Oct. 6, 1936. J. B. CONKLIN 2,056,256

SCREW HOLDER

Filed Sept. 24, 1934

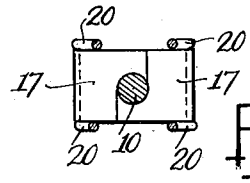


Fig. 7.

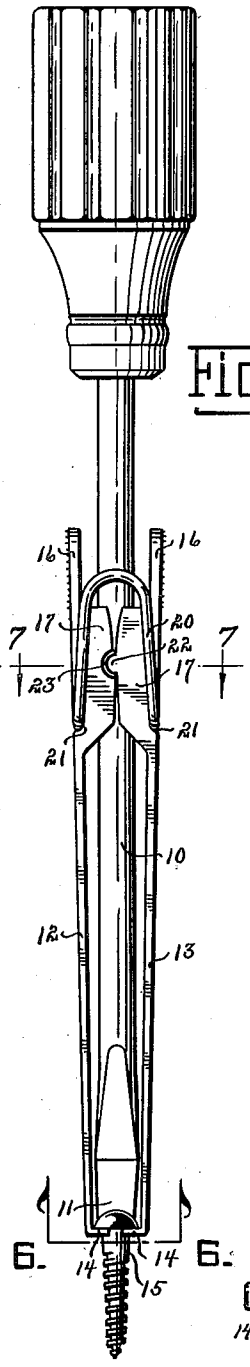


Fig. 1.

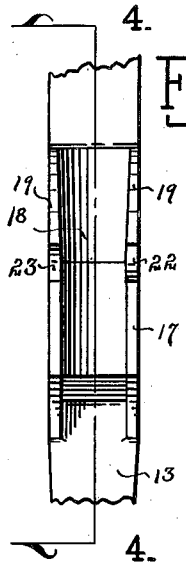


Fig. 3.

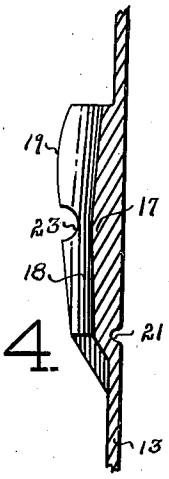


Fig. 4.

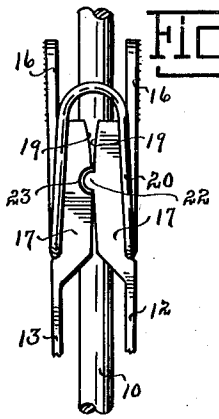


Fig. 2.

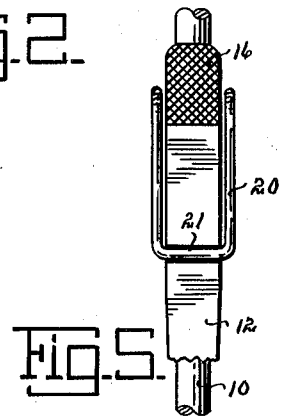


Fig. 5.

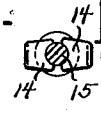


Fig. 6.

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SCREW HOLDER

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2 Claims. (Cl. 145—52)

The principal object of my invention is to provide an easily manually operated attachment for a screw driver that will successfully hold a screw or the like to and on the point of the screw driver on which it is installed.

A further object of this invention is to provide a screw holding device for screw drivers that may be easily and quickly manually placed in an inoperative position on the screw driver and the screw driver used in the ordinary manner without interference therefrom.

A still further object of my invention is to provide a manually operated tong constructed screw holding device for screw drivers that will yieldingly frictionally engage the shaft of the screw driver when it is holding a screw or like, but will be completely released from such holding engagement on the shaft when the tong arms are manually moved away from the screw driver shaft.

A still further object of my invention is to provide a combination screw driver and screw holding device that is so constructed that the screw holding device portion may be quickly slidably positioned on the screw driver shaft for operative position, non-operative position, and a position where it may be used as a tweezers in advance of the screw driver point.

A still further object of my invention is to provide a device for holding a screw to and on a screw driver that is economical in manufacture and durable in use.

These and other objects will be apparent to those skilled in the art.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawing, in which:

Fig. 1 is a side view of my complete device installed on a screw driver and in use.

Fig. 2 is a side view of the upper portion of the device and is taken on the side opposite the side shown in Fig. 1.

Fig. 3 is an enlarged inside view of the pivot portion of one of the tong arms.

Fig. 4 is an enlarged side-sectional view of the pivot portion of one of the tong arms and is taken on line 4—4 of Fig. 3.

Fig. 5 is a top plan view of the upper portion of the device and more fully illustrates its construction.

Fig. 6 is a cross-sectional view of a screw being held by my device, taken on line 6—6 of Fig. 1, and showing the forward end of the device engaging the shank of the screw.

Fig. 7 is a cross-sectional view of my device on an ordinary screw driver and is taken on line 7—7 of Fig. 1.

Any one who uses a screw driver over a substantial period of time discovers that in certain instances where confined areas are encountered, it is almost impossible to get a screw started into the medium into which it is to be screwed. Although my device is particularly adapted to overcome such circumstances, it is also exceptionally handy to use in starting screws even when there is sufficient room to hold the screw in one hand and the screw driver in the other.

Referring to the drawing, I have used the numeral 10 to designate the shaft of an ordinary screw driver having the screw head engaging point 11. It is upon such a shaft that I attach my screw holding device and which I will now explain. I have used the numerals 12 and 13 to designate the two tong arms of my screw holder designed to extend at each side of the screw driver shaft in positions diametrically opposite from each other, as shown in Fig. 1. On the lower end of each of the arms 12 and 13 is an inwardly extending jaw portion 14 capable of engaging the shank of a screw 15 just below the head, as shown in Fig. 6. These jaw elements may be enlarged in width near their ends, as shown in Fig. 6 to provide better support to the good area engagement with the under side of the head of the screw. The numeral 16 designates a serrated handle portion formed on the upper ends of each of the tong arms 12 and 13. The numeral 17 designates a split bearing element on the inner side of each of the tong arms and positioned just below the handle member portions 16, as shown in Fig. 2. These split bearing portions 17 are complementary with each other and surround the shaft 10 of the screw driver. The specific construction of these split bearing members 17 is an important phase of the device inasmuch as they must tightly clamp on the screw driver shaft when the handle portions 16 are not being compressed with the thumb and finger of the user and must loosely embrace the screw driver shaft when the handle portions 16 are in a compressed condition. In this connection it will be noted that the bore produced by the two split bearing members, which are complements of each other, varies in direction and diameter and that the adjacent and engaging side portions of the two split bearing members are of special construction.

As each of the split bearing members 17 is an

exact duplicate of the other this phase of the device may be easily understood by reference to Figures 3 and 4 and a consideration of the specific construction of the trough portion **18** of each of the split bearing members. This trough portion **18** in each of the bearing members, when the bearing member is viewed from a position as shown in Fig. 2, slopes downwardly and outwardly in both directions from a point near the center of the trough. In order that the forward portion of the trough that extends downwardly and outwardly toward the lower end of the tong arm will tightly embrace the shaft of the screw driver when the handles **16** are released, this portion of the trough is more shallow than the rear portion of the trough which extends downwardly and outwardly in a direction toward the upper end of the tong. This is particularly shown by the side walls of each of the bearing members that extend upwardly at each side of the forward portion of the trough decreasing in height relative to the bottom of the forward portion of the trough as they progress downwardly, as shown in Fig. 4. These lower side portions of the bearing members, when assembled adjacent each other as shown in Fig. 1, do not quite touch in order that the forward portion of the bore of the bearing members will rest on and engage the shaft of the screw driver for yieldingly holding the device on the shaft of the screw driver against displacement. Besides the side walls of each of the split bearing members at each side of the rear portion of the trough rising to a height substantially above the bottom of the trough, the side walls decrease in thickness as they extend to the rear, as shown in Fig. 3. This construction with the relatively increased depth of the rear or upper portion of the trough provides, when the two bearing members are assembled, a rear bore portion of substantially greater diameter than the forward portion of the bore in which the shaft **10** of the screw driver functions.

By compressing the handle portions **16** the two bearing members will rock on each other and this rocking action is encouraged by slightly rounding the marginal edges of the side portions at each side of the rear portion of the bore, as shown in Fig. 4. With these rounded edge portions, which I have designated by the numeral **19**, pivoting on each other the forward portion of the trough portions will be moved away from the shaft **10** and due to the rear portion of the bore being of a diameter substantially greater than that of the shaft of the screw driver, the screw driver will be only loosely embraced by the bore, during which condition the tong arms may be rotated or slid forwardly or rearwardly on the screw driver shaft. Any suitable means may be used to yieldingly bring the forward ends of the tong arms together and the forward portions of the troughs **18** into frictional contact with the shaft of the screw driver when the handle members **16** are released. In the drawing, I show this accomplished by a double U-spring **20**. A U-portion of the spring is positioned at each side of the device, respectively, and the connecting lower end portions of the spring passed over each face of the two tong arms, as shown in Fig. 1 and Fig. 5. To prevent the accidental removal of the spring a transverse groove **21** is formed in the face of each of the tong arms for the reception of the connecting end portions of the spring, respectively. These grooves **21** are positioned forward of the pivot point of the two split bearing members in order that the forward ends of the tong arms will always be yieldingly held toward each other. The spring **20** serves the dual purpose of resisting the compression of the handle members **16** and holding the tong arms in assembled condition on the screw driver. In order to prevent the longitudinal movement of either of the bearing members relative to the other, I have provided a lug **22** and a lug receiving depression **23** on and in each of the split bearing members, as shown in Fig. 3.

When the two bearing members are assembled together around the shaft of the screw driver a lug of each of the bearing members extends into and engages a lug receiving depression of the other. As each tong arm portion of the device is an exact duplicate of the other, the complete device when disassembled, consists of only three pieces.

To operate the device it is merely necessary to manually compress the two handle members **16**, place a screw on the point of the screw driver, slide my device to the proper position on the screw driver shaft, and release the handle members **16** to allow the jaw portions **14** to engage the under side of the head of the screw, embrace the shank of the screw, and hold the screw in proper position on the end of the screw driver, as shown in Fig. 1. To release the screw from my device and the screw driver, it is merely necessary to manually force the handle portions **16** toward each other, at which time the device may be easily moved to the rear on the screw driver and into an inoperative out-of-the-way position. This movement of the device to an inoperative position is always desirable before the screw has been completely screwed into place. There is no danger of the device accidentally moving from such inoperative position, as the spring **20** will yieldingly hold the forward portion of the bore of the split bearing members tightly onto and around the shaft of the screw driver at such a position, as well as when in an operative position. When it is desired to use the device as a pair of tweezers, the handle members **16** are compressed and the device slid forwardly on the shaft **10** until the jaws **14** are in positions substantially beyond the point of the screw driver, at which time the device may be operated in the same manner as a pair of tweezers for picking up screws or other small items.

Some changes may be made in the construction and arrangement of my improved device for holding a screw to and on a screw driver without departing from the real spirit and purpose of my invention, and it is my invention to cover by my claims any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim:

1. In combination with a screw driver having a shaft, a screw holding device comprising two elongated arms, a screw engaging element on the forward end of each of said arms, a split bearing member on each of said arms and at a substantial distance from the forward ends of the arms, a means for pivoting said split bearing members to each other near their longitudinal side centers; said bearing members provided with a bore embracing the shaft of said screw driver; said bore being of a smaller diameter at its forward end portion than it is at its rear end portion, a spring means for yieldingly holding the walls of the forward end portion of said bore in frictional engagement with the shaft of said screw driver and the forward end portions of said arms toward each other, and handle portions on said arms facilitat-

ing the manual movement of said bearing members against the action of said spring means for moving the walls of the forward end portion of the said bore of said split bearing members out of engagement with the shaft of said screw driver and the forward end portions of said arms away from each other.

2. In combination with a screw driver having a shaft, a screw holding device comprising two elongated arms, a screw engaging element on the forward end of each of said arms, a split bearing member on each of said arms and at a substantial distance from the forward ends of the arms, a means for pivoting said split bearing members to each other near their longitudinal side centers; said bearing members providing a bore of varying diameter embracing the shaft of said screw driver, longitudinally curved marginal edges on each of said split bearing members extending rearwardly from their pivot points; said bearing members providing a bore embracing the shaft of said screw driver; said bore being of a smaller diameter at its forward end portion than it is at its rear end portion, a spring means for yieldingly holding the walls of the forward end portion of said bore in frictional engagement with the shaft of said screw driver and the forward end portions of said arms toward each other, and handle portions on each of said arms for facilitating the manual rocking of said bearing members back upon their longitudinal curved marginal edge portions for moving the walls of the forward end portion of the said bore of said split bearing members out of engagement with the shaft of said screw driver and the forward end portions of said arms away from each other.

JOSEPH B. CONKLIN.