M. S. TOWSON.

HUB.

APPLICATION FILED JULY 24, 1907

911,922.

Patented Feb. 9, 1909.

Fig. 1.

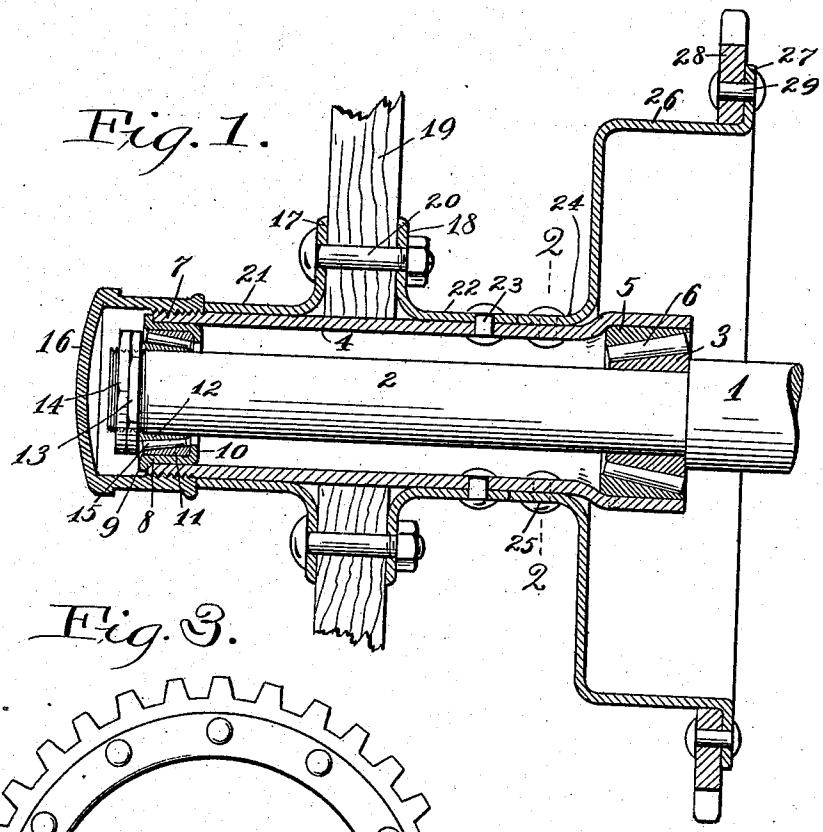


Fig. 3.

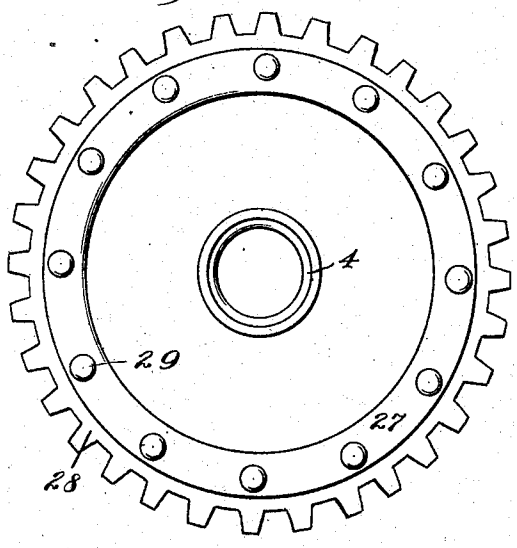
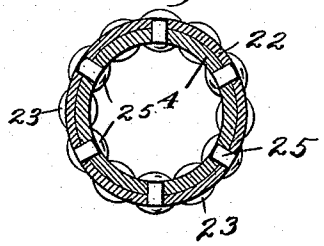


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

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HUB.

No. 911,922. Specification of Letters Patent. Patented Feb. 9, 1909.

Application filed July 24, 1907. Serial No. 385,268.

To all whom it may concern:

Be it known that I, MORRIS S. TOWSON, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Hubs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

My invention relates to vehicle hubs and has for its object to produce a hub of this character from pressed or stamped metal which shall be strong, light, durable and cheap of production. I accomplish these objects by the embodiment of my invention illustrated in the drawing forming part hereof, wherein—

Figure 1 represents a longitudinal sectional view taken through the central portion of a hub constructed in accordance with my invention, the axle, part of one of the cones and the lock nut therefor being shown in elevation. Fig. 2 represents a sectional view on the correspondingly numbered line of Fig. 1, and Fig. 3 represents an end elevation of the hub shown in Fig. 1.

Describing the parts by reference characters, 1 represents the axle having the spindle 2 thereon. This spindle is provided at the inner end thereof with a cone 3 having a driving fit with the spindle with the inner end of the cone abutting against the adjacent enlarged portion of the axle. Surrounding the spindle is the box 4. This box is of seamless drawn metal, preferably steel, and is expanded at its inner end to form a recess for the reception of the cup 5, between which and cone 3 there are interposed antifriction devices, shown as rollers 6. The outer end of the box is provided with an external thread 7, and within said outer end there is fitted a retainer cup 8, said cup having a driving fit with the box. This retainer cup is provided with an outwardly projecting flange 9 adapted to engage the outer end of the box and an inwardly projecting flange at its opposite end. Within the retainer 8 there is fitted the bearing cup 11. The outer end of the spindle 2 is threaded and is provided with a cone 12 carried by and projecting inwardly from a nut 13 adapted to be threaded on the end of the spindle 2. 14 denotes a lock nut for the cone. Between the cup 11 and cone 12 there are interposed antifriction devices, shown as rollers 15. A dust cap 16 is provided for the end of the box, said cap being provided with an internal thread whereby it may be applied to the threaded end of box 4 and form a dust-tight inclosure for the bearings at the outer end of the spindle and box.

17 and 18 denote spoke flanges between which the inner ends of the spokes 19 are fitted, being secured in place by means of bolts 20. These flanges are stamped from flat disks, and each has a tubular portion 21 and 22 respectively projecting in opposite directions and engaging the outer surface of the box. The outer end of tube 21 extends preferably as far as the threaded portion of box 4 and may form an abutment for the inner end of dust cap 16. The inner end of tube 22 is suitably secured to the box, as by means of rivets 23, and tube 21 may be secured to box 4, either by brazing or through bolts 20 and flange 18 of tube 22.

To the inner portion of box 4 there is applied a combined brake drum and wheel drive. To form this combined brake drum and wheel drive, a disk of sheet metal, as steel, is provided with a central aperture and the metal adjacent to said aperture is drawn or pressed outwardly to form a tube 24 which fits the outer surface of the box 4 and may be suitably secured thereto in any convenient manner, as by means of rivets 25. The outer end of tube 24 will preferably abut against the inner end of tube 22. The outer portion of the disk is bent at right angles with respect to the body thereof and is drawn outwardly to form a cylindrical body 26, and the outer end of this cylindrical portion is flanged outwardly at 27 to form means for securing to the hub a sprocket or other gear 28, whereby the hub and wheel may be driven. Gear 28 may be secured to the flange 27 by means of rivets 29.

A hub constructed in accordance with my invention is very light, since it comprises a small number of light sheet metal parts, but is simple and economical of production. The box is preferably constructed of seamless drawn steel tubing, while the other three external members of the hub will be preferably constructed from stampings pressed or drawn from flat disks. The retainer cup 8 is also made of pressed steel as will be the case with the dust cap 16, the whole constituting a hub which is extremely light, strong, and economical of production.

The term "stamping" which appears in the claims is employed to distinguish the

parts referred to from castings and is intended to cover such parts as made from sheet metal which, by suitable manipulation, has been given the desired shape.

Having described my invention, I claim:

1. A vehicle hub comprising, in combination, a box, a stamping having a centrally-arranged tube projecting in one direction therefrom and a cylindrical extension projecting in the opposite direction therefrom, and a gear mounted upon said extension, substantially as specified.

2. A vehicle hub comprising, in combination, a box, a sheet metal stamping having a central tube projecting in one direction therefrom and a cylindrical projection extending in the opposite direction therefrom, an outwardly projecting flange on said extension, and a gear secured to said flange, substantially as specified.

3. A hub comprising, in combination, a box, a pair of spoke flanges of stamped metal each having a tubular projection fitting said box, and a stamped metal cylindrical body having also a tubular projection secured to said box, substantially as specified.

4. A vehicle hub comprising, in combination, a box, a pair of stampings each having a tubular portion adapted to engage the box and a spoke flange, and a third stamping having a tubular portion adapted to engage the box and a cylindrical flange or extension constituting a brake surface, substantially as specified.

5. A vehicle hub comprising, in combination, a box, a pair of stampings each having a tubular portion adapted to engage the box and a spoke flange, means for securing one of said tubular portions to the box, a third stamping having a tubular portion adapted to engage the box and a cylindrical extension constituting a brake surface, and means for securing the tubular portion of the last-mentioned stamping to the box, substantially as specified.

6. A vehicle hub comprising, in combination, a box, a pair of stampings each having a tubular portion adapted to engage said box and each having a spoke flange, a third stamping having a tubular portion engaging the box and also having a cylindrical extension, a flange carried by said extension, and a gear secured to said flange, substantially as specified.

7. A hub comprising, in combination, a metal sleeve having an expanded end, a stamping having a tubular portion adapted to engage such sleeve beyond but adjacent to the expanded end, and a pair of spoke flanges carried by said sleeve beyond said stamping.

8. A vehicle hub, comprising a sleeve constituting a box, a pair of stampings each having a spoke flange and a tubular portion fitting said sleeve, a third stamping having a cylindrical extension projecting in one direction engaging the sleeve and a cylindrical extension projecting in the opposite direction, and means for securing the aforesaid members to the sleeve.

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

MORRIS S. TOWSON.

Witnesses:
S. E. FOUTS,
E. I. HUTCHINSON.