

(No Model.)

A. GOVERS & J. A. SWENSON.
WHEEL AND AXLE FOR WAGONS.

No. 582,015.

Patented May 4, 1897.

Fig. 1.

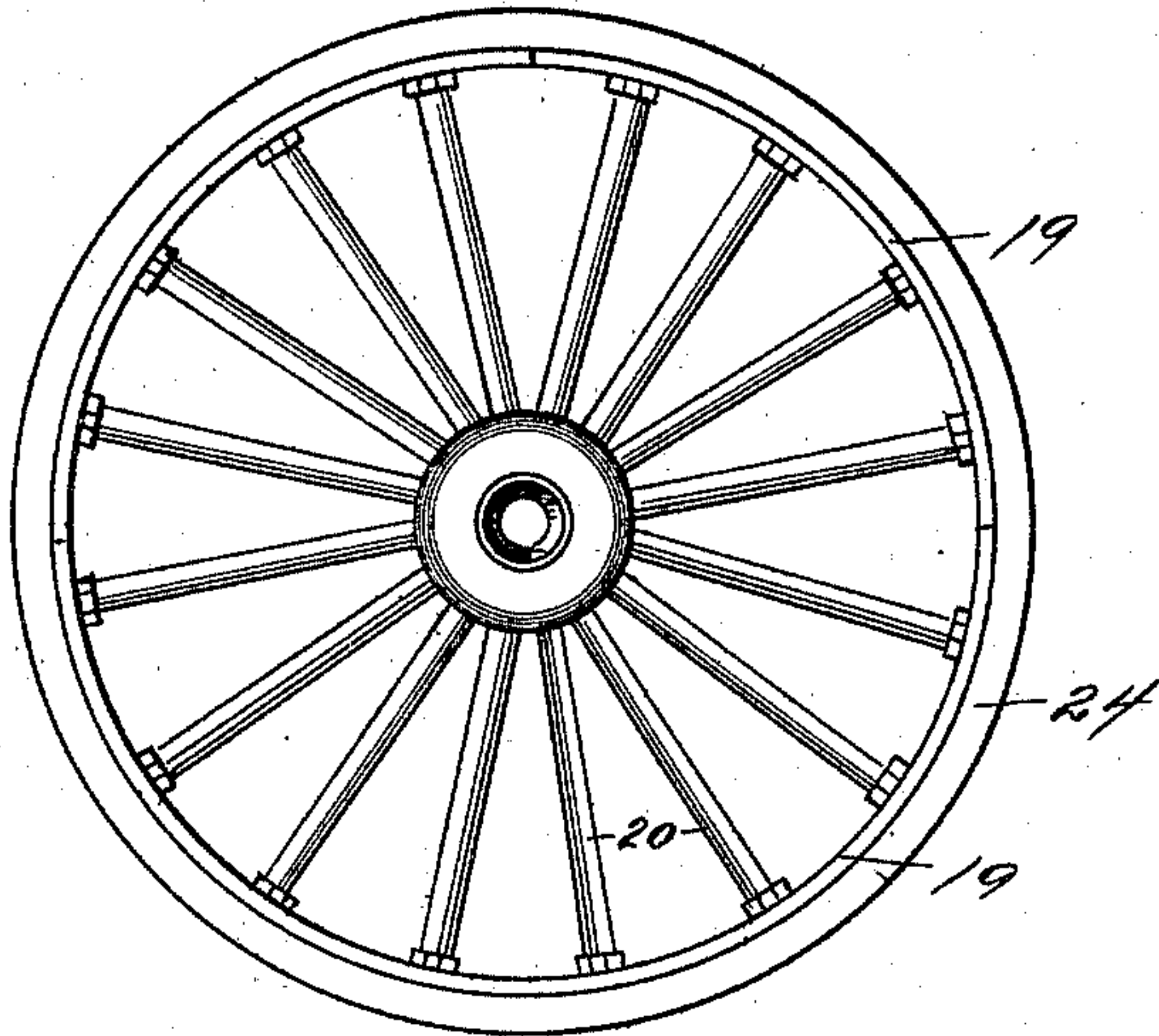


Fig. 3.

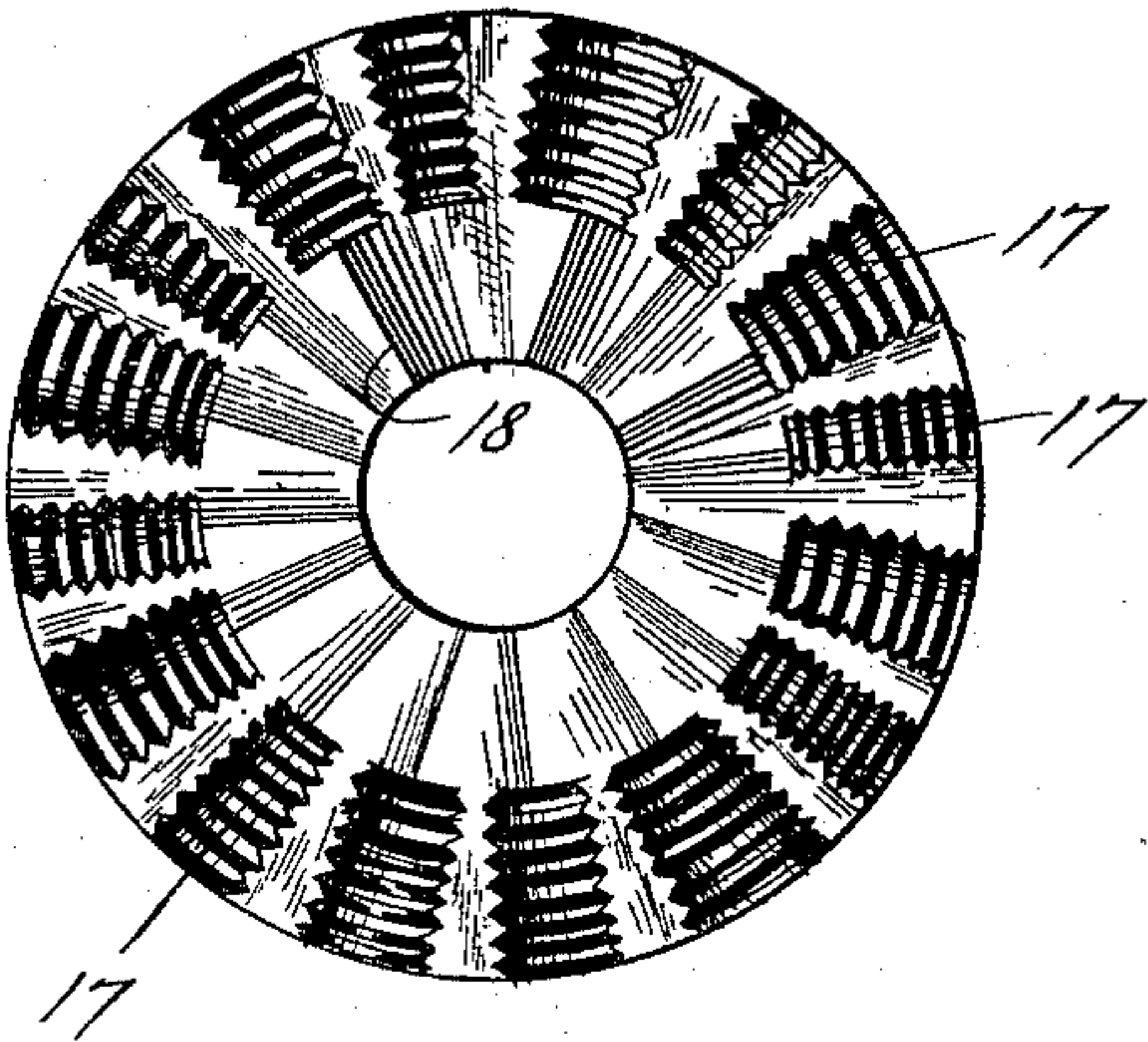


Fig. 4.

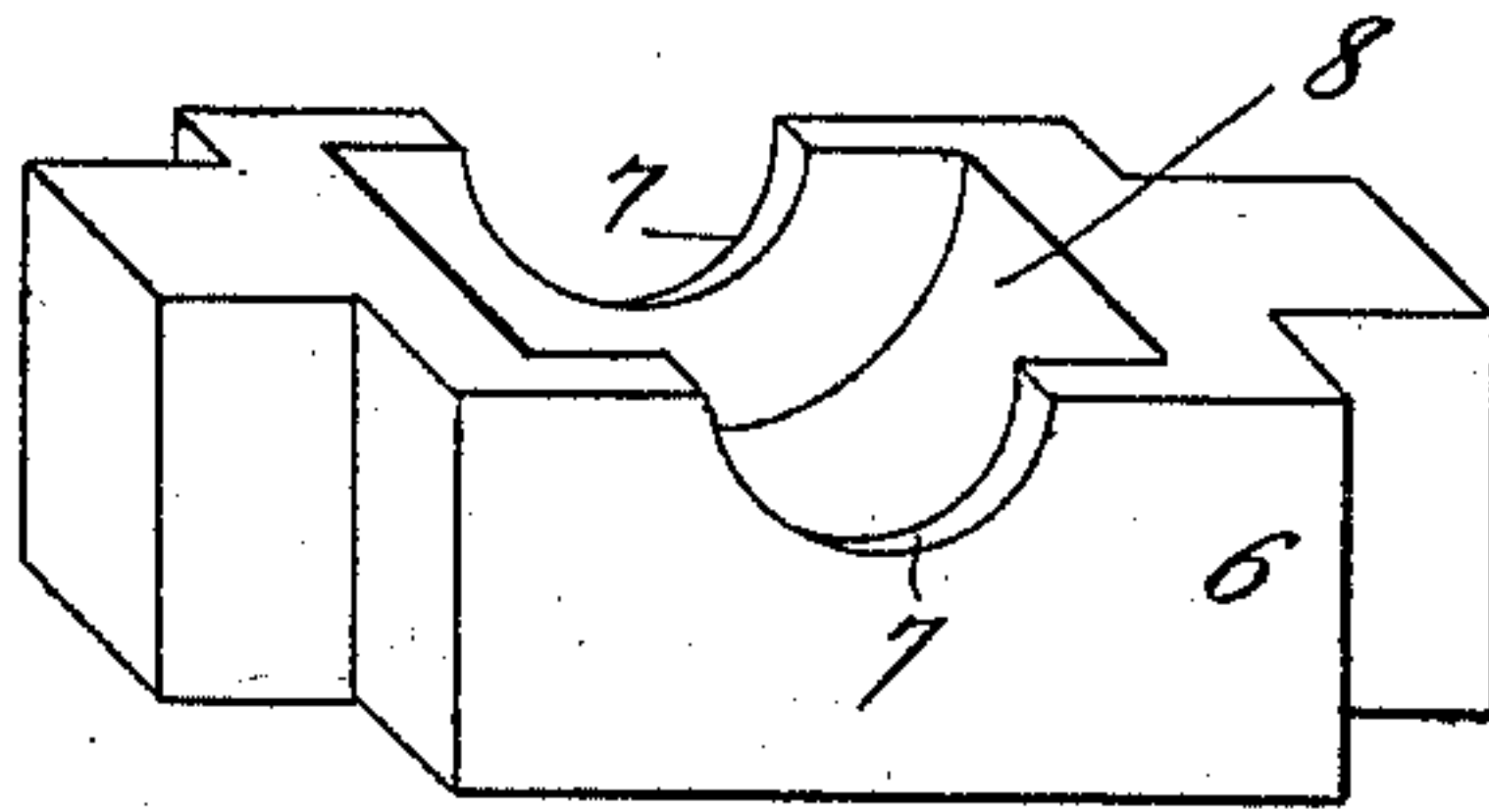
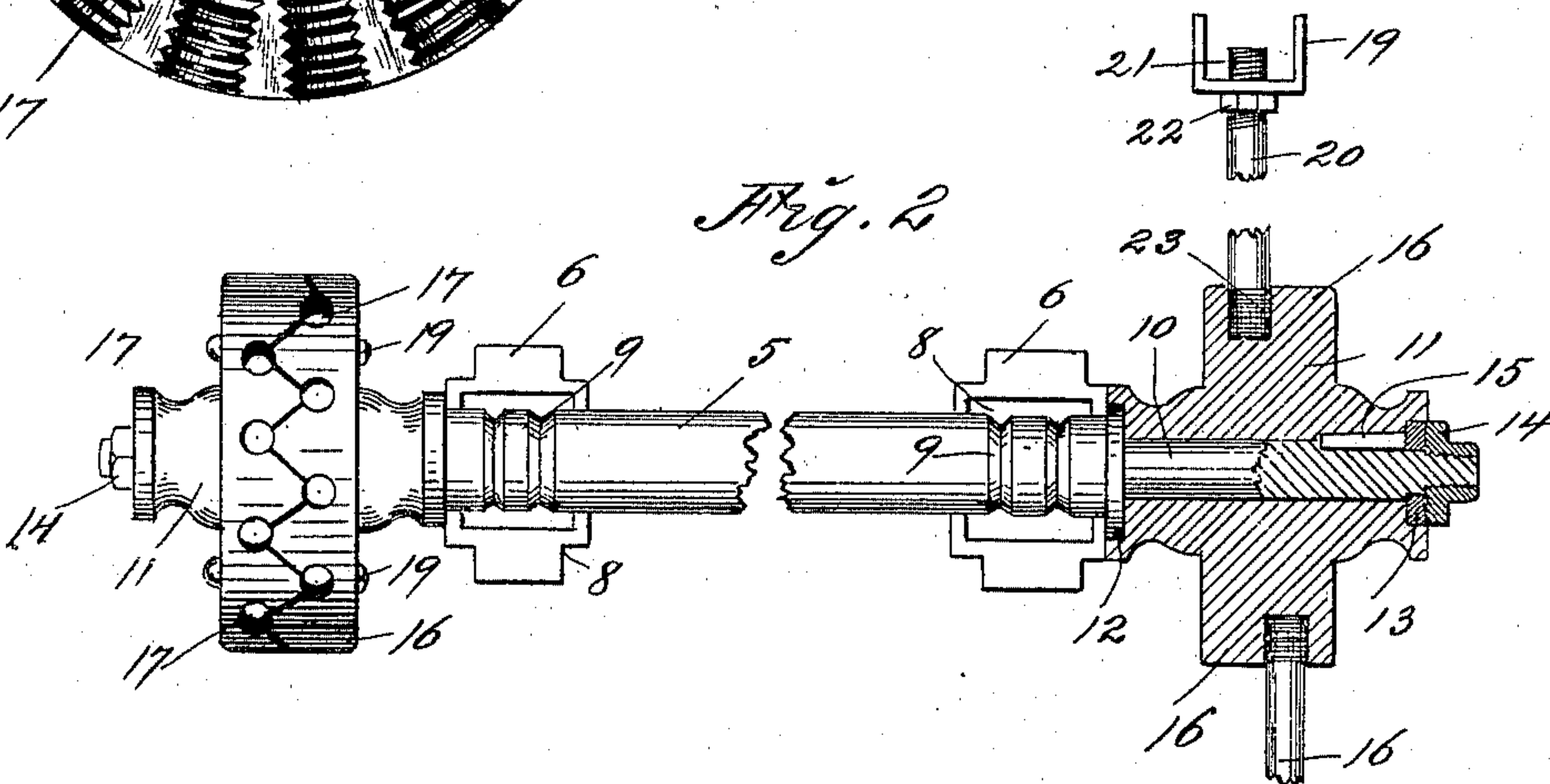


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

ALBERT GOVERS, OF NEW YORK, AND JOHN A. SWENSON, OF BROOKLYN,
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WHEEL AND AXLE FOR WAGONS.

SPECIFICATION forming part of Letters Patent No. 582,015, dated May 4, 1897.

Application filed June 18, 1896. Serial No. 596,048. (No model.)

To all whom it may concern:

Be it known that we, ALBERT GOVERS, a resident of New York, in the county of New York, and JOHN A. SWENSON, a resident of Brooklyn, in the county of Kings, State of New York, citizens of the United States, have invented new and useful Improvements in Wagons and other Vehicles, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar numerals of reference indicate corresponding parts wherever found throughout the several views.

This invention relates to carriages, wagons, trucks, and other vehicles, and particularly to the axles, the bearings thereof, the wheels, and connected parts.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a side view of a wheel made according to our invention; Fig. 2, a plan view of one axle, showing also the hubs connected therewith, one of said hubs being shown in section; Fig. 3, a side view of a section of the hub which we employ, and Fig 4 a perspective view of a journal-box which constitutes a part of the bearing of the axle.

In the practice of our invention we provide an axle 5, which is mounted in suitable journal-boxes, a part of one of which is shown at 6, said journal-boxes being preferably of the form shown in Fig. 4 and being provided with transverse openings or passages 7, through which the axle passes, and being also provided centrally with semicircular cavities or recesses 8, which may be filled in with brasses or other bearings, and the axle is also preferably provided with annular grooves 9 within said journal-boxes.

It will be understood that only half of the journal-box is shown in Fig. 4 and also in Fig. 2, and that these parts are duplicated, and the frame or truck of the wagon or other vehicle is connected with these journal-boxes or bearings, and the shaft is free to revolve therein. The shaft is provided at each end with a spindle 10, on which are mounted hubs 11, and said hubs are provided at their inner ends with countersunk washers 12, which are placed adjacent to the journal-boxes, and the

spindles 10 are screw-threaded at their outer ends and provided with washers 13 and nuts 14, and the washers 13 are also countersunk in the outer ends of the hubs, and said hubs are held in place on the spindles by the nuts 14, and in practice we prefer to key one of the hubs 11 to the spindle, as shown at 15, so that it will not revolve thereon. This construction, however, is not essential or material to our invention, as both of the hubs may be revolvably mounted on the spindle, if desired.

The hubs 11 are provided centrally with annular heads 16, in which the spokes of the wheel are secured, and said hubs are transversely divided or composed of two parts, and a side or face view of one of said parts is shown in Fig. 3.

The annular heads of the hubs are also provided with two rows of holes 17, in which the spokes are inserted, and the holes are arranged alternately, as shown in Fig. 2, and the division-line between the separate parts of the hub is arranged, as is also shown in said Fig. 1, the line of division extending through or into the spoke-holes of each part, and, as shown in Fig. 3, the spoke-holes extend only part way through the hub and are arranged radially therein, and that part of the hub or the separate parts thereof between the inner ends of the spoke-holes and the spindle-opening is also corrugated or grooved, as shown at 18, and when the separate parts of the hub are placed together they appear as shown in Fig. 2, and the adjoining or abutting faces thereof interlock.

The separate parts of the hub are bound together by bolts 19, and in practice we construct a wheel as shown in Fig. 1. The felly of the wheel is preferably composed of a number of parts, said parts being indicated at 19, and said felly is U-shaped in cross-section, as shown in Fig. 2, and the spokes 20 are preferably composed of metal, and the outer ends thereof are screw-threaded, as shown at 21, and passed through the felly, and each is provided with a nut or bur 22, which is mounted thereon and by which the felly or the sections thereof may be forced outwardly. The inner ends of the spokes 20 are preferably provided with annular grooves, as shown at 23, and in practice the spokes are connected

with the felly, the tire 24 is applied thereto, and the parts of the hub are separated, and the inner ends of the spokes are placed in spoke holes or openings 17, after which the
 5 separate sections of the hub are securely bolted together. The spoke-holes 17 are also preferably provided with annular grooves or recesses, as shown in Fig. 3, and the annular
 10 grooves 23, formed on the inner ends of the spoke, correspond therewith, and when the separate parts of the hub are clamped together, as above described, the spokes are
 15 securely and firmly held in place, and a strong, stable, and firm wheel is thus produced.

The formation of the felly in sections is not essential to our invention, and said felly may be formed of one piece if desired, and any
 20 suitable power may be employed.

A wheel made as herein described is much
 25 stronger than ordinary wheels, and the tires thereon may be set or tightened whenever desired by simply operating the nuts or burs 22, which force the separate sections of the
 30 felly downwardly, and by means of our improved construction the axles are free to revolve in their bearings, and any suitable means may be provided for oiling or lubricating the same within said bearings or the
 35 journal-boxes. The washer 13 is so connected with the spindle 10 as to revolve therewith, the central bore through said washer being flat at one side and adapted to operate in connection with a corresponding
 40 cavity or recesses formed in the spindle, and in practice the meeting surfaces of the two sections of the hub are joined by or filled in
 45 with iron, putty, or other suitable material, so as to exclude water or moisture and prevent oxidation on the interior surfaces.

The washers 12 may be formed integrally with the axle, if desired, or may be rigidly
 50 connected therewith, and by suitably mounting the axles in suitable journal-boxes or bearings, as herein described, a wagon or other heavy vehicle may be operated with less
 55 power than is usually necessary.

It will be understood that the separate parts of the hub or hubs are cast in the form described, and when so formed they may be
 60 much more economically produced and are far stronger than when made in the usual manner, but said hubs may be composed of wood in certain cases, and the axles may also be composed of either wood or metal.

Having fully described our invention, we claim as new and desire to secure by Letters Patent—

1. A wheel comprising a hub which is divided transversely, the separate parts there-
 65 of, being provided with spoke-holes, and be-

ing also adapted to interlock, and a felly through which the outer ends of the spokes pass, said outer ends of the spokes being screw-threaded, and provided with nuts or
 70 burs, substantially as shown and described. 65

2. A wheel comprising a hub which is divided transversely, the separate parts thereof, being provided with spoke-holes, and being also adapted to interlock, and a felly
 75 through which the outer ends of the spokes pass, said outer ends of the spokes being screw-threaded, and provided with nuts or burs, and said felly being U-shaped in cross-section, and composed of separate parts, sub-
 80 stantially as shown and described. 75

3. The combination with the axle of a vehicle, of suitable bearings or journal-boxes, in which said axle is mounted, said axle being also provided with the usual spindles,
 85 and with wheels mounted thereon, one of said wheels being keyed to the axle, and the hubs of said wheels being divided transversely, and the separate sections thereof, being provided with spoke-holes, in which the inner ends of
 90 the spokes are placed, before the separate parts of the hub are bolted together, substantially as shown and described. 85

4. A wheel, comprising a hub, which is divided transversely, and the separate parts of which are provided in their adjacent faces
 95 with spoke-holes, said separate parts being adapted to interlock, and the spoke-holes being arranged alternately on opposite sides of a central transverse line, and said separate parts being bolted together, and a felly
 100 through which the outer ends of the spokes pass, said outer ends of the spokes being screw-threaded and provided with nuts or burs, substantially as shown and described. 95

5. The combination with the axle of a vehicle, of suitable bearings or journal-boxes, in which said axle is mounted, said axle being also provided with the usual spindles, and
 105 with wheels mounted thereon, said journal-boxes being arranged adjacent to the hubs of said wheels, and said axle being provided with washers adjacent to said journal-boxes, and said hubs being provided with flanges within which said washers fit, substantially
 110 as shown and described. 110

In testimony that we claim the foregoing as our invention we have signed our names, in presence of the subscribing witnesses, this
 15th day of June, 1896.

ALBERT GOVERS.
 JOHN A. SWENSON.

Witnesses:

W. W. HILL,
 A. ARMSTRONG.