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C. R. NALLE

2,254,973

ADJUSTABLE CASTER CONSTRUCTION

Filed April 19, 1940

Fig. 1.

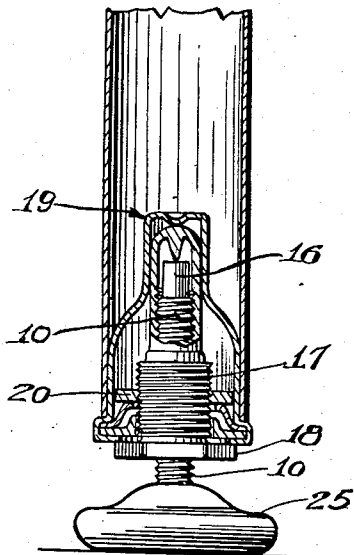
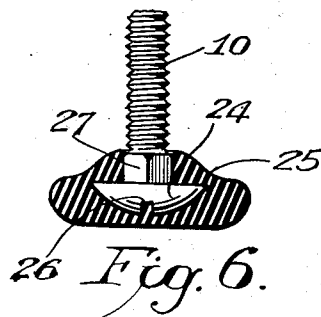
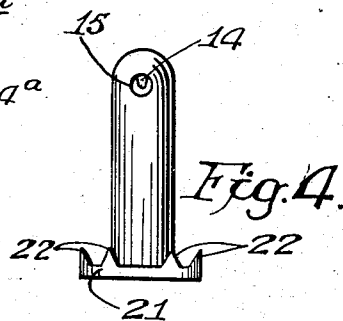
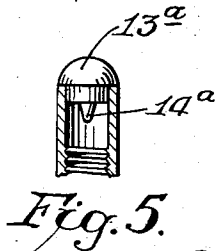
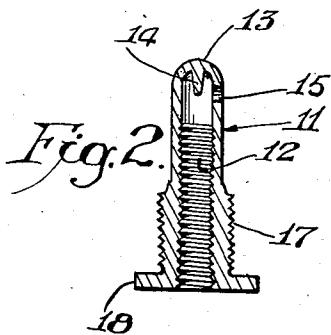
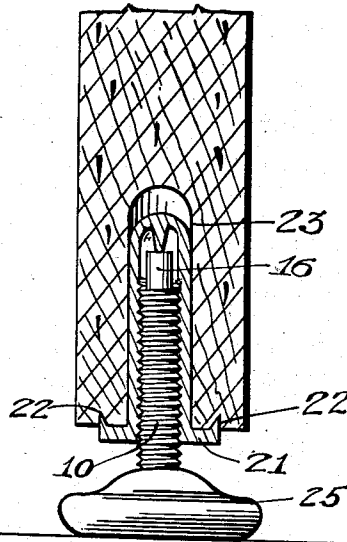


Fig. 3.



Inventor:
Charles R. Nalle
by his Attorneys
Howson & Howson

UNITED STATES PATENT OFFICE

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ADJUSTABLE CASTER CONSTRUCTION

Charles R. Nalle, Philadelphia, Pa.

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2 Claims. (Cl. 16-19)

This invention relates to furniture casters, glides, or the like; and, more particularly, to a novel form of adjustable caster. Heretofore, many attempts have been made to produce economically an adjustable furniture support, but all such attempts with which I am familiar leave much to be desired.

In a glider or caster of this type, it is necessary that a threaded socket be provided for direct attachment to the furniture, such socket being secured to the furniture either, as in the case of wooden furniture, by placing the socket in a bore in the leg of the furniture; or, in the case of metallic furniture, by threading the socket into the metal of the furniture leg, or otherwise securing the same thereto.

An important object of the present invention is the provision of an adjustable caster having a socket formed from a die casting having a closed upper end and interiorly threaded, thereby providing an extremely solid connection between the socket and stem. In accordance with my invention, this socket has its upper end closed so that there is no possibility of fine borings entering the socket and interfering with proper adjustment.

Another object of the invention is the provision in a construction of this character of an arrangement which insures against jamming of the threaded connection when the stem shall have been entered in the socket to the limit.

Another object of the invention is the provision of a structure of this character which, due to its formation, will continue in solid engagement and rigid relation to the legs of wooden furniture.

These and other objects I attain by the construction shown in the accompanying drawing wherein, for the purpose of illustration, I have shown a preferred embodiment of my invention and wherein:

Fig. 1 is a vertical sectional view showing a glide, constructed in accordance with my invention, applied to the leg of metallic furniture;

Fig. 2 is a vertical sectional view through the socket of Fig. 1;

Fig. 3 is a vertical sectional view illustrating a glide applied to the leg of wooden furniture;

Fig. 4 is a side elevation of the socket of Fig. 3;

Fig. 5 illustrates a slightly modified method of constructing the sockets; and

Fig. 6 is a sectional view illustrating an improved method of formation of the glide.

Referring now to the drawing, the numeral 10 generally designates a threaded shank of a caster

or glide; and 11, a socket for the reception of said shank. In accordance with my invention, this socket is die cast and then interiorly threaded as at 12. The socket has its upper end closed as at 13 and this closed upper end is provided with a depending centrally located conical projection 14 which is adapted to abut the upper end of the shank 10 when the same has been fully engaged in the socket and limit the movement thereof. Due to the fact that the area of the tip of this conical portion is extremely small, but little friction will be exerted on the upper end of the shank 10 so that the shank may be readily withdrawn.

It is, obviously, impractical to extend the threading of the socket entirely to the upper end thereof, due both to the construction of the tap and to the fact that the cuttings tend to collect in the bore in advance of the tap so that a complete threading, disregarding the limitations of the tap, could only be obtained by one or more withdrawals of the tap to permit these cuttings to escape. This I have overcome to a certain extent by forming in the upper end at the side wall of the socket a small opening 15 through which air may be forced during the tapping operation to cause these cuttings to be ejected. In order to provide for maximum engagement of the shank 10 in the socket and at the same time to enable the upper end of the stem to engage the projection, this shank is formed as a dog point screw, the unthreaded reduced upper end portion thereof being indicated at 16.

Where a socket of this type is to be used with metallic furniture, the lower portion thereof is somewhat increased in diameter at its lower end and exteriorly threaded as at 17, and the lower end thereof is formed with a polygonal flange 18 which may be engaged by a wrench and which will limit the movement of the shank into an opening of the furniture socket 19. The threaded portion 17 may be either threaded directly into the metal of the socket, or of the furniture itself, or a nut 20 may be utilized for clamping the socket in position, or both may be employed.

For wooden furniture, a socket of the type shown in Figures 3 and 4 is employed, this socket having a smooth external wall of substantially uniform diameter and having at its lower end a flange 21 the upper surface of which is provided with well-spaced teeth 22. The bore 23 in the furniture leg is made of such diameter that the socket will fit snugly therein, and the socket is driven into the opening to an extent such that the teeth 22 embed themselves in the

lower end of the furniture leg and thus securely hold the socket against rotation. In this operation the opening 15 serves to permit escape of air trapped in the bore above the socket and thus facilitate its insertion. Due to its considerable length and to the fact that it is sufficiently solid that it may be very forcibly driven into the bore, the socket has an extremely firm engagement with the furniture leg. This engagement is enhanced and preserved by the use of the relatively large, well-spaced teeth on the flange of the socket, since these teeth not only prevent rotation of the socket but likewise, through their grip in the wood of the leg, prevent any side movement of the socket.

In Figure 5, I have shown a slightly modified construction in which the upper end of the socket is closed, not by an integrally cast head, but by an inserted plug 13a bearing the conical tip 14a.

In constructing a glide in accordance with my invention, I preferably provide the lower end of the screw with a rounded head 24, having found that where a head is to be embedded in Bakelite or some similar composition, indicated at 25, the rounding of the head serves to prevent cracking of the composition which occurs where flat heads are employed. The shank may be secured against rotation by providing this head with a screw slot 26, or with a squared neck portion 27, or both.

Since the construction illustrated is capable of some modification without departing from the spirit of my invention, I do not wish to be understood as limiting myself to the particular construction or applications of this construction herein disclosed, except as hereinafter claimed.

I claim:

1. In an adjustable furniture caster or glide, a threaded stem having a ground-engaging support at its lower end, a tubular socket member for adjustably receiving said stem and adapted for in-

sertion in a bore in the leg of an article of furniture, said socket member being interiorly threaded over a portion of its length for engagement with the stem and having its upper end closed, and a downwardly tapered projection extending from the upper end closure of said socket member within the extreme upper part of said member, the lower end of said tapered projection being of extremely small area and being engageable by the upper end of said stem to limit the upward adjustment of the stem relative to the socket member, there being possible only negligible frictional engagement between said projection and the upper end of the stem owing to the extremely small area of the lower end of said projection which can engage the upper end surface of said stem, whereby binding engagement between the threaded portions of the stem and socket member is effectively prevented.

2. In an adjustable furniture caster or glide, a threaded stem having a ground-engaging support at its lower end, a tubular socket member for adjustably receiving said stem and adapted for insertion in a bore in the leg of an article of furniture, said socket member being interiorly threaded over a portion of its length for engagement with the stem and having its upper end closed, and means for limiting the upward adjustment of said stem within said socket member and for effectively preventing binding between said elements, said means comprising a projection on the upper end of one of said elements having an end of extremely small area arranged for engagement by the upper end of the other element, whereby the possible frictional engagement between said elements is reduced to a minimum, and binding engagement between the threaded portions of said elements is effectively prevented.

CHARLES R. NALLE.