SAFFORD & SAWYER.

Centerer.

No. 49,553. Patented Aug. 22, 1865.

Fig: 2.

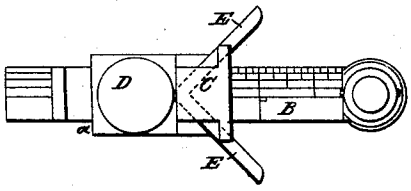


Fig: 4.

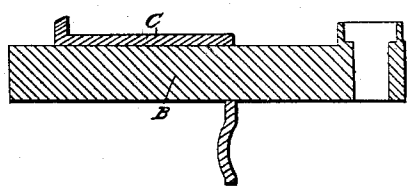


Fig: 1.

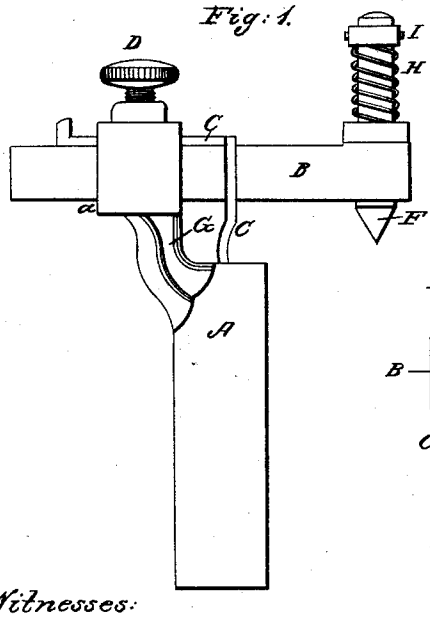


Fig: 3.

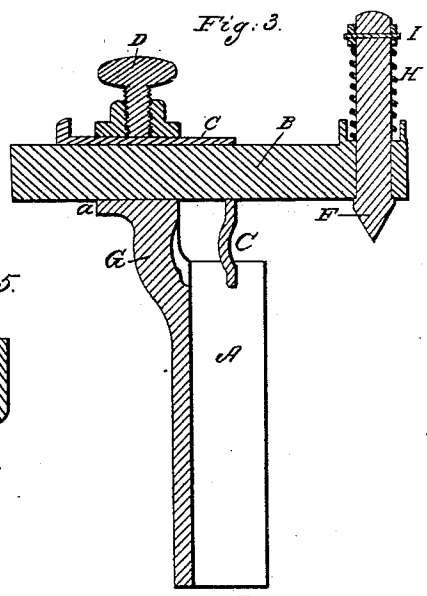
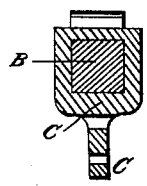


Fig: 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

EDMUND E. SAFFORD AND SYLVANUS SAWYER, OF FITCHBURG, MASS.

IMPROVED ADJUSTABLE CENTER-PUNCH.

Specification forming part of Letters Patent No. **49,553**, dated August 22, 1865.

To all whom it may concern:

Be it known that we, EDMUND E. SAFFORD and SYLVANUS SAWYER, of Fitchburg, in the county of Worcester and State of Massachusetts, have invented a new and useful tool or apparatus which we term an "Adjustable Center-Punch," for ascertaining and punching the center in the end of a round or square iron shaft, rod, or bolt or any other piece of metal or substance of convenient form and size that it may be desirable to mark the center of; and we do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which--

Figure 1 is a side elevation, Fig. 2 a top view, Fig. 3 a vertical section, Fig. 4 a longitudinal section, of the adjustable bar and indicator; Fig. 5, a transverse section of the same.

The process of ascertaining and punching the center of a shaft, rod, or bolt, &c., that it may be adjusted upon the center-points of a lathe, or for any other purpose, is one that requires considerable care and time in order that it may be done correctly. Hence we have endeavored to construct a tool in such a manner that the operation may be performed correctly and with facility, even by an unskillful workman.

In the drawings, A represents what we term the "adjustable stock," in the top of which is a square hole, as seen at *a*, or a hole of any other form that may be found most convenient in practice, through which the extension-bar B and the indicator C are inserted, the extension-bar passing through the indicator at *b*. It also has a screw, D, in its extreme top, which holds the extension-bar B and indicator C (which acts as a gib to protect the graduated surface of the extension-bar) in their places after they have been adjusted. Upon the lower portion of this stock there are two flanges or wings, E, constructed in such a manner as to be at right angles to each other, so that when they are applied to the surface of a cylindrical or the corner of a square bar of iron or other metal it shall present the extension-bar B, carrying the center-punch F, in a direct radial line to the center of the end of such cylindrical or square bar, shaft, or bolt, or to the center of any circular or square piece of metal or other substance that it may be necessary to find the center thereof, and is connected with the top, through which the extension-bar and indicator pass, by a continuation of the same in a curved line, as shown at G.

H represents a spiral spring arranged around the center-punch F, the bottom of which rests upon the extension-bar B and the top pressing against a collar, I, upon the top of the center-punch F, which keeps it withdrawn until it is adjusted to the center of the end of a shaft or bolt, &c., by means of the graduated scale upon the extension-bar B and the indicator C, and secured by a set-screw, D, when it is forced down by a blow given the top of it with sufficient force so as to mark or punch the center of the object to which it is applied.

Having thus fully described our invention, we will proceed to explain the manner in which it is applied and operated.

The tool is taken with the left hand and applied to the side of a cylindrical or the corner of a square shaft or bolt, as hereinbefore described. The thumb of the right hand is then placed upon the outward end of that portion of the indicator termed the "gib," pressing it through the hole in the top of the stock until the point of the same, which is suspended between the two wings or flanges of the stock and the point of the center-punch, touches the cylindrical surface or the corner of the square shaft or bar. Then, in like manner, the extension-bar is pressed through the aperture in the stock and through the hole in the indicator until the center-punch reaches to one-half of the diameter of the shaft or bolt, as will be seen by the scale on the extension-bar, as it passes through the indicator. The whole diameter being known, the screw D is then turned down so as to confine the indicator and extension-bar in place. A blow is then given upon the top of the punch, which forces it down upon the end of the shaft or bolt, thereby punching a center therein.

This center-punch can also be used as a gage

for inscribing a circle upon the end of a cylinder or for gaging any straight piece of metal or wood.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination of the adjustable stock A with the extension-bar B.

2. The combination of the indicator C with the stock A and the extension-bar B.

3. Combining the center-punch F with the extension-bar B, the indicator C, and the stock A, the whole being arranged and operating substantially in the manner herein described and set forth.

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