No. 624,246. Patented May 2, 1899.

T. C. PROUTY.

DOOR HANGER.

(Application filed July 10, 1896.)

(No Model.)

Fig. I.

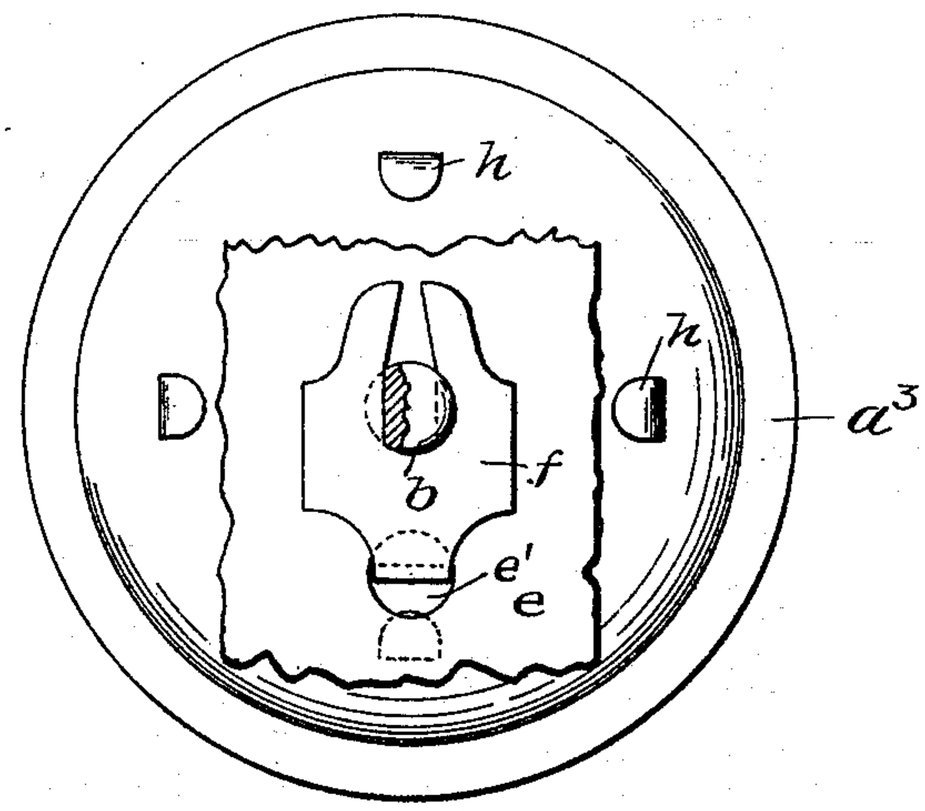


Fig. II.

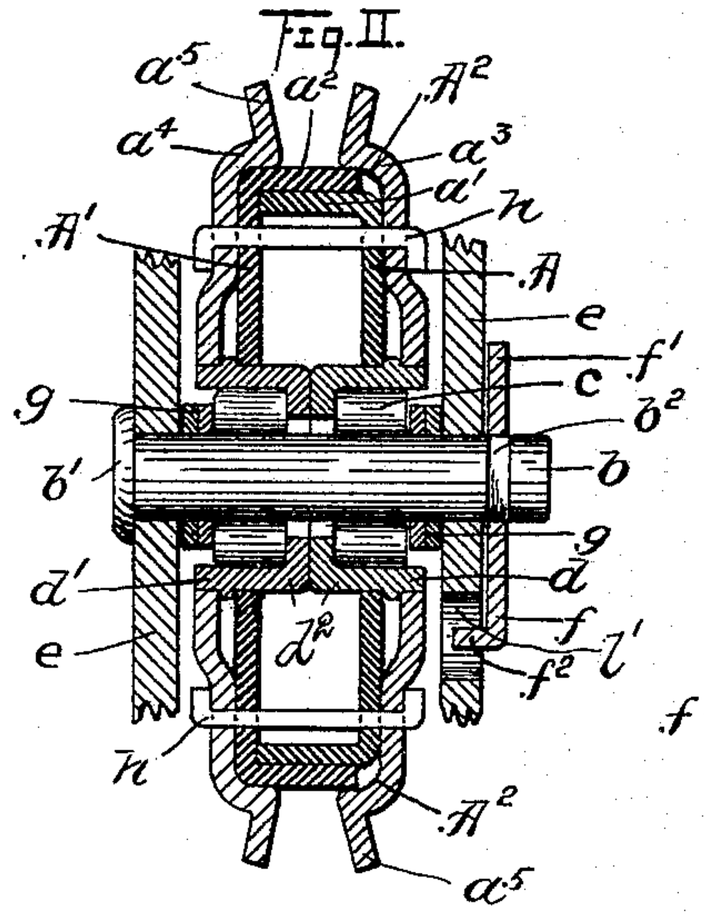


Fig. III.

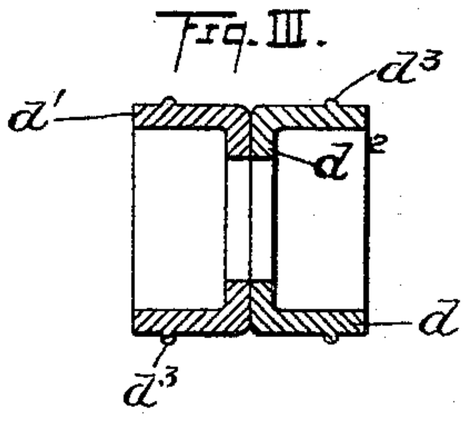
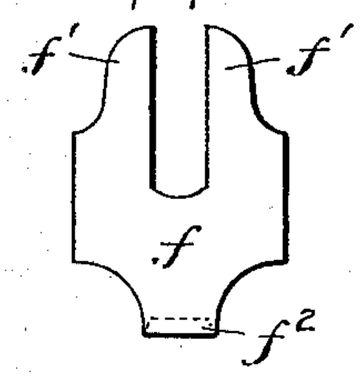


Fig. IV.



Witnesses
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UNITED STATES PATENT OFFICE.

THEODORE C. PROUTY, OF MIDLAND, MICHIGAN.

DOOR-HANGER.

SPECIFICATION forming part of Letters Patent No. 624,246, dated May 2, 1899.

Application filed July 10, 1896. Serial No. 598,672. (No model.)

To all whom it may concern:

Be it known that I, THEODORE C. PROUTY, a citizen of the United States, and a resident of Midland, county of Midland, and State of Michigan, have invented certain new and useful Improvements in Door-Hangers, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

The annexed drawings and the following description set forth in detail one mechanical form embodying the invention, such detail construction being but one of various mechanical forms in which the principle of the invention may be used.

In the annexed drawings, Figure I represents a front elevation of the antifriction-wheel in my improved hanger, showing also a portion of a banger-frame and the end of the shaft, partly in section and partly in elevation, illustrating the locking device which renders the shaft non-rotatable. Fig. II represents a vertical cross-sectional view of my improved wheel, showing also the shaft and rollers in elevation and a sectional view of a portion of the loop and the shaft-locking device. Fig. III represents a cross-sectional view of the roller-raceway. Fig. IV represents an elevation of the locking-claw.

The wheel consists, primarily, of a body portion composed of elements arranged transversely of the axis of the wheel, an antifriction-bearing-cup portion, and a shaft and suitable antifriction balls or rollers. The said body portion consists of the two shells A and A′ and the antifriction-bearing-cup portion, consisting of the two ball or rolling bearing cups d and d'. Each of said shells is drawn at right angles into tread-forming flanges a' and a^2, respectively, the outer diameter of shell A being equal to the inner diameter of shell A′ and each shell being of substantially the same depth, the altitude of the shell A being such that it will project from the shell A′, and a space A^2 is thus left between the end of the flange a^2 and the incasing disk a^3. The shells are incased by two outer disks a^3 and a^4, respectively, each of which is drawn at right angles, so as to fit the outside of the shell A′, and provided with flanges a^5, forming tread-guards. The flange a' serves as a tread-supporting base, and the flange a^2 forms the tread of the wheel.

The shells and disks are each formed with a central circular opening admitting the cups d and d', the disks a^3 and a^4 being centrally and outwardly depressed, so as to permit of the introduction of the circumferential ribs or flanges d^3, formed upon the outside of the cups d and d', whereby said ribs interiorly engage contiguous pairs of disks and shells. The cups are further formed with end flanges d^2, which are placed contiguous to each other in the wheel. Binding-pins h pass through the shells and disks and securely tie the wheel structure together. Rollers c bear upon a shaft b and in the cups d and d', their inner ends abutting the inner flanges d^2.

The above construction is broadly claimed in my application Serial No. 676,044.

The shaft b is provided at one end with a head b' and at the other end is formed with two parallel flat depressions b^2, located in that part of the shaft which projects beyond the hanger-frame e.

A claw f, formed of thin sheet metal and provided with the jaws f', whose inner surfaces are parallel to each other and of a distance from each other substantially equal to the distance between the depressions b^2, engages the shaft at said depressions. The said claw is further formed with a projecting tongue f^2, which engages a hole or depression e' in the hanger-frame e. After the claw has been inserted in the depressions b' the jaws are bent toward each other, and the claw is thus permanently fastened upon the shaft, the tongue f^2 having meanwhile been sprung into the hole e', preventing thereby the rotation of the shaft relatively to the hanger-frame. Washers g, of lesser diameter than the inside diameter of the cups d and d', are placed on the shaft on each side of the wheel, between the end of the rollers and the inside of the hanger-frame. The said washers, in combination with other parts in a similarly-constructed wheel, are claimed in my above-mentioned application, Serial No. 676,044.

The above-described door-hanger is especially adapted for use on heavy doors, in which

continued and constant heavy pressure tends to ultimately spread the parts and render the structure or parts thereof useless.

By providing the space A^2 sufficient room is left for the tread-flange a^2 to spread laterally without coming into contact and displacing the disk a, thereby preserving the original width of tread. The ball-cups d and d' not being rigidly connected with the wheel structure are also left undisturbed by changes or alterations in the other parts of the structure and retain their original dimensions indefinitely.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means covered by any one of the following claims be employed.

I therefore particularly point and distinctly claim as my invention—

1. In a wheel, the combination with disks and shells arranged transversely of the axis of the wheel and adapted to form the body portion thereof, of two bearing-cups provided with circumferential ribs adapted to project between and engage contiguous pairs of disks and shells, whereby lateral movement of the bearing-cup portion is prevented, substantially as set forth.

2. In a wheel, the combination with disks and shells arranged transversely of the axis of the wheel and adapted to form the body portion thereof, said disks and shells formed with central openings, of two cups located in said openings and formed with projecting means located intermediately of the ends of said cups, said projecting means adapted to interiorly engage contiguous pairs of disks or shells, whereby lateral movement of the bearing-cup portion of the wheel is prevented, substantially as set forth.

3. In a door-hanger, a wheel consisting of the combination of disks and shells arranged transversely of the axis of the wheel and formed with central openings, two bearing-cups located in said openings, formed with circumferential projections adapted to interiorly engage contiguous disks and shells, said bearing-cups formed with contiguous annular flanges, a suitable shaft and balls or rollers within said cups and adapted to bear upon said shaft, substantially as set forth.

4. In a door-hanger, the combination of disks and shells arranged transversely of the wheel-axis, one of said shells provided with a flange adapted to form the tread of the wheel, suitable balls or rollers, suitable ball or roller bearing cups and a suitable shaft, the end of said tread-flange being so located as to form a space between the same and the adjacent disk whereby said flange is permitted to expand, substantially as set forth.

5. In a door-hanger, a wheel comprising in its construction two oppositely-flanged shells, one of said shells being adapted to form the tread of the wheel and the other adapted to fit into and form a supporting-base for the tread-forming flange of the other shell; two incasing disks adapted to fit over said tread and flanged to form tread-guards; the tread-supporting shell being of such altitude that it will project from the tread-shell whereby a space is left between the edge of the tread its contiguous incasing disk, and said tread-flange may be expanded without coming into lateral contact with said incasing shell, substantially as set forth.

6. A wheel consisting of the combination of a tread-supporting shell, a shell adapted to form the tread of the wheel, two disks adapted to incase said supporting and tread shells, a bearing-raceway, and means adapted to bind said shells and raceway together, substantially as set forth.

7. In a door-hanger, the combination of a hanger-frame, a wheel and its shaft mounted therein, said shaft being formed near one of its extremities with two parallel depressions, and a claw formed with parallel jaws adapted to engage said depressions and provided with means adapted to engage a recess in said hanger-frame whereby said shaft may be rendered non-rotatable, substantially as set forth.

8. In a door-hanger, the combination of a hanger-frame, a wheel and its shaft mounted therein, said shaft being formed, near one of its extremities, with two parallel depressions, and a claw formed with two parallel jaws adapted to engage said depressions and provided with a projecting lip adapted to engage a recess formed in said hanger-frame, substantially as set forth.

In testimony that I claim the foregoing to be my invention I have hereunto set my hand this 22d day of June, A. D. 1896.

THEODORE C. PROUTY.

Witnesses:
GEO. B. STANFORD,
W. C. MEALDY.