

(No Model.)

R. BEAN.

WHEEL.

No. 315,995.

Patented Apr. 21, 1885.

Fig. 1.

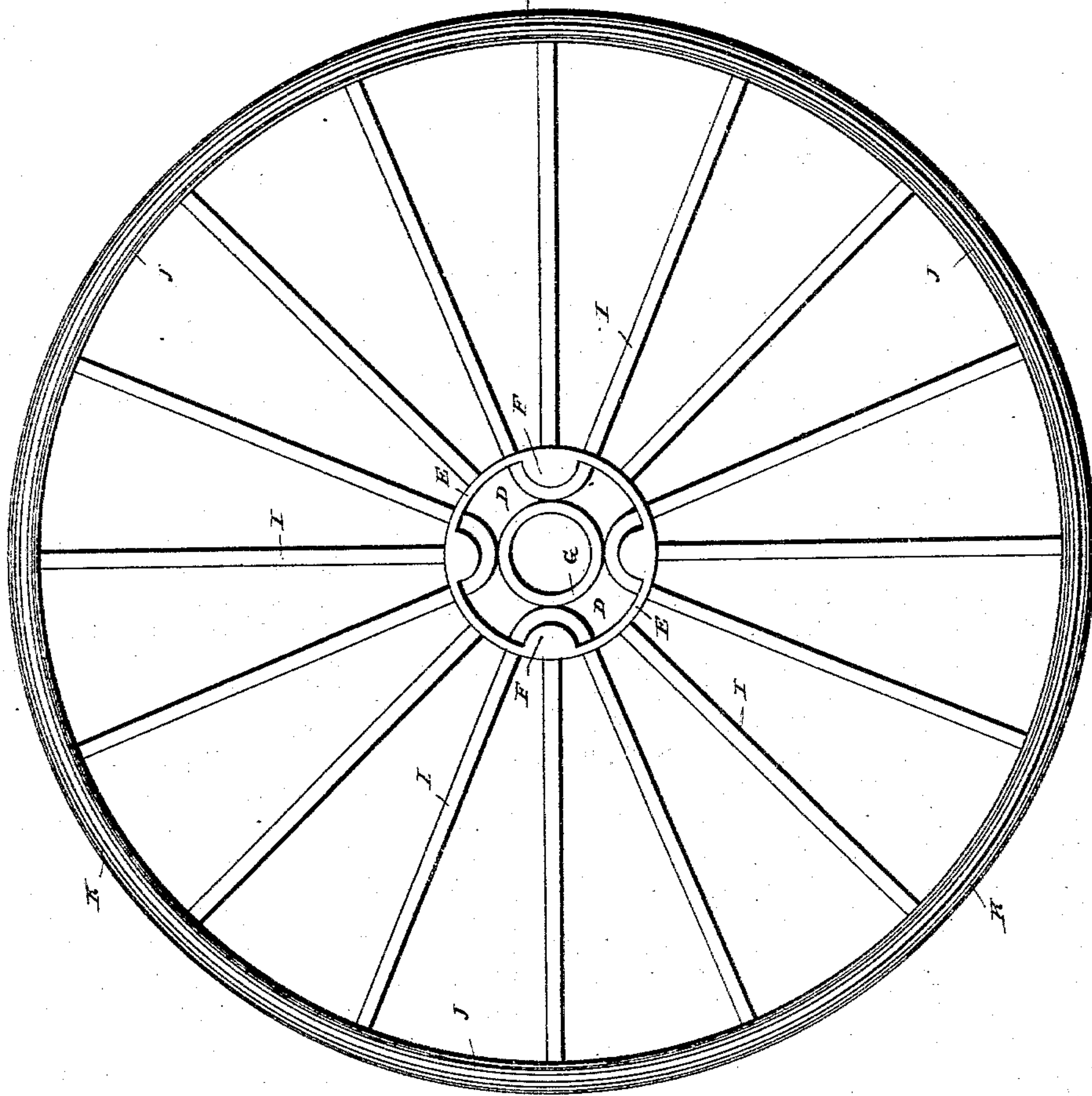


Fig. 2.

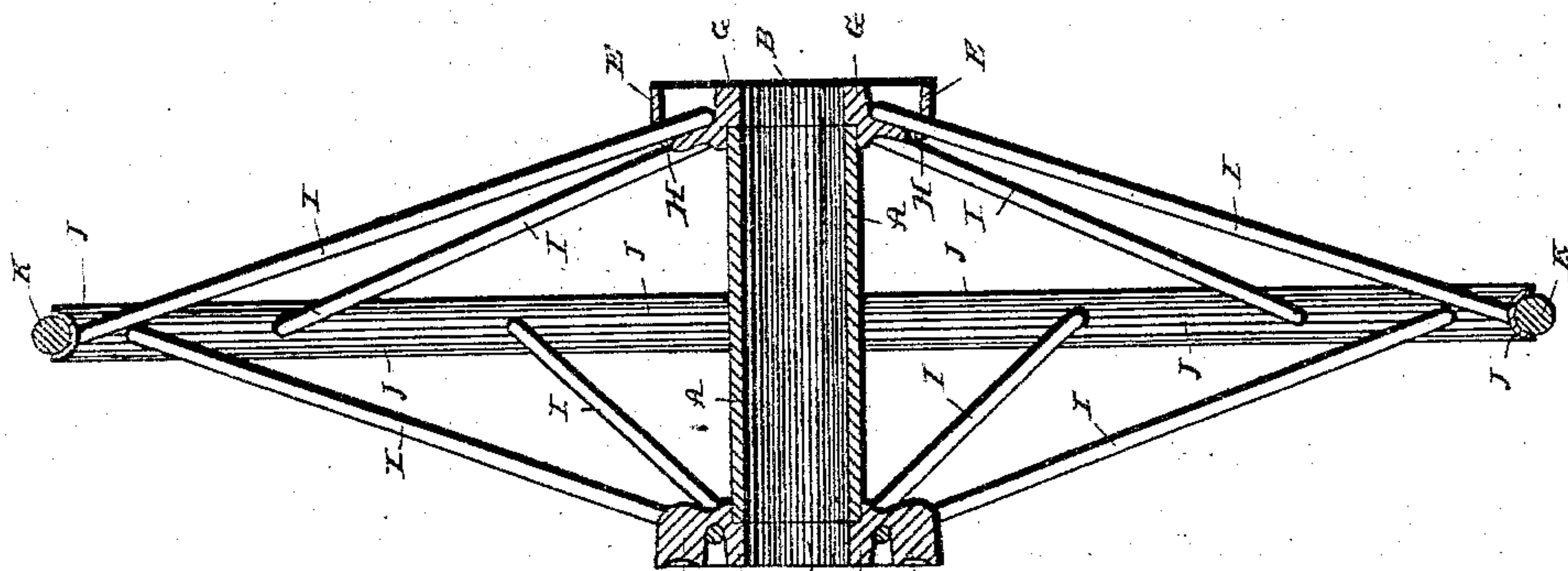
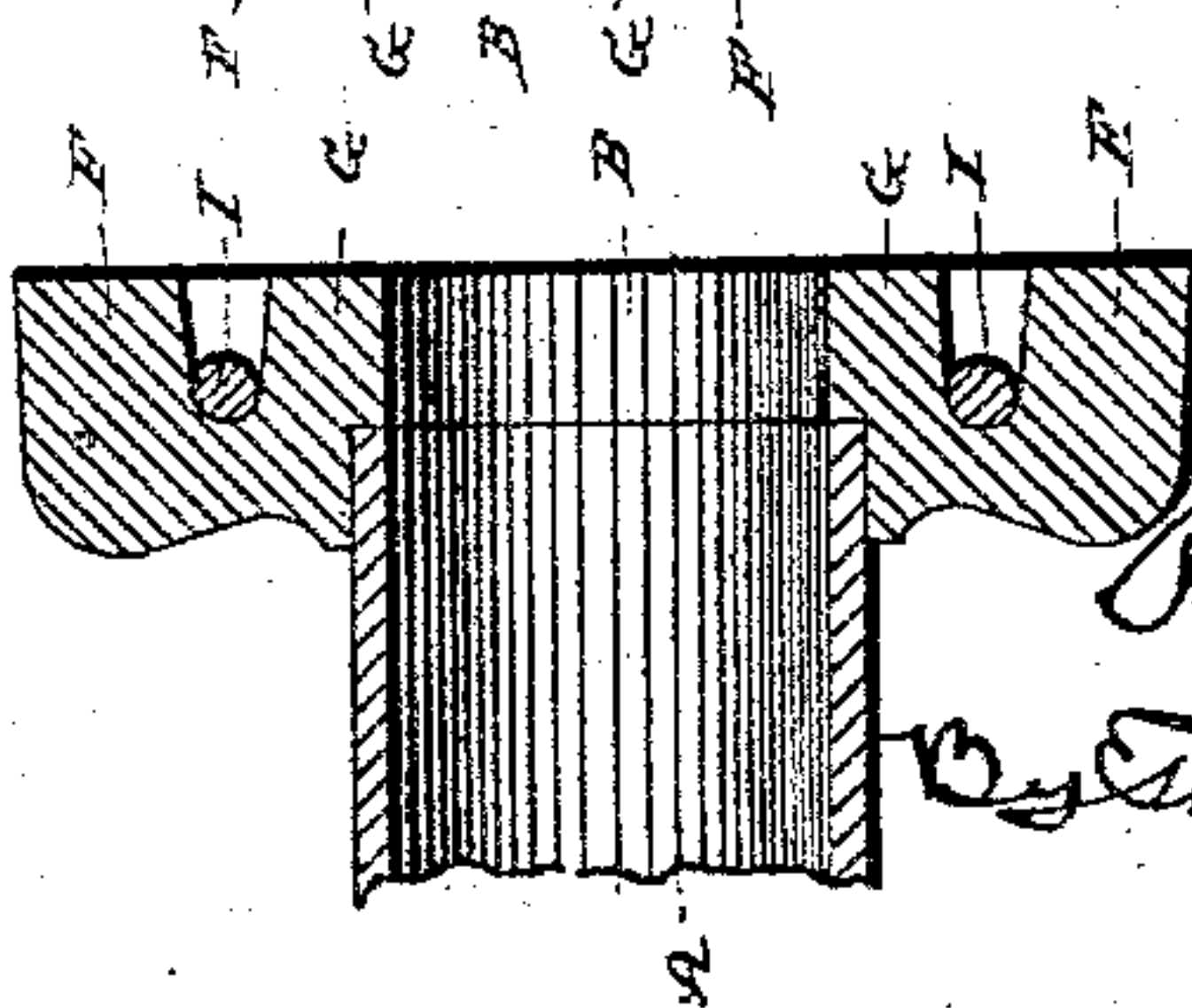


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

ROSCOE BEAN, OF SPRINGFIELD, OHIO.

WHEEL.

SPECIFICATION forming part of Letters Patent No. 315,995, dated April 21, 1885.

Application filed November 1, 1884. (No model.)

To all whom it may concern:

Be it known that I, ROSCOE BEAN, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have
5 invented certain new and useful Improvements in Wheels, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and
10 useful improvements in vehicle-wheels; and it consists, essentially, of a hub composed of two disks, each constructed with an inner and an outer rim, the former being tapered on
15 the exterior and the latter provided with a series of lugs having tapering sides and having an aperture on each side of the respective lugs, whereby the sets of spokes formed of one wire are secured to said disks, the disks themselves being connected by a tube.

20 In the accompanying drawings, forming a part of this specification, and on which like letters of reference indicate the same or corresponding features, Figure 1 represents a side elevation of my improved wheel; Fig. 2,
25 a diametrical sectional view of the same, taken through its axis; and Fig. 3, a diametrical sectional view of one of the hub-disks, showing more clearly the tapering lugs and tapered inner rim.

30 The letter A designates a metallic tube or sleeve, which constitutes the body of the hub, the bore of which receives the axle-spindle. This sleeve is preferably made of sheet metal and rolled into tubular form of the desired
35 size. By constructing it of this material and in this manner a very smooth wearing-surface is presented to the spindle or axle which passes through it, and at the same time the sleeve can be made perfectly true. These advantages avoid the necessity and expense attending
40 the same of drilling or reaming out the sleeve when made of a piece of tubing, as also that of turning the sleeve true in a lathe.

The letter B refers to the disks which form
45 the ends of the hub in which the spokes are secured. These disks are provided with central apertures, a portion of which is enlarged to agree with the diameter or the dimension of the ends of the tube A. Each disk B is
50 provided on one side with an annular recess or groove, D, while the rim formed by the presence of this recess has extending inwardly

therefrom at suitable distances apart a number of lugs, F. These lugs are preferably rounded on their inner faces and extend nearly
55 to the rim G, the distance between these faces of the said lugs and the exterior of said rim being about equal to the diameter of the spokes to be used. These lugs are tapered, as also is the inner rim on its exterior, whereby a flaring
60 entrance for the curved portion of the spokes, to be presently mentioned, is afforded. By this means great facility in applying the spokes to the disks is gained, and the taper allows of the disks being withdrawn from the mold. 65

Each two spokes, I, are formed of a single piece of wire, that part of the wire which constitutes the inner ends of the spokes being curved so as to agree in shape and size with the respective lugs. The projecting wires
70 which form the spokes proper are passed through the apertures H, and the curved portion seated tightly within the narrow or neck-like portion of the annular recess D between the lugs and the inner rim, G. By forcing the
75 curved portion of the spokes within these narrow portions it is found that the spokes are secured to the hub so that they cannot lose their position with reference to the hub, and the structure is made rigid and light. The
80 relative position of the respective disks is such that the sets of spokes attached to each disk lap over each other. In other words, a spoke extending from one disk connects with the rim between two spokes extending from the
85 other disk.

The letter J designates the rim, provided with a rubber tire, K, if desired; but it may be of any approved construction, either of wood or metal. If of wood, it will be provided
90 with a metallic tire, to which the spokes are connected by passing them through apertures formed therein and in the rim, their ends being riveted or upset. If a metallic rim is used, the connection is likewise made. Thus it will
95 be observed that when the ends of the spokes are upset and a tractile strain thereby exerted upon them the disks will be drawn toward each other and the shoulder C set firmly against the ends of the tube A. 100

I am aware that hub-spiders have heretofore been made with a series of segmental lips arranged close to each other, leaving only room for the passage between each lip of two spoke-

wires, these spiders being fitted upon a tube, which forms a box to receive the spindle. In such instance, however, there are no lugs having tapering sides and no rim having a tapering exterior whereby a flaring seat for the spokes is formed between them and the inner rim. In such instance, also, two spoke-wires pass through a single aperture formed between the juncture of the two lips, while in my case each spoke is provided with its own aperture, so that a more effectual connection between the hub-disks and the spokes is provided.

In the instance here alluded to there is also no outer rim, which in my device strengthens the structure, unites the lugs, and forms a body through which each spoke is passed and to which it is snugly fitted.

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

1. A wheel consisting of two hub-disks having each an outer rim, from which extends a series of lugs whose sides are tapered, and

having two apertures for each lug, one of said apertures being on each side of said lugs, and each having an inner rim whose exterior is tapered, whereby a flaring seat is formed for the spokes between said lugs and rim, a tube to which said disks are fitted, and the sets of spokes forced between said lugs and the inner rim, and passing through said apertures, and secured to the tire, each aperture receiving one spoke.

2. In a wheel, a hub-disk constructed with an outer rim, from which extends a series of lugs having tapering sides, with two apertures for each lug, one of said apertures being on each side of said lugs, and having an inner rim whose exterior is tapered.

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

ROSCOE BEAN.

Witnesses:

JAS. JOHNSON, Jr.,
J. M. MARKLEY.