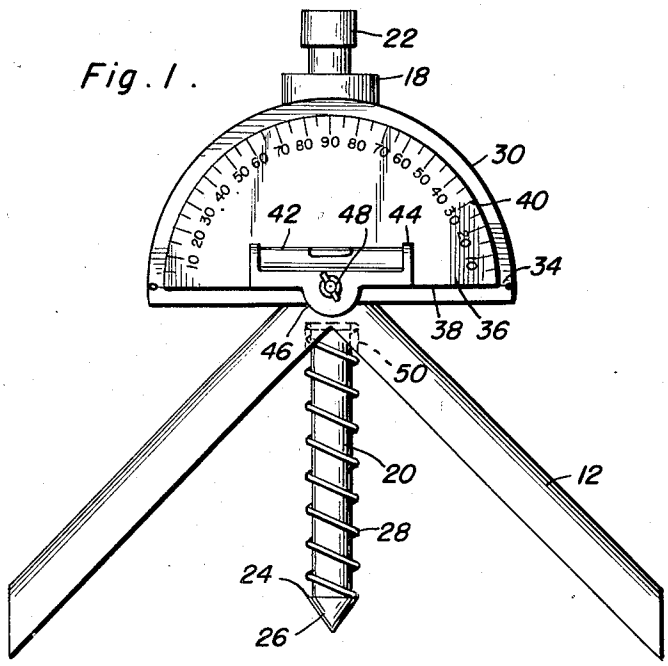
Aug. 21, 1951 C. A. PARKS 2,565,262

CENTER PUNCH

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Fig. 1.



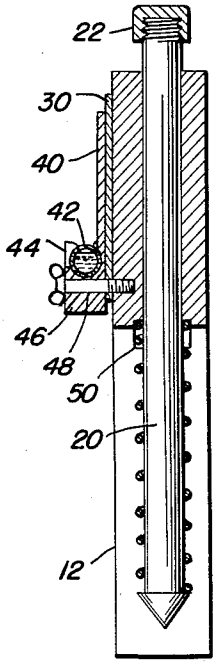


Fig. 4.

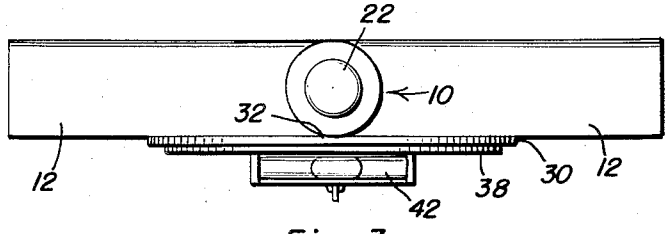
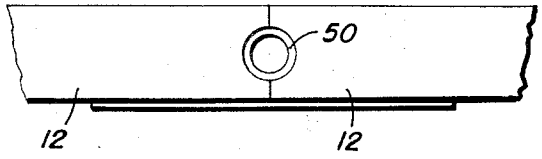


Fig. 3.

Fig. 7



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CENTER PUNCH

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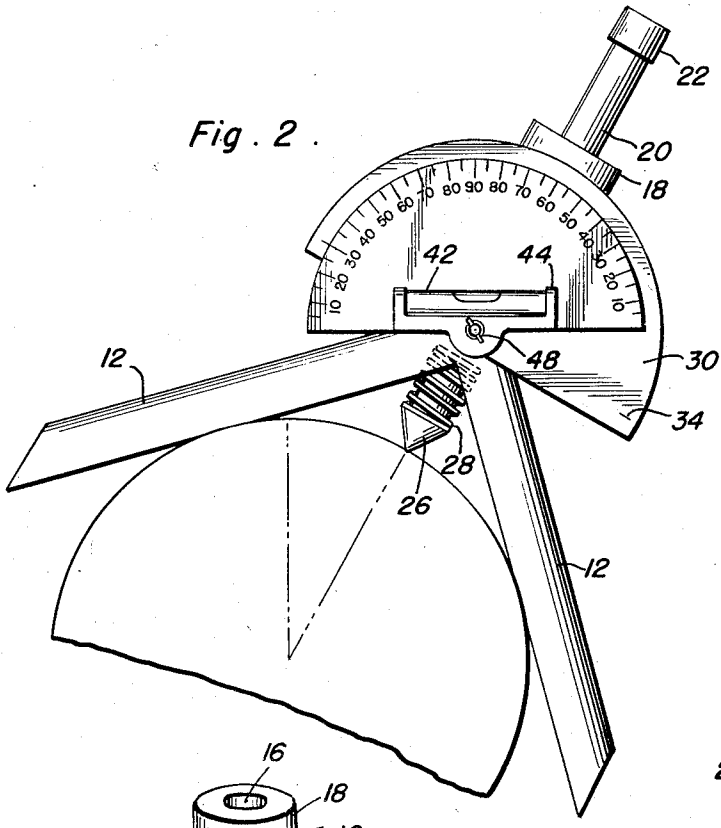


Fig. 2.

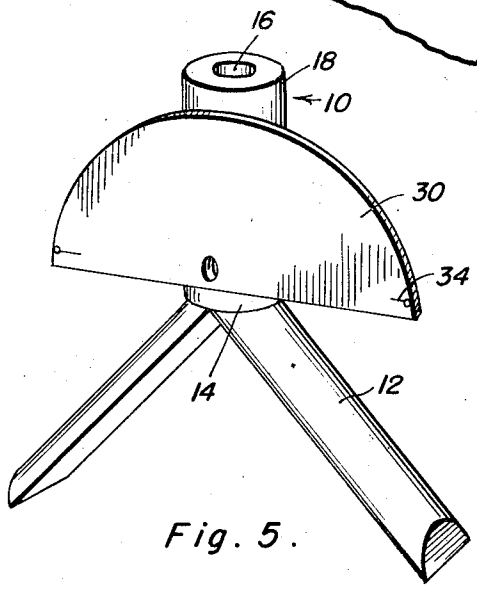


Fig. 5.

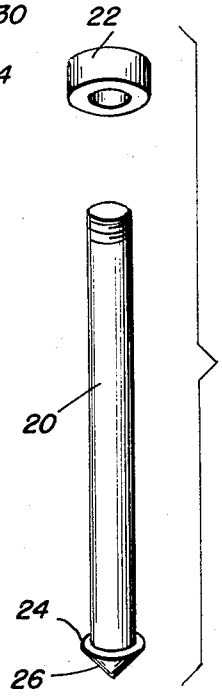


Fig. 6.

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Patented Aug. 21, 1951 2,565,262

UNITED STATES PATENT OFFICE

2,565,262

CENTER PUNCH

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Application August 11, 1948, Serial No. 43,618

4 Claims. (Cl. 33—189)

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This invention relates generally to tools, and more particularly to a center punch which is combined with a protractor, a spirit level on the protractor, and a pair of diverging legs on a center head portion of the tool so that the center punch can be properly located upon a piece of work such as a cylinder, when it is desired to lay out a line for a keyway or a series of holes or the like.

A primary object of this invention is to facilitate the laying out of work, especially the provision of center punch marks on cylindrical members when these marks must be arranged according to a predetermined angular relationship.

Another object of this invention is to provide a tool of the general character mentioned above in which the reading and adjustment of a protractor portion of the tool is simplified by the positional arrangement of the protractor, a fixed plate on the said center head, and a spirit level carried by the protractor.

Still another object of this invention is to provide a tool of this character with a spring consistently biasing the center punch in one direction, that is, toward the work, the spring being arranged so that the jamming of the center punch, due to deformation of the spring, is prevented.

And a last object to be mentioned specifically is to provide a tool of this character which is relatively simple and inexpensive to manufacture, which is simple to assemble, which is safe and very convenient to operate, and which will give generally efficient and durable service.

With these objects definitely in view, this invention resides in certain novel features of construction, combination and arrangement of elements and portions as will be hereinafter described in detail in the specification, particularly pointed out in the appended claims, and illustrated in the accompanying drawings which form a material part of this application, and in which:

Figure 1 is a side elevational view of the assembled tool, the center punch being retracted slightly from its normal or inoperative position in order to facilitate the illustration of this invention;

Figure 2 is another side elevational view of the assembled tool, applied to a cylindrical work piece;

Figure 3 is a top plan view of the tool;

Figure 4 is a central vertical sectional view of the tool, with the center punch positioned substantially as in Figure 1;

Figure 5 is a three-dimensional view of the

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center head, fixed plate, and leg construction, with the other parts of the tool removed;

Figure 6 is a grouped view of the center punch and the cap therefor which functions both as an anvil for the center punch and as a stop limiting the movement of the center punch in one direction; and

Figure 7 is a fragmentary lower plan view of the structure illustrated in Figure 5.

Similar characters of reference indicate similar or identical elements and portions throughout the specification and throughout the several views in the drawings.

Referring now to the drawings in detail, this tool includes a center head which is generally indicated by the numeral 10 and has a pair of diverging legs 12 integrally secured to one end 14 of the center head. A bore 16 extends from this end 14 through the center head to the opposite end 18 which may be flattened.

A center punch 20 is formed with one end thereof threaded to receive an internally threaded cap 22 which functions as an anvil for the center punch as well as a stop for limiting the movement of the center punch relative to the center head 10. The center punch is formed with a shoulder 24 near the pointed end 26 and a coiled spring 28 is compressed between the shoulder 24 and a central portion of the tool, as described hereinafter more fully.

A fixed plate 30 which is semi-circular in shape is rigidly secured, as by welding, to a flattened side portion 32 of the center head 10, this fixed plate 30 being parallel to the plane of the major axes of the diverging legs 12. An index line 34 will be provided on each side of the fixed plate 30, to facilitate the reading of the protractor 36, which is also semi-circular in shape, having a flat side 38 colinear with the zero markings of a set of graduated markings 40 on the protractor, when the protractor is in one position.

A spirit level 42 is carried by a bracket member 44 which may be formed integrally with an ear 46 depending from the flat side 38 of the protractor 36. The ear 46, fixed plate 30, and contiguous portions of the center head 10 are formed with bores to receive a thumb screw 48, whereby the protractor and the spirit level carried thereby may be adjusted relative to the fixed plate 30.

A refinement of structure in this invention relates to the provision of a seat 50 for the inner end of the spring 28, the crotch portions of the legs 12 being recessed as clearly indicated in the

drawings, so that the spring 28, which is coaxially arranged on the center punch 20, may be anchored to prevent deformation of this end of the spring and, consequently, to prevent any tendency of the spring to jam the center punch 20 against movement relative to the center head 10.

Since the use of tools of this general character is well understood, the operation of this invention will be clearly comprehended when consideration is had to the foregoing description of the mechanical details thereof, taken in connection with the drawings and the objects recited above. Further description would, therefore, appear unnecessary. Minor variation in the form of this tool may be resorted to without departure from the spirit of this invention, and the scope of the invention should be limited only by the terminology of the subjoined claims.

Having described the invention, what is claimed as new is:

1. A tool comprising a cylindrical center head having legs diverging from one end thereof, a bore extending through the center head from said one end to the opposite end of the center head, a center punch slidably mounted in said bore and having a cap on the end thereof adjacent said opposite end, a shoulder on the center punch adjacent the pointed end of the center punch, the other end of the punch being threaded, a screw cap on said other end and comprising means to prevent complete withdrawal of the punch as well as an anvil, a spring coaxial with the center punch and compressed between said shoulder and said center head, a substantially semi-circular plate rigidly secured to one side of the center head parallel to the plane containing the major axes of the legs, index lines on said plate, a protractor pivoted on said plate so that the protractor may be read in relation to said index lines, and a spirit level fixed on said protractor.

2. A tool comprising a cylindrical center head having legs diverging from one end thereof, a bore extending through the center head from said one end to the opposite end of the center head, a center punch slidably mounted in said bore and having a cap on the end thereof adjacent said opposite end, a shoulder on the center punch adjacent the pointed end of the center punch, the other end of the punch being threaded, a screw cap on said other end and comprising means to prevent complete withdrawal of the punch as well as an anvil, a spring coaxial with the center punch and compressed between said shoulder and said center head, a substantially semi-circular plate rigidly secured to one side of the center head parallel to the plane containing the major axes of the legs, index lines on said fixed plate, a protractor pivoted on said plate so that the protractor may be read in relation to said index lines, and a spirit level fixed on said protractor, said cap comprising an anvil for said center punch and also limiting the movement thereof in one direction relative to the center head.

3. A tool comprising a cylindrical center head

having legs diverging from one end thereof, a bore extending through the center head from said one end to the opposite end of the center head, a center punch slidably mounted in said bore and having a cap on the end thereof adjacent said opposite end, a shoulder on the center punch adjacent the pointed end of the center punch, the other end of the punch being threaded, a screw cap on said other end and comprising means to prevent complete withdrawal of the punch as well as an anvil, a spring coaxial with the center punch and compressed between said shoulder and said center head, a substantially semi-circular plate rigidly secured to one side of the center head substantially in the plane containing the major axes of the legs, index lines on said plate, a protractor pivoted on said plate so that the protractor may be read in relation to said index lines, and a spirit level fixed on said protractor, said protractor being substantially semi-circular and said spirit level being disposed parallel to and closely adjacent the straight side of said protractor to facilitate the simultaneous reading and adjustment of the protractor.

4. A tool comprising a cylindrical center head having legs diverging from one end thereof, a bore extending through the center head from said one end to the opposite end of the center head, a center punch having a cap on the end thereof adjacent said opposite end, a shoulder on the center punch adjacent the pointed end of the center punch, the other end of the punch being threaded, a screw cap on said other end and comprising means to prevent complete withdrawal of the punch as well as an anvil, a spring coaxial with the center punch and compressed between said shoulder and said center head, a substantially semi-circular plate rigidly secured to one side of the center head parallel to the plane of the legs, index lines on said plate, a protractor pivoted on said plate so that the protractor may be read in relation to said index lines, and a spirit level fixed on said protractor, said legs having the crotch portions thereof recessed to provide a seat in which one end of said spring is anchored so that the spring will not be deformed and the center punch will not be jammed.

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