No. 617,987. Patented Jan. 17, 1899.

# W. H. HOLDEN.

## SAND BAND.

(Application filed Sept. 6, 1898.)

(No Model.)

Fig. 1.

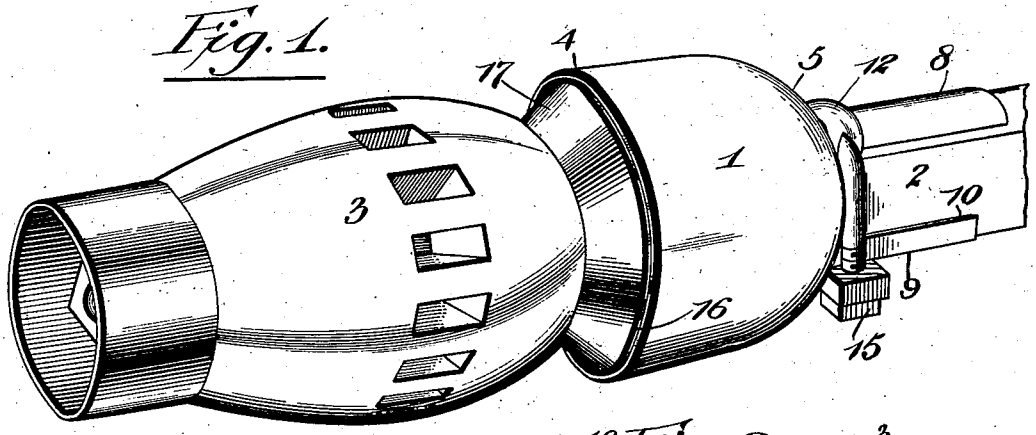



Fig. 2.

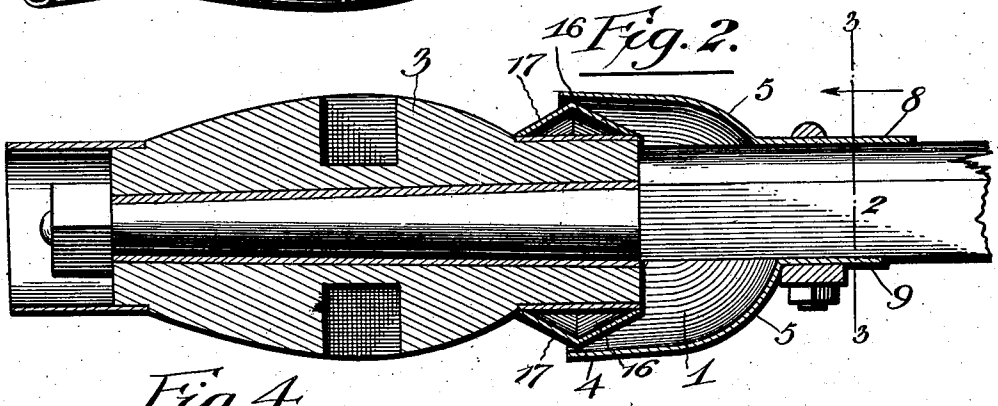



Fig. 4.

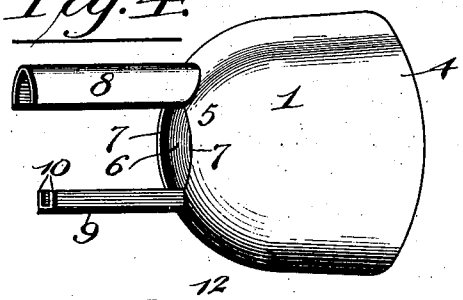
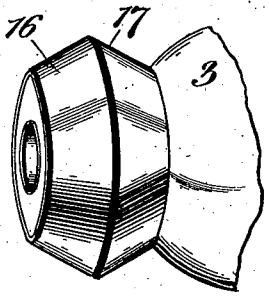



Fig. 5.



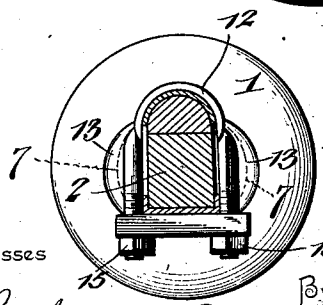




Fig. 3.

Witnesses

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J. F. J. Riley

William H. Holden, Inventor.

By his Attorneys.

C. A. Snow & Co.

# UNITED STATES PATENT OFFICE.

WILLIAM H. HOLDEN, OF IDAHO FALLS, IDAHO.

## SAND-BAND.

SPECIFICATION forming part of Letters Patent No. 617,987, dated January 17, 1899.

Application filed September 6, 1898. Serial No. 690,293. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. HOLDEN, a citizen of the United States, residing at Idaho Falls, in the county of Bingham and State of Idaho, have invented a new and useful Spindle and Hub Protector, of which the following is a specification.

The invention relates to improvements in spindle and hub protectors.

The object of the present invention is to improve the construction of devices for protecting hubs and spindles and to provide a simple, inexpensive, and efficient one adapted to be readily applied to the wheels and axles of carriages, wagons, and other vehicles and capable of effectually excluding dust, sand, mud, and the like from the bearing and of shedding the same from the hub.

A further object of the invention is to provide a device of this character which in case it should be submerged by reason of a vehicle crossing a stream will cause any water collecting in it to drain thoroughly from it, so that there will be no liability of the parts accumulating water and rusting out.

The invention consists in the construction and novel combination and arrangement of parts, as hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a device constructed in accordance with this invention and shown applied to a hub and an axle. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a transverse sectional view on line 3 3 of Fig. 2. Fig. 4 is a detail perspective view of the shield, showing the inner or rear portion thereof. Fig. 5 is a similar view of the annular band, showing the same applied to the hub.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a shield constructed of thin metal or other suitable material designed to be mounted on an axle 2, adjacent to the inner end of a hub 3 and extending over the same, as clearly illustrated in Fig. 2 of the accompanying drawings, to exclude dust, sand, mud, and other accumulation from the bearing of the wheel and prevent the same from reaching the spindle of the axle. The shield 1, which is substantially bell-shaped, has a flared outer portion, and it is provided with a rounded inner or back portion 5, having an aperture 6, conforming to the configuration of the body portion of the axle. This aperture, which is rounded at the top and straight at the bottom, is enlarged at the sides at 7 to enable it to receive the spindle, so that the shield may be introduced on the end of the axle. The flared portion 4 at the outer end of the shield has only a slight flare, as shown, and the shield is provided at its inner end with upper and lower arms 8 and 9, extending along the top and bottom of the axle and conforming to the configuration of the same.

The upper arm 8 is curved in cross-section and the lower arm, which is straight to fit the bottom of the axle, is provided at opposite sides thereof with longitudinal flanges 10, which embrace the sides of the axle. The shield is attached to the axle by means of an axle-clip 12, which is provided at opposite sides with enlargements or ears 13, adapted to cover the side extensions 7 of the aperture 6 of the shield to exclude dust, sand, mud, and other accumulation therefrom. The axle-clip, which is of the ordinary construction, has its ends threaded and connected by a plate, which is engaged by nuts 15.

In order to close practically the outer end of the bell-shaped sleeve, the hub is provided at its inner end with a band or collar 16, substantially triangular in cross-section and presenting a sloping outer side 17, adapted to shed any dirt, sand, mud, or other accumulation falling from the wheel upon the device. The sloping side also sheds water and prevents rain falling upon the device from entering the bearing. The band or collar is slightly smaller than the flared portion of the shield, so that it will rotate freely therein, and it may be constructed integral with the inner end band of a hub or be secured over the ordinary end band in any suitable manner. The former construction is preferable when the device is applied to a wheel during the manufacture thereof, and the latter construction is adapted to be applied to wheels in use.

The invention has the following advantages: The devices, which is simple and in-

expensive in construction, is adapted to be readily applied to an axle and a hub, and it is capable of use on all kinds of wheeled vehicles, either heavy or light. The rounded inner portion of the shield is adapted to shed sand, mud, dirt, and water, and the sloping or inclined outer portion of the collar or band extends beyond the flared portion of the shield and is arranged to shed accumulation and prevent sand, mud, and the like from entering the device and reaching the bearing of the wheel. Should the device be submerged by reason of a vehicle being driven through a stream, the water will thoroughly drain from the same, so that there is no liability of the device accumulating moisture and rusting out.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

What is claimed is—

1. A device of the class described comprising a substantially bell-shaped shield, designed to be mounted on an axle and adapted to extend over the inner portion of the hub, and a collar or band designed to be mounted on the said hub and arranged within the outer end of the shield and substantially closing the same, said collar or band being provided with an inclined or tapering portion extending beyond the outer end of the shield and adapted to shed water, sand, mud and other accumulation and exclude the same from the interior of the device, substantially as described.

2. A device of the class described comprising an annular shield designed to be mounted on an axle and adapted to extend over the inner portion of the hub, and a collar or band designed to be mounted on the hub and arranged within and substantially closing the outer end of the shield and having an inclined or tapering portion lying beyond the same, substantially as and for the purpose described.

3. A device of the class described comprising a substantially bell-shaped shield having a slightly-flared outer portion and designed to be secured to an axle, and a collar or band designed to be mounted on a hub, arranged within the flared portion of the shield and substantially closing the same, said collar or band being substantially triangular in cross-section and having its outer inclined portion located beyond the shield, substantially as described.

4. A device of the class described comprising a shield of annular form provided at its inner end with an aperture conforming to the configuration of an axle, and having enlarged side portions, whereby it is adapted to permit the shield to be passed over the spindle of the axle, arms extending from the top and bottom of the aperture of the shield and conforming to the configuration of the axle, an axle-clip for securing the arms to the axle, said axle-clip being provided at opposite sides with enlargements or ears arranged to cover the enlarged side portions of the aperture, and a collar or band designed to be mounted on a hub and arranged within the shield, substantially as described.

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

WILLIAM H. HOLDEN.

Witnesses:
J. E. MILLER,
BARZILLA CLARK.