April 5, 1932. O. J. MOEHLER 1,852,785

EXTENSIBLE SUPPORTING APPARATUS

Filed Jan. 23, 1930

Fig. 1

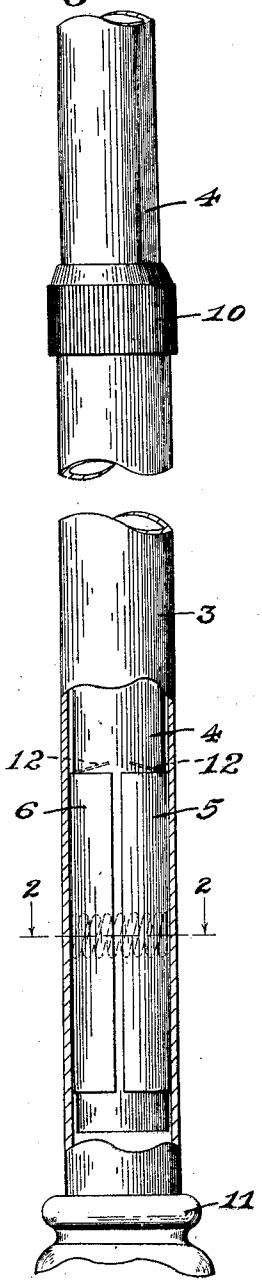
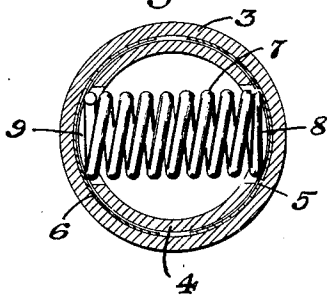


Fig. 2



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UNITED STATES PATENT OFFICE

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EXTENSIBLE SUPPORTING APPARATUS

Application filed January 23, 1930. Serial No. 422,731.

The present invention relates to extension supporting apparatus and to friction devices generally and more particularly the invention relates to such devices of the spring and shoe type, all of which are useful in the arts generally. The invention is particularly useful in relation to housings for electric discharge devices such as that set forth in pending application of Leroy J. Buttolph, Serial Number 416,932, filed December 27, 1929.

The object of the invention is to provide an extension supporting apparatus and a frictional device combining the features of rigidity, adaptability, compactness, smoothness and certainty in operation.

In accordance with the object of the invention the device comprises two thin metal shoes attached to the slidable member of an extension supporting apparatus and a spring through the slidable member of said apparatus adapted to press said shoes against the stationary member of said apparatus.

In the drawings accompanying and forming part of this specification two views of the invention are shown for purposes of illustration in which,

Fig. 1 is an elevational view of the new and novel extension supporting apparatus and frictional device with the outer tubular supporting member broken away so as to show the two shoes; the position of the spring being indicated by dotted lines.

Fig. 2 is a plan view of the invention along the line 2—2 of Fig. 1.

Referring to Fig. 1 of the drawings 3 is a tubular support and 4 is another tubular support being concentric therewith. The outer diameter of support 4 is less than the inner diameter of support 3 to permit the vertical movement of support 4 in support 3 and to permit the introduction of thin shoes 5, 6 between said supports 3, 4. Said shoes 5, 6 are each provided with a tongue at the top thereof adapted to fit into openings in the walls of slidable support 4. Said tongues are indicated by dotted lines at 12 in Fig. 1, though in their normal position they are at right angles to the longitudinal axis of slidable support 4. Being so arranged said tongues maintain shoes 5, 6 in a fixed position with respect to support 4 when said support 4 is moved in support 3. The position of said shoes 5, 6 on support 4 is such that the ends of said shoes 5, 6 are at least a short distance up from the end of support 4. In this position said shoes 5, 6 stop said support 4 at the top of support 3 leaving a sufficient portion of support 4 in support 3 to maintain a stiff, rigid support in respect to lateral movement for any device mounted on support 4 even when said support 4 is in fully extended position. From this it is obvious that a stiff rigid support is maintained when support 4 is in any intermediate position. Lock nut 10 is provided only as a precaution against any severe physical shocks to which the apparatus in which the invention is used may be subject. Support 3 is firmly set into base 11, said base 11 may also act as a stop for slidable support 4.

Referring to Fig. 2 of the drawings, 7 is a spring passing through two openings 8, 9 in the walls of hollow support 4 pressing shoes 5, 6 against the inner walls of support 3. The position of said spring 7 with respect to shoes 5, 6 is indicated by dotted lines in Fig. 1. The pressure exerted by spring 7 on shoes 5, 6 determines the force necessary to move support 4 in support 3, so that springs of various resistance may be used determined by the weight of the object mounted on support 4 and supported by the two members 3, 4.

Having these structural characteristics the device is rigid and compact, is smooth and certain in operation and is adaptable to support objects of various weights.

While in the annexed claims certain new and novel features of the invention have been pointed out it will be understood that various omissions, substitutions, multiplications and changes in the form and details of the device and in the use and operation thereof may be made by those skilled in the art without departing from the broad spirit and scope of the invention. For example, instead of having a single stationary member and a single slidable member the device may have a multiplicity of both by having each slidable member act as a stationary member when in

an extended position. Having this structure the apparatus, is compact, and may be extended to great lengths without losing its rigidity.

Thus, the tube 3 is telescoped into another tube mounted on the base 11, the friction devices 5, 6, 7, being provided on the inner end of the tube 3 and bearing against the inner surface of the added tube and performing their usual function and, furthermore, another tube structure similar to 4, 5, 6, 7 can be telescoped into tube 4 to slide therein, lock nuts 10 being provided at appropriate places along the length of the multiple structure as indicated at 10 to provide a compact, smoothly working, strong, rigid extensible support structure of light weight and one, because of the cooperation of its members, capable of supporting articles of considerable size and weight in any vertical or horizontal position of the support device.

I claim:

1. In combination an extensible supporting apparatus having a plurality of members one slidable within the other and a friction device comprising a plurality of shoes attached to said slidable member and a spring through said slidable member adapted to press said shoes against the walls of the stationary member.

2. In combination an extensible supporting apparatus having a plurality of members one slidable within the other and a friction device comprising a plurality of shoes attached to said slidable member a sufficient distance from the end thereof to resist lateral movements of the slidable member in its extended position and a spring through said slidable member adapted to press said shoes against the inner walls of the stationary member.

3. In combination an extensible supporting apparatus having a plurality of members one slidable within the other and a friction device comprising a plurality of shoes attached to said slidable member, a spring through said slidable member adapted to press said shoes against the walls of the stationary member and means for locking said members in desired position.

Signed at Hoboken, in the county of Hudson and State of New Jersey, this 21st day of January, A. D. 1930.

OTTO J. MOEHLER.