(No Model.) 3 Sheets—Sheet 1.

F. ORAM.

CARRIAGE WHEEL.

No. 313,364. Patented Mar. 3, 1885.

Fig. 1.

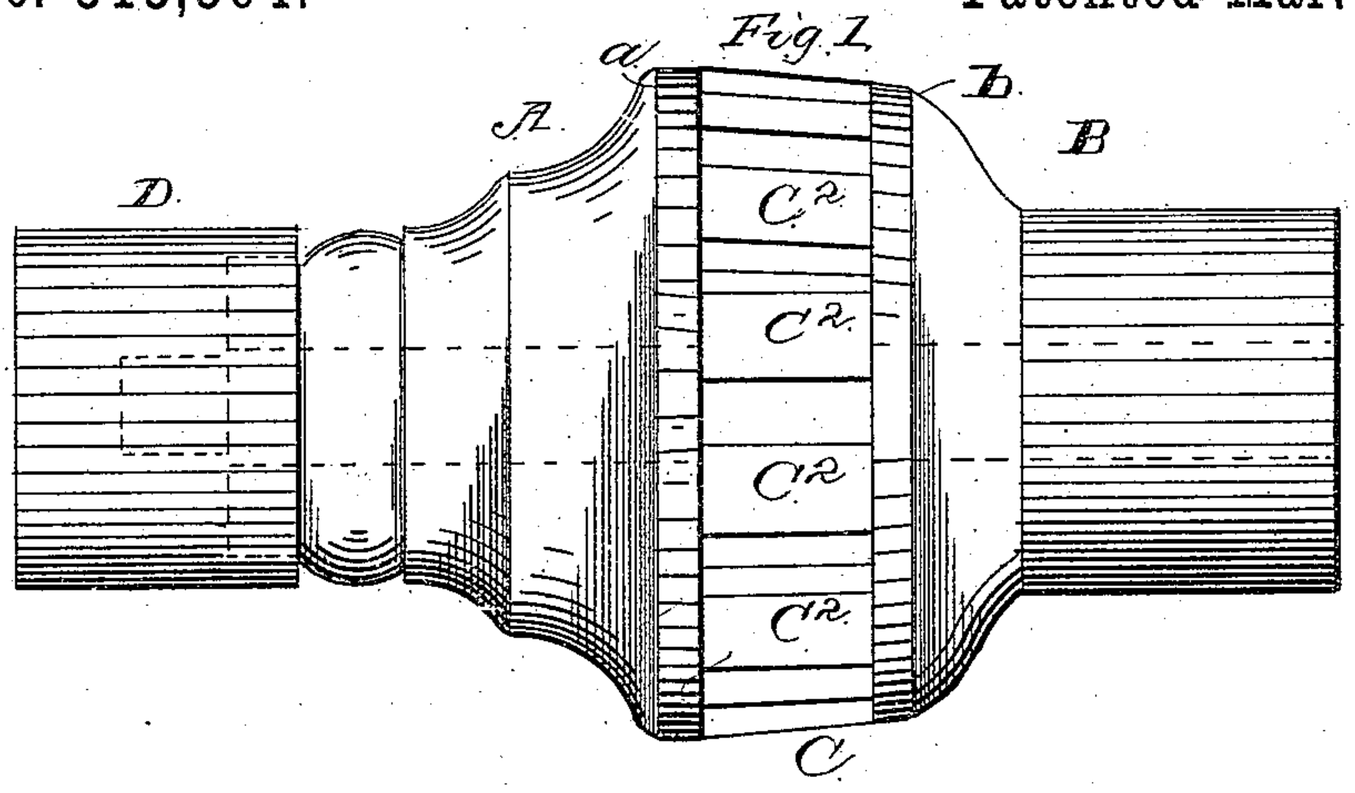
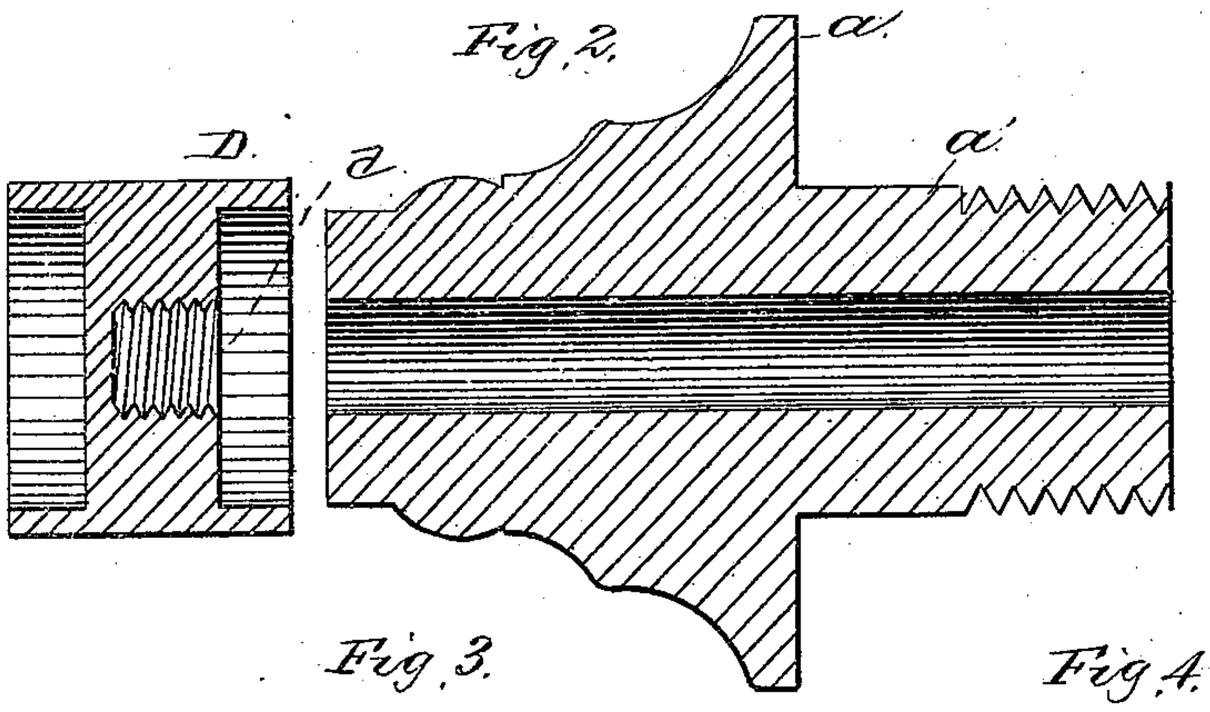


Fig. 2.



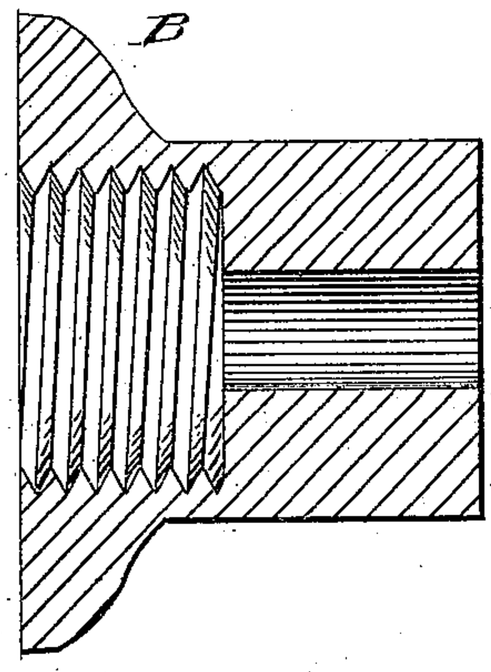


Fig. 3.

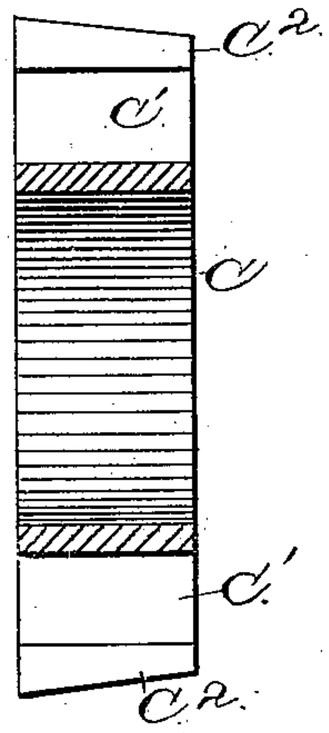


Fig. 4.

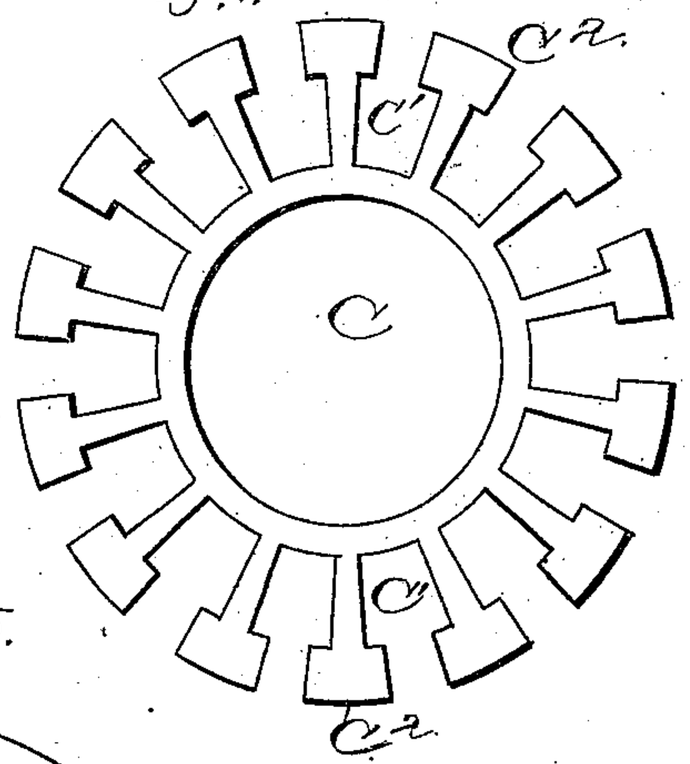
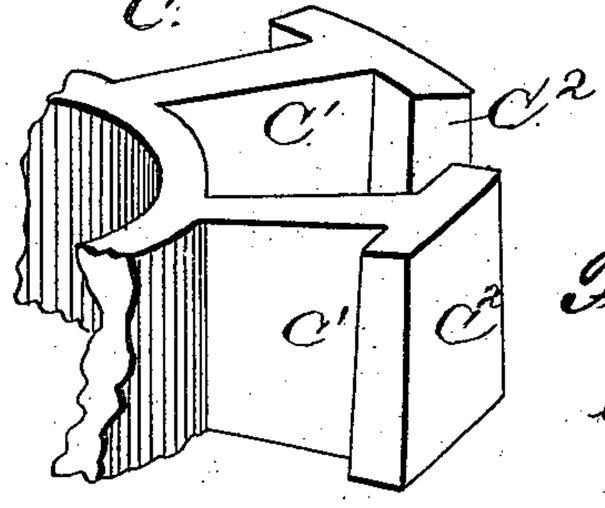


Fig. 5.



Witnesses.
C. O. K. McKenna
Tom R. Stuart

Inventor:
Frederick Oram
by H. A. Sims
his atty

(No Model.)

3 Sheets—Sheet 2.

F. ORAM.

CARRIAGE WHEEL.

No. 313,364. Patented Mar. 3, 1885.

Fig. 6

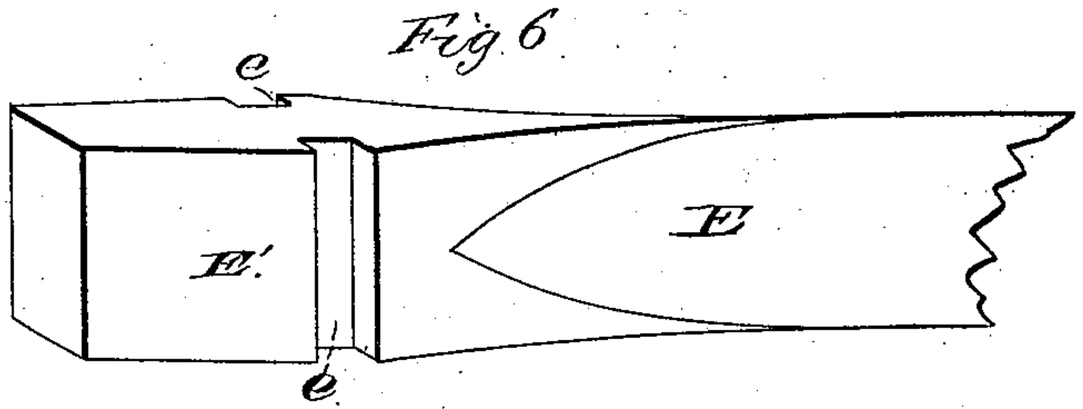


Fig. 7.

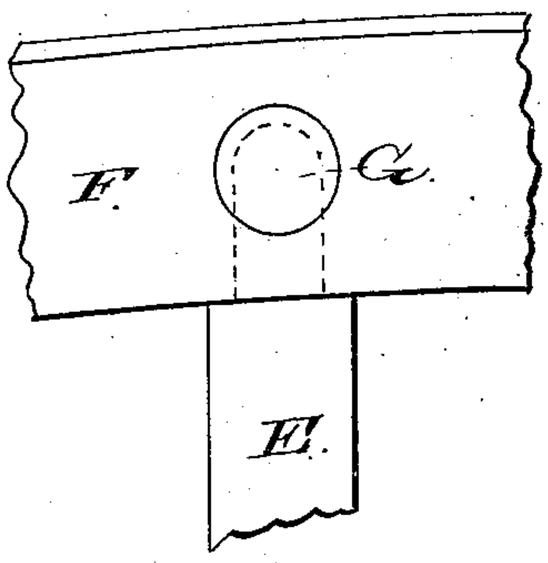


Fig. 8.

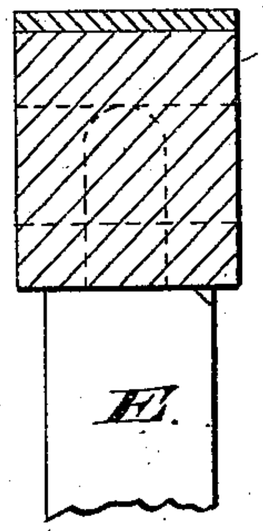


Fig. 9.

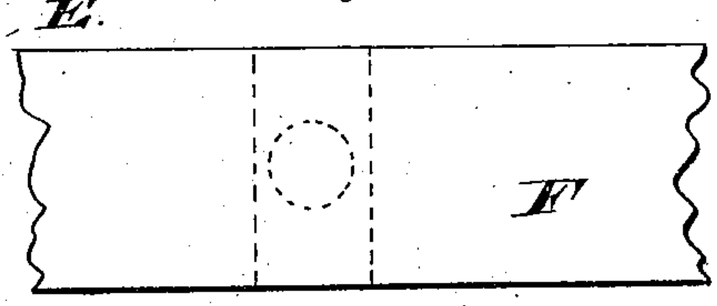


Fig. 10.

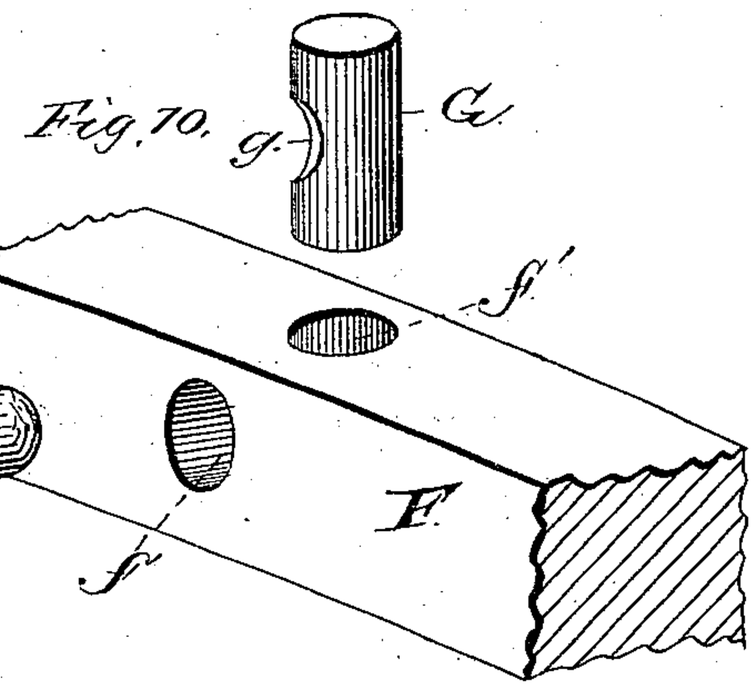


Fig. 11.

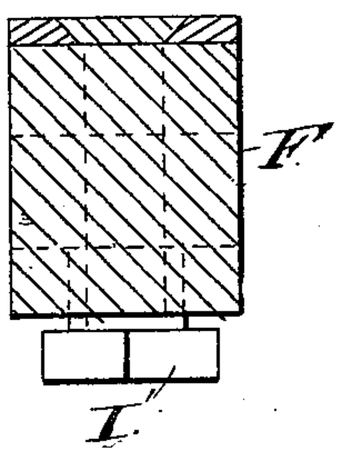
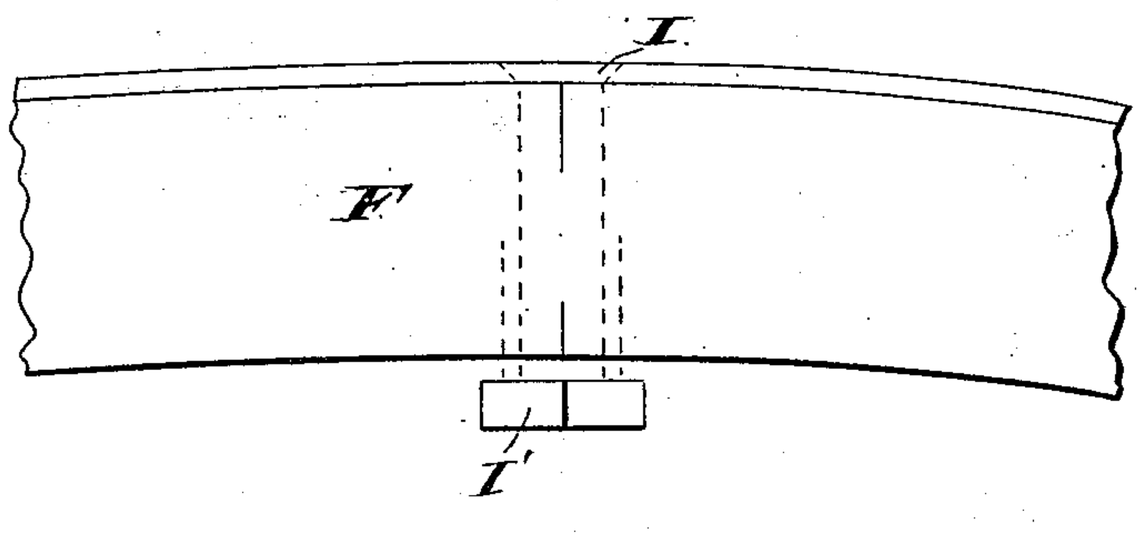


Fig. 12.



Witnesses.
O. L. McKenna
Tom R. Stuart

Inventor:
Frederick Oram
by H. A. Toulmin
his atty

(No Model.) 3 Sheets—Sheet 3.

F. ORAM.

CARRIAGE WHEEL.

No. 313,364. Patented Mar. 3, 1885.

Fig 13.

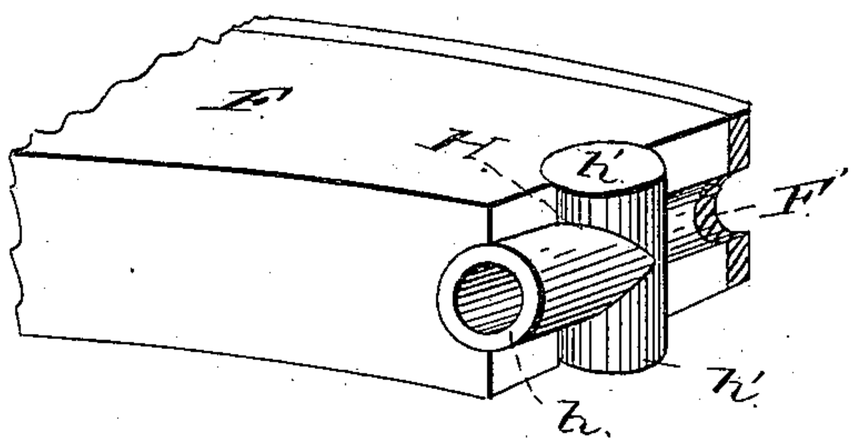
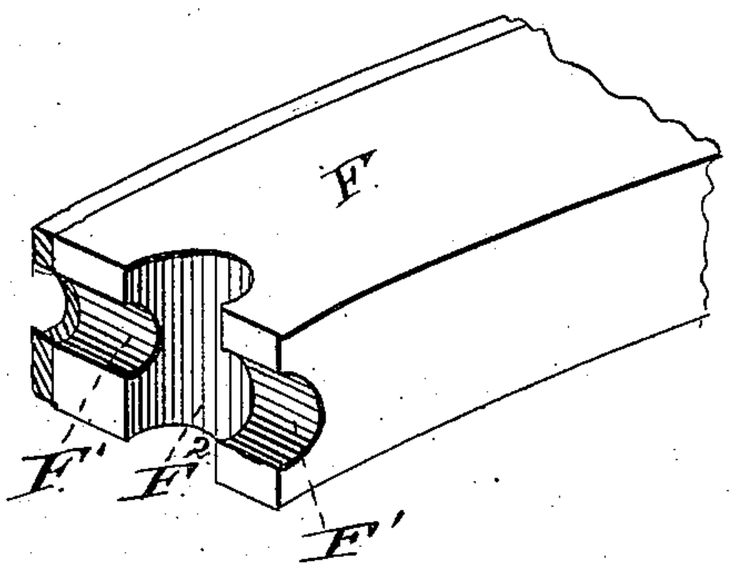


Fig 14.



Witnesses.

W. L. McKenna

Tom R. Stuart.

Inventor:

Frederick Oram

by

H. A. Snow

his attys.

UNITED STATES PATENT OFFICE.

FREDERICK ORAM, OF ILION, NEW YORK.

CARRIAGE-WHEEL.

SPECIFICATION forming part of Letters Patent No. 313,364, dated March 3, 1885.

Application filed August 14, 1884. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK ORAM, of Ilion, county of Herkimer, and State of New York, have invented a new and useful Improvement in Carriage-Wheels; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use it, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to vehicle-wheels; and it consists in the novel construction, combination, and arrangement of the several parts, as will hereinafter be more fully described and claimed.

In the drawings, Figure 1 is a side view of my hub. Fig. 2 is a vertical longitudinal section of the body, end cap, and cap-nut of same. Figs. 3, 4, and 5 are detailed views of the spoke-ring. Fig. 6 is a detail view of the inner end of the spoke. Figs. 7, 8, 9, and 10 are detail views illustrating the spoke-bearing in the felly; and Figs. 11, 12, 13, and 14 are detail views of the felly-joint, all of which will be described.

The hub is composed of the body A, the cap B, and the spoke-ring C. The body A is formed with the flange *a* and the cylindrical bearing *a'*, which bearing is threaded on its outer end to receive the cap-piece. This cap is formed with a flange, *b*, and turns onto the threaded end of the bearing *a'*. The flanges *a b*, it will be seen, form the walls of an annular groove, within which the spoke-ring is fitted and clamped. The ring C fits over the part *a'* of the hub-body, and is provided with radial arms C', formed with head C^2, as shown, forming a T, and these heads are tapered from end to end, as most clearly shown in Fig. 3, in order that the spokes may be firmly clamped therein. The nut or cap D is adapted to fit over the outer end of the hub, and has formed in it a threaded socket, *d'*, fitted to receive the threaded end of the spindle. The spoke E has its inner end formed with a tenon, E', fitted to be inserted between the arms C', and has in its sides, at the head of said mortise, grooves *e*, in which slide the heads C^2, as will be understood.

In setting up the wheel, the ring C is placed in the bearing *a'*, with the thickest part of heads C^2 against the flange *a*. The spokes are then applied, the tenons E' being driven between the arms C' and the grooves *e* on the heads C^2. As the spokes are forced to their places against the flange *a*, the taper of heads C^2 will cause them to bind firmly to the ring, so that no shaking or clattering of same in their hub-sockets can take place. The cap-piece B is then turned onto the threaded end of shank *a'* and up against the ring and spokes, clamping same firmly to place. The outer end of the spokes are formed with tenons *e'*, which fit in opening *f*, bored from the inner side of the felly F. An opening, *f'*, is bored through the felly at the head of and transverse the opening *f*. A pin, G, is inserted in the opening *f'*, and is provided with a notch or recess, *g*, in which rests the point or extremity of the tenon *e'* of the spoke. This transverse pin, it will be seen, takes the bearing and jar of the spoke-point off the felly, and gives a firm as well as a strong bearing therefor. The felly-sections have their ends formed with radial grooves F' and transverse grooves F^2 intersecting the grooves F', as shown in Figs. 13 and 14. The groove F' is formed midway the sides of and the groove F^2 midway the inner and outer edges of the felly, and the grooves F' and F^2 on the end of one section register with the corresponding groove in the adjacent end of the next section. The T-shaped connection-piece H has a tubular arm, *h*, fitted to the inner wing of slot F' and across head *h'*, which fits the groove F^2. The connection-piece is placed in the grooves in the end of one section, as shown in Fig. 13, and the other section is placed thereagainst. The bolt I is then inserted down through the tire-groove F' and the tubular arm of the connection, and secured by a nut, I', turned up against the end of said arm, as shown in Figs. 11 and 12. By this means I am able to securely fasten the felly-sections, and dispense with all joint-plates on the sides of same and the necessity of transverse bolts for securing such plates.

By the construction described it will be seen my wheel may be readily taken apart, when desired, to repair or replace any part thereof without removing the tire. This enables the repairing of the wheel by the wheelwright, and

obviates the necessity of calling in the aid of a blacksmith, as is requisite when the tire has to be sprung on and off.

I claim—

1. The combination of the felly provided with a spoke hole or mortise and with an opening formed at the head of and transverse the said mortise, a pin inserted in said transverse opening and formed with a notch or recess, and the spoke provided with tenon inserted in the spoke-hole and bearing directly in the notch or recess in the transverse pin, substantially as set forth.

2. A wheel-felly provided with radial spoke-mortises and having bearing-pin inserted in them at the head of and transverse to said mortises and across the felly, substantially as set forth.

3. The combination of the hub-body provided with a bearing or shank, the spoke-ring placed on said bearing and provided with mortise fitted to receive the base of the spokes, the spokes having their base end fitted to said ring, the hub cap-piece, the felly provided with a spoke hole or mortise and having an opening formed at the head of and transverse the said mortise and across the felly, pins inserted in said transverse openings through the felly and adapted to serve as bearings for the outer end of the spokes, substantially as set forth.

4. A vehicle-wheel consisting of a hub having the threaded end B and the spoke-ring C C′ C², the hood or cap D, covering the end of the hub and provided with the threaded opening *d*, the spokes formed to fit in the ring C C′ C² and tenoned at their outer ends, and the felly having radial openings for the tenoned ends of the spokes and transverse opening cut across the felly, and pins provided with holes for reception of the tenoned ends of the spokes placed in said transverse openings, all substantially as and for the purpose set forth.

In testimony that I claim the foregoing I append my signature.

FREDERICK ORAM.

Witnesses:
TILSON LEAVITT,
ELBERT G. PETTINGILL.