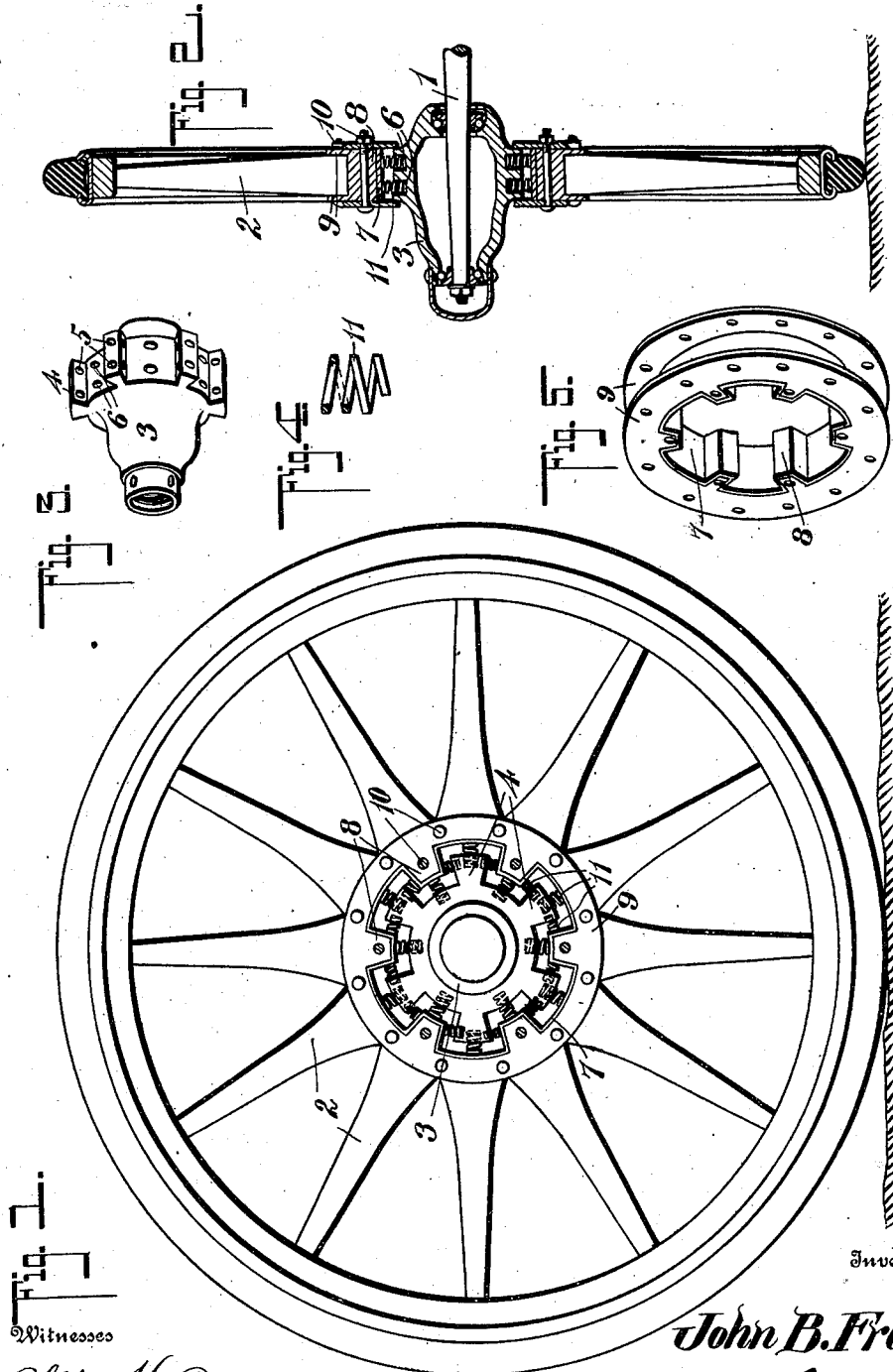


J. B. FROST.
WHEEL.

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UNITED STATES PATENT OFFICE.

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WHEEL.

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To all whom it may concern:

Be it known that I, JOHN BERLIN FROST, a citizen of the United States, residing at Jefferson, in the county of Coos and State of New Hampshire, have invented a new and useful Improvement in Wheels, of which the following is a specification.

This invention relates to spring wheels and consists in the matters hereinafter described and referred to in the appended claims.

Figure 1 is a side elevation of my wheel a side plate being removed. Fig. 2 is a vertical section taken diametrically through the wheel. Fig. 3 is a detail perspective view of the spindle portion of the hub. Fig. 4 is a detail view partly in section showing one of the springs. Fig. 5 is a detail perspective view of the outer or wheel portion of the hub.

In these drawings 1 represents the ordinary spindle and 2 a wheel, both of which may be of any of the ordinary forms of construction. The hub is practically formed in two separate sections, one section which I will call the inner member being formed with a hollow body portion 3 through which the spindle 1 passes and in which it is suitably journaled. This body portion has circumferentially formed about it a series of outwardly projecting ribs 4 arranged longitudinally with respect to the body portion, and these ribs are provided with sockets 5 both upon their outer and side faces. The hub is also provided with sockets 6 placed between the ribs and preferably formed in pairs. The outer or wheel portion of the hub consists of a band 7 formed of metal and bent inwardly or offset at certain points to form inwardly extending ribs 8, said ribs intermatching with the ribs 4 of the inner member 3. Upon the sides of the wheel portion are secured rings 9 connected by suitable bolts 10, said rings having inwardly extending lugs which fit in the grooves formed by the bending inwardly of the metal band 8 to form the ribs 9, the tenons of the wheel spokes also fitting in said grooves and between the lugs of the rings 9. The inner member 3 being placed upon the spindle, the outer portion 2 is assembled thereon and is supported from said inner member 3 by a plurality of short springs 11. While these springs are similar in construction they are so arranged as to support and

brace the construction in every direction. A portion of these springs are seated in the sockets 5 of the inner member 3 and bear upon the outer hub portion of the wheel formed by the band 7, and a portion of them are seated in the sockets 6 and bear against the ribs 8 of the band 7.

It will be obvious that the springs 11 seated in the sockets 5 formed in the sides of the ribs 4 will bear against the sides of the ribs 8 these being circumferentially active springs, those seated in the outer end faces of the ribs 4 will bear upon the inner face of the band 7 at points between the ribs 8, while those seated between the ribs 4 will bear upon the inner end faces of the ribs 8 the last two sets being radially active springs. By this arrangement each set of springs, the springs being preferably arranged as previously stated in pairs, is arranged substantially at right angles to the adjacent springs.

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

1. A vehicle wheel comprising a rim and a hub, said hub including an outer member to which the spokes are attached, and an inner member engaging the axle, said outer member having inwardly projecting spring supports, the face of the inner member having radial arms extending therefrom, a set of radially active springs interposed between the face of said inner member and the inwardly projecting spring supports of the outer member of the hub, a second set of radially active springs interposed between the outer ends of said radial arms, and the outer member of the hub, and circumferentially active springs located at a radial distance intermediate the sets of radially active springs, said circumferentially active springs being substantially circumferentially alined and each of said circumferentially active springs engaging at one end one of the radial arms and at the other end engaging one of the inwardly projecting spring supports.

2. A vehicle wheel having a hub, including an outer member to which the spokes are attached, and an inner member engaging the axle, said outer member having inwardly projecting ribs and the inner member having outwardly projecting ribs extending into the spaces between the inwardly pro-

jecting ribs on the outer member, radially
active springs each bearing at one end on
the face of the inner member between the
outwardly projecting ribs thereon and at
5 its other end bearing on the inner face of
the inwardly projecting rib on the outer
member, other radially active springs each
bearing at one end on the outer face of one
of the outwardly projecting ribs on the
10 inner member, and at its other end on the
inner face of the outer member between the
inwardly projecting ribs thereon, and cir-
cumferentially active springs, substantially

circumferentially alined located at a radial
distance intermediate the sets of radially 15
active springs, each circumferentially active
spring engaging at one end the side face
of one of the outwardly projecting ribs
on the inner member, and at its other end
engaging the side of one of the inwardly 20
projecting ribs on the outer member.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
