

(No Model.)

A. PERKINS.
CYCLE WHEEL.

No. 502,500.

Patented Aug. 1, 1893.

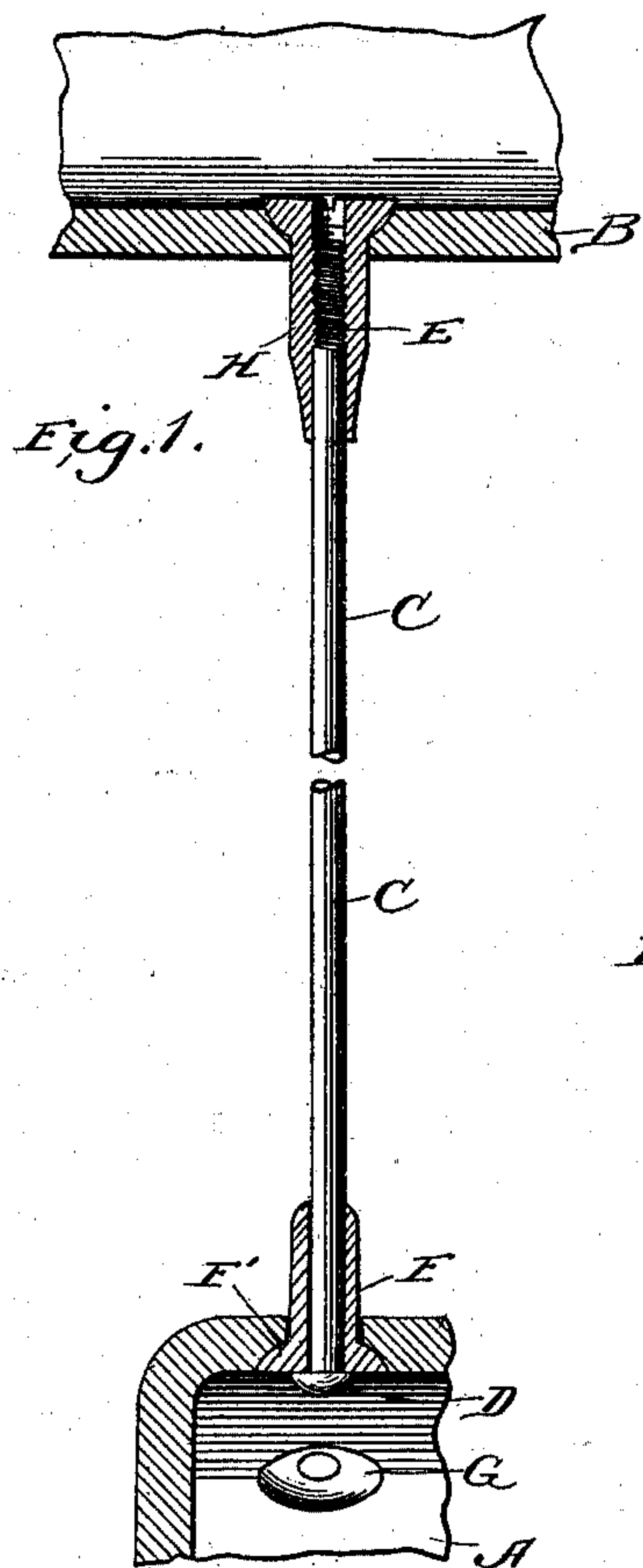


Fig. 2.

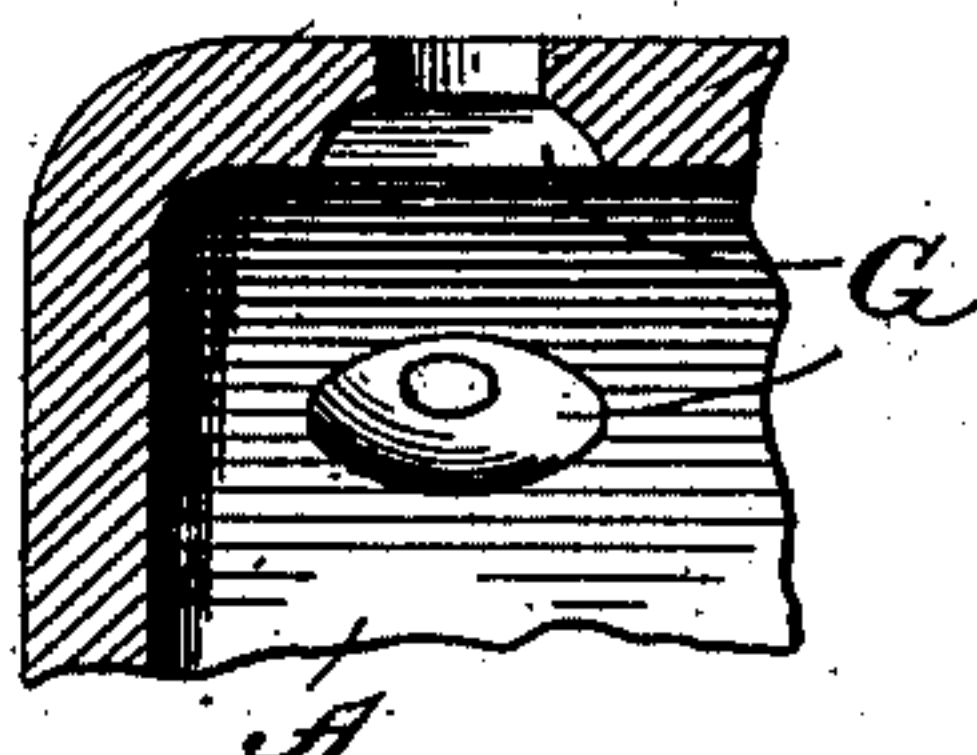


Fig. 3.

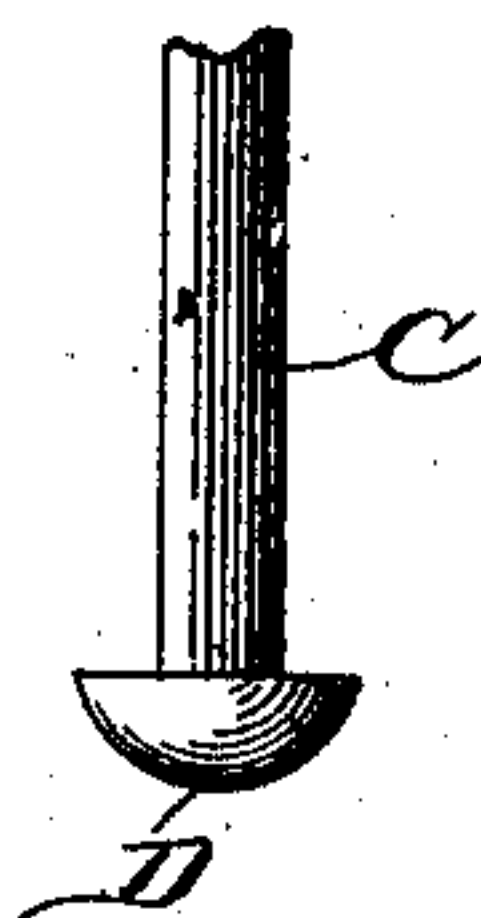


Fig. 4.

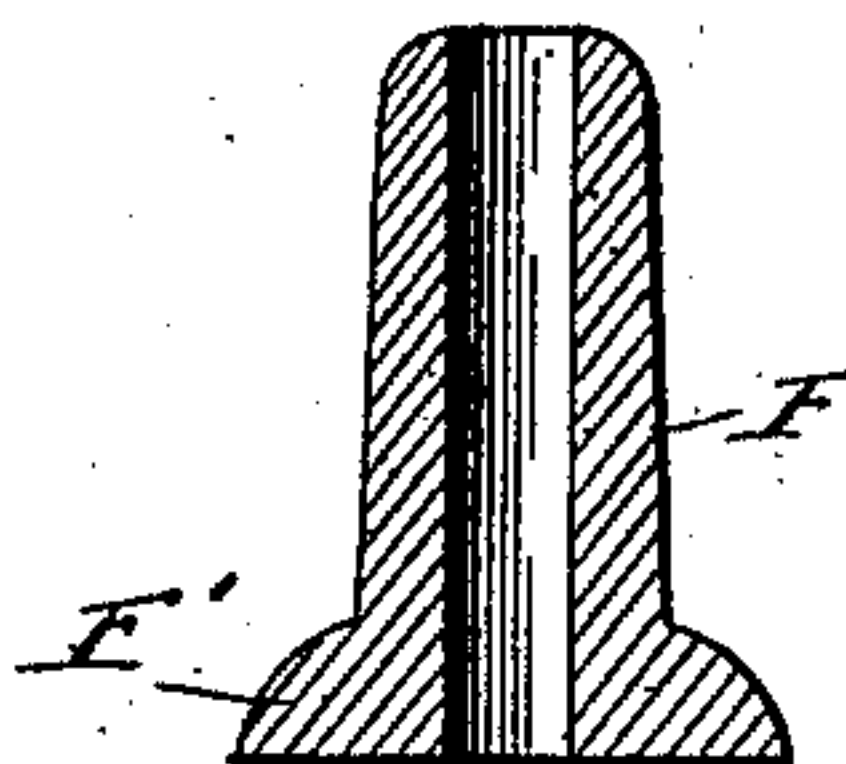
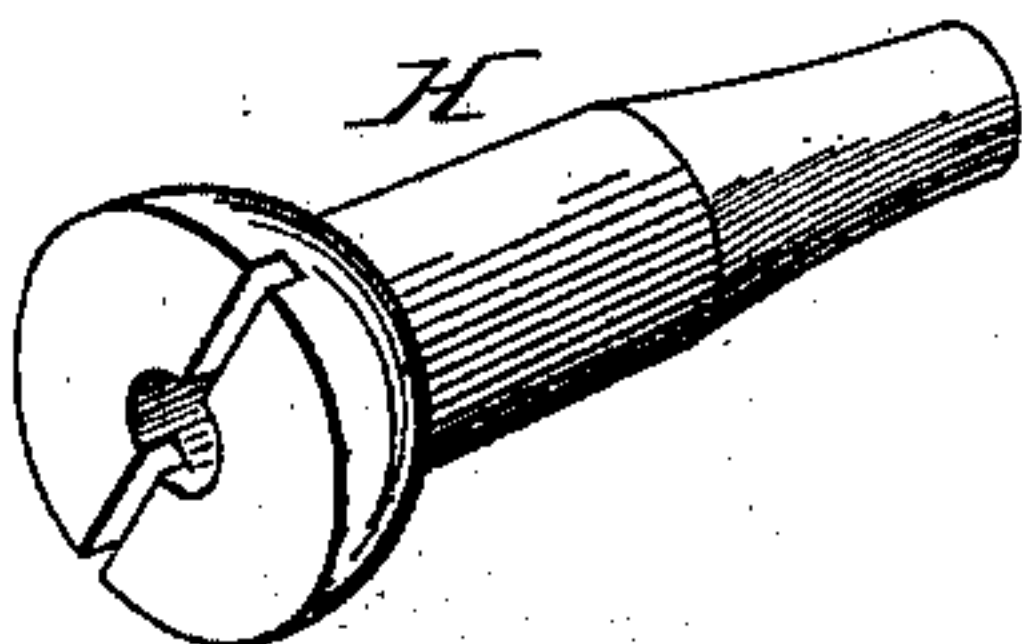


Fig. 5.



witnesses:

Harry D. Rohrer.
J. M. Dowling.

Inventor
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UNITED STATES PATENT OFFICE.

ALBERT PERKINS, OF CHICOPEE, MASSACHUSETTS, ASSIGNOR TO THE A. G. SPALDING & BROTHERS, OF NEW YORK, N. Y., AND THE LAMB KNITTING MACHINE MANUFACTURING COMPANY, OF CHICOPEE FALLS, MASSACHUSETTS.

CYCLE-WHEEL.

SPECIFICATION forming part of Letters Patent No. 502,500, dated August 1, 1893.

Application filed January 28, 1893. Serial No. 459,946. (No model.)

To all whom it may concern:

Be it known that I, ALBERT PERKINS, a citizen of the United States, residing at Chicopee, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Cycle-Wheels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention pertains particularly to the spokes and the means for connecting them with the hub and the rim. It is common knowledge that spokes of uniform diameter break most often at or near their points of attachment, and it has been common to avoid this difficulty in enlarging the end portions of the spokes either by upsetting or by still more expensive methods. The result has not been entirely satisfactory for the metal is changed in character by the great displacement of its particles, or the cost is too greatly increased. These evils I overcome in reinforcing the end portions by distinct pieces which at the same time are so constructed as to secure a ball-and-socket union, whereby the strains at the ends of the spokes are almost wholly longitudinal pulls even when the straining force acts perpendicularly to the spoke. This construction is less expensive than the expedients commonly employed, yet practical tests show it to be from thirty to fifty per cent. stronger.

In the accompanying drawings,—Figure 1 shows small portions of both the rim and the flange with a spoke in normal position with reference thereto. Figs. 2, 3, 4, and 5, are detail views of parts seen in Fig. 1.

In the drawings A represents a portion of the hub flange, B a part of the rim, and C a spoke, which may be of uniform diameter throughout and which has at its inner end an integrally formed head D. The hub flange is perforated for each spoke and each perforation is reamed or countersunk at G to form

a preferably spherical recess. In the aperture is placed an eyelet or headed tube F, of a diameter a little less than the perforation and having a head F' that fits the spherical depression just mentioned. The spoke is passed out through the eyelet until its head rests against the head F' of the latter. The length of this eyelet tube is greater than the thickness of the flange so that it forms a reinforce for the spoke for some distance from the hub. We have, then, a ball-and-socket union between the spoke and hub, and, within the limits allowed by the perforation, the spoke is perfectly free to move laterally in any direction. Now if any ordinary force act laterally upon the spoke, it swings slightly and the force at the hub is practically a strain in the line of the spoke's axis instead of a strain acting with a leverage to break the spoke transversely at that point, and if the spoke be pressed beyond the limit of its free motion, it will yet not be broken at the hub for the eyelet tube prevents; nor will it be readily broken at the end of this tube as it often is at the corresponding point in butt ended spokes, because the tube fits the spoke rather loosely and the strain is distributed, instead of being centered at exactly this point.

At the outer end of the spoke the rim perforation and the eyelet are analogous in construction but the eyelet is screwed upon the spoke end, being slotted to receive a screw-driver, and its sides are flattened below the rim in order that it may be held or turned with a wrench.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with the hub having the spoke flanges provided with radial perforations, of metallic eyelets headed at their inner ends, fitting said perforations and projecting out through said flanges, and spokes fitting in said eyelets and having at their inner ends heads resting against the inner ends of the eyelets.

2. The combination with the hub having

spoke flanges provided with radial perforations spherically reamed upon the inner side of the flange, of headed eyelets fitting the spherically reamed perforations and projecting out through the flanges, and spokes of uniform diameter fitting in said eyelets and provided at their inner ends with heads preventing withdrawal outward therefrom.

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

ALBERT PERKINS.

Witnesses:

A. B. BARKMAN,
J. H. FORD.