

No. 659,857.

Patented Oct. 16, 1900.

D. NICKEL & E. W. WAINWRIGHT.  
CASTER.

(Application filed May 11, 1900.)

(No Model.)

Fig. 1.

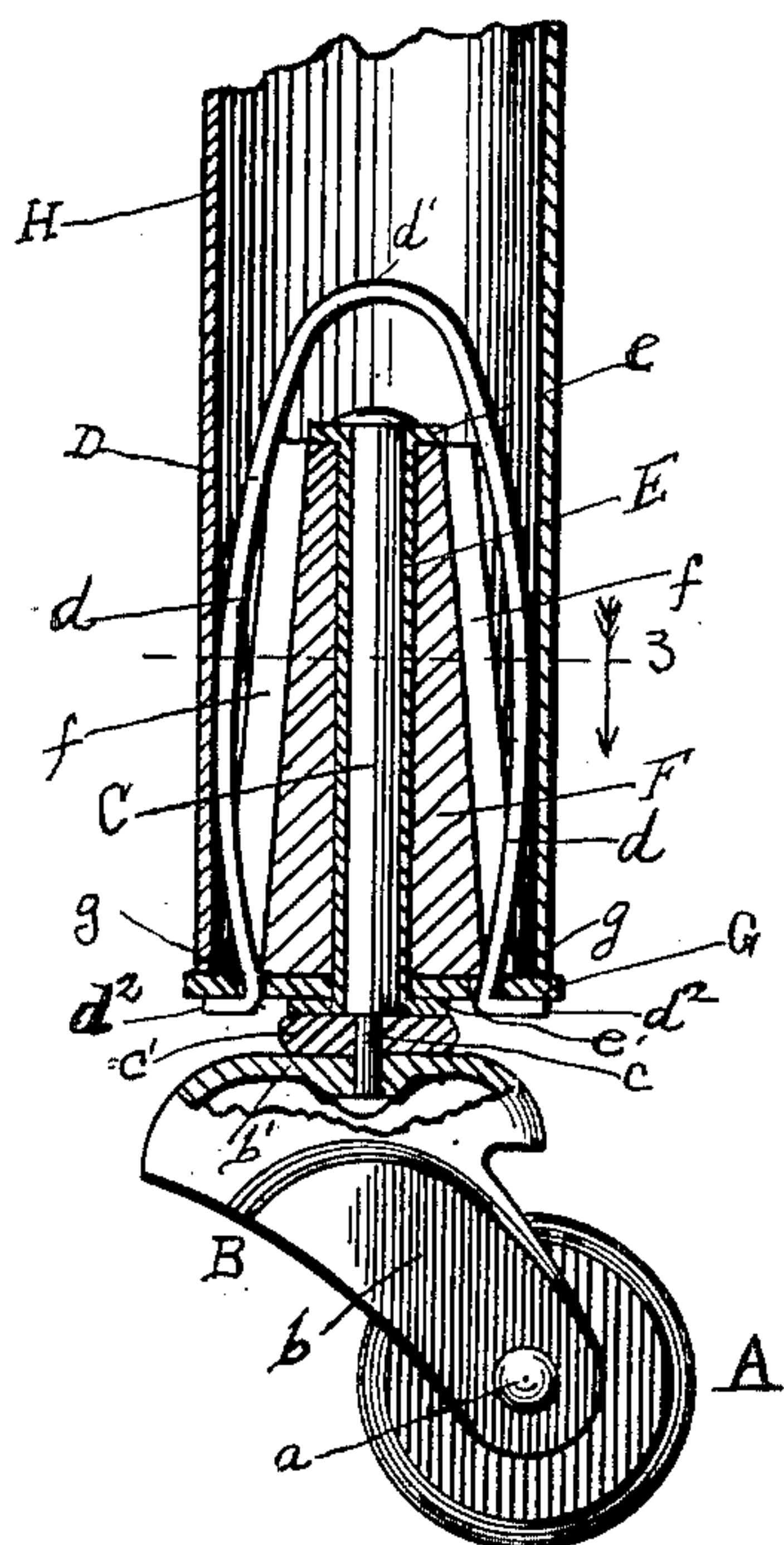


Fig. 2.

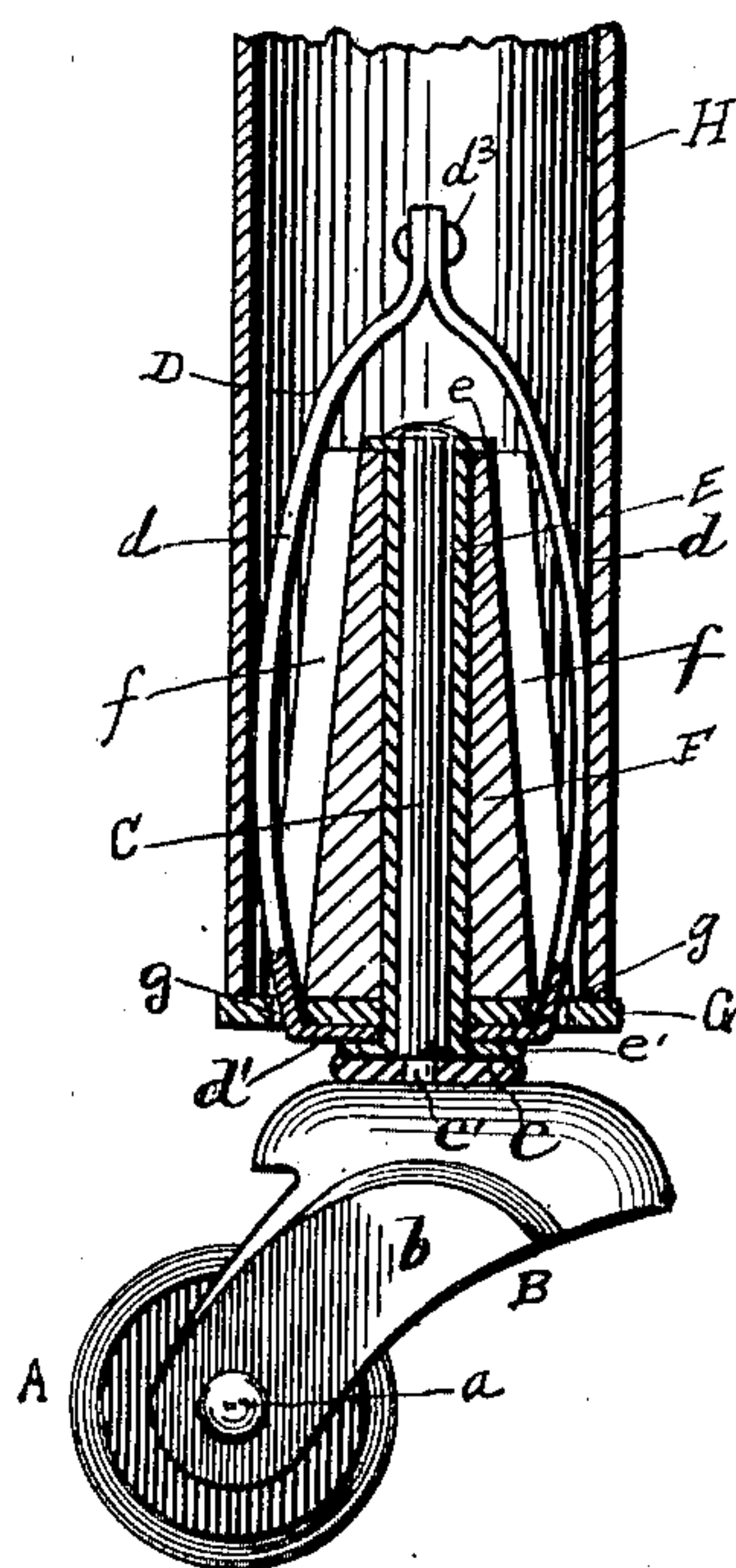
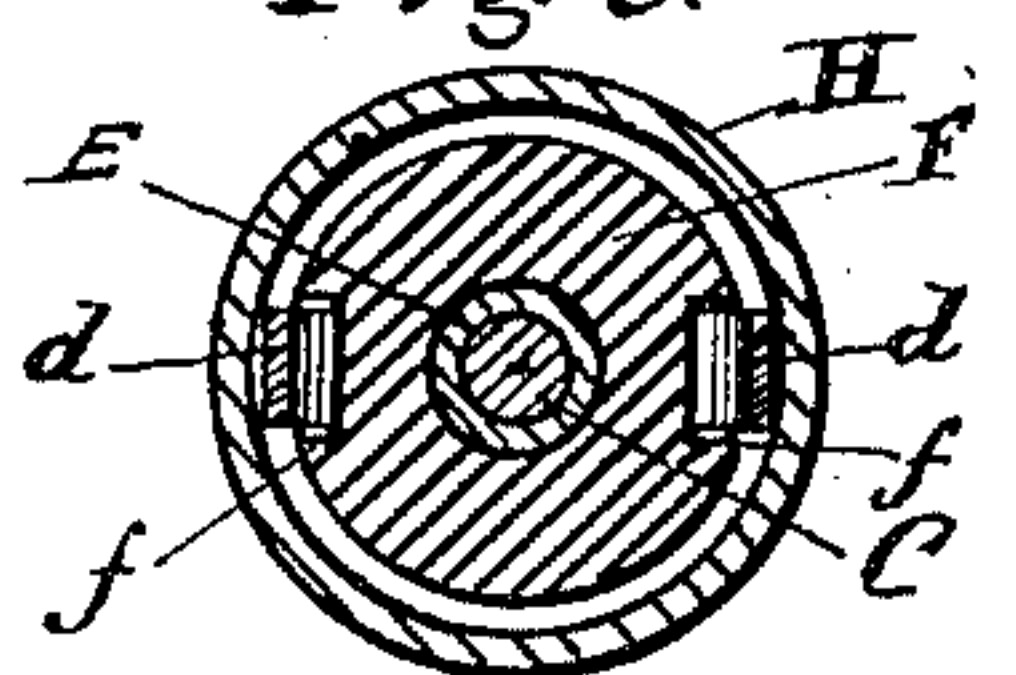


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## CASTER.

SPECIFICATION forming part of Letters Patent No. 659,857, dated October 16, 1900.

Application filed May 11, 1900. Serial No. 16,269. (No model.)

*To all whom it may concern:*

Be it known that we, DAVID NICKEL and EDWARD W. WAINWRIGHT, citizens of the United States, residing at Morris, in the county of Grundy and State of Illinois, have invented certain new and useful Improvements in Casters, of which the following is a specification.

It is a common and general practice to apply casters to different articles of furniture and other structures, and in doing this it is desirable to have such an attachment as will permit of the easy and ready removal of the casters, and various attempts have been made to attain this end.

The object of our invention is to construct a caster which can be easily attached to or detached from the article with which it is used, which will be simple in construction and well adapted for the purposes for which it is intended, and which when applied will be held in place without the employment of nails or screws and so as to permit of its ready, quick, and easy detachment.

The invention consists in the features and combinations hereinafter described and claimed.

In the drawings, Figure 1 is a sectional elevation showing a construction in which the retaining or binding spring has its free ends at the bottom and engaged with the cap of the tube for the body to extend into the tube and around a guide or support; Fig. 2, a similar view to Fig. 1, showing the closed end or center of the retaining or binding spring beneath the bottom plate of the tube and the free ends projected into the tube for the body to pass each side of the guide or support; and Fig. 3, a cross-section on line 3 of Fig. 1.

In carrying out our invention we employ a caster-wheel A, made of wood, iron, or other material, as usual, and mount it in the arms or forks *b* of a bracket or carrier B by a pin or trunnion *a*, as usual. The bracket or carrier is journaled on a pin or pintle C, which, as shown, is secured thereto by means of a neck or stud *c*, passed through a ring or guard *c'* and the plate *b'* of the bracket or carrier, and then riveted or headed down, so as to firmly and rigidly attach the pin or pintle to the bracket or carrier for the free turning of

the bracket or carrier on the pin or pintle as a journal in use.

The retaining or binding spring D is of essentially a U shape, so as to provide spring-arms *d* on each side, having an outward bow or curve and a center or cross piece *d'*, continuous with the side arms or springs, thus enabling the spring as a whole to be constructed from a single piece of flat spring metal or other suitable material having a closed end and free ends.

The pin or pintle C is surrounded by a sleeve or bushing E, and this bushing extends through a guide or support F, made of wood or other suitable material, which rests on the cap or bottom plate G of the socket-tube H, in which the caster is to be inserted and held in place. The sleeve or bushing E is turned at its upper end to form a head or flange *e* to abut against the upper end of the guide or support, and, as shown in Fig. 1, the lower end of the sleeve or bushing is turned to form a head or flange *e'* to abut against the cap or bottom plate G, so that when the bushing is in place the guide or support F will be retained in position around the bushing or sleeve and on the cap or bottom plate. As shown in Fig. 2, the lower end of the sleeve or bushing is turned to have its head or flange *e'* engage the center or closed end of the retaining or binding spring. The upper end of the pin or pintle in both forms of construction is headed, so as to engage the end of the sleeve or bushing around the head or flange *e*, attaching the caster bracket or carrier to the bushing, with the lower end of the bushing resting on the interposed ring or guard. The opposite sides of the guide or support F are provided with grooves *f*, corresponding in width to the width of the spring in the construction shown, so as to permit the body of the spring to enter and lie partially within the grooves, and the cap or bottom plate G, in line with the grooves of the guide or support, is provided with slots or openings *g* for the passage of the side arms of the spring.

The construction shown in Fig. 1 has the free ends of the side arms or springs *d* passed through the slots or holes *g* in the cap or base plate G and then turned, so as to have its



ends  $d^2$  catch beneath the end face of the plate, and the body of the retaining or binding spring or the side arms constituting such body extend up alongside of the guide or support with the part adjacent to the free ends lying within the longitudinal grooves  $f$ , as shown in Fig. 1, which grooves permit of the requisite movement of the spring in contracting and expanding for inserting the caster and holding it when inserted by means of the spring in the socket-tube H, with the closed or cross end  $d'$  of the spring within the socket-tube and above the upper end of the guide or support.

The retaining or binding spring can be reversed as to the location of its ends from the arrangement shown in Fig. 1, and such reversal is shown in Fig. 2, in which the center guide or spool of Fig. 1 is used in the same manner and is of a similar construction to that of Fig. 1. The closed end or cross-center  $d'$  of the retaining or binding spring is straight instead of curved, as in Fig. 1, and this end of the spring has the bushing or sleeve E passed through it, so as to be located between the end  $e'$  of the bushing or sleeve and the cap or bottom plate G for the side arms or springs  $d$  to pass up through the slots or openings  $g$  to bear against the wall of the tube-socket and impinge against such wall with sufficient force to hold the caster in place. As shown, the free ends are brought together and secured by means of a rivet  $d^3$ , so that the spring is free to move endwise or longitudinally at its free end to fulfil the requirements of contraction and expansion in inserting and withdrawing the caster. With either form of construction the retaining or binding spring operates in the same manner.

The retaining or binding spring is to have its side arms or springs of a bow or curve to throw in or out, and thereby permit of the necessary contraction and expansion for the insertion and retention of the caster in the socket tube or hole for the caster shank or guide and permit the withdrawal of the caster therefrom. The outward force exerted by the spring as a whole should be sufficient

to provide a bearing or impingement against the wall of the socket tube or hole that will prevent the natural dropping out of the caster and so as to require a side pull in order to detach the caster. The spring, by reason of its form and action, furnishes the required retaining quality to hold the caster in place and at the same time permit of its ready withdrawal and insertion without any trouble or inconvenience, and the action of the spring in its longitudinal or endwise movements is guided and facilitated by means of the longitudinal grooves in the center guide or spool, on opposite sides of which the arms of the spring are located and operate.

We claim—

1. In a caster, the combination of a caster-wheel, a bracket or support for the wheel, a pin or pintle carrying the bracket or support, a sleeve surrounding the pin or pintle, a guide or support encircling the sleeve and having longitudinal grooves on its opposite sides, a base-plate and a retaining or binding spring having its sides contractible and expandible longitudinally for entering the caster and retaining it in place, and extending longitudinally of the guide or support and means for securing the spring in position, substantially as described.

2. In a caster, the combination of a caster-wheel, a bracket or support for the wheel, a pin or pintle carrying the bracket or support, a sleeve or bushing surrounding the pin or pintle, a guide or support encircling the sleeve or bushing and provided on its opposite sides with grooves longitudinally thereof, a cap or base plate on which the guide or support rests and having slots or openings therein, and a retaining or binding spring having side arms passing through the slots or openings of the cap or base plate and entered into the longitudinal grooves of the guide or support, substantially as described.

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