No. 870,565. PATENTED NOV. 12, 1907.

S. D. LATTY.

DOUBLE LOCK HUB.

APPLICATION FILED FEB. 5, 1906.

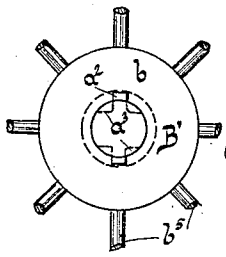


Fig. 2

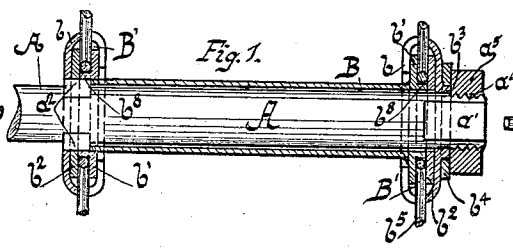


Fig. 1.

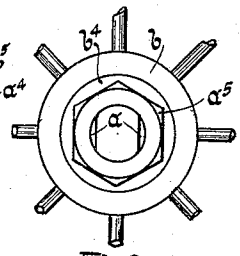


Fig. 3

Fig 6.



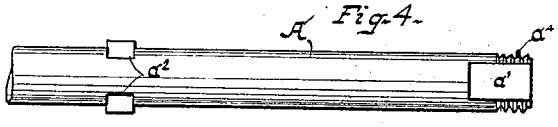
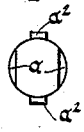


Fig. 4.

Fig. 7



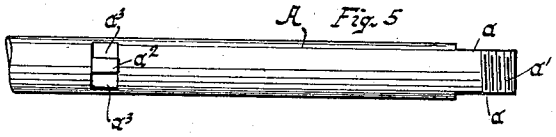
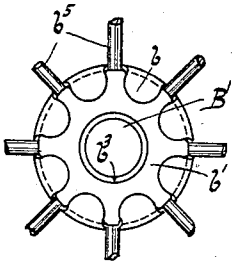


Fig. 5.

Fig. 9



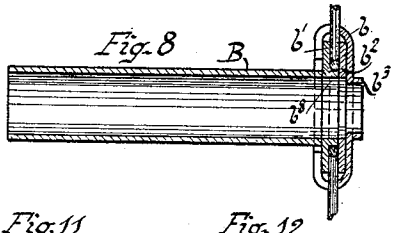


Fig. 8.

Fig. 10

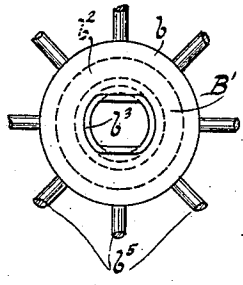


Fig. 13

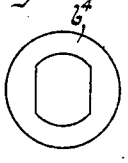


Fig. 14



Fig. 11

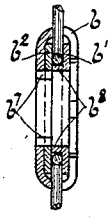
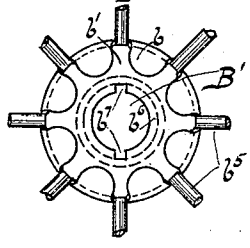


Fig. 12



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UNITED STATES PATENT OFFICE.

SAMUEL D. LATTY, OF CLEVELAND, OHIO.

DOUBLE-LOCK HUB.

No. 870,565. Specification of Letters Patent. Patented Nov. 12, 1907.

Application filed February 5, 1906. Serial No. 299,435.

To all whom it may concern:

Be it known that I, SAMUEL D. LATTY, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Double-Lock Hubs, 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.

My invention relates to axle hubs and particularly to a device of such a character in which the hub and axle are adapted to be non-rotatably secured together at both ends of the hub, whereby the strain is not confined to one end only of the latter, as is common in devices of this character with which I am at present acquainted, but is distributed equally over the whole hub.

Said invention consists of means hereinafter fully described and specifically set forth in the claims.

The annexed drawing and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawing, Figure 1 represents a vertical axial section of a double lock-hub mounted upon part of an axle, such hub and axle constituting my invention; Figs. 2 and 3 represent, respectively, elevations of the inner and outer ends of the same; Figs. 4 and 5 represent elevations of the improved axle constituting a feature of my invention, said elevations being shown at right angles to each other, respectively; Figs. 6 and 7 represent, respectively, inner and outer end elevations of said axle part; Fig. 8 represents a vertical axial section of the hub constituting a feature of my invention, with the inner flange thereof removed; Figs. 9 and 10 represent, respectively, inner and outer end elevations of the elements shown in Fig. 8; Figs. 11 and 12 represent, respectively, a vertical central section of the inner hub-flange and an inner end elevation of the same; and Figs. 13 and 14 represent, respectively, front and side elevations of a piece or washer adapted to be pressed upon a boss formed upon the outer end of the outer hub-flange.

I have shown in the accompanying drawing so much of an axle as is adapted to support one wheel hub, and have designated the same by the reference letter A, the hub supported thereon being designated by the reference character B. From the outer end of the axle and on diametrically opposite sides have been cut away portions a of the same, leaving plane surfaces to form of said outer end of the axle a rectangular-shaped portion a', which is provided with a suitable screw thread a^4 intermediate between the two plane surfaces adapted to receive a suitable nut a^5 for the purpose hereinafter fully described. At a suitable distance removed from the said outer end of the axle A are provided ears a^2 formed upon the axle in any suitable manner, but preferably stamped or punched out of the body of the axle itself, leaving therein the depressions indicated by the reference character a^3. Upon each end of the hub B is secured a flanged portion B′, said portion comprising the inclosing notched and bent-over part b, which is the flange proper, an inner part b' inclosed within the flange b and held by the notched portion of the same, the washer b^2 also inclosed within the flange b and contiguous to the outer portion of the same, and the spokes b^5 of the wheel, formed and assembled in any suitable manner, mounted upon an outwardly-turned boss b^8 of the part b', and retained between the body portion of said part and the washer b^2. Projecting from the outer end of the flange b of the outer flange portion B′ is a hollow boss b^3 having a rectangularly-shaped hole adapted to receive and hold the rectangularly-shaped end a' of the axle A. A washer b^4 is adapted to be pressed over the boss b^3. The inner and outer flange portions B′ are composed of the same elements assembled in the same manner with the exception that the flange b of the inner flange portion B′, instead of having the outer hollow boss b^3, is provided with an inwardly-turned portion b^6 forming a bearing for the axle A, and having longitudinally-disposed grooves b^7 adapted to receive and hold the ears a^2 formed upon the axle A. The flange portions B′ of the hub B may be of any suitable construction, and I have shown herewith merely one form of the same capable of being utilized with my invention, but the same in the particular form shown comprise no essential part of my improved wheel hub. Furthermore, the number of ears a^2 which I may form upon the axle A is immaterial, but I prefer to make two of the same. The essence of my invention consists in the axle having a non-circular end adapted to support a wheel hub having an outer hole adapted to coöperate with said non-circular end of said axle to non-rotatably secure the axle and hub together; and the ears formed upon the axle and adapted to coöperate with suitable means upon the inner end of the hub to non-rotatably secure together said axle and hub at this point also.

Having thus described my invention in detail, that which I particularly point out and distinctly claim is:—

1. In a device of the character described, the combination with a cylindrical axle having an angular end and projecting ears removed at a distance from said end; of a suitable wheel-hub for said axle having a plurality of flanges secured thereto, said flanges adapted non-rotatably to engage with said angular end and said ears, respectively.

2. In a device of the character described, the combination of an axle having an angular end and projecting ears removed at a distance from said end; a suitable wheel-

hub for said axle; and a flange secured at each end of said hub, one of said flanges having a hole adapted to receive said angular end and the other flange having longitudinally-disposed grooves adapted to receive said ears.

3. In a device of the character described, the combination of an axle having a rectangular-shaped end and two projecting ears removed at a distance from said end; a suitable wheel-hub for said axle; and a flange secured at each end of said hub, one of said flanges having a rectangular-shaped hole adapted to receive said rectangular-shaped end and the other flange having a hole through which the axle is adapted to pass, said last-named flange having longitudinally-disposed grooves intersecting the axle-hole and adapted to receive said ears.

4. In a device of the character described, the combination of an axle having an angular end and two projecting ears removed at a distance from said end, said ears being stamped out of the body of the axle; a suitable wheel-hub for said axle; and a flange secured at each end of said hub, one of said flanges having a hole adapted to register with said angular end and the other flange having a hole through which said axle is adapted to pass, said last named flange having slots intersecting the axle-hole and adapted to receive said ears.

5. In a wheel construction, the combination with an axle having an end portion of angular cross-section and less diameter than the axle proper, and being provided with laterally projecting ears removed from such end portion; of a wheel non-rotatably mounted upon said axle, such wheel comprising two annular members respectively engaging said ears and said angular end portion, a sleeve disposed between said members and adapted to hold the same apart, and spokes mounted in said hub members.

6. In a wheel construction, the combination with an axle having an end portion of angular cross-section and less diameter than the axle proper and being provided at a distance from such end portion with oppositely disposed laterally projecting ears, stamped out of the body of the axle itself; of a wheel non-rotatably mounted upon said axle, such wheel comprising two washers mounted upon the cylindrical portion of said axle and adjacent to said end-portion and said ears, respectively, a sleeve disposed intermediately of said washers, and two annular, peripherally notched members respectively engaging the end-portion and the ears of said axle, and spokes having their inner ends located between said members and the respective washers contiguous thereto, the portions of said members intermediate between the notches being bent over upon said washers to thereby secure said spokes in place.

Signed by me, this 3 day of February 1906.

SAMUEL D. LATTY.

Attested by—
JNO. F. OBERLIN,
G. W. SAYWELL.