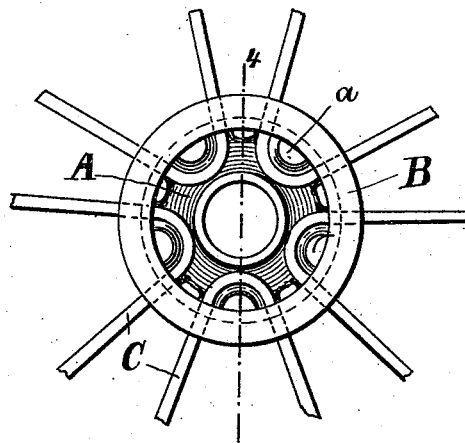


(No Model.)

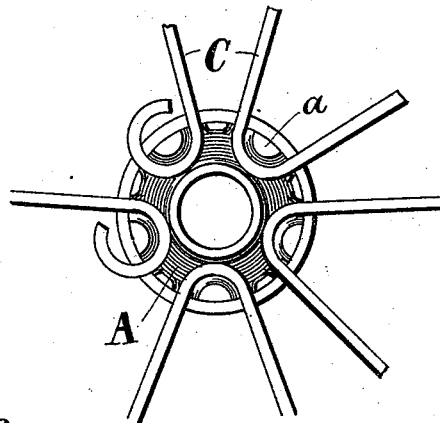
E. L. HOWE.  
WHEEL.

No. 492,017.

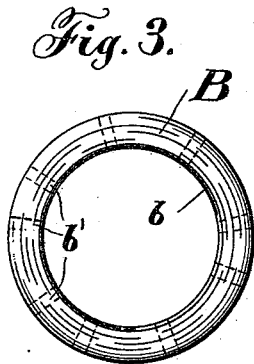
Patented Feb. 21, 1893.



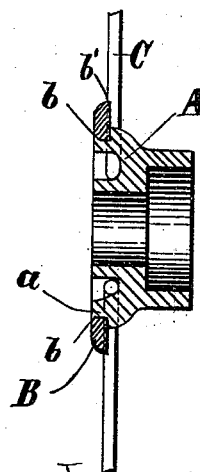
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Fig. 4.*

Witnesses.

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Inventor.

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# UNITED STATES PATENT OFFICE.

EUGENE L. HOWE, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-THIRD TO  
I. PRESTON RICE, OF CHICAGO, ILLINOIS.

## WHEEL.

SPECIFICATION forming part of Letters Patent No. 492,017, dated February 21, 1893.

Application filed August 9, 1892. Serial No. 442,586. (No model.)

*To all whom it may concern:*

Be it known that I, EUGENE L. HOWE, a citizen of the United States, residing at Cleveland, Ohio, have invented certain new and  
5 useful Improvements in Wheels, of which the following is a specification.

The object of my invention has more particular reference to the means for fastening the wire spokes to the hubs of wheels, and  
10 more especially those used for baby carriages, children's carts and similar purposes, although it is applicable to wheels of various kinds; and my invention consists in the features and details of construction hereinafter described  
15 and claimed.

In the drawings, Figure 1 is a plan view of the hub of a wheel showing my improvements; Fig. 2 is the same with the fastening ring removed; Fig. 3 is a plan view of the  
20 fastening ring; and Fig. 4 is a section taken through the line 4 of Fig. 1.

In making my improvements, I cast the hub, A, of the wheel of the size desired, and with a number of lugs or projections *a*, extending  
25 outward from its face. These lugs are preferably the same in number as the number of wire spokes intended to be used in the wheel. They may either be all of the same form, or, if preferred, every other one may be provided  
30 with a rounded or semi-circular form on its inner side or toward the axis of the hub, as shown in the drawings, while the alternate lugs may be made of a different form if desired. I cast a ring, B, of a size to admit of  
35 its being placed upon the hub, so that it will lie thereon immediately surrounding the lugs or projections *a*. I take the wires intended to form the spokes of the wheel, C, and bend them so that the part intended to be fastened  
40 to the hub can be placed over every other one of the lugs or projections, so that the bends will surround and fit against the particular lugs intended to be inclosed by them. As shown, every two spokes are formed of an integral wire bent at the inner ends of the  
45 spokes to surround the lugs; but it is obvious

that the spokes could be made separate, each having a loop or ring on its inner end, as shown in a portion of Fig. 2, though I prefer to make them in pairs as above described. 50 The intermediate lugs will prevent the spokes from being opened or bent out, and will serve to hold them in their position around the lugs which their bends inclose. I then place the ring B in position surrounding the lugs and  
55 lying flat upon the spokes, and bend and swage the lugs outward, so that their ends will overlap and clamp the inner edge of the ring to hold it permanently and securely in place. The inner edge of the ring may be  
60 made beveled, as at *b*, if desired, to facilitate the bending or clamping of the lugs over it; and, if desired, the inner face of the ring may be made with grooves *b'*, corresponding in  
65 number, form and position with the respective spokes, so that when the ring is in place, the spokes will lie in the grooves in the ring, and thus be more securely and firmly held in place.

What I regard as new, and desire to secure 70 by Letters Patent, is--

1. In wheels, the combination of a hub having lugs on its face adapted to be swaged outward, spokes having their inner ends bent around the lugs of the hub, and a ring surrounding the lugs clamping the spokes to the  
75 hub and fastened thereto by the overlapping ends of the lugs, substantially as described.

2. In wheels, the combination of a hub having lugs on its face adapted to be swaged or  
80 bent outward, spokes having their inner ends bent around the lugs of the hub, and a ring surrounding the lugs and having grooves on its inner face partially inclosing the spokes and clamped or fastened to the hub by the  
85 overlapping ends of the lugs, substantially as described.

EUGENE L. HOWE.

Witnesses:

FRED SCHUCH,  
WM. H. HOUSMAN.