

Aug. 20, 1935.

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2,011,809

THREAD GUIDE

Filed Sept. 28, 1932

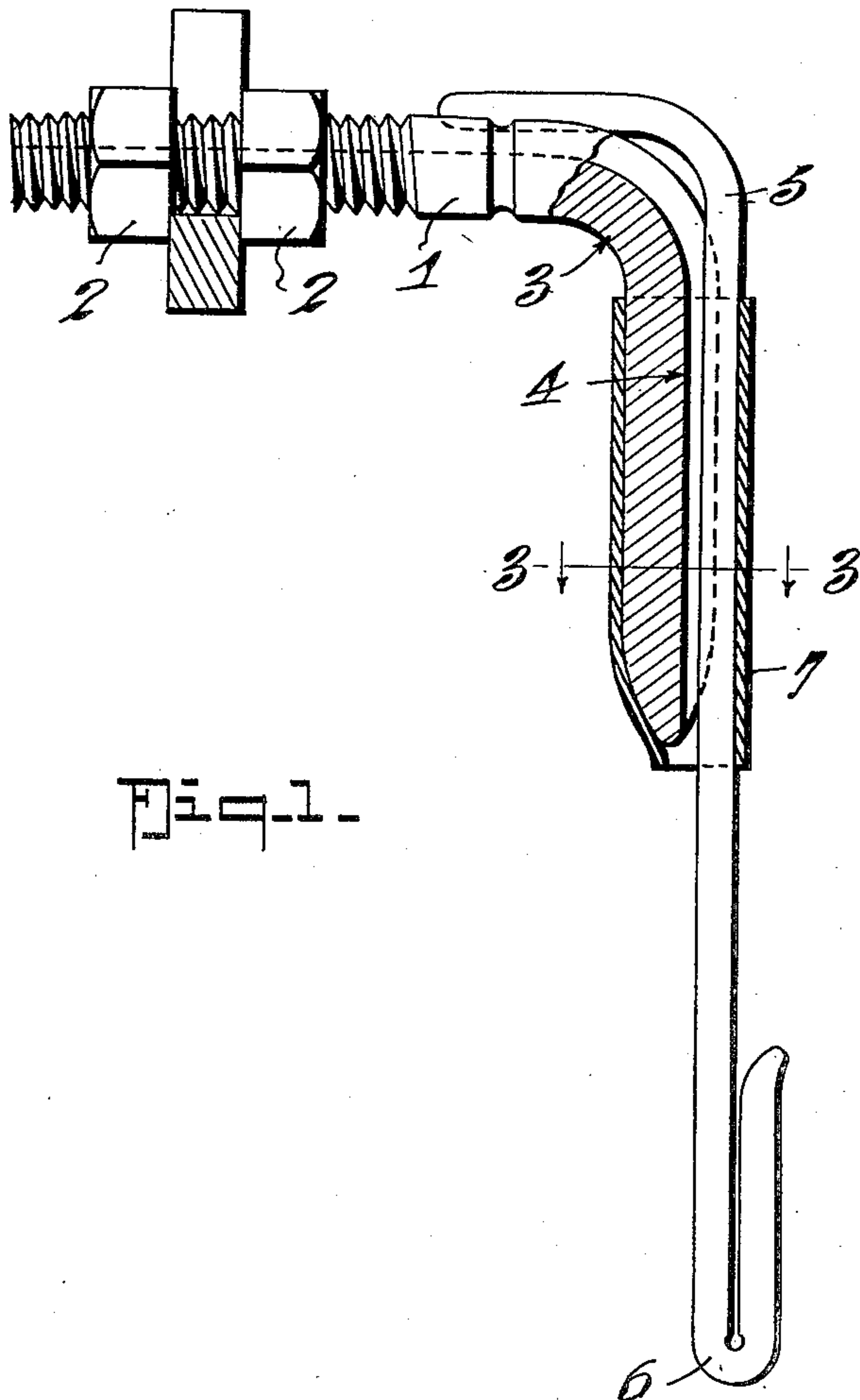


Fig. 1.

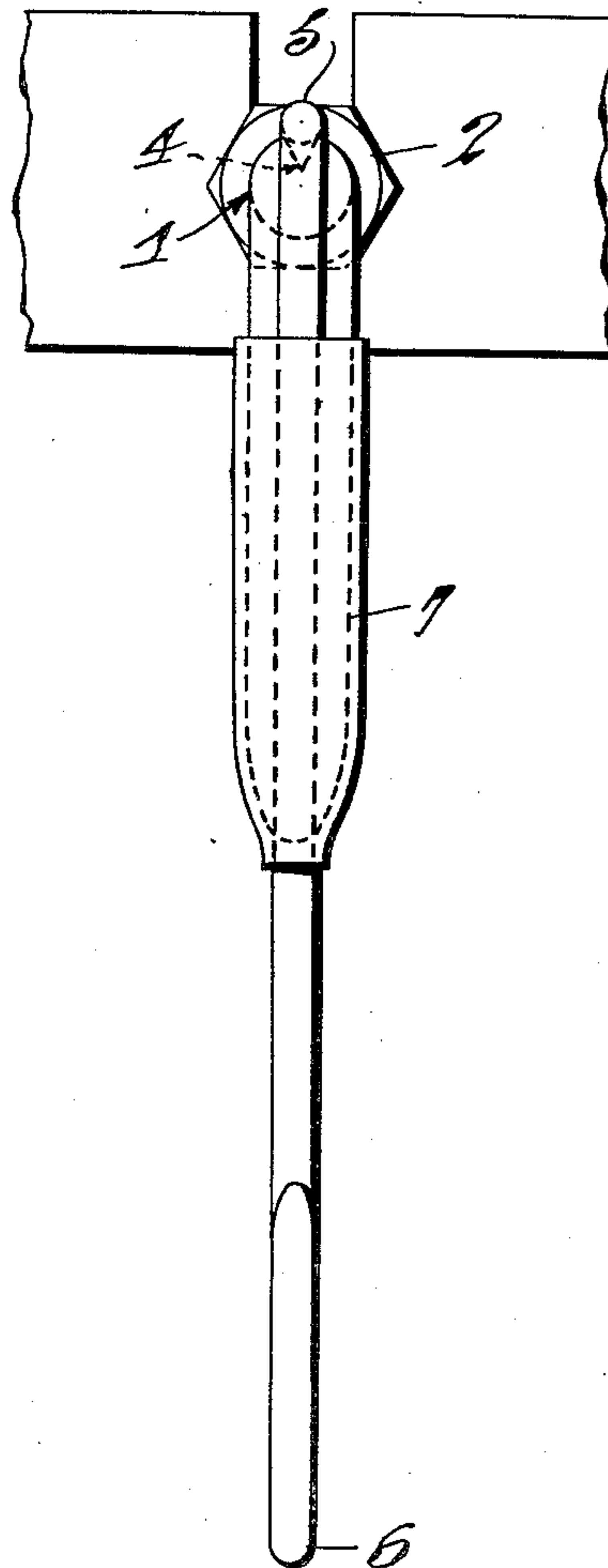
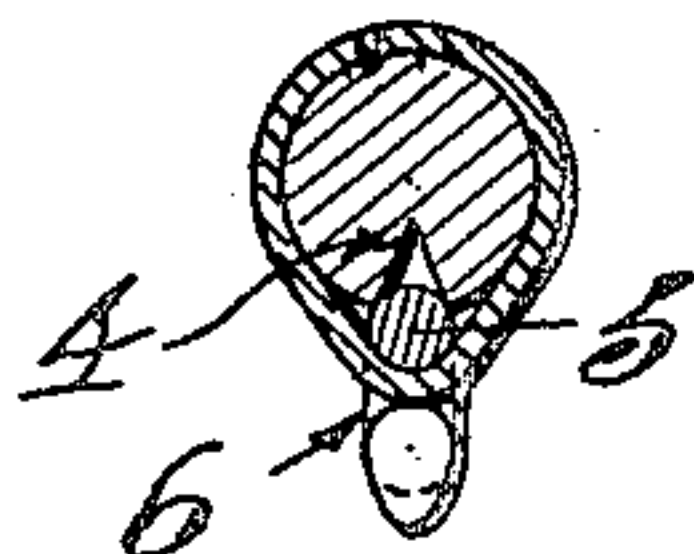


Fig. 2.

Fig. 3.



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## UNITED STATES PATENT OFFICE

2,011,809

## THREAD GUIDE

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Application September 28, 1932, Serial No. 635,267

2 Claims. (Cl. 242—157)

This invention concerns the handling of cellulose filaments and has particular reference to an improved apparatus for guiding freshly extruded artificial filaments in their passage from the precipitating bath to the bobbins or spools upon which they are to be collected.

The following description is given to the use of this apparatus in the production of viscose filaments, but it is to be understood that the guide may be used, generally, in any other spinning or extruding processes where filaments are made or treated, and we do not, therefore wish to limit ourselves to the use of this guide in the production of viscose filaments.

In producing artificial silk by the viscose process, a cellulose xanthate solution is extruded into an acid bath, and the resulting filaments are led, by means of guides, to spools or bobbins, and are then collected for further treatment. Ordinarily, these guides are made of glass, and are held on some standard or support which is resistant to the action of the acid carried by the filaments. Although the glass and support may be resistant to the acids and acid fumes, no provision has hitherto been made whereby the silk passing through the guides is protected from salts precipitating and collecting on the support.

An object of the present invention, therefore, is to produce an improved device whereby the following advantages may be obtained:

The filaments are passed through a glass, acid-resisting channel;

The channel or guide is secured firmly, but detachably, to an acid resisting standard or support;

The means whereby the guide and support are attached is not only quickly removable for cleaning purposes, but prevents the collection of crystallized salts on the surface of the support;

The rubber attachment used is large enough to adequately protect the standard;

Guides may be changed while the machines are in operation;

As the collecting of crystals on the standard or support is prevented, there will be no danger of injury to the passing filaments from falling or obstructing crystalline formations.

In describing our apparatus, reference will be made to the accompanying drawing, in which:

Figure 1 is a plan view, partially in cross-section, of our new device;

Figure 2 is a front elevational view of the thread guide in position; and

Figure 3 is a detailed view of the manner in which the guide is gripped, this view being taken on the line 3—3 of Figure 1.

The standard 1 is securely held to the traverse bar of a spinning machine by means of the nuts

2. At 3 a cross-section of the support is shown. This support is constructed of acid resisting substance, generally aluminum, and is provided with a groove 4 into which a glass rod 5 fits. This rod is bent, as at 6, to form a channel-like guide member through which the extruded filaments pass. In order to secure the glass rod to its support, a piece of rubber tubing 7 is used. As shown in the drawing this tubing covers the greater portion of the standard or support 3 and thus protects the same, both from the corrosive action of the acids used in the precipitating bath and from the possibility of collecting injurious crystals, since the crystals do not tend to form on the rubber surface.

In actual operations, the filaments pass through 6 carrying with them adhering acid. This is scraped off by 6 and the resulting dampness and fumes tend to rise and affect the remainder of the guide 5. The presence of the rubber sheathing on the rod, however, prevents crystals from forming and thus does away with any danger of damaging the filaments by allowing crystals to fall onto the guide. In order to change the guide for cleaning purposes, etc., the operator needs only to slip the rubber cover 7 from the guide and support, and insert another guide. In this way, changes may be made without affecting the operation of the spinning machine.

Although we have described our invention as applied to one particular type of guide, it is apparent that it may be applied to other types of guides and standards. It is not intended to hereby limit our invention to the particular embodiment shown since the novel principles involved may be utilized in many other modifications.

Having now set forth our invention as required by the patent statutes, what we desire to claim is:

1. In a thread guide for use in the wet-spinning of filaments, threads, etc., in combination, an acid-resisting support, a groove formed in a portion of the face of said support, a thread guide rod positioned in said groove, said rod extending beyond said support and carrying a thread guiding portion thereon, and an elastic tube securing said thread guide to said support.

2. In combination, a support, a groove formed in one face of said support, a thread guide rod positioned in said groove, said rod extending beyond said support and carrying a thread guiding portion thereon, and a tube securing said rod to said support and adapted to prevent the formation of crystals on said rod and said support.

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