

June 30, 1942.

T. L. STANTON

2,288,043

ADJUSTABLE ELECTRICAL RESISTANCE

Filed Dec. 19, 1941

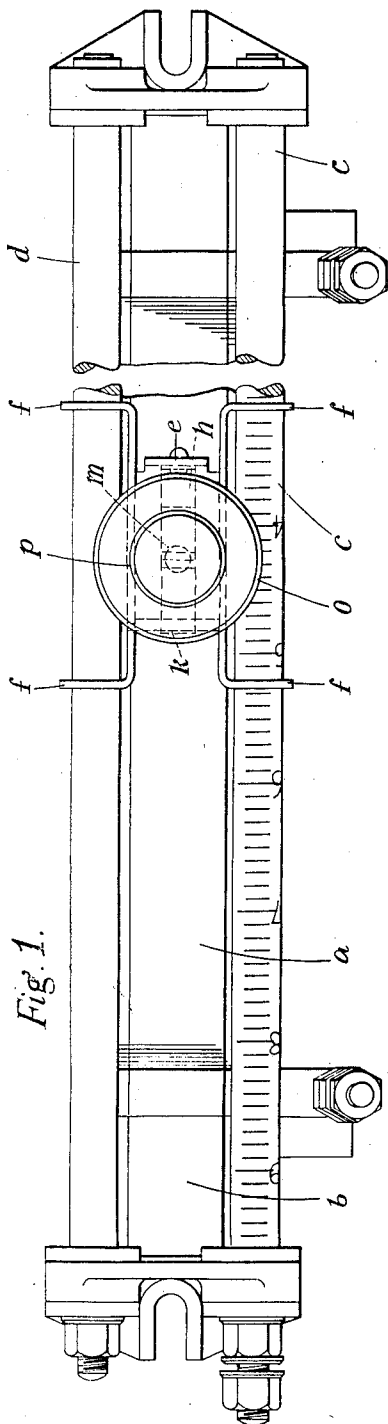
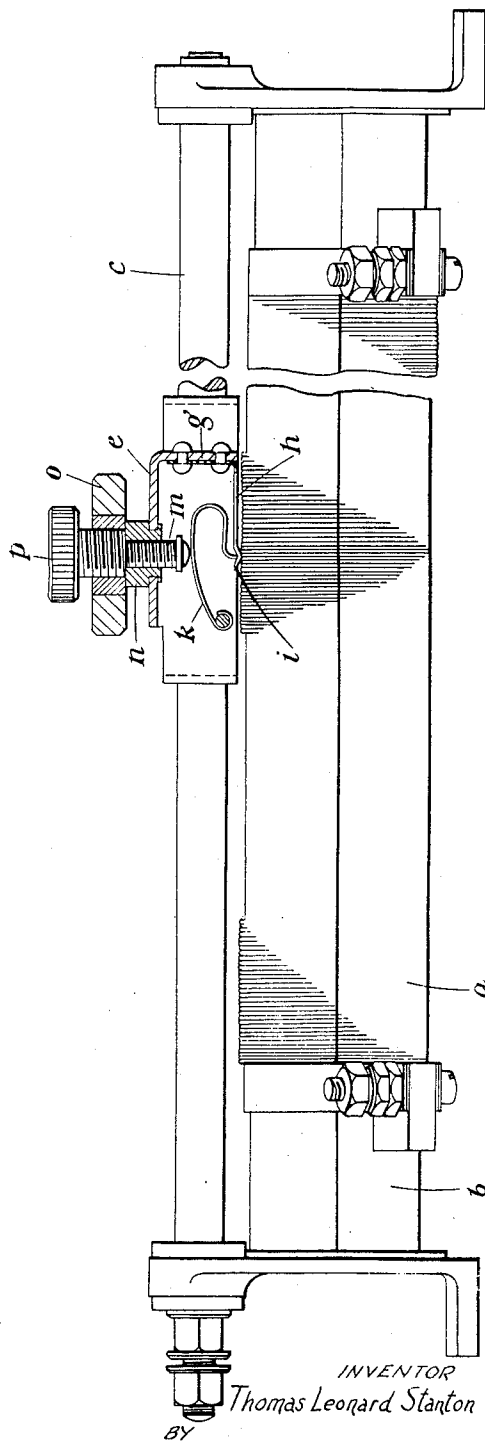


Fig. 2.



UNITED STATES PATENT OFFICE

2,288,043

ADJUSTABLE ELECTRICAL RESISTANCE

Thomas Leonard Stanton, Ruislip, England, assignor to The Bell Punch Company Limited, London, England, a British company

Application December 19, 1941, Serial No. 423,605
In Great Britain October 3, 1940

2 Claims. (Cl. 201—56)

This invention relates to adjustable electrical resistances of the kind in which a contact member is arranged to move relatively to a coil of resistance wire.

In adjustable resistances of the above kind already proposed, contact is often made by means of a contact member which extends over a number of adjacent turns of the wire with the result that the precise point of contact often varies as a result of vibration, dirt or other conditions. It is the object of the present invention to overcome this difficulty and to provide a device in which the point of contact can be accurately and permanently located.

According to the invention there is provided an adjustable electrical resistance of the kind referred to having a metal slider carrying a blade contact which at one portion of its length is provided with a local projection or is shaped to the form of a V so that it is adapted to seat between two adjacent turns of the wire coil to make contact therewith.

In the preferred form of the invention, the aforesaid local projection or V-shaped portion is provided at the end of the blade contact and above the latter there is arranged a resilient metal strip or second blade shaped at one end to fit into the recessed side of the projection or V part of the contact blade, the two being held together with the contact blade in contact with the coil by means of a screw mounted in the slider and arranged to apply pressure to the second blade. Also, the screw is preferably provided with a nut to lock a position after adjustment.

In order that the said invention may be clearly understood and readily carried into effect, the same will now be more fully described with reference to the accompanying drawing in which:

Fig. 1 is a plan view of one form of adjustable electrical resistance produced according to the invention; and

Fig. 2 is a side view of the resistance shown in Fig. 1 showing the slider in section.

In the form of the invention illustrated in the accompanying drawing *a* indicates the coil of resistance wire which is wound around a support *b* consisting, for example, of a tube of insulating material or a tube coated with insulation which may be of circular or polygonal cross section but is preferably hexagonal in cross section. Disposed parallel with the axis of the said coil are a pair of slider supports *c* and *d* on which is slidably mounted the metal slider *e* which carries the blade contact. The said slider may conveniently be constituted by a channel-shaped

member disposed adjacent the coil and between the supports *c* and *d*, and provided with four outwardly extending lugs which fit around or are slidably mounted on the supports *c* and *d*. At or near one end the channel-shaped member is formed with a downwardly extending portion *g* to which is secured one end of a blade contact *h* provided at its opposite end with a local projection or a V-shaped portion *i* adapted to bear against and to seat between two adjacent turns of the wire coil. Above the contact is arranged a looped resilient metal strip or second blade *k* having one end secured to the slide and its other end engaging or fitting into the recessed side of the projection or V-shaped portion of the blade contact. The strip or blade *k* is adapted to be held in contact with the contact blade for the purpose of pressing the projection or V-shaped portion of the latter into contact with the coil by means of a screw *m* which is threaded into a sleeve *n* carried by the upper portion of the slider and associated with the clamping screw there is preferably provided a lock nut *o*. The latter and the knob *p* of the clamping screw are preferably formed of insulating material.

In operation, the clamping screw *m* is slackened to permit the slider to be moved along the bar in resilient contact with the resistance wire and when the required resistance is attained the screw is screwed down to force the second blade into the recess or V of the contact blade to cause the point of the projection or V in the latter to seat firmly between two adjacent turns of the wire, the lock nut being subsequently screwed up. By such a construction the resistance can be very accurately adjusted and such adjustment will be permanently maintained under all conditions.

The invention is not limited to the example above described as subordinate details of construction can be varied to meet different requirements.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

1. An adjustable electrical resistance comprising a coil of wire having closely arranged turns, a support for said coil, a slider, and means guiding said slider for movement along said coil, said slider carrying a blade shaped to provide a V-shaped projecting portion arranged to seat between adjacent turns of said coil and a recess within said projecting portion, and a resilient member having one end secured to said slider and

the other end engaged within said recess to urge the blade into engagement with the coil.

2. An adjustable electrical resistance comprising a coil of wire having closely arranged turns, a support for said coil, a slider, and means guiding said slider for movement along said coil, said slider carrying a blade shaped to provide a V-shaped projecting portion arranged to seat between adjacent turns of said coil and a recess

within said projecting portion, a resilient member having one end secured to said slider and the other end engaged within said recess to urge the blade into engagement with the coil, and a member threaded in said slider and engaging said resilient member to adjust the force applied by said resilient member to said blade.

THOMAS LEONARD STANTON.