(No Model.)

J. A. WEBBER.

CAR WHEEL.

No. 461,859. Patented Oct. 27, 1891.

Fig. 1.

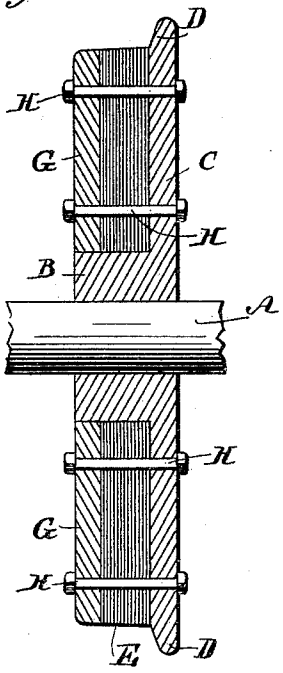


Fig. 2.

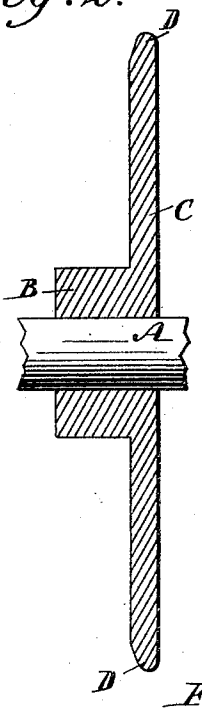


Fig. 3.

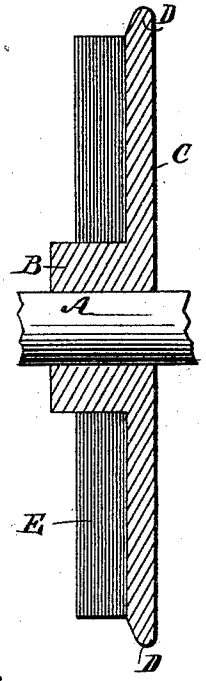


Fig. 4.

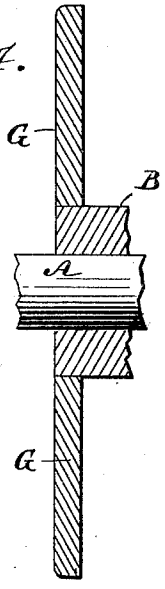
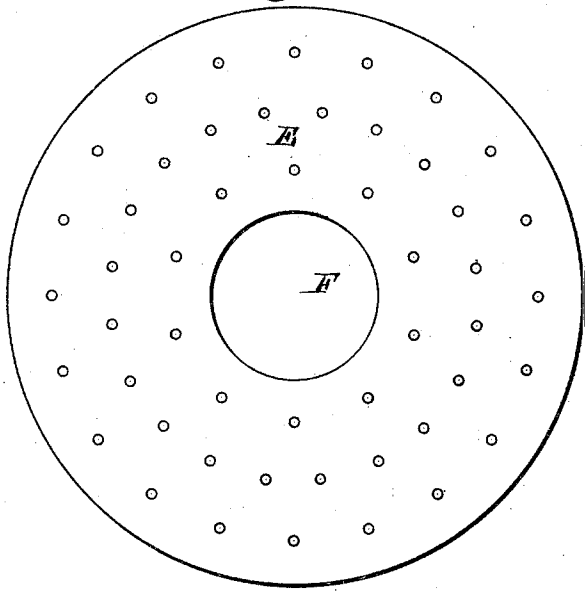


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOSIAH A. WEBBER, OF BROOKLYN, NEW YORK.

CAR-WHEEL.

SPECIFICATION forming part of Letters Patent No. 461,859, dated October 27, 1891.

Application filed November 1, 1890. Serial No. 370,073. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH A. WEBBER, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Car-Wheels, of which the following is a specification.

My invention relates to improvements in car-wheels; and it consists, broadly stated, in a metallic hub which is driven or forced upon the axle, as now well understood, and in two side plates, between which I clamp by means of bolts, which hold the side plates together, a central body of non-metallic substance, which is preferably elastic and also preferably of fibrous character, and which is subjected to pressure, so as to make it sufficiently dense to serve as the tread for the wheel. The flange for the wheel is attached to or forms part of one of the side plates.

In the drawings the same reference-letters indicate the same parts in all the figures.

Figure 1 illustrates a vertical transverse section of one of my improved wheels. Fig. 2 illustrates a vertical transverse section of the side plate which has the flange on it, showing also the hub as integral with it. Fig. 3 illustrates a view similar to Fig. 2, showing also in vertical transverse section the disks of non-metallic material. Fig. 4 illustrates in vertical transverse section the other plate of the wheel. Fig. 5 illustrates an elevation of one of the disks of non-metallic material.

A is the axle of the car.

B is the hub of the wheel.

C is one of the side plates for the wheel. It is shown in the present instance as cast or forged integral with the hub; but it may be made as a separate piece and attached thereto in any preferred manner.

D is the flange for the wheel, formed on the periphery of the plate C.

E E are disks of non-metallic and preferably flexible and fibrous material, such as leather, paper, and the like substances. I prefer leather, however. These disks are cut out into blanks such as shown in Fig. 5, having a hole F in their center and of about the diameter of the desired wheel. A number of these disks are placed over the hub and against the plate C, and are then subjected to great pressure, preferably by a hydraulic press, so that they are squeezed down into a small part only of their original thickness, whereby they are rendered sufficiently dense or hard, and when a sufficient number of them have been placed on the hub to form the desired thickness for the wheel then another plate G, not having any flange on its edge, is placed over the hub and against the compressed disks, and the whole structure is there firmly bolted together by bolts H, which are either headed down upon the side plates of the wheel or are held firmly in place by suitable lock-nuts.

I prefer to round off the edge of the plate G, as shown, so that it will have but slight bearing on the rail at any time, and I prefer that the non-metallic disks should be applied to such a width that the normal tread of the rail shall come upon them alone.

It is obvious that the disks may be compressed prior to being put upon the wheel and then placed thereon separately or as one solid mass. The holes for the bolts may be drilled at such time as preferred.

It will be seen that by my construction I secure the following advantages in a marked degree—that is to say, my wheels are elastic, and consequently relieve the rails and also the cars of much shock and wear and are "noiseless," so called; also, that there will be no screeching of the brakes when applied to the wheels, because they take their bearing on the elastic non-metallic surface of the central disks and not upon a metallic surface; also, that when the tread of the wheel has become somewhat worn they may be taken apart and new disks put in place of those which have become worn. Thus the hub and side plates may be used for several sets of disks, and the plate C and the hub, if it be made separate from the plate, may be used for a very long time; but the flange on the plate C will after a time become worn, so that that plate will have to be thrown aside or else turned down to a size suitable for use as one of the other plates; also, and this is an important feature of advantage, the plates C and G may both of them be made of hardened steel, or they may be chilled iron or case-hardened or otherwise treated, since there is

no danger of their cracking during manipulation, owing to the absence of any metallic tire or tread for the wheel; also, because of the absence of any tire I save very materially in the weight of the wheels, thus reducing the weight of the cars.

I claim—

1. A car-wheel comprising, essentially, a metallic hub, a non-metallic central portion composed of disks extending from the hub to the tread of the wheel, the edges of the disks constituting the tread of the wheel, and side plates, one of them provided with a flange for the wheel, and means whereby they and the central portion are clamped together, substantially as set forth.

2. A car-wheel comprising, essentially, a metallic hub and a side plate integral therewith provided with a flange for the wheel, a central portion composed of non-metallic material in the form of disks extending from the hub to the tread of the wheel, the edges of the disks themselves forming the tread, another side plate, and means whereby the entire structure is clamped together, substantially as set forth.

3. A car-wheel comprising, essentially, a metallic hub, a central portion as wide as the normal tread of the wheel, made of the edges of non-metallic disks, which extend from the tread of the wheel inwardly to the hub, and side plates, one of them provided with a flange for the wheel, substantially as set forth.

4. A car-wheel the central portion whereof in a circumferential radial plane is composed of disks of non-metallic material, which extend from the hub to the periphery of the wheel, the edges of which disks constitute the tread of the wheel, substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 11th day of September, A. D. 1890.

JOSIAH A. WEBBER.

Witnesses:

PHILLIPS ABBOTT,

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