

G. A. KLEMMER.
 ADJUSTABLE SUPPORT FOR TESTING ELECTRICAL UNITS.
 APPLICATION FILED AUG. 23, 1919.

1,418,655.

Patented June 6, 1922.

2 SHEETS—SHEET 1.

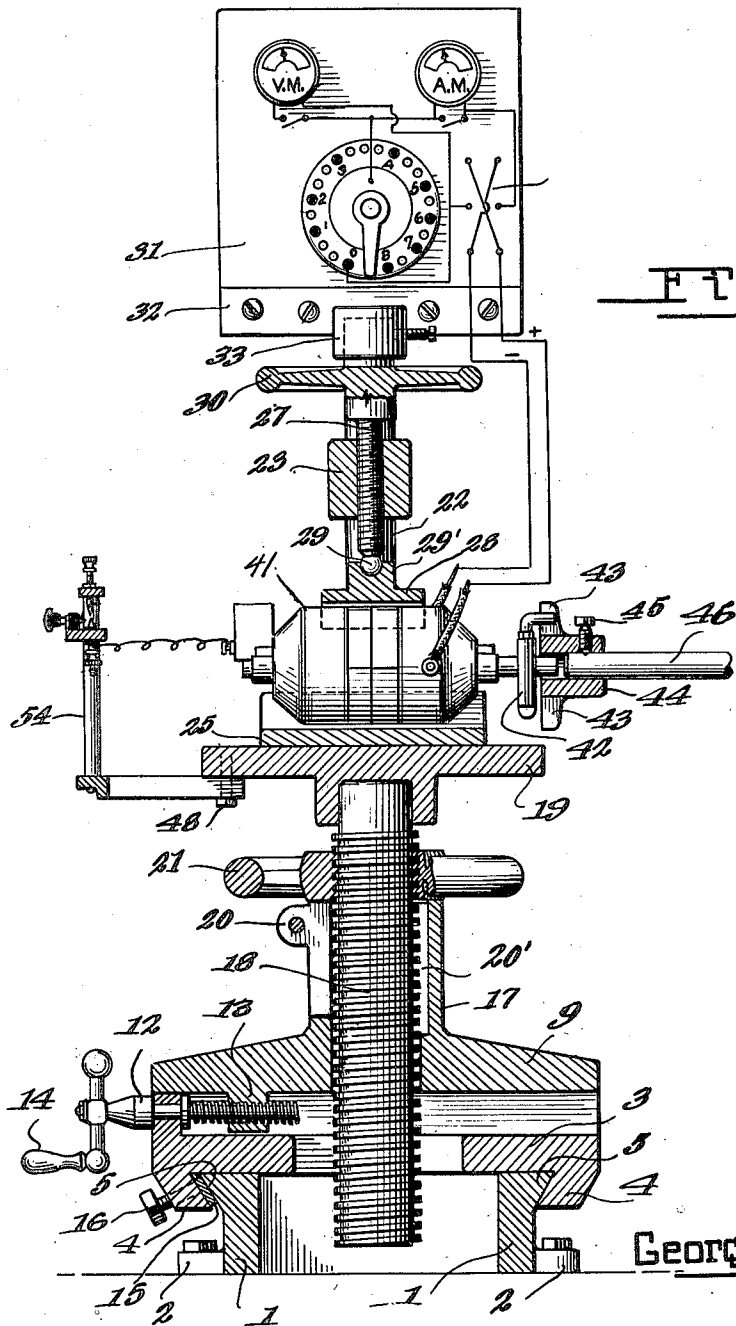


Fig. 1.

George A. Klemmer
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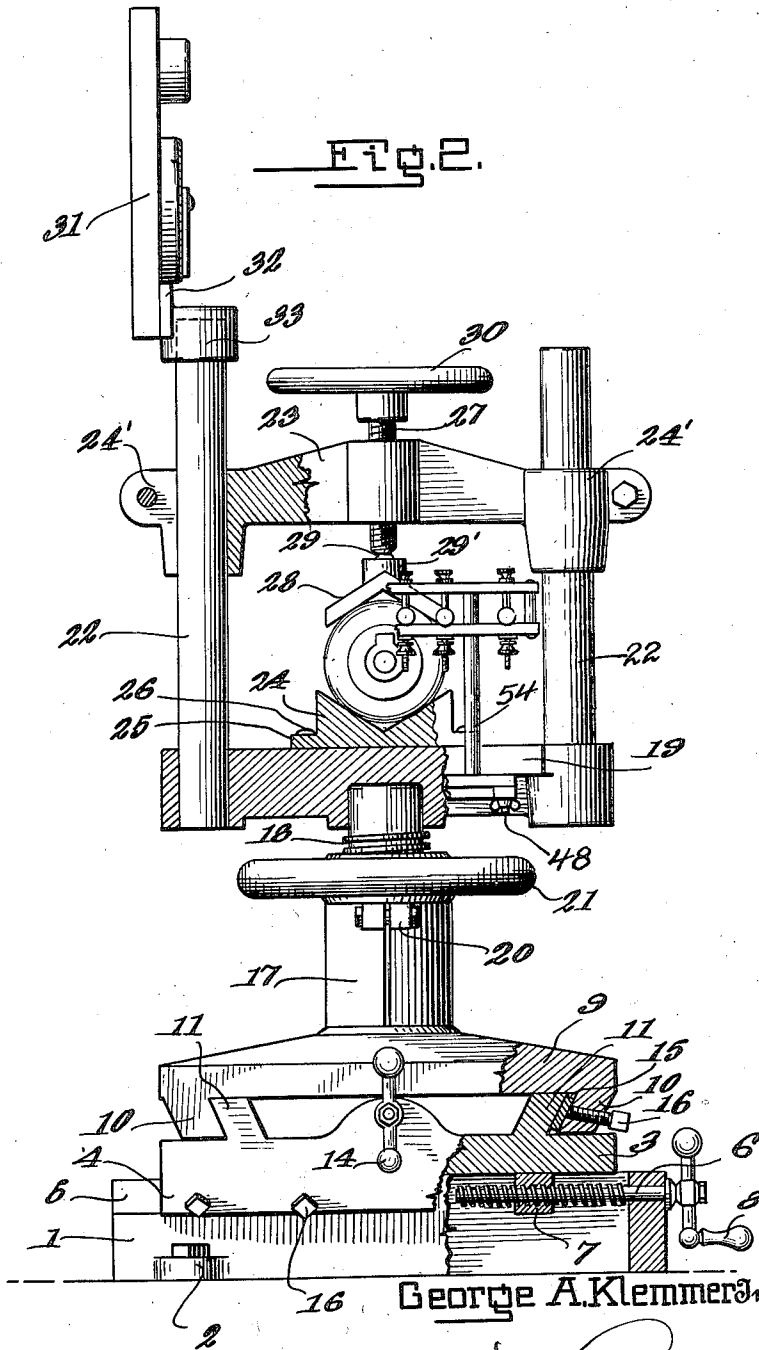
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UNITED STATES PATENT OFFICE.

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ADJUSTABLE SUPPORT FOR TESTING ELECTRICAL UNITS.

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To all whom it may concern:

Be it known that I, GEORGE A. KLEMMER, a citizen of the United States, residing at Owatonna, in the county of Steele and State of Minnesota, have invented certain new and useful Improvements in Adjustable Supports for Testing Electrical Units, of which the following is a specification.

The present invention relates to an adjustable support capable of receiving and holding various magnetoes, generators, and engine starters mounted in such a way that the machine to be tested can be adjusted both vertically and horizontally to a line with the shaft from which it is to be driven for making the tests.

It is also an object of the invention to provide such an apparatus which is comparatively simple, compact and inexpensive in construction, and which, at the same time, is thoroughly practical reliable and efficacious in operation.

With the foregoing and other objects fully in view, which will be apparent as the description proceeds, the invention resides in the construction and arrangement of the component parts, as claimed, it being understood changes can be made within the scope of what is claimed without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a vertical section of the support, portions being shown in elevation.

Figure 2 is a side elevation looking at right angles to the line of view in Figure 1, portions being broken away and shown in section.

In carrying out the invention there is provided an adjustable clamp provided with means for clamping or holding the magneto, generator, starter or other electrical unit to be tested and enabling such unit to be so adjusted as to be coupled up with a shaft or other driving member, thereby enabling the stand to be adjusted to align the armatures of various electrical units with the driving shaft or member. This stand has a base 1 which is preferably provided with lugs or feet 2 for bolting it on the floor, bench or other support. An adjusting plate 3 is mounted for sliding movement on the base 1 and is guided for rectilinear movement in one direction horizontally on the base, such as by depending parallel undercut flanges 4 for slidably engaging the

overhanging guides 5 extending along opposite sides of the base. Accurate adjustment of the plate 3 on the base is had by means of an adjusting screw 6 mounted for turning movement in one end of the base 1. and engaging a nut 7 secured to and depending from the plate 3, said adjusting screw having an operating handle 8 at its outer end, which when rotated will adjust the plate 3 on the base. A second adjusting plate 9 surmounts the plate 3 and is slidable thereon in a horizontal rectilinear line at right angles to the line of movement of the plate 3. The upper plate 9 is guided for movement on the plate 3 similar to the guiding means between the lower plate 3 and the base 1. Thus, the plate 9 has parallel depending undercut flanges 10 movable along the overhanging guides 11 of the plate 3, and an adjusting screw 12 is journaled through one end of the plate 3 and engages a nut 13 depending from the plate 9 for adjusting said plate 9. This screw 12 has an operating crank 14 at its outer end. It is preferable to provide a wear strip 15 between one flange 10 and the guide 11, and similarly between one flange 4 and guide 5, to take up wear, and clamping screws 16 are threaded into said flanges for holding said strips in place, and also clamping the parts in adjusted position. By the provision of the superposed plates 3 and 9 mounted for sliding adjustment one on the other and on the base 1, the upper plate 9 can be adjusted horizontally in one direction with the lower plate, and horizontally at right angles on the plate 3, thereby enabling said upper plate to be set in any desired position in a horizontal direction within the limits of adjustment. The plate 9 carries the means for holding or clamping the electrical unit to be tested, and for this purpose the said plate has a central pedestal 17, which is tubular or hollow so as to receive the vertical lift screw 18, the plate 3, and base having openings for receiving said screw and permitting of horizontal movement thereof. Secured on the upper end of the screw 18 is a table 19 on which the electrical unit is held, and this table 19 and screw 18 are constrained against rotation by means of a feather 20 within the pedestal 17 engaging a feather way in said screw. The upper end of said pedestal is split and formed with a clamp 20 so that it can be made to tightly embrace the screw 18 to prevent ac-

cidental adjustment thereof and to also make the structure rigid while undergoing the testing operation. The vertical adjustment of the table 19 is accomplished by the rotation of a hand wheel 21 having its hub in the form of a nut threaded on the screw 18 and seating on the pedestal so as to raise or lower said screw to the desired position. Thus, the plates 3 and 9 afford horizontal rectilinear adjustment of the table in the plane thereof in two directions at right angles with one another while the screw 18 and hand wheel 21 provide for vertical adjustment of the table perpendicular to such plane, permitting the unit held on the table to be adjusted so as to align with the driving member or shaft to be coupled directly to one end thereof.

The table 19 is provided with means thereon for bolting or clamping the electrical unit, and for this purpose such table has secured thereto opposite posts 22, between and from which is supported the yoke 23 above the table. The ends of said yoke are formed with clamps 24' to embrace said posts, and support said yoke in various vertical positions, to which it can be adjusted when said clamps are loosened. A seat 24 for the electrical unit is supported on the table 19, being provided with an upper V-shaped recess for receiving and centering the unit, and said seat has opposite outstanding flanges 25 for receiving pins 26 to drop into openings in said table 19 for holding the seat in place. Disposed above the seat 24 is a pressure jaw 28 of inverted V-shape, carried for adjustment by the yoke 23 for clamping the units on the seat 24. A vertical screw 27 is threaded through the yoke 23 for adjustably moving the pressure jaw 28 downward to clamp and hold the electrical unit, the lower end of said screw having a ball tip 29 seated in the spherical socket of the boss 29' upstanding from said jaw, thereby enabling said jaw to tilt and turn relatively to the screw so as to bear on the unit and adjust itself to said unit when the screw 27 is being tightened. The upper end of said screw has a hand wheel 30 for convenience in applying pressure, whereby the electrical unit will be firmly held between the seat 24 and jaw 28 while undergoing the tests. The yoke 23 provides for the adjustments to accommodate the electrical units of various sizes and the screw 27 enables the unit to be clamped in place on the table. Seats 24 and jaws 28 of different sizes and forms can be used interchangeably to accommodate different styles and sizes of magnetoes, generators, and starters.

An upright instrument board 31 is provided for holding the instruments used to test an electrical unit 41, and this board 31 may be secured to a plate 32 formed with a cap 33 slipped over and secured to the upper

end of one post 22, thereby supporting the instrument board in position. Other testing apparatus 54 may be suitably attached as at 48, for testing the electrical unit 41.

The electrical unit 41 which is clamped on the seat 24 by the pressure jaw 28 is coupled up with a driving shaft or member 46 and as a convenient means for doing this a dog 42, similar to an ordinary lathe dog, is clamped on the armature shaft of the unit 41 and engages in one of the slots 43 of a collar 44 secured on driving shaft 46 by means of a set screw 45 or the like. The shaft 46 represents any convenient shaft or driving member from which the electrical unit can be driven for making the tests, and by using the dog 42 and coupling collar 44, the armature shaft can be conveniently coupled to the driving shaft 46, it being noted that the electrical unit 41 when clamped or held in the testing stand can be adjusted longitudinally, laterally and vertically relative to the shaft 46, to bring said electrical unit into alignment with the shaft 46 to be readily coupled thereto. It is thus possible to bring various magnetoes, generators and starters into position to align this shaft 46, without the necessity of adjusting said shaft.

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

1. An apparatus for supporting testing magnetoes, generators, and other electrical units for testing purposes, comprising a stand having a base and a pedestal mounted thereon for adjustment in various horizontal directions, and means for holding an electrical unit mounted for vertical adjustment on said pedestal.

2. An apparatus for supporting magnetoes, generators and other electrical units for testing purposes comprising a base, a plate mounted on the base for horizontal adjustment in one direction, a second plate mounted on said plate for horizontal adjustment in another direction, and means for holding an electrical unit mounted for vertical adjustment on the second plate.

3. An apparatus for supporting magnetoes, generators, and other electrical units for testing purposes comprising a base, a plate mounted for horizontal adjustment in one direction on the base, a second plate mounted for horizontal adjustment in another direction on said plate, and having a pedestal, a member carried for vertical adjustment by said pedestal, and means for holding an electrical unit mounted on said member.

4. An apparatus for supporting magnetoes, generators, and other electrical units for testing purposes, comprising a base, plates mounted one on the other and on the base for relative adjustment in different horizontal directions, and electrical unit holding means carried for vertical adjustment by one of said plates.

5. An apparatus for supporting magnetoes, generators, and other electrical units for testing purposes comprising a base, a plate mounted on the base for adjustment horizontally in one direction; a second plate mounted on said plate for horizontal adjustment in another direction, the second plate having a pedestal, a screw movable vertically in said pedestal, an adjusting nut supported by said pedestal and engaging said screw, a table supported by said screw and means for holding an electrical unit on said table.

6. An apparatus for supporting magnetoes, generators and other electrical units for testing purposes, comprising a table having a seat thereon for receiving and supporting an electrical unit, an adjustable mounting for said table enabling the table to be adjusted in the plane thereof in various rectilinear directions and also perpendicularly for bringing the unit to a position for connection with a driving member, and adjustable means having a jaw to bear on the unit and clamp it on the seat.

7. A device for testing electrical units comprising a member having an upstanding hollow pedestal thereon, means mounting the said member for sliding movement, a screw member vertically adjustable within said hollow pedestal, a table upon the outer end of said screw, and clamping means disposed upon said table whereby an electrical unit may be clamped intermediate said table and said clamping means.

8. A device of the class described comprising an adjustable supporting member having an upstanding hollow pedestal thereon, a screw member feathered within said hollow pedestal for reciprocation there-through, a hand wheel in screw threaded engagement with said vertically adjustable screw threaded member resting upon the upper end of said hollow pedestal for movement to adjust said screw member relative to the pedestal, and a supporting table disposed upon the upper end of said screw threaded member.

9. An apparatus for the supporting of electrical units comprising a plurality of plates connected for relative movement in different directions, a pedestal mounted up-

wardly upon one of said plates, a screw threaded member adjustably mounted with respect to said pedestal, and a unit supporting table mounted upon the upper end of said screw threaded member.

10. An apparatus for the supporting of materials comprising a supporting base, a plate, means slidably connecting said plate to said base for movement in a horizontal plane, a second plate, means mounting said second plate upon the first mentioned plate for movement in a horizontal plane at right angles to the plane of movement of the first mentioned plate, a hollow spindle mounted upwardly upon said second mentioned plate, a screw member feathered within the hollow of said spindle, an adjusting hand wheel in screw threaded engagement with said member and disposed upon said hollow spindle for rotation to vertically adjust this screw threaded member, and a supporting table mounted upwardly upon said screw threaded member for receiving materials.

11. A device for the testing of electrical units comprising a table, means for adjusting said table, a plurality of supporting posts mounted upon said table and extending upwardly thereof, a yoke slidably connected over said table to said posts, means for clamping said yoke in position upon said posts, and clamping means carried by said yoke and table for securing a unit intermediate said yoke and table in a fixed and determined relation.

12. In a device of the class described, the combination of a supporting table, means adjustably mounting said supporting table, a seat member mounted upon said supporting table, a plurality of posts carried upwardly of said table, a yoke slidably mounted over said table upon said posts, means for clamping said yoke in a determined position upon said posts, an adjustable screw member carried by said yoke having a ball tip upon the lower end thereof, and a jaw adapted for working intermediate said seat and the screw for the clamping of a unit between said seat and jaw, said jaw and seat having substantially V-shaped unit engaging surfaces there-

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