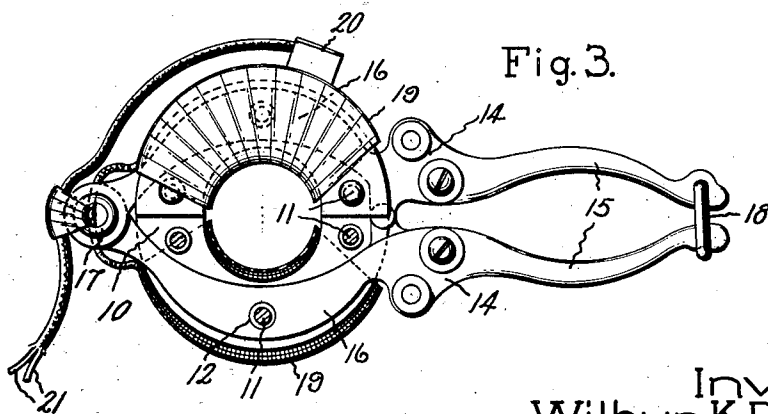
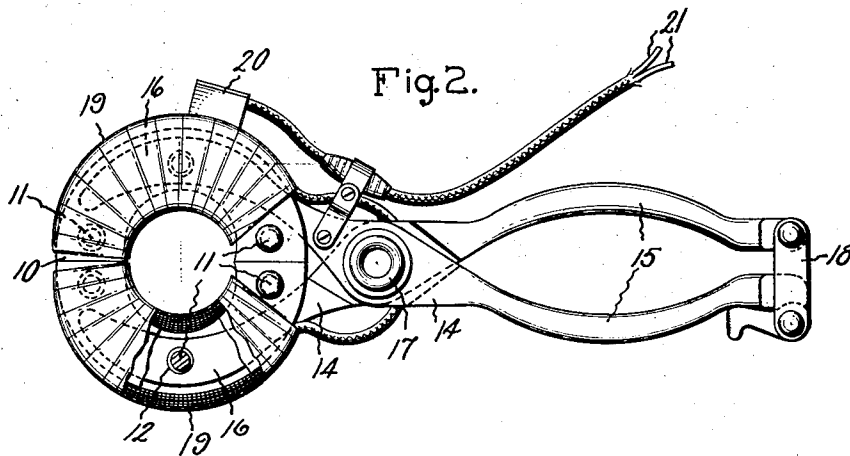
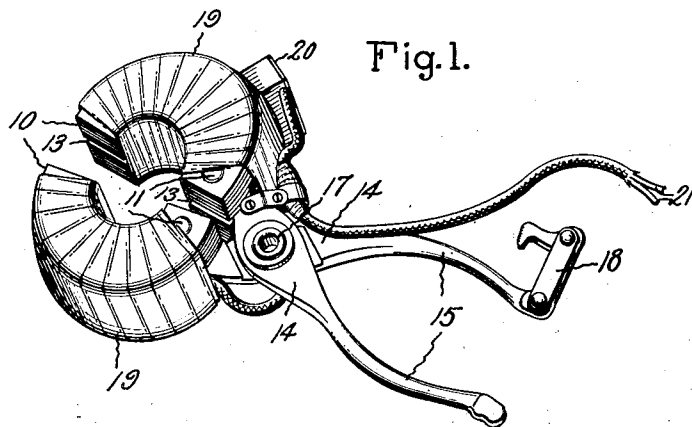


Jan. 12, 1926.

1,569,723

W. K. DICKINSON
INSTRUMENT TRANSFORMER
Filed August 14, 1925



Inventor:
Wilbur K. Dickinson,
by *Wm. S. Lunt*
His Attorney.

Patented Jan. 12, 1926.

1,569,723

UNITED STATES PATENT OFFICE.

WILBUR K. DICKINSON, OF LYNN, MASSACHUSETTS, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

INSTRUMENT TRANSFORMER.

Application filed August 14, 1925. Serial No. 50,327.

To all whom it may concern:

Be it known that I, WILBUR K. DICKINSON, a citizen of the United States, residing at Lynn, in the county of Essex, State of Massachusetts, have invented certain new and useful Improvements in Instrument Transformers, of which the following is a specification.

My invention relates to instrument transformers of the type in which a winding is mounted on a core which is separable to permit it to be opened and placed around a current carrying conductor. Such a transformer may be used for a variety of purposes but is commonly used in connection with an ammeter for measuring the current in the conductor which it surrounds. It is desirable that the contacting surfaces of the two-part core fit together accurately so that the reluctance of the flux path through the core may be low and it is the general object of the invention to mount the core parts on their support so that their contacting surfaces may adjust themselves to an accurate fit when brought together. A further object of the invention is to mount the core parts on their support in such manner that the pressure between the contacting surfaces will be evenly distributed, thus further contributing to low reluctance of the flux path and to a uniform distribution of the flux throughout the cross section of the path at the contacting surfaces between the two core parts.

Further objects and advantages will appear from the following description taken in connection with the accompanying drawing in which Fig. 1 is a perspective view of an instrument transformer constructed in accordance with the invention, Fig. 2 is a side view of the transformer shown in Fig. 1, and Fig. 3 is a side view of a modified form of the invention, a section of the winding being broken away in Figs. 2 and 3 to reveal details of construction.

Like reference characters indicate similar parts in the different figures of the drawing.

In the form of the invention shown in Figs. 1 and 2 a closed substantially ring shaped core 10 is divided into two parts, thus forming two joints at opposite sides of the core. The contacting surfaces at these joints preferably lie in a single plane passing through the axis of the core. The contacting surfaces at each joint are fin-

ished to fit together accurately. Each of the core parts comprises a stack of magnetic laminations secured together by pins or rivets 11. Each rivet 11 has an enlarged portion 12 near its center forming shoulders which separate the laminations of each stack into two groups with a thin space 13 between them as shown most clearly in Fig. 1 where the core is partly opened.

The two parts of the core are supported on two handles 14 with their outer ends formed as grips 15. The other two ends 16 of the handles 14 are flattened and extended into the two spaces 13 in the two parts of the core. The flattened end 16 of each handle has an opening which fits the enlarged portion 12 of one of the rivets 11 so that each core part is pivotally supported on the flattened end of the handle which carries it. The two handles 14 are crossed and pivoted together by a rivet 17 between the grips 15 and the flattened ends 16 so that the two parts of the core may be closed and pressed together by means of the grips 15. A clasp 18 may be used to hold the two core parts pressed tightly together while the transformer is in use. A winding 19 is distributed in two parts over the two parts of the core and connected through a terminal box 20 with the outside leads 21.

A low reluctance path for the magnetic flux in the core is desirable and for this reason it is important that the contacting surfaces of the two core parts fit together accurately and it is also desirable that the pressure between the two core parts when closed together be distributed substantially equally between the two joints. The surfaces at the two core joints are accurately finished to make accurate contact when the two core parts are properly positioned together and the pivotal connections between the two core parts and the flattened ends 16 of the two handles permit proper relative adjustment of the two core parts when pressed together by the handles. The particular rivet 11 which connects each core part to its supporting handle is preferably about midway between the two ends of the core part so that the pressure of the handle is distributed substantially equally between the two core joints.

The construction shown in Fig. 3 is similar to that which has been described in connection with Figs. 1 and 2 except that the

handles 14 are not crossed and are pivoted together at the side of the core and winding opposite the grips 15 instead of adjacent thereto.

- 5 The invention provides an efficient and convenient instrument transformer having a core which may be easily opened and placed around a conductor which cannot itself be conveniently opened. The pivotal connections between the core parts and their supporting handles permit these core parts to adjust themselves accurately together when pressed together by the handles and thus obviates the necessity of great accuracy in construction and compensates for wear in the pivotal connection between the two handles.

What I claim as new and desire to secure by Letters Patent of the United States, is:

- 29 1. An instrument transformer including

a separable two part core and two pivotally connected handles supporting said core parts, one of said core parts being pivotally connected to its supporting handle.

2. An instrument transformer including 25 a separable two part core, and two pivotally connected handles pivotally supporting said core parts.

3. An instrument transformer including a separable two part laminated core, and two 30 pivotally connected handles supporting said core parts, the lamination of one of said core parts being separated into two groups with a space therebetween, and one end of one of said handles extending into said space 35 and being pivotally connected therein to the adjacent core part.

In witness whereof, I have hereunto set my hand this 11th day of August, 1925.

WILBUR K. DICKINSON.