

No. 609,258.

Patented Aug. 16, 1898.

D. J. C. ARNOLD.

METAL WHEEL.

(Application filed Jan. 28, 1898.)

(No Model.)

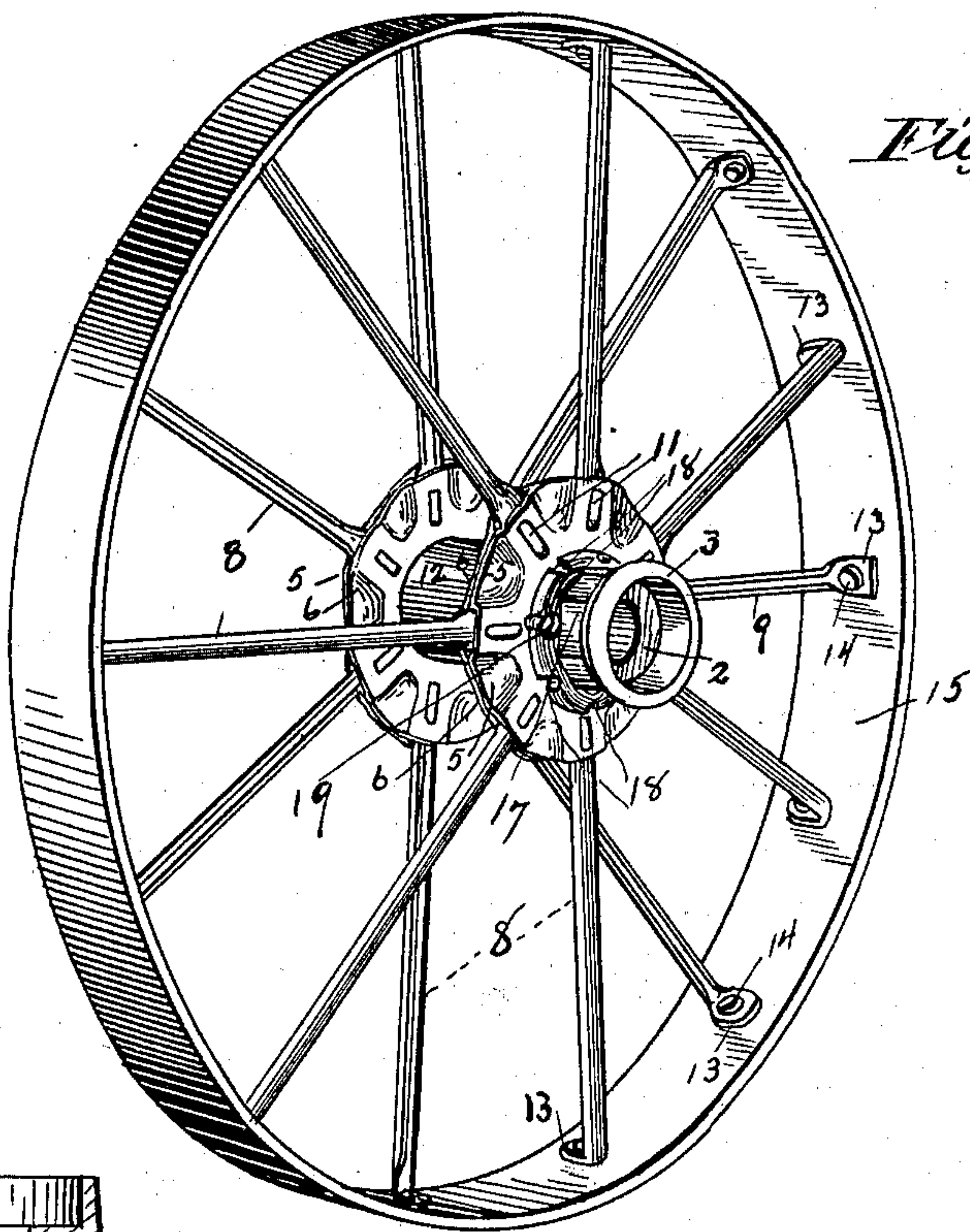


Fig. 1

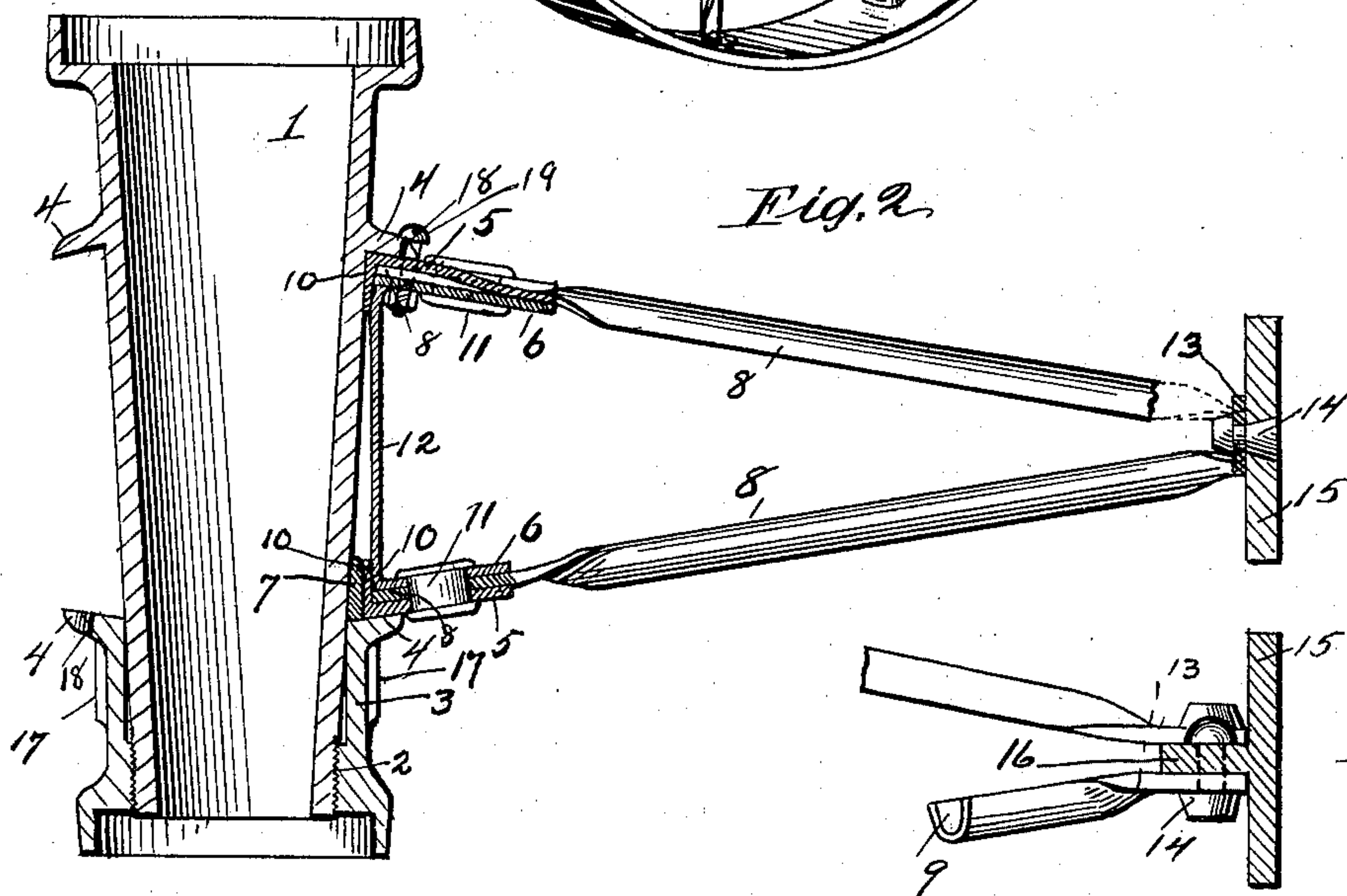


Fig. 2

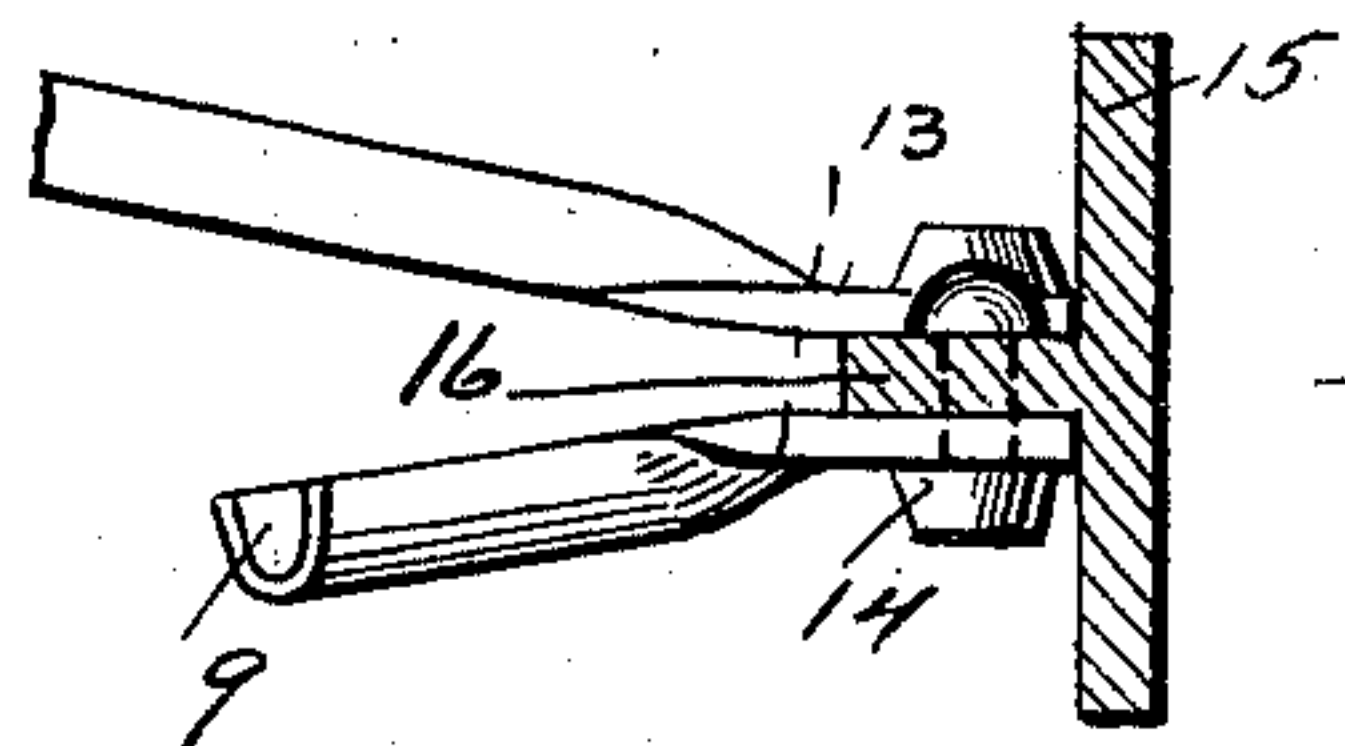


Fig. 3

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UNITED STATES PATENT OFFICE.

DANIEL J. C. ARNOLD, OF NEW LONDON, OHIO.

METAL WHEEL.

SPECIFICATION forming part of Letters Patent No. 609,258, dated August 16, 1898.

Application filed January 28, 1898. Serial No. 668,294. (No model.)

To all whom it may concern:

Be it known that I, DANIEL J. C. ARNOLD, a citizen of the United States, and a resident of New London, county of Huron, State of Ohio, have invented certain new and useful Improvements in Metal Wheels, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in metal wheels; and the object of the invention is to provide a durable wheel of great strength adapted for use in all kinds of agricultural machinery or heavy trucks.

My invention consists in the sleeved hub portions and independent sheet-metal spokes, with the central sheet-metal sleeve and clamping-plates, and in the means for attaching the spokes thereto and to the metal rim, as hereinafter described, shown in the accompanying drawings, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the invention. Fig. 2 is a central longitudinal section, and Fig. 3 is detail of rim in section of a modified form.

In the figures, 1 is the larger hub-section, upon the screw-threaded extremity 2 of which is secured the outer portion 3 in the manner of a nut and which is tapered within and without. Each of these sections is provided with an inwardly-turned flange 4, between which are secured the inner and outer circular clamping-plates 5 and 6, arranged in pairs. The outer plates 5 are loose and inwardly flanged at 10, bearing one upon the tapered surface of the inner portion of the hub, the other upon the doubly-tapered ring 7, which is sleeved upon the outer portion and abuts against the outer hub-flange 4.

The spokes 8 are formed of band metal doubled into a U-shaped section, as seen at 9, to increase their strength and abut against the inwardly-turned and tapered flanges 10 of the outer clamping-plates 5.

6 are the inner clamping-plates, between which and the outer plates are secured the spokes 8 by means of the elongated rivets or keys 11. One of these plates is formed in continuation of the sheet-metal sleeve 12, which encircles the taper hub and protects it from

dust, so that the movements of the wedge-shaped ring 7 thereon shall be unimpeded. The sleeve also separates the pairs of clamping-plates, so as to produce a staggered construction of the spokes. The outer extremities of the spokes 13 retain their flattened shape and are attached, by means of rivets 14, either directly through the metal rim 15, as shown in Fig. 2, or through a flange thereon, as shown at 16, Fig. 3. The sleeve 12 bears upon the inwardly turned and tapered extremities of the outer plates, which also pass under the extremities of the spokes and under the outer plates, so that the action of the outer portion of the hub against the wedge-ring and outer plate serves to tighten all the parts together and also makes all the parts interchangeable.

An octagonal shape is given the outer hub at 17 for the use of the wrench in screwing them together, and notches 18 are made in the flanges 4 for the introduction of small bolts 19 to prevent the sheet-metal flanges from turning on the hub.

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

1. In a metal wheel, the combination with a cylindrical hub, of circular pressed plates encircling the same in pairs and adapted to secure the inner ends of metal spokes between them, one plate in each pair being flanged to obtain a bearing upon the hub, substantially as described.

2. In a metal wheel provided with a cylindrical hub, pressed steel plates in pairs encircling the hub and securing the spokes between each pair, in combination with a sleeve separating each pair of plates, flanged and tapered inner extremities of the outer plates upon which said sleeve bears, and means for clamping the plates against the sleeve, substantially as described.

3. In a metal wheel, the combination with a taper hub, of metal plates encircling the same in pairs between which the inner extremities of the spokes are secured, a metal sleeve having its bearing upon flanged and tapered inner extremities of the plates, a taper split ring upon said hub underneath one of said flanges, and means for clamping the parts securely together, consisting of a flange upon the hub and a threaded and flanged sleeve

bearing upon said ring and outer pair of plates, substantially as described.

4. In a metal wheel, the combination with an inner hub portion, tapered within and without, of an outer portion adapted to be screwed over the same, outer and inner clamping-flanges arranged in pairs and adapted to inclose the metal spokes, an extension of one of said inner flanges adapted to encircle the tapered hub, and means for securing the flanges to the hub and for pressing the parts securely together, consisting of inclined flanges upon the hub portions, and a wedgering upon the taper hub abutting against the outer hub portion, substantially as described.

5. In a metal wheel, hub portions provided with inwardly-inclined flanges, sheet-metal flanges secured between said hub-flanges and

separated by means of a sleeved extension of one of said metal flanges, spokes composed of doubled sheet metal secured between the pairs of flanges by means of elongated rivets, and provided with flattened extremities for attachment to the rim, and means for preventing the flanges from turning on the hub, consisting of notches upon the hub-flanges, and bolts adapted to pass through the notches and clamping-flanges, substantially as described.

In testimony whereof I hereunto set my hand this 8th day of December, A. D. 1897.

DANIEL J. C. ARNOLD.

Witnesses:

WM. M. MONROE,
C. H. OLDS.