2 Sheets—Sheet 1.

J. JOHNSON.

Hub.

No. 30,681.

Patented Nov. 20, 1860.

Fig. 1.

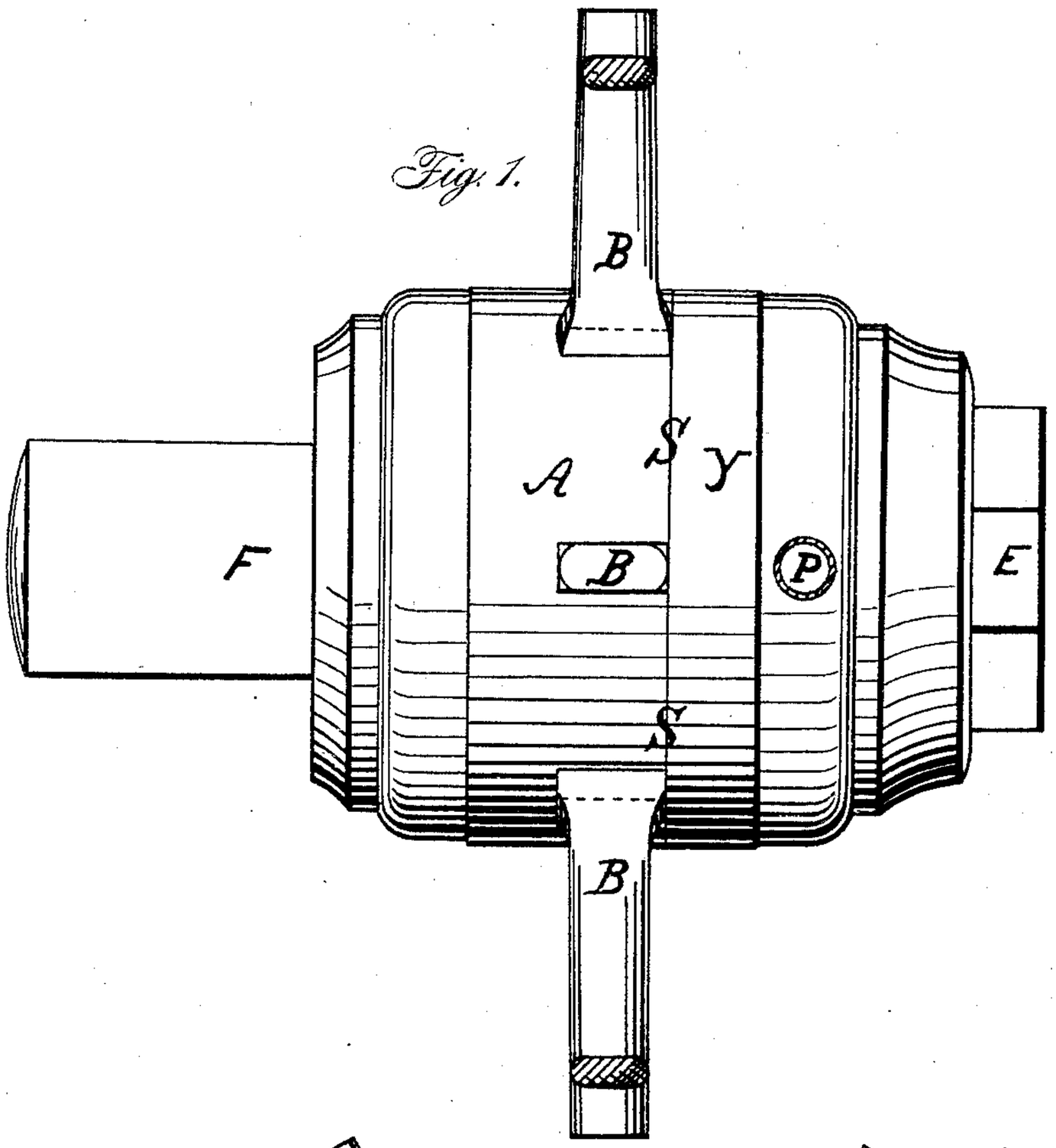
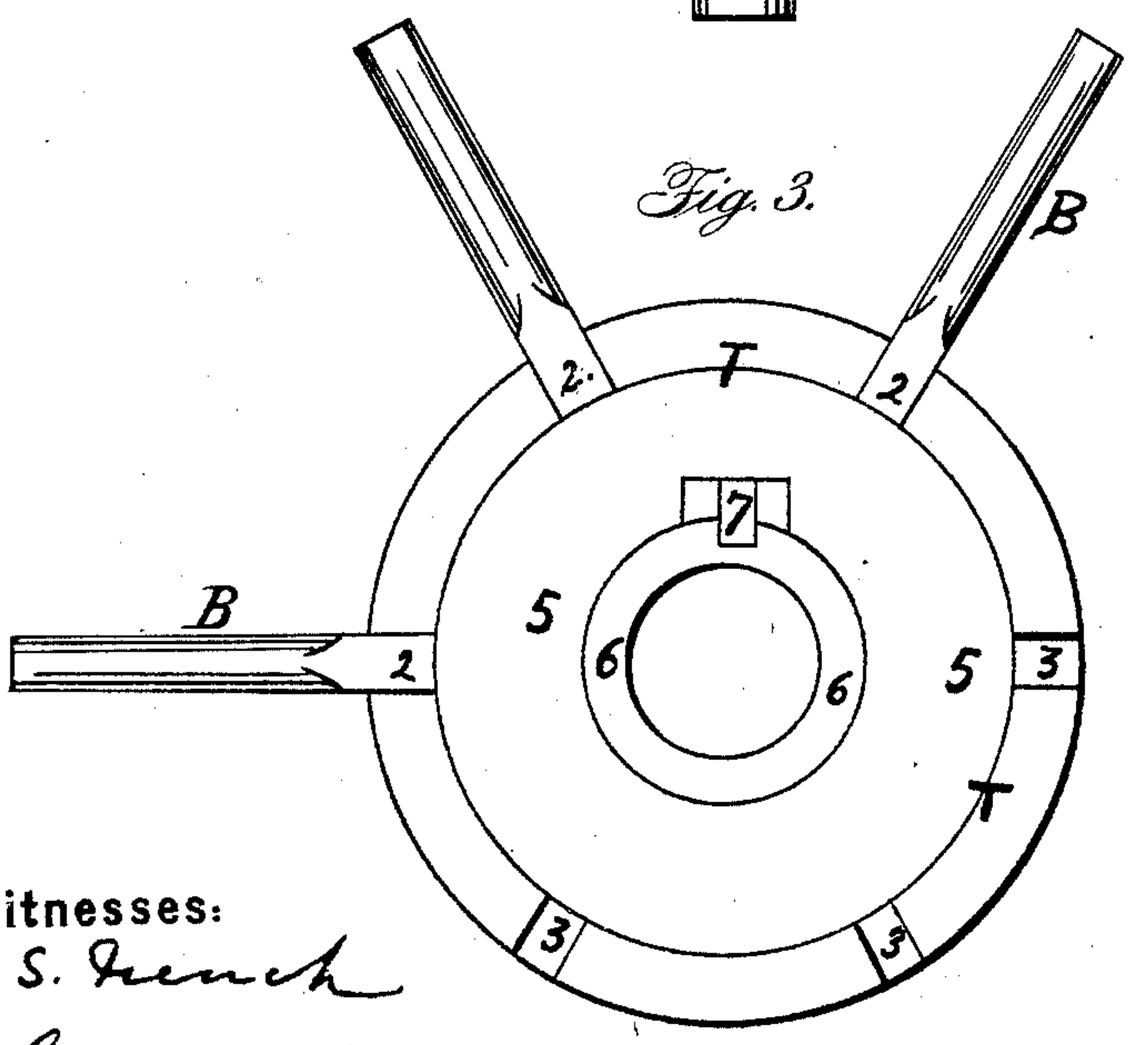


Fig. 3.



Witnesses:

James S. French

A Schaeffer

Inventor:

Geo Johnson

2 Sheets—Sheet 2.

J. JOHNSON.

Hub.

No. 30,681.

Patented Nov. 20, 1860.

Fig. 2.

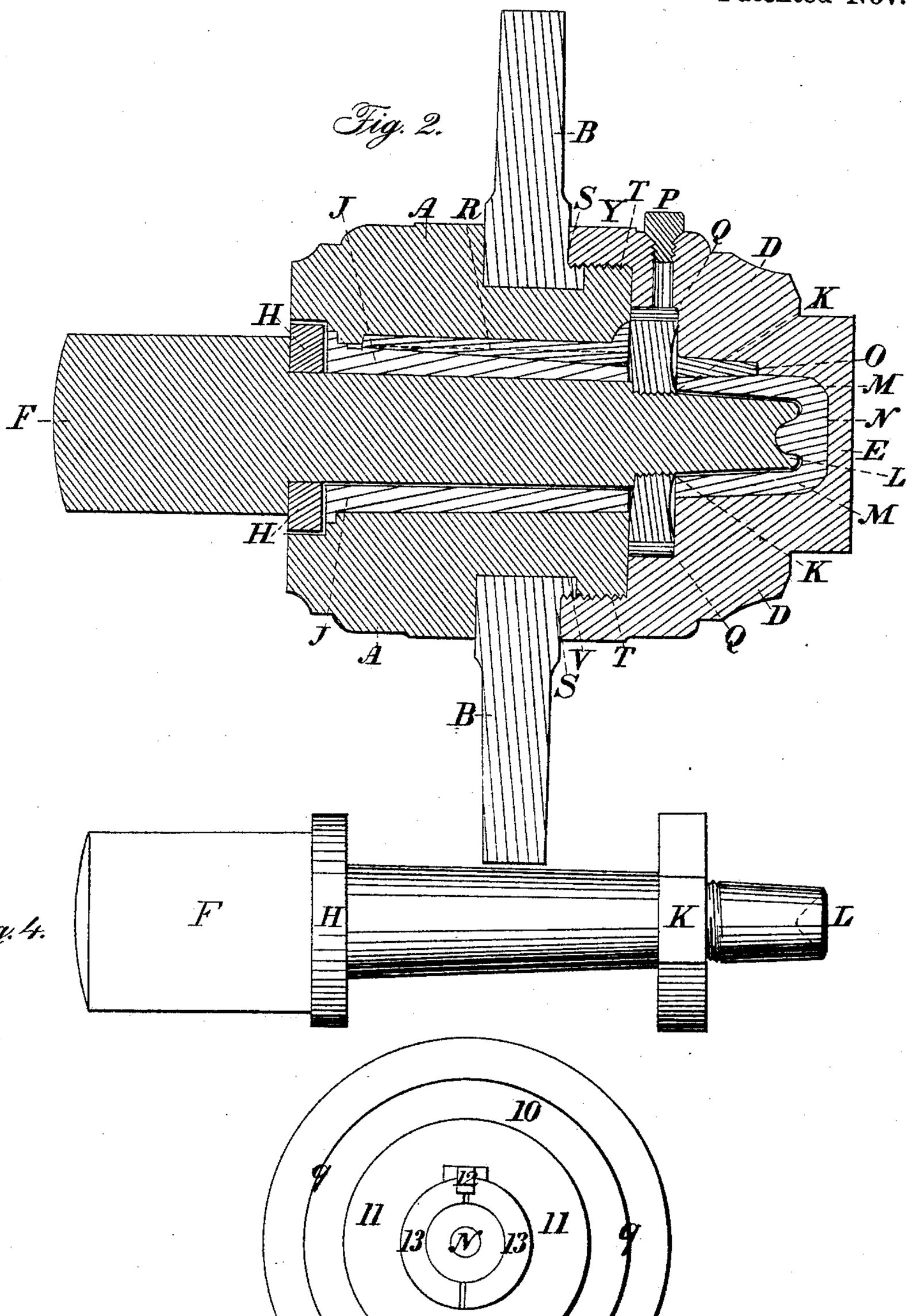


Fig. 4.

Witnesses:

James S. French

A. Schuyff

Inventor:

Jas. Johnson

UNITED STATES PATENT OFFICE.

JAMES JOHNSON, OF GARYSBURG, NORTH CAROLINA.

METALLIC HUB OF CARRIAGE-WHEELS.

Specification of Letters Patent No. 30,681, dated November 20, 1860.

To all whom it may concern:

Be it known that I, JAMES JOHNSON, of Garysburg, in the county of Northampton, in the State of North Carolina, have invented a new and Improved Metallic Carriage-Hub; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The hub which is the subject of this specification, is divided into two unequal portions, which are easily joined together and made one by a screw thread cut on a shoulder formed on the outer end of the inner section of that portion of the hub next to the vehicle when occupying its position on the axle. The outer portion is made to fit on this shoulder by a reciprocal arrangement, as a top would fit a circular box. The shoulder above referred to has a male thread cut on it which is made to enter the female thread, cut within the inner margin of the outer or cap like portion of the outer section of the hub, the two when united as a hub, being as strong as though they were inseparable.

By reference to the drawings, the external as well as internal arrangement of the hub will be easily understood and appreciated.

Figure 1 represents the hub adjusted and perfect in all its arrangements, as it will appear when occupying its position as a component part of the complete wheel. A represents the inner section of the hub; Y the outer section; B, B, B, three of the spokes, with their tenons driven into their mortises; S, S, the line of division between the two sections of the hub; P, the cap which closes the tube leading into the tap or oil chamber; E, the octagonal projection or hold for a wrench, with which the hub can be united or unscrewed; F, a portion of the body of the axle protruding from the inner vertical end of the hub.

Fig. 2, represents a horizontal section of the hub, cut through its longest diameter. F, is the axle, with its arm occupying its proper place in the hub. H, H, is the washer or shoulder of the axle in its countersink, and may be traced by the deep line, starting from H, running a short distance in the direction of the axle, at a right-angle, changing its course toward and cutting across the axle, then with another right-angle turning toward, and terminating at H; J, J, the axle-box for the inner portion of the hub, terminating at K, K, the tap, screwed on the axle, and resting securely in the oil-chamber, or tap-box; L, the portion of the axle which extends through the tap into the outer section of the hub; M, M, the axle-box of the outer section; N, the pivot projection at the bottom of the outer box, resting in the concavity formed for its reception on the end of the axle; O, the key securing the outer box driven into a seat cut into the substance of the hub, and side of the box; P, cap and oil tube; Q, Q, the oil chamber, with tube above leading into it; R, the key holding the inner box in its place; S, S, the line of division between the two sections of the hub; T, T, two serrated marks, representing the screw which holds the hub together, and clamps the outer portion of the tenons of the spokes above the screw; B, B, spokes; V, V, shoulders of the tenons projecting under the screw.

Fig. 3, represents the outer end of the inner section of the hub with its outer vertical surface turned up, the side on which the axle enters being below; B, B, B, the spokes; 2, 2, 2, the portion of the tenons above the screw; 3, 3, 3, mortises for spokes; T, T, shoulder for the screw threads; 5, 5, the inner wall of the oil or tap chamber; 6, 6, the outer end of the inner axle box; 7, end of the key, securing box.

Fig. 4, represents a portion of the body of the axle, with its shoulder or washer, the arm, and tap, all in their proper places.

Fig. 5, represents the outer section of the hub, with the octagonal protuberance turned down; P, cap of the oil tube; 9, 9, projecting cap of the outer section within which the female threads are chased to unite the two sections; 10, 10, perspective view of the inner circumference of the oil or tap chamber; 11, the outer wall of the oil or tap chamber; 12, end of the key to the outer box; 13, inner edge of the outer box; N, pivot at the bottom of the outer box.

Deeming the above description sufficiently minute and accurate to form an appreciation of the hub presented for examination, I will briefly recapitulate its advantages, and state what I claim in the improvement. In the first place, being made entirely of metal, the peculiar arrangement of the hub gives to the entire wheel great strength, the tenons of the spokes fixed in deep mortises, with

that portion of the mortise on the screw side, extending into the substance of the hub below, the screw shoulders on the outer side of the tenon, which renders it impossible the spoke can be withdrawn while the hub is screwed together. The outer section of the hub, by means of the screw, is made to clamp the tenons as a vice, giving great power in the spokes to resist oscillation. The boxes are securely fastened in their places, by means of keys which are readily removed when necessary, the boxes being made in numbers, after long use, shall give too much play to the axle, can be substituted for smaller numbers, fitting the axle as at first. The position of the tap within the hub, with the pivot arrangement in the end of the outer box resting in the cavity at the end of the axle makes four points of resistance against oscillation, instead of two, as in all the hubs now in use. The tap K, placed as it is, between and against which two unyielding metallic walls revolve, and forming themselves an almost impervious oil chamber is deprived in, a great degree, of the friction resulting from the attrition of metallic surfaces—first, by the concave form of the tap on its inner and outer vertical surfaces, leaving only a circumferential ring on each side in contact with the sides of the oil chamber; secondly, the tube leading to the oil chamber renders it unnecessary to remove other than the little cap on its outer end to supply the oil. The tap is a flat octagon readily grasped by a wrench.

In reference to the mode adopted by me for confining the spokes in the hub, I am aware that spokes have been dovetailed in the hubs of wheels, but I do not claim any such arrangement but

I claim—

1. The combination and arrangement of the hub (A), cap (D) and the screw thread on the shoulder of the spoke whereby the spoke is securely held in its position.

2. The combination and arrangement of the screw nut (K) on the arm of the axle, with the pivot (N) in the cap (D) as described: for the purpose of preventing the oscillation of the hub on the arm of the axle.

JAS. JOHNSON.

Attest:

JOHN S. HOLLINGSHEAD.

JOHN W. RANKIN.