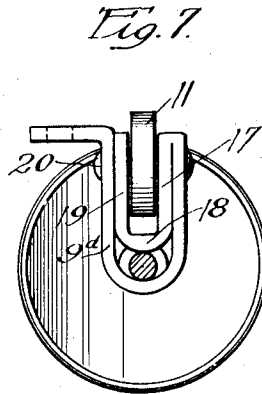
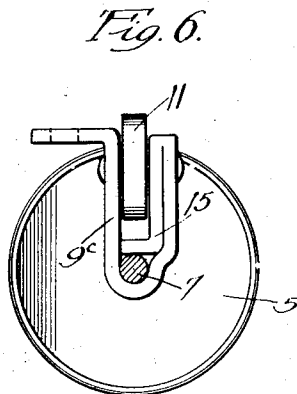
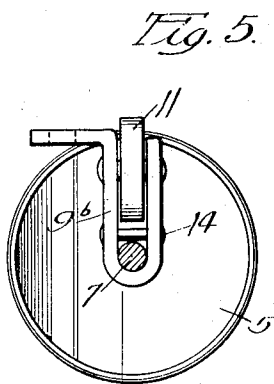
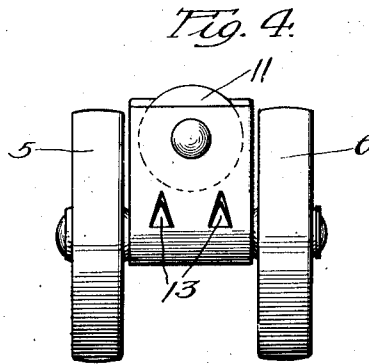
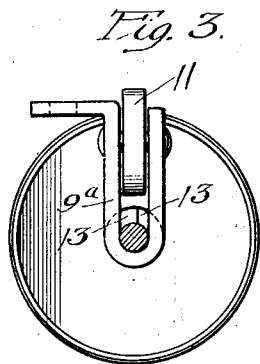
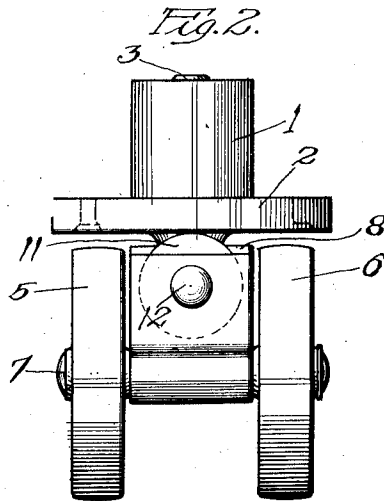
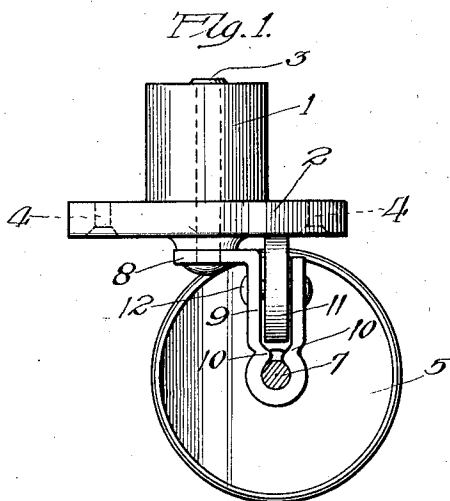


E. PAYSON.
DOUBLE WHEEL ANTIFRICTION CASTER.
APPLICATION FILED AUG. 13, 1919.

1,338,325.

Patented Apr. 27, 1920.



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UNITED STATES PATENT OFFICE.

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DOUBLE-WHEEL ANTIFRICTION-CASTER.

1,338,325.

Specification of Letters Patent.

Patented Apr. 27, 1920.

Application filed August 13, 1919. Serial No. 317,172.

To all whom it may concern:

Be it known that I, EDWARD PAYSON, a citizen of the United States, residing at Traverse City, county of Grand Traverse, State of Michigan, have invented a certain new and useful Improvement in Double-Wheel Antifriction-Casters, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to that type of caster provided with two floor wheels and also with a small roller at the top of the housing or frame for the floor wheels, through which roller the weight is transmitted to the wheels, and it has for its object to produce a simple and novel construction and arrangement which will permit the roller to be brought close to the axis of the central vertical stem of the caster; thereby producing a compact arrangement which permits casters of this type to be used in places where there has heretofore not been sufficient space to accommodate them, and, what is even more important, reducing to a minimum the leverage which results from the fact that the anti-friction wheel or roller must be placed at one side of the axis of the stem. The greater the leverage of the load, the heavier and stronger the frame of the caster must be, and therefore, by reducing the leverage to a minimum, a light, simple frame may be used.

The various features of novelty whereby my invention is characterized will hereinafter be pointed out with particularity in the claims; but, for a full understanding of my invention and of its object and advantages, reference may be had to the following detailed description taken in connection with the accompanying drawing, wherein:

Figure 1 is a side elevation of a caster arranged in accordance with a preferred form of my invention;

Fig. 2 is a front view of the caster;

Fig. 3 is a detail, in side elevation, illustrating a modified form of housing and frame;

Fig. 4 is a view looking toward the left from a point to the right of Fig. 3; and

Figs. 5, 6 and 7 are all views similar to

Fig. 3, showing three additional modifications.

Referring to Figs. 1 and 2 of the drawing, 1 and 2 represent respectively the stem and stem plate of a caster, while 3 is a rivet passing through the center of the stem to attach the wheeled frame to the plate. These parts may be of any usual or suitable construction and the plate may be provided with the usual counter-sunk holes, 4, for receiving screws by means of which the caster is attached to the furniture or other thing which is to be supported thereby. Beneath the plate, 2, are floor wheels, 5 and 6, mounted on a suitable axle, 7, in the usual way.

The present invention has to do with the means for supporting the members 1 and 2 from the floor wheels so as to transmit the load thereto. To this end I employ a strong strip of metal, preferably steel, of a width slightly less than the distance between the two floor wheels, through one end of which, as indicated at 8, the rivet 3 passes. The strip is then bent downwardly and again upwardly to form a U-shaped structure, 9, in the closed end of which the axle 7 lies. The axle is held in the closed end of the member 9 in any suitable way, conveniently by indenting one or both arms transversely, as indicated at 10, just above the axle. Lying in the upper end of the member 9, that is between the arms thereof, is an anti-friction roller, 11, which is held in place by a suitable rivet, 12, passing through the same and through the two arms. It will be seen that the rivet serves not only as a mounting for the roller but also to tie the two arms of the supporting frame or housing together and prevent them from spreading apart under a load imposed upon the caster.

It will be seen that by constructing the frame or housing in the manner illustrated, it is possible to bring the roller, 11, close to the vertical axis of the stem of the caster, thus reducing the leverage of the load to a minimum, and it is also possible to bring the axis of the floor wheels themselves close to the aforesaid axis, with the result that the caster as a whole is extremely compact and the wheels can turn within a space much smaller than has heretofore been deemed possible. It will be seen that the track of the roller on the under side of the plate 2 lies within the circle of the holes,

4, in the plate, so that the roller is permitted to run on a solid smooth track of the full width of the roller.

The means for holding the axle in the closed end of the U-shaped frame member may be varied. Thus in Figs. 3 and 4 I have illustrated a frame member, 9^a, in which ears, 13, which may be V-shaped or of any other shape are punched out of the metal of the arms of the frame and bent inwardly over the axle.

In Fig. 5 the frame, 9^b, has one or more transverse rivets, 14, passing through the arms thereof just above the axle for the purpose of holding the axle in place.

In Fig. 6 the upwardly-projecting arm of the U-shaped frame member 9^c is made long enough so that its free end may be bent downwardly as indicated at 15, to a point just above the axle, and then be bent laterally, as indicated at 16, to form a shoulder overlying the axle.

In Fig. 7 I have carried the idea contained in Fig. 6 still further, the upwardly-extending arm of the U-shaped frame member, 9^d, having a part which is first bent downwardly as indicated at 17, then laterally as indicated at 18, and then upwardly, as indicated at 19; the part, 19, extending high enough so that the supporting rivet, 20, for the roller passes through the same.

It will be seen that in each of the modifications that I have illustrated the frame or housing is made in a simple compact form possessing lightness and at the same time great strength so as to permit the casters, though in compact form, to be employed for supporting pianos, trucks and other heavy articles many of which require double-wheel casters but which often do not provide the space necessary to receive double-wheel casters having cumbersome

cast metal frames and therefore requiring a comparatively large turning radius.

I claim:

1. A caster comprising a plate, a frame lying beneath the plate and made of a flat strip or bar bent into an elongated U having a short outwardly-extending lip at the free end of one of its arms, a vertical pivot connecting said lip to said plate so as to support the frame for rotation about a vertical axis lying close to one side of the frame, a wheeled axle seated in the lower end of said frame, a roller lying between the upper ends of the arms of the frame and engaging with the under side of said plate, a combined supporting shaft for the roller and tie between the upper ends of said arms passing through said arms and through said roller, and means associated with said arms for engaging with the top of said axle and holding it in the seat.

2. A caster comprising a plate, a frame lying beneath the plate and made of a flat strip or bar bent into an elongated U having a short outwardly-extending lip at the free end of one of its arms, a vertical pivot connecting said lip to said plate so as to support the frame for rotation about a vertical axis lying close to one side of the frame, a wheeled axle seated in the lower end of said frame, a roller lying between the upper ends of the arms of the frame and engaging with the under side of said plate, and a combined supporting shaft for the roller and tie between the upper ends of said arms passing through said arms and through said roller, portions of the arms being bent inwardly so as to lie above and in contact with the axle and hold it in its seat.

In testimony whereof, I sign this specification.

EDWARD PAYSON.