

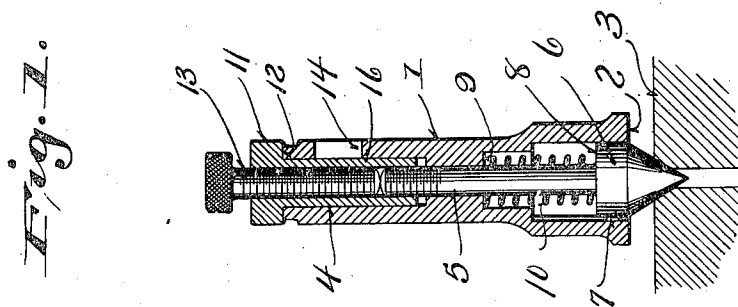
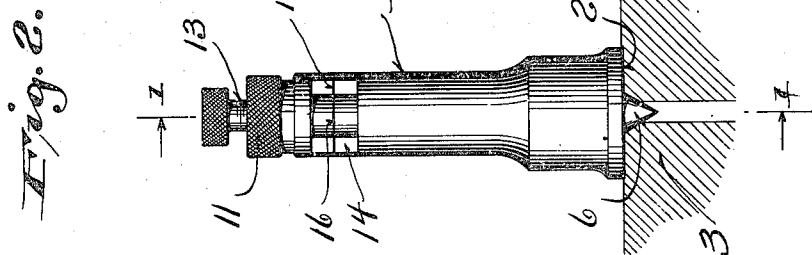
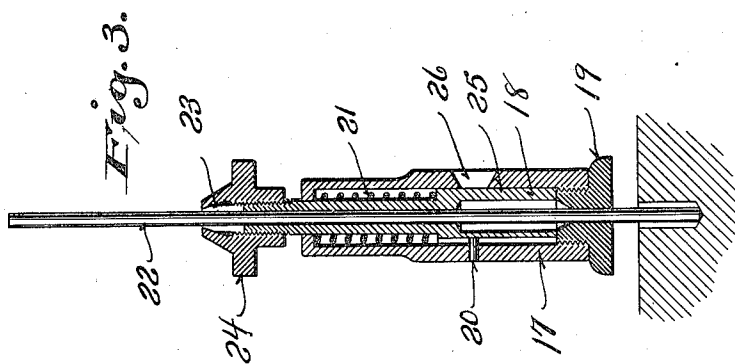
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1,459,896

W. N. JOHN

COUNTERSINK GAUGE

Filed Dec. 8, 1921



Witness:
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UNITED STATES PATENT OFFICE.

WILLIAM N. JOHN, OF MILWAUKEE, WISCONSIN.

COUNTERSINK GAUGE.

Application filed December 8, 1921. Serial No. 520,827.

To all whom it may concern:

Be it known that I, WILLIAM N. JOHN, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Countersink Gauges; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to a new and improved countersink gauge of the type which may be set in connection with a countersink of standard depth and thereafter used to gauge accurately the depth of other countersinks relative thereto.

A general object of the invention is to provide an instrument of this character which will be simple in construction and may be easily and quickly manipulated to accurately gauge the depth of the countersink.

It is a further object of the invention to provide an improved construction by means of which the gauge may be locked in its adjusted position so that a series of countersinks may be gauged accurately in relation to the countersink which has been used as the standard.

The invention is illustrated in the accompanying drawing, in which

Figure 1 is a vertical sectional view through my invention taken substantially on the line 1—1 of Figure 2.

Figure 2 is a front elevation of the invention in operative position, and

Figure 3 is a sectional view similar to Figure 1 but showing a modified form of the invention.

Referring specifically to the drawing and more particularly to Figures 1 and 2, the numeral 1 indicates a barrel which forms the outer casing of my improved instrument, and is provided with a flat annular end 2, which is adapted to engage the flat surface 3 of the object in which the countersink is to be formed.

A sleeve 4 is slidably mounted in the upper end of the barrel 1, and is in threaded connection with the spindle 5 of a plunger 6, the lower face of which is suitably shaped to fit into a countersink of the type which it is desired to gauge. The plunger and sleeve are slidable to a limited extent within the barrel and the plunger is keyed thereto, as shown at 7. The plunger and barrel are provided with opposed annular shoulders 8 and 9 between which is mounted an expan-

sile coil spring 10 which surrounds a spindle 5. This spring urges the plunger outwardly of the barrel and its outward movement is limited by the head 11 formed on the sleeve 4 and which performs the dual function of providing a knurled surface by means of which the sleeve may be adjusted and by means of the annular shoulder 12 forms a stop for the longitudinal movement of the sleeve and plunger.

After the plunger has been longitudinally adjusted with respect to the sleeve 4, it may be locked in this position by tightening the stem 13. The barrel is provided with an opening 14 through which a portion of the sleeve 4 may be seen. A mark 15 is provided across one or both sides of the opening with which a corresponding mark 16 on the sleeve is adapted to register.

In the operation of the invention, the plunger 6 is so adjusted in connection with the sleeve that when the plunger is inserted in a countersink of standard depth, as shown in Figure 2, the mark 16 will be in alignment with the mark 15 at the side of the opening in the barrel. The instrument is then locked in this position by the locking stem 13.

After the instrument has been thus set, any number of countersinks may be gauged accurately relative to the standard by drilling them so that when the instrument is applied thereto, the marks 15 and 16 will be in alignment.

In Figure 3, there is shown a modified form by which the principle of my invention may be adapted to gauge countersinks or bores of considerable depth. In this form, a sleeve 18 is slidably mounted in a barrel 17, in which it is retained by a plug 19. A key 20 is provided for preventing the rotation of the sleeve in the barrel. The sleeve is normally held in its lowermost position, its end in contact with the plug, by means of a spring 21. A spindle 22 is adjustably held within the sleeve by means of the friction jaws 23 integral with the sleeve and extending upward therefrom which may be tightened by manipulation of the nut 24.

The barrel 17 is provided with an opening 26 similar to the opening 14 in the barrel 1, and the depth is gauged by means of the mark 25 which corresponds to the mark 16 on the sleeve 4.

While I have shown and described specifically two structures by means of which the principles of my invention may be carried

out, it will, of course, be understood that other modifications in the structural details may be made without departing from the spirit of the invention, as hereinafter claimed.

I claim:

1. A countersink gauge comprising a barrel, a sleeve slidable within the barrel, a plunger mounted for longitudinal adjustment within the sleeve, means yieldably urging said plunger to project outwardly from said barrel, said sleeve and said barrel having cooperating marks thereon for indicating the relative amount of projection of said plunger, and a stem in said sleeve for locking said plunger in adjusted position.

2. A countersink gauge comprising a barrel, a reciprocable member keyed within the barrel and comprising a sleeve and a plunger longitudinally adjustable with respect to said sleeve, means for locking said plunger in its adjusted position, said barrel and reciprocating member having opposed shoulders, an

expansile spring between said shoulders urging the plunger to project outwardly, means for limiting the extent of the projection, and means for indicating the relative amount of said projection.

3. A countersink gauge comprising a barrel, a sleeve slidable within said barrel, a plunger carried by the sleeve, an opening in the barrel through which the sleeve may be seen, cooperating marks on the sleeve and the side of said opening, said plunger being resiliently urged outwardly from the end of the barrel and means for adjusting the sleeve longitudinally with respect to the plunger so that when the end of the barrel rests on a flat surface with the plunger inserted in a given countersink, said marks will be in registration with each other.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

WILLIAM N. JOHN.