A. RINGLAND.

PORTABLE BRINNELL HARDNESS TESTER.

APPLICATION FILED JULY 28, 1919.

1,348,897. Patented Aug. 10, 1920.

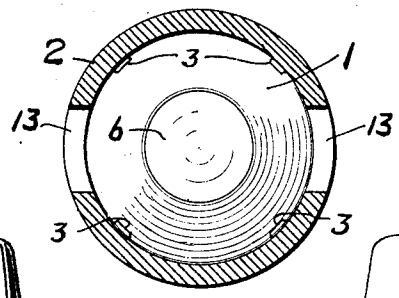


FIG. 3.

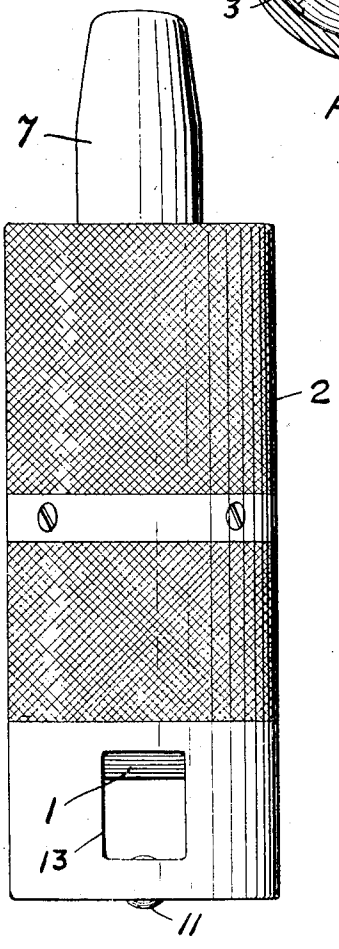


FIG. 1.

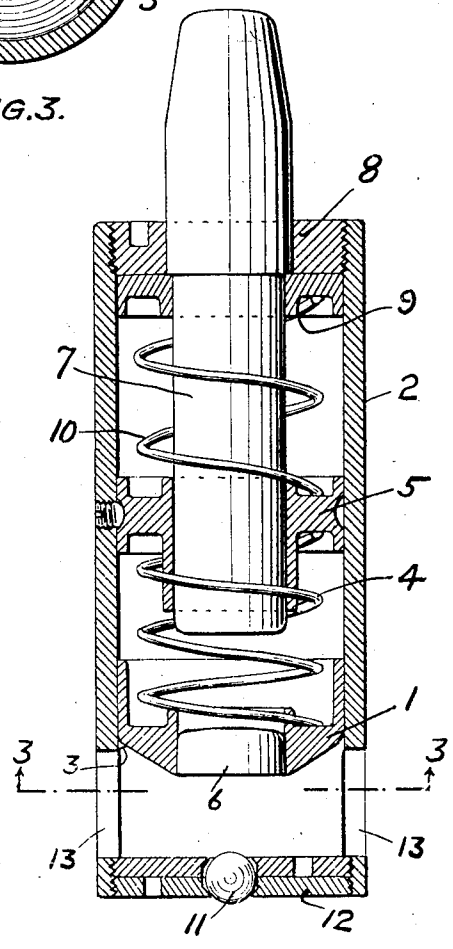


FIG. 2.

WITNESS:

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PORTABLE BRINNELL HARDNESS-TESTER.

1,348,897. Specification of Letters Patent. Patented Aug. 10, 1920.

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To all whom it may concern:

Be it known that I, ALBERT RINGLAND, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Portable Brinnell Hardness-Testers, of which the following is a specification.

The principal object of the present invention is to insure the presence of a sharp unmarred depression in the piece or object tested by a portable Brinnell hardness tester.

To this and other ends hereinafter set forth the invention, stated in general terms, comprises the provision of a recoil absorbing anvil member which receives the plunger blow and transmits it to the standard piece which in turn transmits the impact through the hard ball to the piece being tested.

The invention will be claimed at the end hereof but will be first described in connection with the embodiment of it selected for the sake of illustration in the accompanying drawings forming part hereof and in which—

Figure 1, is a side elevation of a portable Brinnell hardness tester embodying features of the invention.

Fig. 2, is a vertical central section of the same, and

Fig. 3, is a transverse section taken on the line 3—3, of Fig. 2, looking upward.

In the drawings 1, is a recoil absorbing anvil member movable in the portable housing 2, in respect to the stops 3, and acted upon by a spring 4, seated upon a guide 5, fast in the housing 2. This anvil member is shown as provided with a hard metal insert 6, somewhat spherical on one face to receive blows from the plunger 7. This plunger 7, works through the guide 5, and also through the guide 8, and is provided with a shoulder 9, upon which operates a spring 10, seated on the guide 5. The hard metal ball 11, is mounted for limited movement in the frame 12, secured in the housing 2, which is provided with openings 13, for the insertion of a standard bar between the ball 11, and the anvil element 1, or more accurately, the hard metal insert 6, thereof.

In use the standard bar is inserted between the anvil member 1, and the ball 11, and this puts the spring 4, under slight compression. The ball 11, is pressed up to the object to be tested, thus slightly increasing the compression of the spring 4, thereupon a blow is struck upon the plunger with the result that the ball 11, makes an impression or indentation both in the standard piece or bar and in the object to be tested, and from a comparison of these indentations the hardness of the object to be tested can be determined in terms of Brinnell hardness. An advantage of the described improvement is that the anvil member 1, receives and absorbs any recoil stroke of the plunger 7, and being itself relatively light, any recoil stroke of the anvil member is of insufficient force to mar the previously made indentation or impression in the object to be tested or to make another or additional indentation or impression therein.

The improvement is not confined to the form of embodiment or to the details of construction herein shown and described, as will be well understood by those skilled in the art, hence the invention is not limited as to such matters or otherwise than as the prior art and the appended claims may require.

I claim:

1. A portable Brinnell hardness tester provided with a recoil absorbing anvil in combination with a plunger adapted to strike the anvil and with a ball adapted to receive the transmitted blow of the anvil and to transmit said blow, substantially as described.

2. A portable Brinnell hardness tester provided with a spring pressed anvil in combination with a plunger adapted to strike the anvil and with a ball adapted to have imparted to it the blow of the anvil and to transmit the same, substantially as described.

3. A portable Brinnell hardness tester comprising in combination a housing, a fixed guide and stops therein, an anvil movable between the guide and stops, a spring interposed between the anvil and guide, a plunger working through the guide, and a ball adapted to receive and transmit the blow of the anvil, substantially as described.

4. A portable Brinnell hardness tester provided with a recoil absorbing anvil having a hard metal insert in combination with a plunger adapted to strike the anvil and with a ball adapted to indirectly receive and pass on the impact of the anvil.

ALBERT RINGLAND.