

B. AMES.
ADJUSTING POST.
APPLICATION FILED MAY 21, 1913.

1,140,433.

Patented May 25, 1915.

Fig. 1.

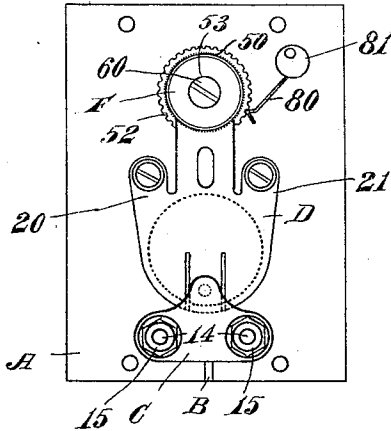


Fig. 2.

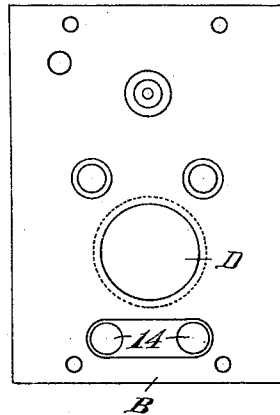


Fig. 3.

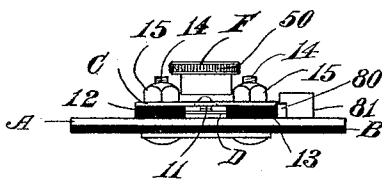
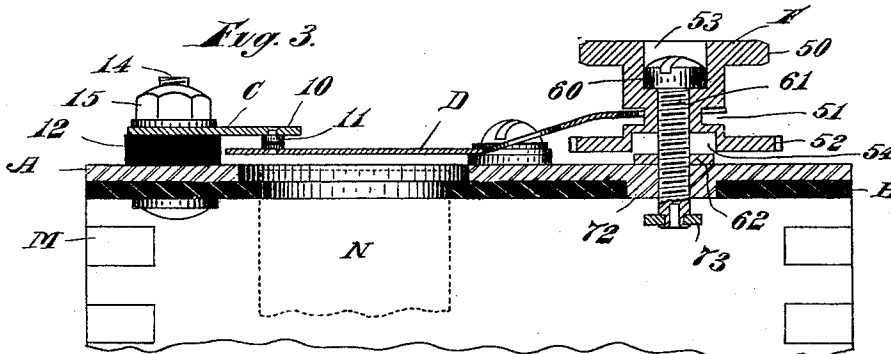


Fig. 4.

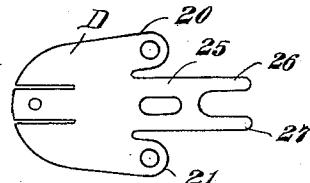


Fig. 5.

WITNESSES:

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BUTLER AMES, OF LOWELL, MASSACHUSETTS.

ADJUSTING-POST.

1,140,433.

Specification of Letters Patent.

Patented May 25, 1915.

Application filed May 21, 1913. Serial No. 769,045.

To all whom it may concern:

Be it known that I, BUTLER AMES, a citizen of the United States, residing at Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Adjusting-Posts, of which the following is a specification.

This invention relates to adjusting posts for adjusting the tension of armature springs or spring armatures used in connection with induction coils and especially with such as are known as spark coils.

My device may be used in connection with many forms of armature springs but I prefer to use it in connection with the spring armature shown in the drawings herewith upon which I have applied for Letters Patent of even date herewith, filed May 21, 1913, Serial Number 769,043 entitled Armature springs.

The purpose of my adjusting device is to permit the tension on the spring armature or armature spring to be adjusted at the minimum point and to then lock the parts in place in such a manner that within a limited range, greater tension may be applied but the tension cannot be reduced below the minimum point or increased above an allowable predetermined maximum.

Figure 1 is a plan view from the top of my device on a coil. Fig. 2 is a plan view from the bottom of the top non-conducting plate. Fig. 3 is an enlarged sectional side elevation. Fig. 4 is an end elevation from the bottom of Fig. 1. Fig. 5 is a plan view of the spring armature.

A suitable case M incloses the usual core N, primary and secondary windings, condenser and proper electrical connections. Upon the top of the case M and insulated therefrom by a non-conducting plate B, is the top metal plate A to which the members of my device are attached. There is an opening opposite core N in plate A.

C is a metallic bridge plate with a projecting wing 10 from which depends a contact tip 11 which is preferably a plug of platinum. The bridge plate is insulated by means of collars 12, 13 and is attached to the top plate by means of posts 14 and nuts 15.

The spring armature plate D which may be stamped from one piece of sheet metal and may be attached to the top plate by means of ears 20 and 21 and suitable screws

has a tail 25 which is bent up and back and terminates in arms 26 and 27.

My adjusting means comprises an adjusting nut F which has at the top a knurled rim 50 by which it may be turned by the fingers. At its middle portion, it has an annular slot 51 into which the arms 26 and 27 enter and at its bottom it has a toothed rim 52.

Through the center of nut F is an axial threaded passage through which passes the lock screw 61. In the top of nut F is preferably a central cylindrical cavity 53 which receives the head 60 of lock screw 61 and in the bottom is another central cylindrical cavity 54 to receive a check nut 62. This check nut 62 is preferably thin and can enter entirely into bottom cavity 54. Lock screw 61 passes through a threaded hole in top plate A and through a boss 72 formed therein.

The spring 80 carried by a spring post 81 engages the toothed rim 52 in such a manner as to prevent the adjusting nut being accidentally turned.

In assembling my device at the factory, lock screw 61 is screwed through the adjusting nut and then the check nut 62 is screwed thereon. The lock screw is then screwed through the top plate A and the collar 73 is fixed to the bottom end thereof preferably by spinning over the metal on the end of 61 so that after the top plate is in place, the adjusting means cannot be removed without taking off the top plate and forcibly removing the collar 73. It is desirable that such coils should be delivered adjusted for a uniform quantity of current, but at the same time, there should be a moderate range of adjustment thereafter. With this device, I can set the minimum tension adapted to the weakest working current and leave a limited range of adjustment for increasing that tension for an increased current.

In adjusting at the factory after the parts are assembled, the adjusting nut is screwed up to the highest point on the lock screw until stopped by the head thereof. Then by means of a screw driver inserted in the slot in head 60 both are turned down until the desired tension is obtained. This can be done while the circuit is closed and can be rapidly and accurately standardized by connecting with and reading an electrical

indicator. To fix this minimum tension, the check nut 62 by means of a thin wrench is screwed down tight on the top of plate A whereby the lock screw is prevented from
 5 being turned except by the use of excessive and unreasonable force. This is the position shown in Figs. 3 and 4. The adjusting nut can now be screwed downward on lock screw 61 thus increasing the tension
 10 but cannot be screwed up beyond the head whereby the minimum tension is fixed. The maximum tension in such case is determined when the bottom of nut F strikes the top of plate A. The parts must be so made
 15 that this maximum will not be excessive. It will be seen, however, that the maximum bears no fixed relation to the minimum tension and the range of adjustment between the maximum and minimum varies.
 20 The advantages of my construction are that the parts can be assembled complete and in proper condition for testing and then the adjusting nut can be adjusted for the minimum tension desired, after which the
 25 parts can be so locked in place by means of the check nut and thin wrench that they cannot reasonably be tampered with thereafter by the user as he is not likely to be provided with the special form of wrench or
 30 key necessary to turn the thin check nut.

What I claim as my invention and desire to cover by Letters Patent, is:

1. In a spark coil having a core and a top plate, the combination of a spring armature
 35 having a tail which terminates in arms, a lock screw which passes through the top plate and has a bottom collar fixed at its lower end and has a head at its upper end, and an adjusting nut through which the

lock screw passes having a top cylindrical 40 cavity for the screw head, a bottom cylindrical cavity and an annular groove on the outside for the arms, with a thin check nut on the lock screw adapted to enter the bottom cavity in the adjusting nut as described. 45

2. In a spark coil having a core and a top plate, the combination of a lock screw which passes through the top plate and has a bottom collar fixed at its lower end and has a head at its upper end, with an adjusting 50 nut through which the lock screw passes having an annular groove on the outside, a thin check nut on the lock screw between the adjusting nut and the top plate, and a spring armature having a tail which enters 55 the annular groove on the adjusting nut as described.

3. In a spark coil having a core and a top plate, the combination of a lock screw which passes through the top plate and has a bottom collar fixed at its lower end and has a head at its upper end, with an adjusting 60 nut through which the lock screw passes having an annular groove on the outside and a toothed rim at the bottom, a thin 65 check nut on the lock screw between the adjusting nut and the top plate, a spring which engages the toothed rim of the adjusting nut, and a spring armature having a tail which enters the annular groove 70 on the adjusting nut as described.

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

BUTLER AMES.

Witnesses:

JOHN AMESFENNIG,
FRANCES A. KANE.

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