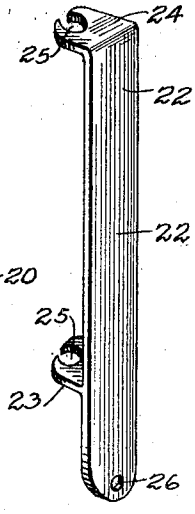


Fig. 2.

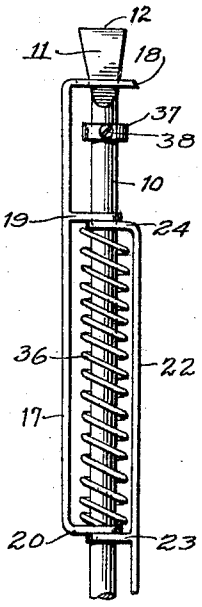


Fig. 5.

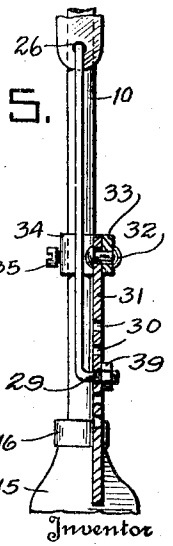


Fig. 6.

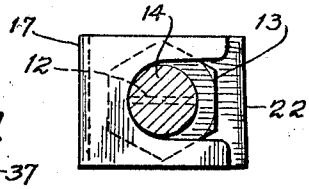


Fig. 7.

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UNITED STATES PATENT OFFICE.

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SCREW-DRIVER ATTACHMENT.

Application filed December 7, 1925. Serial No. 73,791.

The present invention relates to tools, and more particularly to screw drivers and the like.

An object of the present invention is to provide a screw driver with an attachment for holding a screw in position on the bit of the screw driver so that the screw driver may be used as a lever or handle for initially placing the screw in its opening without the necessity of holding the screw in the fingers and applying it to its opening and starting the screw.

Another object of the invention is to provide means for placing a screw in its opening where the opening is inaccessible to the hand or fingers, and under such conditions that the hand and fingers would encounter grease, dirt or the like, and to provide means by which screws may be easily placed or removed without soiling the hands, such as in making repairs or adjustments on machinery where parts become loose or broken.

Another object of the invention is to provide an attachment of this character which lies closely against the sides of the bit and stem of the screw driver so that the latter may be introduced into relatively narrow spaces and turned or otherwise operated as is found necessary and without interference by adjacent obstacles liable to catch in attachments to the screw driver.

The invention also provides an attachment of this character for yieldingly holding the screw against the bit of the screw driver and for releasing the screw after it has been started in its opening, and to provide means for adjustably tensioning the device on the screw to meet various conditions in the character of the screw head and the length and weight of the screw.

A still further object of the invention is to provide a screw holding attachment of this character with operating means arranged adjacent to the handle of the screw driver so that the screw may be engaged and released from the handle portion of the screw driver. This facilitates not only the positioning of a screw but also the removal of the screw without touching the same with the fingers.

The above and various other objects and advantages of this invention will in part be described in, and in part be understood from, the following detailed description of the present preferred embodiment, the same being illustrated in the accompanying drawing, wherein:

Fig. 1 is a side elevation of a screw driver having the screw holding attachment of this invention applied thereto, the attachment and a screw clamped therein being shown in section.

Fig. 2 is a fragmentary outer end view of the screw driver and attachment with the latter adjusted in position out of the way so that the screw driver may be used in the ordinary manner.

Fig. 3 is a detail perspective view, enlarged, of the clamping member.

Fig. 4 is a similar view of the tension member employed.

Fig. 5 is a fragmentary sectional view taken through the operating device on the line 5—5 of Fig. 1.

Fig. 6 is an enlarged transverse section taken through the screw on the line 6—6 of Fig. 1, and

Fig. 7 is an enlarged transverse section taken through the screw driver and attachment on the line 7—7 of Fig. 1.

Referring to the drawing, the invention is disclosed as applied to a conventional form of screw driver having a stem 10 provided on its inner end with a bit 11 adapted to engage in the kerf 12 formed in the head 13 of a screw 14. The outer end of the screw driver is provided with a handle 15 which may be reinforced by a ferrule 16 in the usual manner.

The screw holding attachment comprises a clamping member 17 which is in the form of a flat bar having one end turned at substantially right angles to the bar and forked to provide an engaging or clamping jaw 18. The jaw 18 is of sufficient length to engage across the inner side of the head 13 of the screw 14 and the bight of the jaw 18 is of sufficient width to freely receive the stem or shank of the screw 14 therethrough by a lateral movement of the clamping member 17. The clamping member is provided at suitable spaced points with guides 19 and 20. The guide 20 may be formed by bending the opposite end of the clamping member 17 at right angles thereto and in the direction of the clamping jaw 18. The guide 19 may be integrally or otherwise attached to an intermediate portion of the clamping member 17 and is disposed between the guide 20 and the jaw 18. The guides 19 and 20 are provided

with openings 21 therethrough for the reception of the stem 10 of the screw driver and the outer ends of the guides may be partially open to facilitate the assembling of the guides on the stem.

The attachment also includes a tension member 22 in the form of a flat bar provided with spaced guides 23 and 24 extending at substantially right angles from one side of the tension member 22. The guides 23 and 24 are provided with openings 25 therein through which the stem of the screw driver may freely slide. The outer ends of the guides 23 and 24 are left partly open to facilitate the assemblage of the parts. The guide 23 may be integrally or otherwise attached to an intermediate portion of the tension member 22 while the guide 24 may comprise the inner end of the tension member bent at right angles to the body of the tension member. The outer end of the tension member is provided with an eye or opening 26 for pivotally receiving therethrough the hooked end 27 of a pull rod 28 which extends outwardly toward the handle 15 of the screw driver.

The outer end of the pull rod 28 is bent at right angles and threaded to provide a pivot 29 which is selectively positioned in one of a series of openings 30 which are formed in a lever 31 which is pivoted at one end at 32 upon a projection or bracket 33 which is provided with a sleeve 34 mounted on the stem 10 of the screw driver. The sleeve 34 is secured in position spaced from the handle 15 by a set screw 35. The free end of the lever 31 is adapted to swing toward and from one side of the handle 15 and may be adjusted to suit the length of the stem 10 by means of the sleeve and set screw 34 and 35 and the openings 30 in the lever 31.

The clamping member 17 is placed against one side of the stem 10, and the tension member 22 is placed against the opposite side of the stem 10 with the members 17 and 22 in overlapping relation such that the guide 24 of the tension member 22 lies between the guides 19 and 20 of the clamping member. A coil spring 36 is placed about the stem 10 between the guide 20 of the clamping member 17 and the guide 24 of the tension member 22 for urging these guides away from each other. The spring is housed between the clamping and tension members 17 and 22.

For the purpose of holding the clamping and tension members 17 and 22 in correct position upon the inner end of the stem 10, a collar 37 is mounted on the stem and secured in adjusted position by a set screw 38, the collar being located adjacent to the bit 11 to engage the guide 21 of the clamping member 17.

In operation, the lever 31 is swung into releasing position as shown in dotted lines in Fig. 1. The tension member 22 releases the spring 36 so that the clamping member 17 may be moved inwardly upon the stem 10 and the jaw 18 may be engaged over the inner side of the head 13 of the screw 14 either by a lateral movement of the stem 10 or by manually placing the screw in the jaw. In placing the screw in position the kerf 12 is brought in to register with the bit 11 of the screw driver. The lever 31 is now swung back into locking position as shown in full lines in Fig. 1, and it will be noted that the pull rod 28 is carried inwardly past the pivot 32 so that the rod is automatically locked in position. This movement of the lever 31 draws the tension member 22 outwardly and compresses the spring 36, the latter drawing the clamping member 17 outwardly and binding the head 13 of the screw against the bit 11.

The releasing and clamping actions of the jaw 18 are thus controlled by the lever 31 which is located at the outer end of the screw driver and adjacent to the handle 15. The tension of the spring 36 may be regulated by the selective positioning of the pivot 29 in one of the openings 30 of the lever 31, a bit or the like 39 being mounted on the pivot 29 to hold it in adjusted position.

If it is desired to use the screw driver without holding a screw thereto, the screw may be omitted and the lever 31 swung into locking position as shown in Fig. 1, when the clamping member 17 will assume the position shown in Fig. 2, or wherein the clamping jaw 18 is drawn outwardly over the bit 11 by the spring 36 and the guides 20 and 23 are brought together to hold the parts against vibration.

It is of course understood that various changes and modifications may be made in the details of construction and design of the above specific embodiment of the invention without departing from the spirit thereof, and limited only by the scope of the following claims.

What is claimed is:

1. In combination with a screw driver having a stem, a bit and a handle, a clamping member slidably mounted on the stem to engage a screw and hold it against the bit, a tension member slidably mounted on the stem, a lever carried by said stem operatively connected to said tension member to move it toward and from the bit, and a spring operatively engaging said clamping and tension members to urge said clamping member in a direction toward said handle when said tension member is drawn away from the bit.

2. In combination with a screw driver having a stem and a bit, a pair of members slidably mounted in overlapping relation with respect to each other and against the opposite sides of the stem, one of said mem-

bers having a clamping jaw extending across the bit, a spring interposed between the overlapping portions of the members to maintain the same in overlapping relation, a lever pivoted to the outer end of the stem, and a pull rod connected between the lever and the other member for drawing the same outwardly on the stem to compress the spring and bind the first member toward the bit and for shifting said other member inwardly upon the stem to release said first member.

3. In combination with a screw driver having a stem and a bit, a pair of members arranged against the opposite sides of the stem and provided with spaced guides engaging the stem and disposed in alternate relation thereon to support the members in overlapping relation, a coil spring on the stem between adjacent guides of said members to urge the same into overlapping relation, one of said members having a clamping jaw adapted to project beyond said bit, a lever pivotally mounted on the stem near the outer end thereof, a pull rod connected at one end to the other one of said members and provided with a pivot on its other end, said lever having a series of openings therein to selectively receive the pivot of the rod therethrough, said lever being adapted to be swung in one position for tensioning the spring to draw the clamping jaw outwardly and adapted to be swung into an opposite position to release the spring and permit the inward movement of said jaw.

4. In combination with a screw driver having a stem and a bit thereon, a clamping member, a spring tensioning member, each of said members having spaced apertured guides projecting from one side thereof and slidably mounted on said stem with a guide of one member disposed between the guides of the other member, one of said members having a clamping jaw on its inner end adapted to engage the head of a screw mounted on the bit, a coil spring mounted on the stem between the outer guide of the clamping member and the inner guide of the tension member, a sleeve bracket adjustably mounted on the outer end portion of the stem, a lever pivoted on the sleeve bracket and having a series of openings therein, a rod pivoted to the outer end of the tension member and having a pivot on its other end selectively engaged in one of said openings of the lever, and a stop collar adjustably mounted on the stem near the bit for holding said members in position on the stem.

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