

H. S. SMITH.  
Car-Wheel.

No. 197,675.

Patented Nov. 27, 1877.

Fig. 1

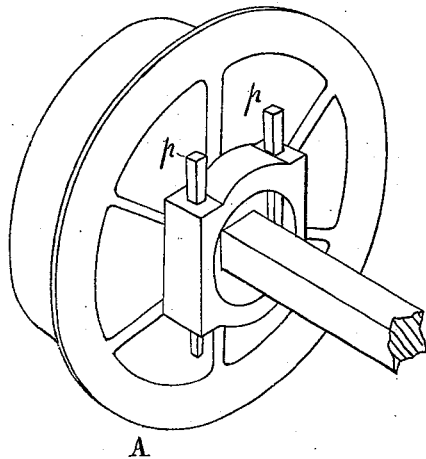


Fig. 2

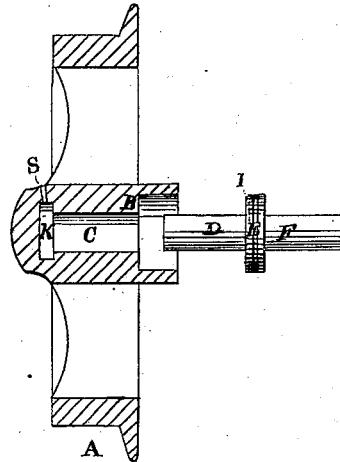


Fig. 3.

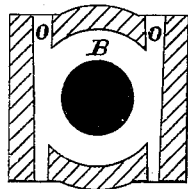
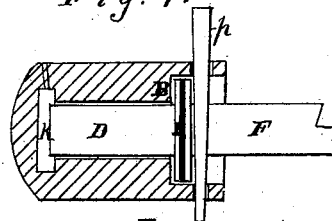


Fig. 4.



Witnesses

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*Jno. L. Boone*

Inventor

*Henry S. Smith*  
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# UNITED STATES PATENT OFFICE.

HENRY S. SMITH, OF SAN FRANCISCO, CALIFORNIA.

## IMPROVEMENT IN CAR-WHEELS.

Specification forming part of Letters Patent No. **197,675**, dated November 27, 1877; application filed June 18, 1877.

*To all whom it may concern:*

Be it known that I, HENRY S. SMITH, of the city and county of San Francisco, and State of California, have invented Improvements in Mining-Car Wheels; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention relates more especially to the wheels of mining-cars and the means for attaching them to the car-axles; and it consists in an improved arrangement for preventing dust and dirt from entering the box or hub of the wheel, and also in a novel device for securing the wheels to the axles, all as herein-after more fully set forth.

Referring to the accompanying drawings, Figure 1 is a perspective view of my wheel. Fig. 2 is a section of the same. Figs. 3 and 4 are sections of the box.

Let A represent a car-wheel of the class above mentioned. The hub of this wheel I cast solid, making the portion which projects on the inner face of the wheel square or nearly square. I then bore out the hole C for the journal of the axle, but do not allow the bore to extend entirely through the hub, so that the outer end of the hub will be left solid. I then enlarge that portion of the bore which passes through the square inner end of the hub, so as to form a shoulder, B, between the two bores of different diameters. The outer end of the bore C, I enlarge so as to form an oil-chamber, K, in which a quantity of oil will be contained. F is the axle, and D is the journal. This journal is just long enough to fit in the hole C. A flange, E, is formed at the point where the journal D connects with the axle, and this face is just large enough to fit snugly in the outer or largest bore. In the face of the flange E, I cut a groove, I, which extends entirely around it, and in this groove I secure some suitable packing, so that when the journal has been entered into the bore of the hub the flange will fit snugly against the

shoulder at the bottom of the larger bore, while the packing makes a tight joint around it, thus excluding dust and dirt from the bearing and preventing the oil from escaping from the box.

To secure the wheel upon the journal, I make two keyways, O, through the square inner portion of the hub, one on each side of the bore outside of the flange E. The keys P P, which are driven into the keyways, pass through the side of the bore on each side of the axle, outside of the flange E, and thus prevent the flange and journal from being withdrawn. When the keys have been driven into the ways, a few taps of a hammer on each end will upset them, so that they will fit tightly, and cannot be withdrawn until they are driven out.

In order to supply oil to the journal and chamber K, I bore a hole, S, through the hub on one side, through which the journal can be oiled; and this hole I stop with a screw-plug, to prevent the entrance of dirt and to keep the oil in the box.

This arrangement is quite simple, and effectually prevents the entrance of dust and dirt to the journal. It is more convenient, also, for the car-man, and can be manufactured cheaper than the ordinary car-wheel.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The wheel A, having its hub left solid on its outer end, and provided with the bore C, a portion of which is enlarged, so as to provide a shoulder, B, inside of the bore, in combination with the journal D, with its flange E, and the keys P P, all combined and arranged substantially as above described.

In witness whereof I have hereunto set my hand and seal.

HENRY S. SMITH. [L. S.]

Witnesses:

OLWYN T. STACY,  
FRANK A. BROOKS.