

A. R. FELLOWS.
SHOCK ABSORBING HUB.
APPLICATION FILED FEB. 17, 1910.

1,014,135.

Patented Jan. 9, 1912.

Fig. 1.

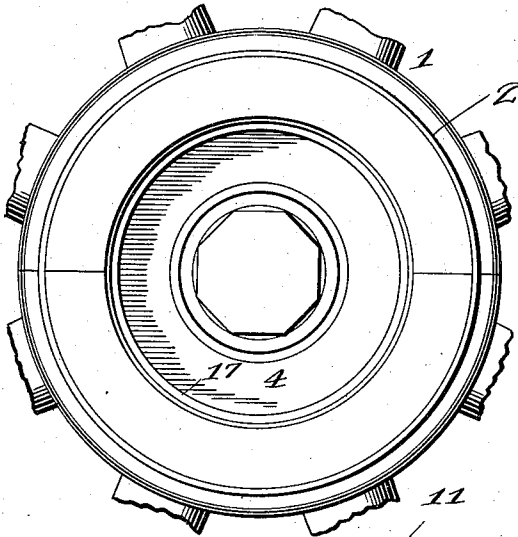


Fig. 3.

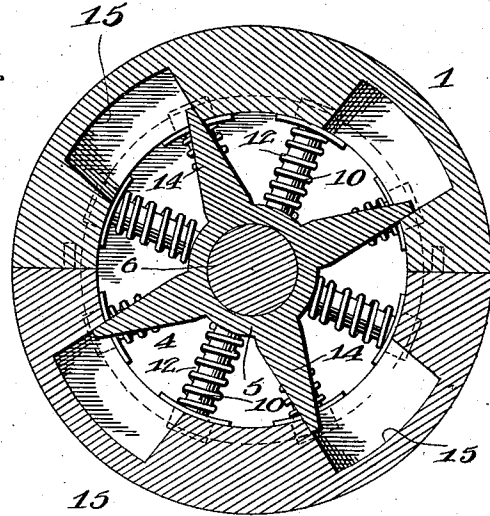


Fig. 2.

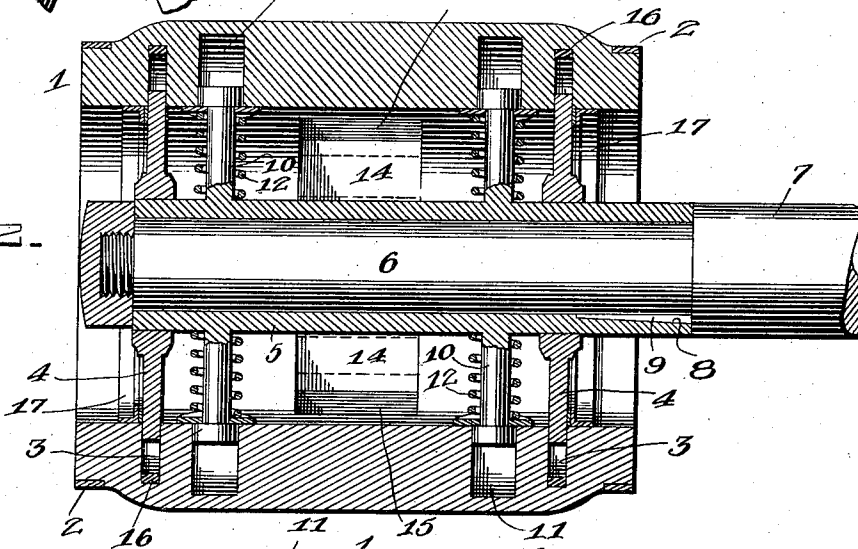
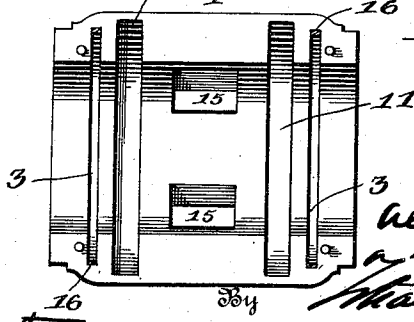


Fig. 4.



Witnesses
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SHOCK-ABSORBING HUB.

1,014,135.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALLEN R. FELLOWS, a citizen of the United States, residing at Sioux Falls, in the county of Minnehaha and State of South Dakota, have invented certain new and useful Improvements in Shock-Absorbing Hubs, of which the following is a specification.

This invention relates generally to vehicle-wheels, but more particularly to the hubs thereof; and it consists essentially of the novel construction of the several parts, their arrangement and combination, as will be hereinafter fully described in this specification and briefly stated in the claims.

The chief object of the invention is the production of a hub which will absorb the shock caused by the wheels striking objects while running, and thereby dispense with the well-known cushion and inflated type of tires. Other objects of the invention will become apparent upon a full disclosure thereof.

In the drawings: Figure 1 is an outer end view of my improved hub; Fig. 2 is a vertical, longitudinal section; Fig. 3 is a central, transverse section; and Fig. 4 is a plan view of the inner surface of one of the hub-sections.

Referring to the drawing, the numeral 1 indicates a hollow hub composed of two sections, alike in all respects, and firmly held together by bands 2, 2. The inner surface or wall of the hub, near each end, is provided with an annular groove 3, in which is arranged an end plate 4, of less diameter than the annular groove, so as to allow for a certain amount of play, as will be hereinafter explained. Each end-plate is centrally bored or apertured to receive a box or casing 5, for the reception of the arm or spindle 6 of the axle 7, the box being preferably provided with a slot or groove 8 in which fits a key or spline 9 on the axle, so that the axle and hub may turn together.

The box or casing is provided with a plurality of rows of radially-projecting pins or posts 10, the outer ends of each row of which, project into annular grooves 11, made in the inner wall of the hub, said grooves being of a depth sufficiently great to afford ample play for the outward movement of said pins or post. Springs 12, preferably coil-springs, are provided for taking up the shock. These springs are generally arranged

with one end resting against the box or casing and the other end against a plate or washer 13, which is mounted loosely on the pin and bears upon or against the face edges of the annular groove 11. The box or casing is also provided, intermediate of the rows of pins or posts, with a plurality of radially-projecting power-arms 14, preferably wedge-shape, whose outer ends project into sockets or recesses 15, made in the inner wall of the hub. These power arms, by engaging one end or the other of the sockets or recesses 15, serve as a power wheel to propel the hub and wheel when the axle is turned in either direction, said sockets being of sufficient depth to permit ample outer movement of the power-arms, and of sufficient length to allow for a slight rotary movement, in either direction, before engaging the ends of the sockets, so that any tendency to a jerking motion in starting, or jolting motion in stopping, is obviated. The bottom of the annular grooves 3 may be lined with rubber, as 16, to cushion any slight jar which might occur when the edges or the end-plates are forced downward, and the inner surface or wall of the hub, at each end thereof, adjacent to the end-plates, is provided with a ring 17 holding a suitable absorbent substance, for absorbing any oil or lubricant which may leak out of the hub.

My improved hub is equally adaptable to self-propelling wheels, in which case the power-wheel, and its coacting sockets may be dispensed with.

It will be obvious that any shock received by the wheel striking an obstruction in the roadway, or in running over irregular or uneven surfaces, will be cushioned or absorbed by the springs, thus obtaining easy-riding qualities for the vehicle provided with wheels to which my hub is applied.

It will be noted that the end-plates not only serve to keep the wheel to which the hub is applied in trim, but as dust-shields or guards to prevent dust and dirt getting into the interior of the hub. It will also be noted that at the time the arms of the power wheel engage the ends of the sockets, the hub will be firmly locked to the axle, and will thereby be caused to revolve therewith.

Various modifications or changes in the details of construction, such as increasing the rows of springs, or increasing or decreasing the number of arms of the power-

wheel, may be made without departing from the spirit of the invention or sacrificing the principle thereof.

Having thus fully described my invention, what I claim is:—

1. A shock-absorbing hub, comprising an outer hub and an inner casing, the hub being provided with annular grooves and the casing with disks operative within said grooves, a plurality of radial arms integral with and projecting from the casing, sockets arranged in the inner wall of the hub, in which the arms are adapted to freely move, and springs encircling said arms, whereby the casing and the hub are sustained in concentric relation.

2. A shock-absorbing-hub, comprising an outer hub and an inner casing, the hub being provided with annular grooves in its inner wall and the casing with disks operative within said grooves, a number of radial arms integral with and projecting from the casing, sockets arranged in the inner wall of the hub, in which the arms are adapted to freely move, springs encircling said arms,

whereby the casing and the hub are sustained in concentric relation, centrally-arranged recesses in the inner wall of the hub, and a power-impelling wheel, carried by the casing and adapted to engage said recesses and lock the hub to the casing.

3. A shock-absorbing hub, comprising a longitudinally-divided hub having its inner wall, near each end, provided with an annular groove, and with sockets, an axle-box provided with disks adapted to operate within the grooves, a plurality of headed arms projecting radially from opposite ends of the axle-box and operative in said sockets, springs encircling said arms, whereby said axle-box and the hub are sustained in concentric relation, and means for locking the hub to the axle-box.

In testimony whereof I affix my signature in presence of two witnesses.

ALLEN R. FELLOWS.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."