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S. WILKINSON.
WHEEL OF MINE CARS.
APPLICATION FILED JAN. 3, 1908.

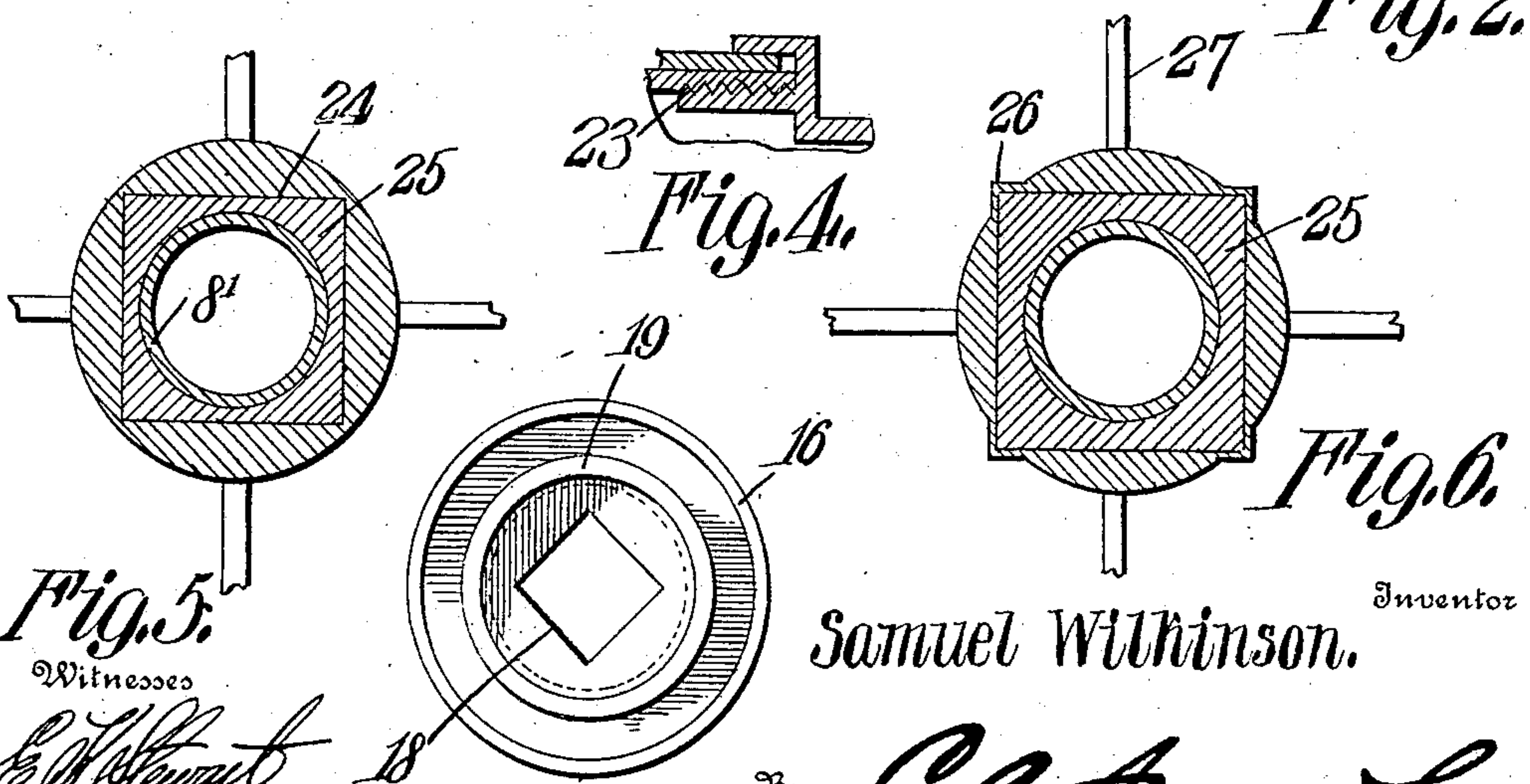
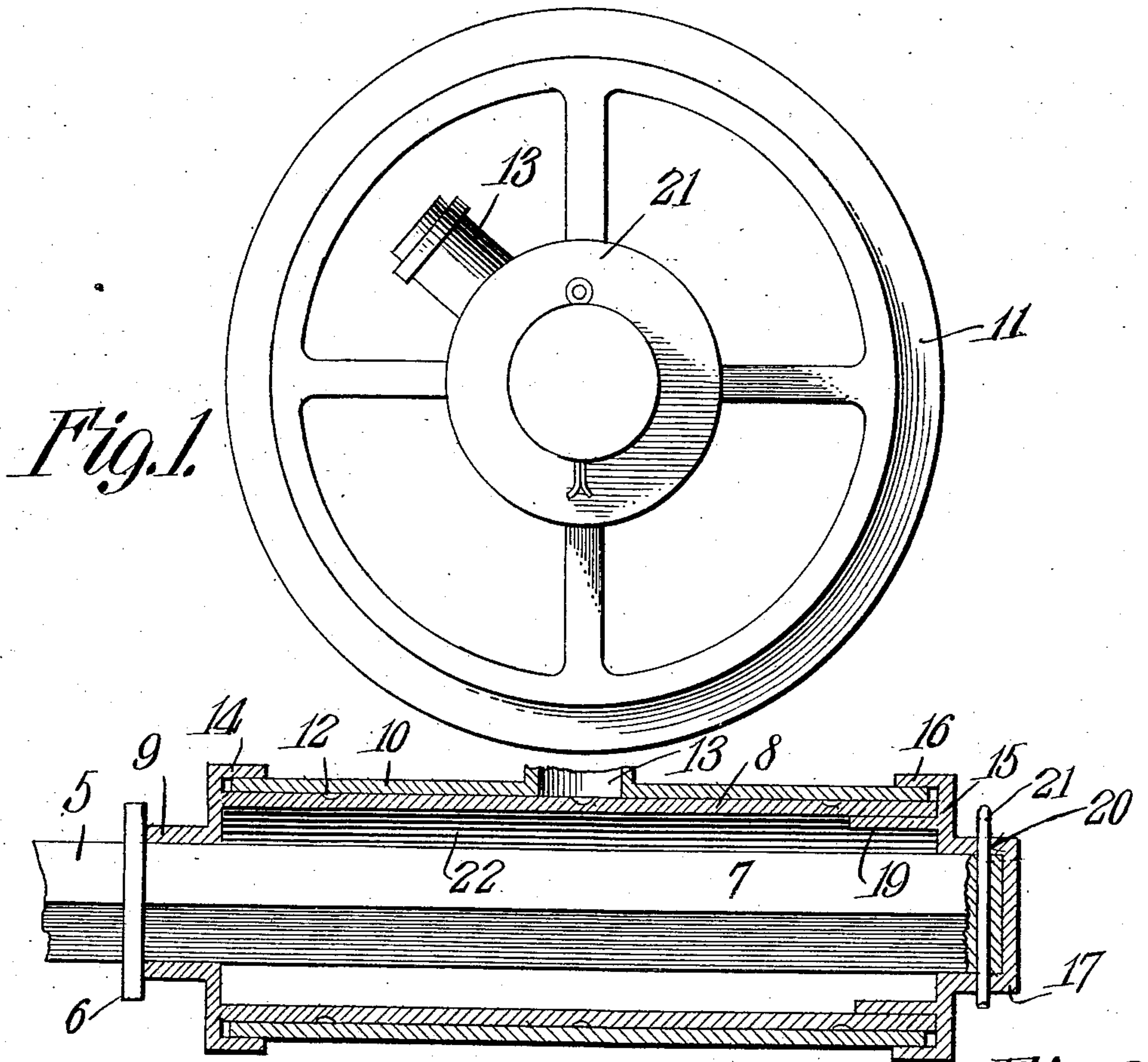


Fig. 5.
Witnesses
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Fig. 6.
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UNITED STATES PATENT OFFICE.

SAMUEL WILKINSON, OF OSCEOLA MILLS, PENNSYLVANIA.

WHEEL OF MINE-CARS.

No. 883,996.

Specification of Letters Patent.

Patented April 7, 1908.

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To all whom it may concern:

Be it known that I, SAMUEL WILKINSON, a citizen of the United States, residing at Osceola Mills, in the county of Clearfield and State of Pennsylvania, have invented a new and useful Wheel of Mine-Cars, of which the following is a specification.

This invention relates to traction wheels for mine cars and other rolling stock and has for its object to provide a car wheel having a stationary spindle and provided with a bearing sleeve which forms a housing for the spindle and upon which the wheel is journaled thereby to prevent wear on the spindle.

A further object of the invention is to provide one end of the bearing sleeve or bushing with a terminal flange which engages the adjacent portion of the hub of the wheel and constitutes a dust guard, the opposite end of the sleeve being housed by a removable cap carried by the adjacent end of the spindle.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings forming a part of this specification: Figure 1 is a front elevation of a car wheel constructed in accordance with my invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a front elevation of the retaining cap detached. Fig. 4 is a detail sectional view illustrating a modified form of the invention. Fig. 5 is a transverse sectional view illustrating a further modification, and Fig. 6 is a similar view illustrating a further modification.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved mine car wheel forming the subject matter of the present invention is mounted on an axle 5 provided with a stop collar 6 defining a spindle 7, the latter being preferably rectangular in cross section, as shown.

Slidably mounted on the spindle 7 is a bearing sleeve or bushing 8 having its intermediate portion spaced from the spindle and one end thereof provided with a reduced por-

tion or collar 9 also preferably rectangular in cross section and which engages the adjacent exterior walls of the spindle at the shoulder 6 and serves to lock the bearing sleeve against rotation.

Mounted for rotation on the bearing sleeve 8 is the hub 10 of a car wheel of any approved construction, indicated as a whole at 11.

The exterior walls of the bearing sleeve 8 are formed with a series of spaced circumferential grooves 12 adapted to receive a quantity of oil or other lubricant, the latter being fed to the sleeve from an oil cup 13 carried by the hub and communicating with the grooves, as shown.

One end of the collar 9 is bent laterally over the exterior walls of the adjacent end of the hub to form an annular flange 14 which constitutes a dust guard and serves to prevent the entrance of dust, dirt and other foreign matter to the interior of the bearing. The opposite end of the sleeve is housed by a terminal cap 15 provided with a similar flange 16 which forms a dust guard for the front end of the bearing sleeve and also forms a housing for the free end of the spindle.

The cap 15 is provided with a circular head 17 having a rectangular recess 18 formed therein for the reception of the spindle 7 and is also provided with an inwardly extending collar 19 which bears against the interior walls of the sleeve 8, as shown.

In order to assist in preventing accidental displacement of the cap 15 the latter is provided with aligned openings 20 in which is seated a cotter pin or similar fastening devices 21, which latter also pierces the adjacent end of the axle thereby to rigidly combine the cap with the axle.

The sleeve 8 is slightly longer than the hub 10 of the wheel so as to permit a slight longitudinal movement of the hub relative to the bearing sleeve, and thus prevent wedging or binding action between the parts. It will thus be seen that the spindle is entirely housed within the bearing sleeve while the latter receives the wear or friction incident to the rotation of the wheel.

When the sleeve becomes worn or otherwise impaired from constant use the same may be readily removed and replaced by a new sleeve by detaching the cotter pin 21 and removing the cap 15, as will be readily understood.

If desired the chamber 22 formed between

the axle and the interior walls of the bearing sleeve may be utilized as an oil receiving reservoir and in which case the oil will be fed to the grooves 12 through a suitable opening in the bearing sleeve instead of employing the oil cup 13.

In some cases the exterior walls of the collar 19 may be threaded, as indicated at 23 in Fig. 4 of the drawings for engagement with corresponding threads formed on the interior walls of the bearing sleeve and in which case the terminal head of the cap 15 will preferably be formed angular in cross section so as to permit the same to be readily grasped with a wrench or other tool when removing the cap.

In Fig. 5 of the drawings there is illustrated a modified form of the invention in which the hub of the wheel is formed with a rectangular recess or socket 24 adapted to receive a correspondingly shaped bushing 25 which latter engages the grooved face of the bearing sleeve 8' and serves to prevent wear on the hub of the wheel.

A still further modification is illustrated in Fig. 6 in which the hub of the wheel is formed with longitudinal ribs 26 preferably disposed between the spokes 27 and which receives the adjacent corners of the bushing 25, as shown, this form of the device being desirable in some cases, inasmuch as the metal forming the hub of the wheel may be made relatively thin and thus reduce the cost of manufacture.

Having thus described the invention what is claimed is:

1. The combination with an axle having a spindle of angular cross section, a stationary bearing sleeve slidably mounted on and spaced from the spindle, a wheel having a hub journaled on the bearing sleeve, a flange carried by the bearing sleeve and engaging the exterior walls of the hub at one end thereof to form a dust guard, and a stationary cap engaging the free end of the spindle and provided with a similar flange adapted to bear against the exterior walls of the hub at the opposite end thereof.

2. The combination with an axle having a spindle of angular cross section, a stationary bearing sleeve slidably mounted on the axle and having one end thereof provided with a collar having angular interior walls for engagement with the spindle, a wheel having a

hub journaled on the bearing sleeve, a stationary cap mounted on the free end of the spindle and provided with a collar engaging the interior walls of the bearing sleeve, said bearing sleeve and cap being provided with laterally extending flanges engaging the exterior walls of the hub, and a fastening device piercing the cap and the adjacent end of the spindle.

3. The combination with an axle having a spindle of angular cross section and provided with a laterally extending stop shoulder, a bearing sleeve slidably mounted on the spindle and having its intermediate portion spaced from the spindle and one end thereof provided with a collar adapted to bear against the stop shoulder, said collar being angular in cross section for engagement with the adjacent walls of the spindle, a flange extending laterally from the sleeve at said collar and constituting a dust guard, a cap engaging the free end of the spindle and provided with a similar flange, a wheel having a hub mounted for rotation on the bearing sleeve between the flanges of the sleeve and cap, respectively, there being a plurality of grooves formed in the exterior walls of the sleeve and adapted to receive a lubricant, and a fastening device piercing the cap and the adjacent end of the spindle.

4. The combination with an axle having a spindle of angular cross section, a stationary bearing sleeve mounted on the axle and having one end thereof provided with a laterally extending flange constituting a dust guard, a cap having an angular recess formed therein for the reception of the adjacent end of the spindle and provided with an inwardly extending collar adapted to bear against the interior walls of the sleeve, said cap being provided with an inwardly extending flange spaced from the collar, and a wheel having a hub mounted for rotation on the bearing sleeve between the flanges of the sleeve and cap, respectively, the length of the hub being less than that of the sleeve.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

SAMUEL WILKINSON.

Witnesses:

P. GALLAGHER,
E. C. DUGAN.