A. P. ACTON.

CENTER PUNCH.

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1,259,335. Patented Mar. 12, 1918.

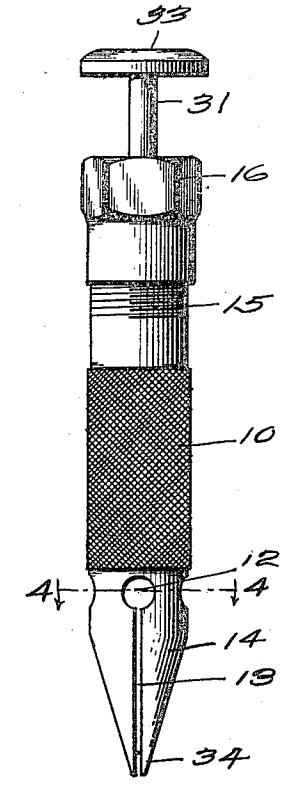


Fig. 1.

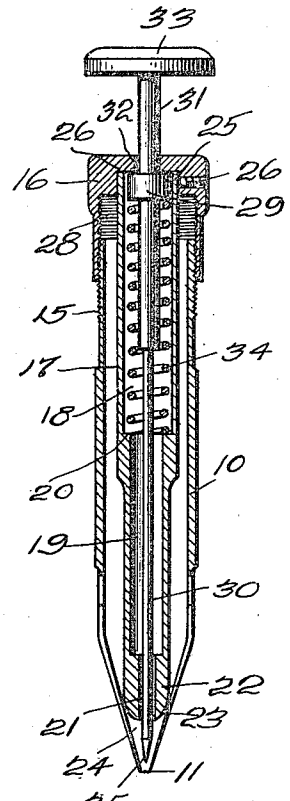


Fig. 2.

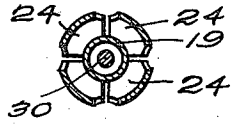


Fig. 3.

Inventor

A. P. Acton,

By Norman T. Whitaker

his Attorney

UNITED STATES PATENT OFFICE.

ALBERT P. ACTON, OF ELGIN, ILLINOIS.

CENTER-PUNCH.

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To all whom it may concern:

Be it known that I, ALBERT P. ACTON, a citizen of the United States, and resident of Elgin, in the county of Kane and State of Illinois, have invented new and useful Improvements in Center-Punches, of which the following is a specification.

This invention relates to carpenters' tools, and has particular reference to a screw center punch.

It is a well known fact among carpenters and cabinet makers that in the application of hinges to doors, box lids, and the like, great difficulty is experienced in the centering of a screw hole adapted to receive the screw which serves as a means for securing a hinge to the desired object. It is also a well known fact that, unless the screw hole is accurately centered with respect to the aperture of the hinge through which the screw is designed to be passed, it is impossible to bring the screw head within the countersink, flush with the surface of the hinge.

The primary object of my invention is to provide, in a screw center punch, adapted to be used particularly in the application of hinges to doors, box lids and the like, a means whereby a screw hole, designed to receive a screw which serves as a means for securing a hinge to the desired object, may be accurately centered with respect to the aperture, of the hinge, through which the screw is to be passed.

Another object of my invention is to provide a means, in connection with a screw center punch, provided with a centering means, whereby the said centering means may be readily adjusted to fit the aperture through which the screw is to pass, thus rendering it possible to center a screw hole with respect to the aperture through which the screw is designed to pass, regardless of the size of the aperture.

With the above and other objects in view, the invention consists in the construction and combination and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:

Figure 1 is a side elevation of the invention,

Fig. 2 is a sectional view of Fig. 1,

Fig. 3 is a cross sectional view of Fig. 1, taken on the line 4—4.

Referring more particularly to the drawings, the numeral 10 indicates an elongated cylindrical tube, the end of which is of a conical formation and provided at its extremity with an opening 11. The tube 10, relatively near its cone shaped end, is provided with a plurality of apertures 12, diametrically opposite, and have leading into them from the opening 11, elongated slots 13, which separate the cone shape end into a plurality of sections 14. The upper end of the tube 10 is provided with an externally threaded portion 15 which is adapted to receive an internally threaded cap 16. Within the tube 10 there is disposed an elongated barrel 17 provided at its upper end with a chamber 18, and has leading thereinto a passage-way 19 which is sufficiently small in bore to form a shoulder 20 at the union of the chamber 18 with the passage-way 19. At the lower end of the passage-way 19 there is provided a guide-way 21, having a bore appreciably smaller than that of the passage-way 19. The end 22 of the barrel 17, is provided with a curvilinear face 23 which is adapted to slidably engage the inner walls 24 of the sections 14. The end 25 of the barrel 17 is inserted centrally into a recess 26 formed on the inner side of the cap 16, and is held normally in place by means of a headless set screw 27 inserted radially into the side of the cap 16. Within the barrel 17 of the tube 10, there is provided a reciprocating plunger 28 which is provided with a collar 29 at one end and at the other end with an elongated center pin 30 extending downwardly through the passage-way 19 and the guide-way 21 to an appreciable distance from the opening 11.

A stem 31, formed integral with the plunger 28 and extending upwardly through an opening 32 in the cap 16, is provided at its upper end with a head 33. The plunger 28, together with the center pin 30 is held in a normal position as is shown in Fig. 2 by means of a coil spring 34 disposed about the plunger 28 and between the shoulder 20 of the chamber 18 and the collar 29 carried by the plunger 28.

When it is desired to center a screw hole

with respect to an aperture, carried by a hinge, for example, through which a screw is to be passed, the point 34 of the tool is inserted into the aperture of the hinge and by means of the screw cap 16, the end 22 of the barrel 17 is forced downwardly between the inner walls 24 of the segments 14 until the points 34 of the segments 14 have been spread sufficiently apart to fit the aperture within which they are contained; a blow sufficient to drive the plunger downwardly against the influence of the spring 34 is exerted upon the head 33 whereupon the point 35 is forced outwardly through the opening 11 and is sufficiently embedded into the material to mark a point indicating where the screw hole is to be formed to receive a screw passed through the aperture of the hinge.

I have described my device as used in connection with centering screw holes, but it is to be understood that it may be used equally as well to serve the purpose of a nail punch in which its operation would be substantially the same as that which I have described.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A center punch comprising an elongated tube, a center pin carried therein, a centering means for the center pin, and a means for varying the diameter of said centering means.

2. A center punch comprising an elongated tube provided with a cone shaped end comprising a plurality of sections; a center pin carried within said tube; and means for varying the distance between the free ends of said sections.

3. A center punch comprising an elongated tube provided with a cone shaped end comprising a plurality of sections; a barrel carried within said elongated tube, the lower end thereof being adapted to slidably engage the inner face of each of said sections; a plunger adapted to reciprocate within said barrel; and a cap disposed upon said tube for imparting vertical adjustment to said tube to vary the distance between the free ends of said sections.

4. A center punch comprising an elongated tube provided with a cone shaped end comprising a plurality of sections; a barrel carried within the tube and provided with a guide-way, a passage-way and a chamber; a plunger disposed within said barrel; a collar carried by the plunger; a center pin carried by one end of the plunger and adapted to extend downwardly through the passage-way and the said guide-way; a shoulder provided within the said chamber; a spring disposed about the said plunger having one end adapted to engage the collar and the other end disposed upon said shoulder; a cap disposed upon the upper end of said tube and adapted to engage said barrel and impart vertical adjustment to the same for varying distance between the free ends of said sections.

ALBERT P. ACTON.