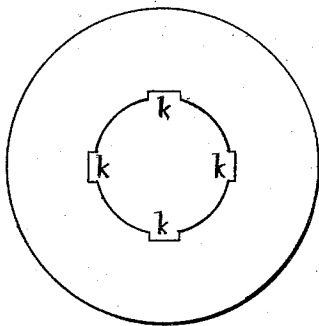
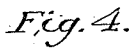
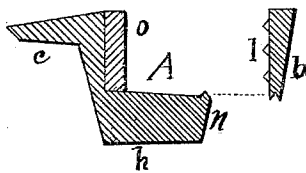
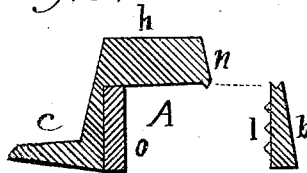
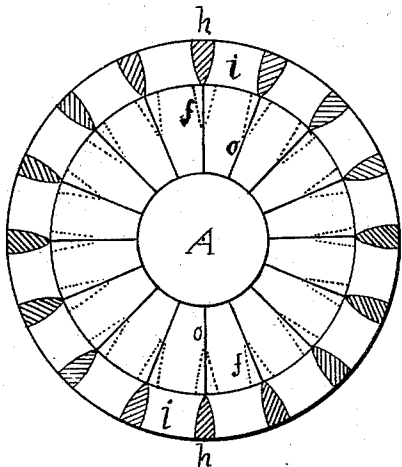
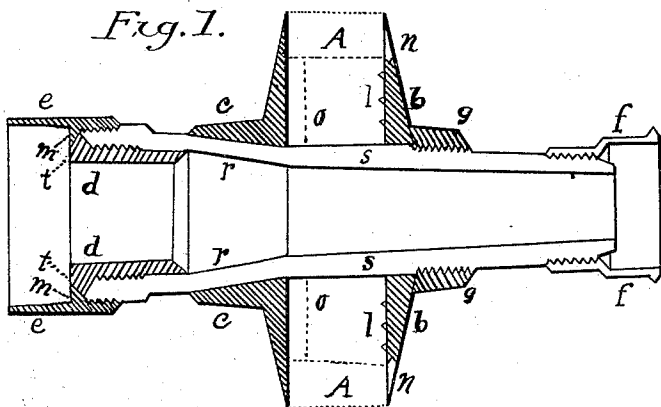


(No Model.)

A. HOUGH.
VEHICLE HUB.

No. 468,494.

Patented Feb. 9, 1892.



Witnesses

David Young

Robert Willgoose

Inventor

Alexander Hough

UNITED STATES PATENT OFFICE.

ALEXANDER HOUGH, OF DOVER, NEW JERSEY.

VEHICLE-HUB.

SPECIFICATION forming part of Letters Patent No. 468,494, dated February 9, 1892.

Application filed July 1, 1891. Serial No. 398,200. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER HOUGH, a citizen of the United States, residing at Dover, in the county of Morris and State of New Jersey, have invented a new and useful Vehicle-Hub, of which the following is a specification.

My invention relates to improvements in vehicle-hubs constructed of metal; and the objects of my improvement are, first, strength and durability in a vehicle-hub; second, the better to secure spokes therein and to provide access thereto for that purpose, and, third, a neat and light method of construction. I attain these objects by the mechanism illustrated in the accompanying drawings and herein described, reference being had to the drawings by letters in the description hereof.

Figure 1 is a longitudinal section of hub, comprising nave A, sleeve or box s, flange-plate b, screw-collar g, journal-box d, and sand-bands e and f. Fig. 2 is a transverse section of nave A and plan of securing spokes therein. Fig. 3 is a longitudinal section of nave A and flange-plate b disconnected. Fig. 4 is a perspective view of flange-plate b, with key-seats k, for the uses shown hereinafter.

The spoke-holder is constructed in two parts, the nave A and the flange-plate b, the nave A containing ports in its outer circumference, the inner part being an open chamber. The nave A is provided with an annular projection c, cone-shaped within, and which rests on sleeve s, a section of which is correspondingly cone-shaped, thereby giving a true and firm bearing and support to nave A. On the reverse or face side the nave A is formed with an open circular space within the rim n, (best shown in Figs. 2 and 3,) the inner edge of rim n being screw-threaded. The nave A is also provided with thin flanges o on the inner wall of chamber, connecting with bars h and converging toward a common center, as shown in Fig. 2, and projecting at a right angle from the inner wall-plate, as indicated by the dotted lines o in Fig. 1 and by the reverse shading o in Fig. 3; but such projection may be greater or less than indicated by the drawings. The purposes of these flanges o are to afford greater strength to nave A and to give proper direction and position to spokes when inserted.

Flange-plate b (shown in Figs. 1, 3, and 4) is screw-threaded on its outer edge and provided with key-seats k at central part. These key-seats or recesses are first used for inserting a tool within for the purpose of turning said plate firmly in position within rim n of nave A. The flange-plate b is also provided on its inner surface with slight annular ridges l, true to a circle and designed to press within spokes for the purpose of more effectually binding them within nave A.

The sleeve or box s in Fig. 1, comprising a part of the hub, is constructed in one piece and screw-threaded to receive screw-collar g, and also screw-threaded at each end to receive sand-bands e and f, and screw-threaded internally to receive journal-box d, said journal-box d being correspondingly so threaded outwardly. A section r of sleeve s is cone-shaped, substantially as shown in Fig. 1, to fill the annulus and cone-bearing c of nave A. The journal-box d and sleeve s may be combined and constructed in one piece only if sleeve s shall be composed of suitable material for bearings. The sleeve s may be fitted with journal-box d at one or both ends, and said journal box or boxes may be fitted in sleeve s without screw-threading, but fluted instead, and the sleeve s correspondingly so fluted, and the journal-box still held in position with the sand-band and shoulder thereof, as in the construction hereinafter shown of sand-band e and journal-box d.

In Fig. 2 the shaded parts h denote the bars intervening in the outer rim of nave A to form the ports i, the bars h being so formed on their inner and outer edges and by their curved sides as to provide a larger port within the inner edge of bars than without, and also the chamber within the bars. The blank spaces i well represent the shape and position of spokes when inserted in nave A and expanded by wedging or keying at points indicated by the short dotted lines j to fill the enlarged parts and chamber within the bars h, thereby forming dovetails, as it were, on the spokes within the bars and most effectually securing spokes in nave A, after which the flange-plate b is turned in position within rim n, the sleeve s being next inserted. The keying of flange-plate b on sleeve s by inserting keys in seats k is next in order, after

which follow with screw-collar *g*, which conceals and secures keys in place and also secures sleeve *s* in spoke-holder and gives to flange-plate *b* additional support.

5 The flange-plate *b* may be fitted to and within rim *n* of nave *A* without screw-threading as a cheaper method and yet a practical construction attained.

10 In Fig. 3 the nave *A* is drawn as on a line through bars *h*, intervening in outer rim to form ports *i*, also through flanges *o*, connecting with bars *h*, and in Fig. 1 as on a line through open ports or between the bars *h*. The journal-box *d* is provided with a beveled 15 shoulder *t*, outwardly resting on end of sleeve *s*, and the sand-band *e* is provided with a correspondingly-beveled shoulder *m*, inwardly resting on journal-box shoulder, for the purpose of securing and retaining journal-box in 20 place and position, whether fluted or screw-threaded. The journal-box *d* and sand-band *e* should be threaded in an opposite direction—that is, the one to the right and the other to the left—and the sleeve *s* correspondingly so 25 threaded, thereby the better securing each in place with the other.

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

30 1. In a vehicle-hub, the spoke-holder constructed in two pieces, the nave *A* and the flange-plate *b*, in which the nave *A* is formed with an open circular space within the rim *n* to receive the flange-plate *b*, with the intervening bars *h*, connecting rim *n* with inner 35 wall of chamber, provided with the cone-bearing *c*, with the bars *h* so formed on their inner and outer edges and by their curved sides as to provide a larger port within the inner edge of bars than without, substantially as 40 shown and described.

2. In a vehicle-hub, the nave *A*, provided

with an opening-port within the rim *n*, by which access is had to inner part of spoke-holder and to the spokes within rim *n* after 45 having been inserted in nave *A* for the purpose of wedging or keying the spokes inside of rim *n* and bars *h* and within the inner edges of bars, as shown, substantially as and for the purpose described.

3. In a vehicle-hub, the nave *A*, provided 50 with the flanges *o* on the inner wall of chamber and connecting with bars *h*, thereby giving proper direction and position to the spokes when inserted in nave *A* and also greater strength in the construction thereof, substan- 55 tially as described.

4. In a vehicle-hub, the nave *A*, provided with the screw-threaded rim *n*, in combination with the flange-plate *b*, correspondingly 60 threaded on outer edge and provided with the key-seats *k* and the annular ridges *l*, substantially as described.

5. In a vehicle-hub, the combination of sleeve *s* with journal-box *d*, either fluted or screw-threaded and provided with an out- 65 wardly-projecting shoulder *t*, in combination with sand-band *e*, provided with an inwardly-projecting shoulder *m*, resting on journal-box shoulder, substantially as and for the purpose 70 described.

6. In a vehicle-hub, the nave *A*, containing the rim *n*, the opening space within rim *n*, and the bars *h*, connecting rim *n* with the inner wall-plate provided with the cone-bearing 75 *c* in the manner shown, in combination with sleeve *s*, provided with a correspondingly cone-shaped section *r*, substantially as and for the purpose set forth.

ALEXANDER HOUGH.

Witnesses:

DAVID YOUNG,
ROBERT KILLGORE.