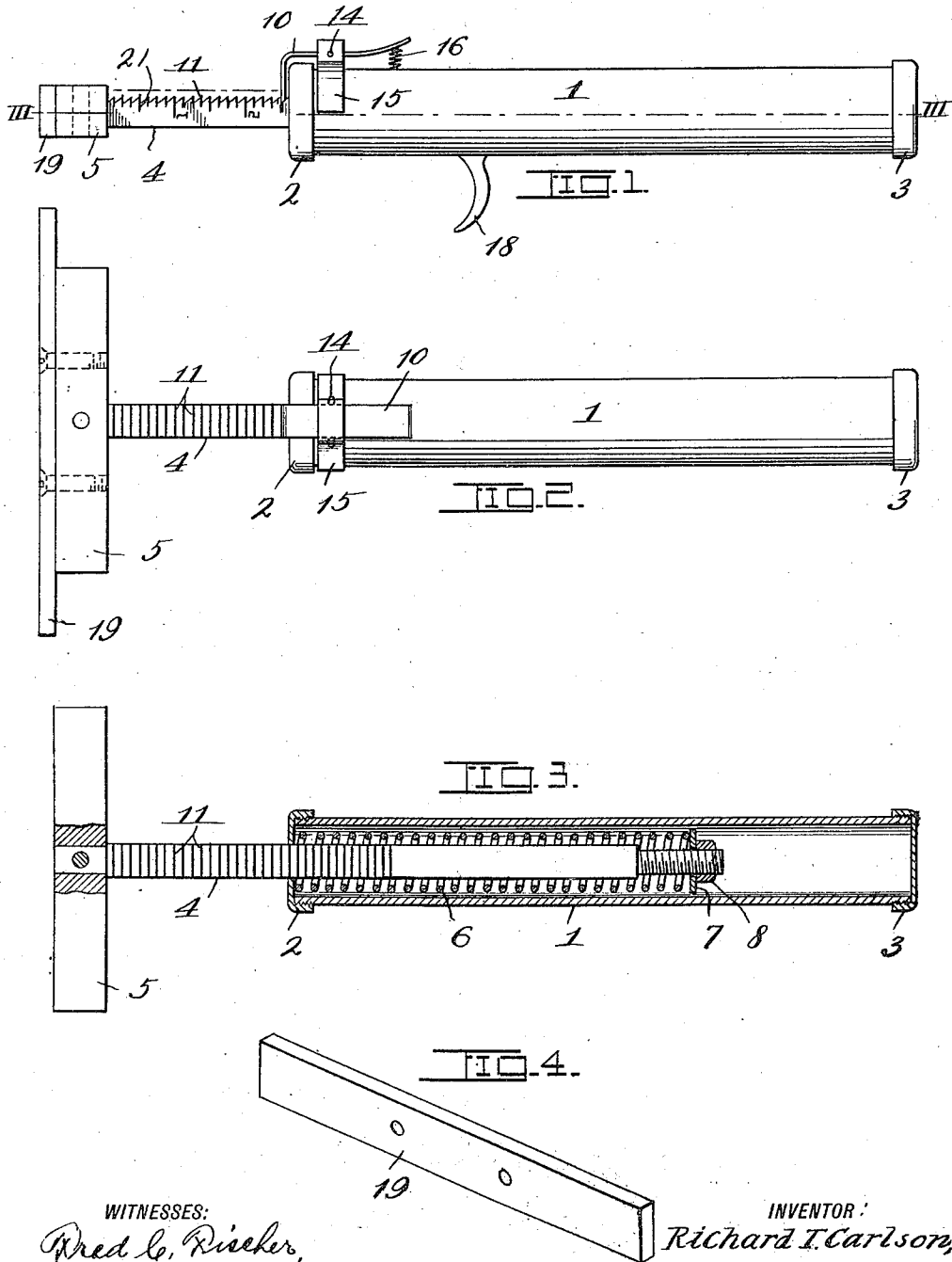


R. T. CARLSON.
MAGNET TESTER.
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1,260,869.

Patented Mar. 26, 1918.



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UNITED STATES PATENT OFFICE.

RICHARD T. CARLSON, OF ROSEDALE, KANSAS.

MAGNET-TESTER.

1,260,869.

Specification of Letters Patent.

Patented Mar. 26, 1918.

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To all whom it may concern:

Be it known that I, RICHARD T. CARLSON, a citizen of the United States, residing at Rosedale, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Magnet-Testers, of which the following is a specification.

My invention relates to testing instruments for measuring the potential energy of electromagnets, permanent magnets, and other electrical devices, and while said instrument is adapted for general use, it is intended more particularly for testing the electrical equipment of automobiles.

In order that the invention may be fully understood, reference will now be had to the accompanying drawings, in which:

Figure 1 is a side elevation of the instrument.

Fig. 2 is a plan view of the instrument.

Fig. 3 is an irregular longitudinal sectional view on line III—III of Fig. 1, with a bridge plate constituting a portion of the invention, removed.

Fig. 4 is a perspective view of the auxiliary bridging bar.

4 designates a plunger reciprocally mounted in the handle 1 and having its forward end extending outwardly through an opening in the cap 2 and provided with a cross bar 5, rigidly secured thereto.

6 designates a coil spring loosely-embracing the plunger 4 and having one end abutting the cap 2 and its opposite end abutting a washer 7, held upon the rear threaded end of said plunger 4 by a nut 8, whereby the tension on the spring 6 may be regulated.

10 designates a detent adapted to engage ratchet teeth 11 on the plunger 4 to hold the same outwardly against the action of the coil spring 6.

The detent 10 has two oppositely-disposed trunnions 14 pivotally-mounted in a bracket 15 secured upon the handle 1 adjacent the cap 2. A small spring 16 is interposed between the handle 1 and the rear end of the detent 10, to normally hold the front end thereof in engagement with an underlying tooth 11.

18 designates a finger hold secured to the underside of the handle 1 near its forward end to afford a grip for the forefinger when pulling the instrument away from an electrical device being tested.

19 designates a bridge plate removably secured to the cross bar 5, to bridge two

poles of a magnet, or other electrical device, when said poles are spaced too far apart to be bridged by the cross bar 5. The cross bar 5 and the bridge plate 19 are made of soft steel or other suitable magnetic substance, and all other parts of the instrument are made of brass or other non-magnetic substance, excepting the spring 6 which, preferably, consists of a good quality of steel such as is used in scales and other measuring instruments.

A scale 21 is formed on the handle 1, beside the teeth 11, to coact with the detent 10 in determining the attractive force of an electrical device being tested.

In practice, the plunger 4 is initially adjusted backwardly in the handle 1 until the cross bar 5 contacts the front side of the detent 10. The cross bar 5, or the bridge plate 19, as the case may be, is then applied to the electrical device to be tested, after which the handle 1 is pulled backwardly by hand against the action of the spring 6, thereby compressing the same until the magnetic force of the electrical device is overcome and the cross bar 5, or the bridge plate 19, is pulled away from said device. After the instrument has been pulled out of contact with the electrical device the potential energy of the latter is readily determined by the scale 21 and the detent 10, which engages with the underlying ratchet tooth 11 and prevents the spring 6 from forcing the plunger 4 backwardly until said detent 10 is manually raised out of engagement with said ratchet tooth.

From the foregoing description it is apparent that I have produced a testing instrument whereby the magnetic potential energy of electrical devices can be quickly and accurately measured, and while I have shown and described the preferred form of my invention I reserve the right to make such changes in the construction, combination, and arrangement of parts as properly fall within the spirit and scope of the claims. Having thus described my invention, what I claim and desire to secure by Letters Patent, is:

1. In a magnet tester, a tubular handle, a spring tensioned plunger in the handle having teeth and graduations, a bar extending transversely of the plunger and secured at its longitudinal center to the outer end of the plunger, a bridging plate removably secured to the outer side face of the bar, a

finger piece depending from the handle, and a spring pressed detent of L-shape pivoted between the ends of one arm to the handle and having its other arm engaging the plunger teeth, said last named arm of the detent being arranged adjacent to said inner end of the handle so as to be restricted thereby in movement against the action of the spring.

10 2. In a magnet tester, a tubular handle, a spring tensioned plunger in the handle having teeth and graduations, a bar extending transversely of the plunger and secured at

its longitudinal center to the outer end of the plunger, a bridging plate removably secured to the outer side face of the bar, a finger piece depending from the handle, and a spring pressed detent carried by the handle and engaging the teeth of the plunger.

In testimony whereof I affix my signature in the presence of two witnesses.

RICHARD T. CARLSON.

Witnesses:

GUSTAF A. HAGSTROM,
F. G. FISCHER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."