

(No Model.)

D. C. OTIS.
FURNITURE CASTER.

No. 350,636.

Patented Oct. 12, 1886.

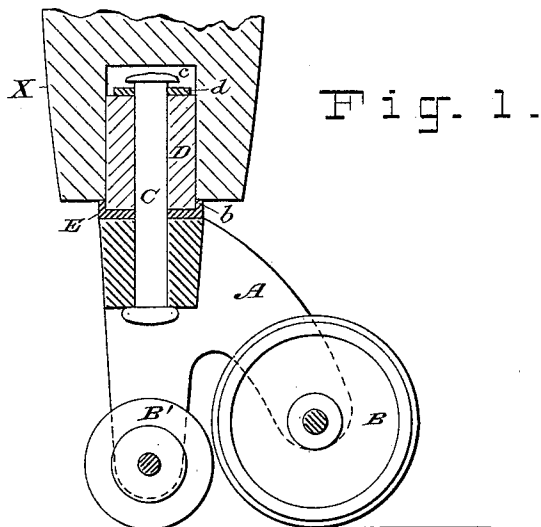


Fig. 1.

Fig. 3.

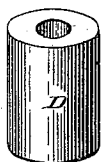


Fig. 2.

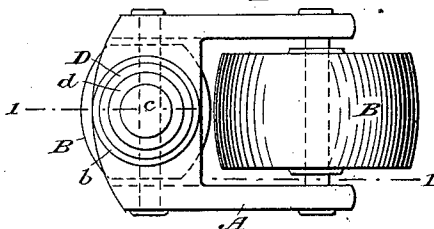


Fig. 4.

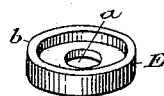
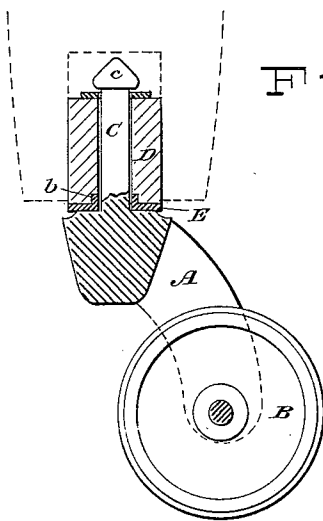


Fig. 5.



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UNITED STATES PATENT OFFICE.

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FURNITURE-CASTER.

SPECIFICATION forming part of Letters Patent No. 350,636, dated October 12, 1886.

Application filed January 9, 1886. Serial No. 183,071. (No model.)

To all whom it may concern:

Be it known that I, DANIEL C. OTIS, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain Improvements in Furniture Casters, of which the following is a specification.

My invention relates most particularly to furniture-casters which have spindles that project into the wood and are capable of rotation therein; and the main or principal object of my invention is to provide a convenient means of securing the metal spindle of the caster in the wood, so that the caster cannot drop off from the furniture or be readily detached, and yet leaving the spindle free to rotate in the hole or socket in the furniture, as it must where the spindle is attached rigidly to the caster-frame.

To this end my invention consists, essentially, in providing the metal spindle with a head or linchpin on its end and mounting it rotatively in a cylindrically or slightly conical hub made from hard wood or other similar non-metallic material. This hub may be supplied to the ordinary caster, and when so provided the caster forms an improved article of manufacture. To apply such a caster it is only necessary to bore a hole in the wood to fit the hub on the spindle and drive the hub in tightly, gluing it in, if necessary. The hub then forms, practically, a part of the wood of the furniture, and the spindle rotates in the hub, but cannot escape because of the head or linchpin.

Another feature of my invention consists in a metallic end cap for the hub, which is interposed between the hub and the caster-frame and takes the lateral strain.

All of the above will be hereinafter fully described, and the novel features carefully defined in the claims.

In the drawings which serve to illustrate my invention, Figure 1 is a sectional elevation of my improved caster as applied, the plane of the section being indicated by line 1 1 in Fig. 2. Fig. 2 is a plan of the caster detached. Fig. 3 is a perspective view of the spindle-hub detached. Fig. 4 is a similar view of the metallic end cap. Fig. 5 is a view similar to Fig. 1, illustrating a modification which will be hereinafter described.

In Figs. 1 and 2 I have shown the caster provided with two wheels arranged tandem; but I do not claim this feature of construction, nor do I limit myself to it, as it is not essential to the perfect operation of my improved caster.

A represents the metal frame of a well-known construction of caster; B, the main wheel or roller mounted rotatively therein. B' is the supplementary or "bicycle" wheel, also mounted in frame A, and C is the vertical spindle or axis, of metal, and, as herein shown, mounted in the frame A. These features are common to this style of caster. On the spindle C, and rotatively mounted thereon, is a hub, D, made of hard wood, and usually of cylindrical form.

Referring particularly to Figs. 1 and 4, E is a cap-washer or end cap, of metal, and usually stamped from sheet metal, having a hole, *a*, for the passage of the spindle, and a turned-up marginal flange, *b*, which is made to take over the sides of the hub D when the washer is applied to the hub, as seen in Fig. 1. This washer serves to form a metallic bearing for the crown of the caster frame, being interposed between the latter and the hub D, and by fitting both the spindle and the end of the hub closely it tends to relieve the wood of the hub from the lateral pressure of the spindle. If the hub D be made of very hard and tough wood, this washer may be dispensed with; but I prefer to employ it in all cases. After the hub has been placed on the spindle, a head, *c*, is formed on the spindle, and this may be conveniently effected by first placing a washer, *d*, on the end of the hub, and then riveting the end of the spindle down, as shown in Fig. 1. The caster constructed as described above is then ready for sale and use.

I give the hub D, for convenience, a diameter corresponding to that of some regular size of boring or auger bit, taking care that the hub shall fit tightly in the hole bored by the bit.

In fitting my improved caster to furniture—as to the leg of a chair, for example—a hole of the proper diameter and depth is bored in the wood of the leg to form a socket, and the hub driven in. Glue may be applied to the hub before it is driven, if it be desired to fit it permanently.

In Fig. 1, X represents the leg or other part having the socket to receive the caster. Wood being in contact with wood, a caster mounted

in this way will stand any ordinary strain or wear without becoming loose or falling out. It will be seen that the hub D becomes practically a part of the leg X, and the spindle, although it is rotatively mounted in the hub, or loose therein, cannot come out by reason of the head and washer on its inner end. I may say that the addition of the wooden hub does not appreciably increase the cost of the
10 caster.

In Fig. 5 I have shown a modification in which the spindle is formed integrally with the frame of the caster. In this case the head c is primarily formed on the spindle. The washer E, in this construction, has the flange b turned up around the spindle. The wheel B' is omitted in this view.

In case the spindle is fixed in or is formed with the caster-frame, and has the head c formed primarily thereon, I may split the hub so that it can be applied. After the halves are applied to the spindle, they may be glued together, so as to form a whole. This after-
20 gluing, however, is not absolutely essential.

In lieu of a head, c, on the end of the spindle to prevent it from being drawn out through the hub, a cross-pin, like a linchpin, may be employed. The heading of the spindle is, however, the more economical mode of forming a stop to prevent the escape of the spindle.
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It will be seen that by mounting the supplementary wheel B' in the prolongation of the spindle-axis it will take a portion of the weight off from the main wheel B, and will then relieve the caster frame and spindle from the oblique strain that all ordinary "pantograph" casters are subject to. The lateral pressure of the spindle in the hub will also be practically removed.
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My invention avoids the use of screws entirely. 40

I am aware that it is not new to recess the opposite sides of a non-rotative caster-spindle, to secure strips of wood in these recesses, and then to glue the metal spindle so provided into the socket in the furniture. This construction does not provide for the rotation of the spindle, and is necessarily limited to that class of casters where the spindle is rotatively mounted in the caster-frame. According to my invention it is immaterial whether the spindle is fixed in the caster-frame or mounted rotatively therein. The spindle may be cast integrally with the caster-frame, as shown in Fig. 5. 45 50 55

Having thus described my invention, I claim—

1. As an improved article of manufacture, a caster having rotatively mounted on its metal spindle a hub made of wood or other like firm material, as specified, the said spindle being provided with a stop at its end to prevent it from escaping from the hub, as set forth. 60

2. As an improved article of manufacture, a caster having on its metal spindle a rotatively-mounted hub made of wood or other similar non-metallic substance, which hub is retained in place on the spindle, as described, and is provided with a metallic flanged washer, E, on its end adjacent to the caster-frame, substantially as described. 65 70

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

DANIEL C. OTIS.

Witnesses:

HENRY CONNETT,
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