(No Model.)

P. DION.

WHEEL.

No. 366,464. Patented July 12, 1887.

Fig. 1.

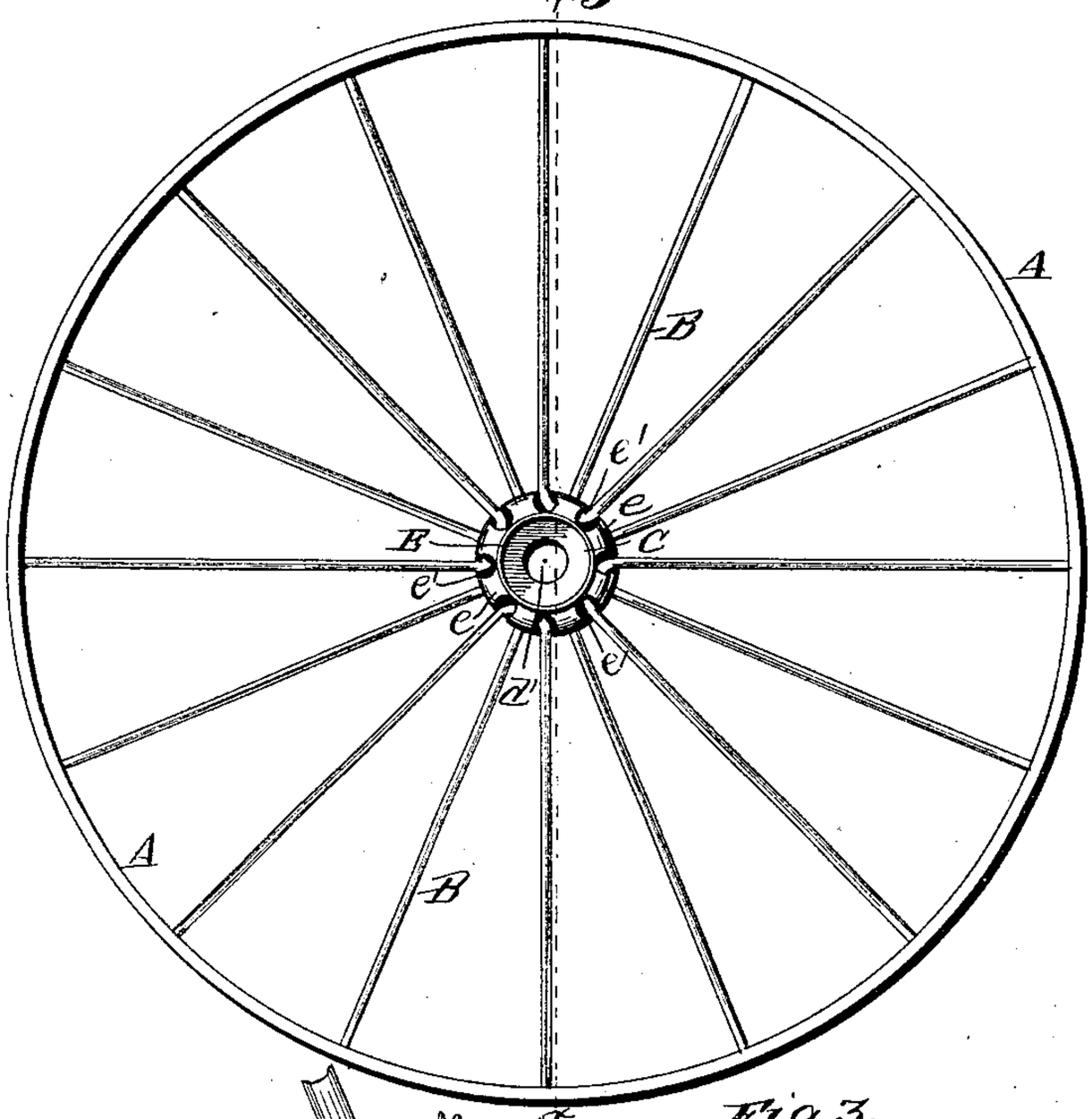


Fig. 2.

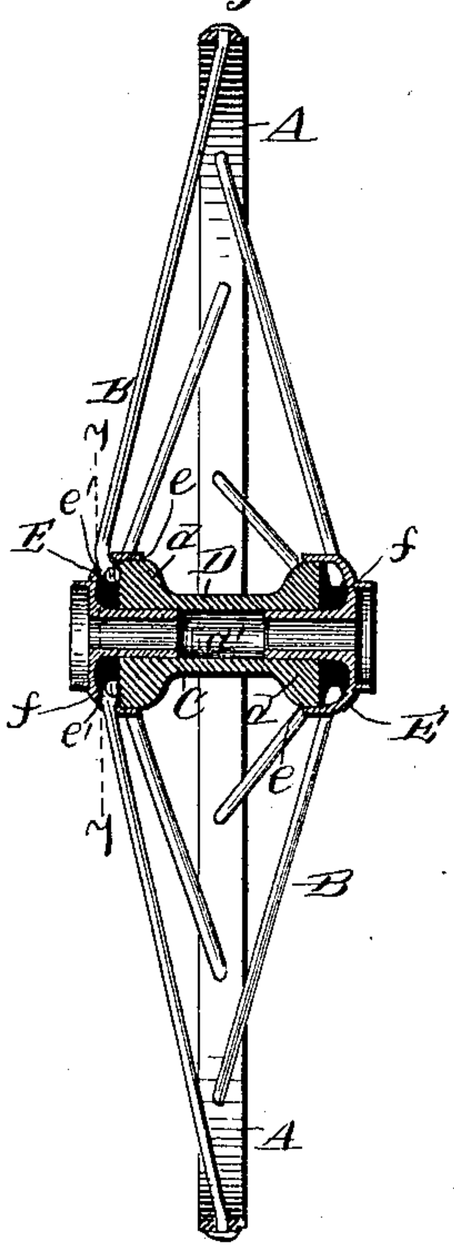


Fig. 3.

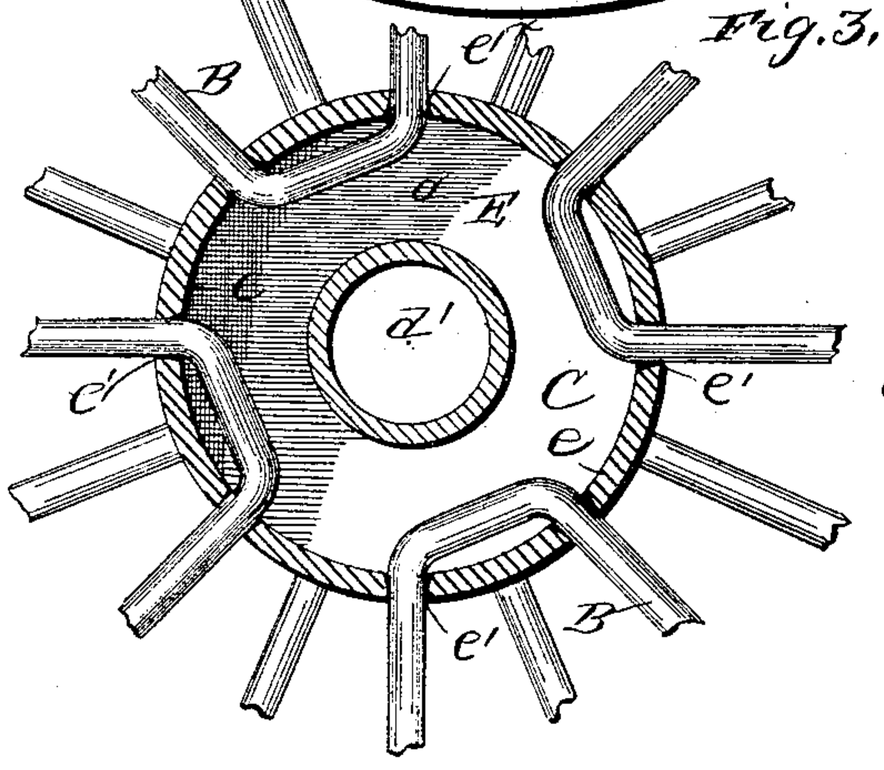
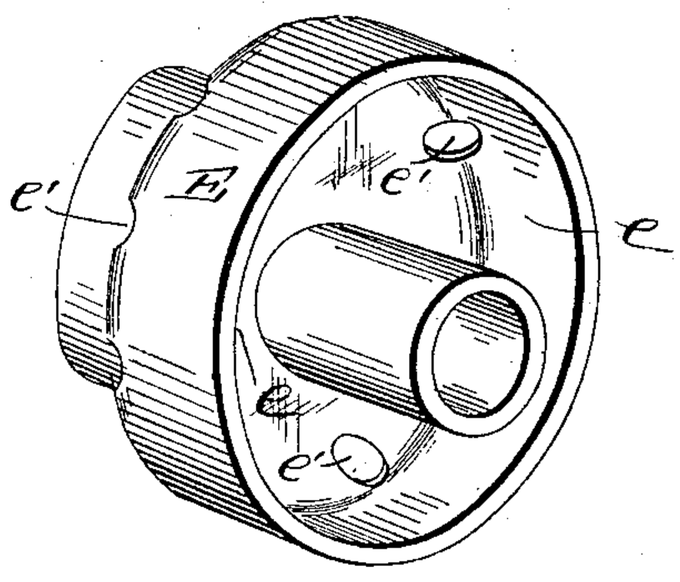


Fig. 4.



Witnesses
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W. Bernhard

Inventor
Peter Dion

By his Attorneys
C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

PETER DION, OF SOUTH BEND, INDIANA, ASSIGNOR OF ONE-HALF TO LOUIS DION, OF SAME PLACE.

WHEEL.

SPECIFICATION forming part of Letters Patent No. 366,464, dated July 12, 1887.

Application filed November 10, 1886. Serial No. 218,486. (No model.)

To all whom it may concern:

Be it known that I, PETER DION, a citizen of the United States, residing at South Bend, in the county of St. Joseph and State of Indiana, have invented new and useful Improvements in Wheels, of which the following is a specification.

My invention relates to improvements in wheels; and it consists of the peculiar combination of devices and novel construction and arrangement of the various parts for service, substantially as hereinafter fully described, and particularly pointed out in the claims.

The object of my invention is to provide an improved box which can be very readily taken apart and worn-out parts or sections thereof replaced at a comparatively small sum.

A further object of my invention is to provide an improved wheel which shall possess superior advantages over others of its class which have preceded it in points of simplicity and strength of construction, lightness and durability, and cheapness of manufacture.

In the accompanying drawings, which illustrate a wheel embodying my improvements, Figure 1 is a side elevation. Fig. 2 is a vertical transverse sectional view thereof on the line *x x* of Fig. 1. Fig. 3 is an enlarged sectional view through the hub, taken transversely therethrough on the line *y y* of Fig. 2; and Fig. 4 is a detail perspective view of one of the end sections of the hub, also on an enlarged scale.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A designates the rim of my improved vehicle-wheel, B the spokes thereof, and C the hub, which are all firmly and securely united together to provide a wheel of simple, light, and strong construction.

The hub C of my improved wheel comprises a central section, D, and two end sections, E, the peculiar construction and relative arrangement of which I will now proceed to describe.

The central section, D, of the hub is provided with the enlarged ends *d*, which are made or formed integral therewith for simplicity and strength, and the said section is provided with a longitudinal central passage, *d'*, which is of uniform diameter throughout. The end sections, E, are each formed or cast in a single piece of metal, and their shanks are made tubular in form, as shown, and of an exterior diameter a little less than the diameter of the central longitudinal opening or passage, *d'*, of the central section, D, so that they will fit snugly and closely therein. At its outer end each of the said end sections of the hub is provided with integral collars or flanges *e*, into which the enlarged ends *d* of the central section, D, of the hub are snugly fitted, thereby closely and compactly fitting the sections of the hub together. These enlarged collars *e* of the end sections form or provide sockets for the reception of the enlarged ends of the central section, and said collars have a series of transverse openings, *e'*, formed therein, for a purpose to be hereinafter explained.

The inner ends of the end sections of the hub terminate, out of contact with each other, within the central section of the hub, and thereby provide or form an intermediate space between the said inner terminal ends of the end sections of the hub. The axle passes through the tubular shanks of the end sections of the hub and is supported solely thereby, and the inner walls of the central section of the hub are thereby held or arranged out of contact with the said axle. As the axle does not bear upon the end or central sections of the hub at the middle of the latter, and only bears upon the end sections of the hub, no friction or wear can take place upon either the center of the hub or the axle. By thus causing the wear upon the axle to take place at the end sections of the hub and the outer ends of the axle the parts will be worn and reduced gradually, and the wheel is caused to run smooth and true on the axle, thereby effectually preventing the wheel from "wabbling."

The central section of the hub can be made of wood or other cheap material, and the end sections thereof, upon which the wear takes place, are made of a suitable hardened metal. The end sections can be very readily detached from the central section when they have become worn or broken, and other new sections substituted therefor at a very small cost.

Each two of the spokes B are made or bent

from a single piece of wire rod or other suitable material, which is doubled or bent upon itself to form said spokes. The ends of the said spokes are passed through two of the transverse openings in one of the end sections of the hub and suitably secured in the rim A, as shown. The spokes are arranged radially of the hub, and the spokes on opposite sides of the hub are alternately secured in the rim.

The end and central sections of the hub are very securely held or connected together by the tension of the spokes, and the rim is rigidly connected to the hub by the spokes. The wheel is very light, firm, and simple of construction, and it can be manufactured at a very small cost as compared with other wheels of its class. The wheel can be used on velocipedes, bicycles, and other classes of pleasure-machines, and it can also be employed on buggies and all other kinds of vehicles.

I do not desire to confine myself to the exact details of construction and form and proportion of parts, herein shown and described, as an embodiment of my invention, as I am aware that changes therein can be made without departing from the principle of the invention.

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

1. The herein-described hub for vehicles, comprising a central section having enlarged ends and two end sections whose shanks fit snugly within the central section, said sections having enlarged collars at their outer ends forming inwardly-opening sockets, within which the enlarged ends of the central section are fitted and the spokes connected to the collars of the end sections, as set forth.

2. The herein-described wheel, comprising a central section, two end sections whose shanks fit snugly within the central section, said end sections having sockets within which the ends of the central section are fitted, a rim, and spokes whose outer ends are secured in said rim and their inner ends fitted within said sockets and in contact with the ends of the central hub-section, substantially as described.

3. The herein-described wheel, comprising a hub composed of a central section and two end sections, the latter having tubular shanks fitting snugly within said central section and out of contact with each other, the central bore of said end sections being smaller than that of the central section, said end sections having inwardly-opening sockets within which the ends of the central section are fitted, a rim, and spokes secured to the end sections of the hub, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

PETER DION.

Witnesses:
LOUIS DION,
GEO. H. ALWARD.