

No. 878,158.

W. E. SCHNEIDER.
VEHICLE WHEEL.

PATENTED FEB. 4, 1908.

APPLICATION FILED FEB. 25, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

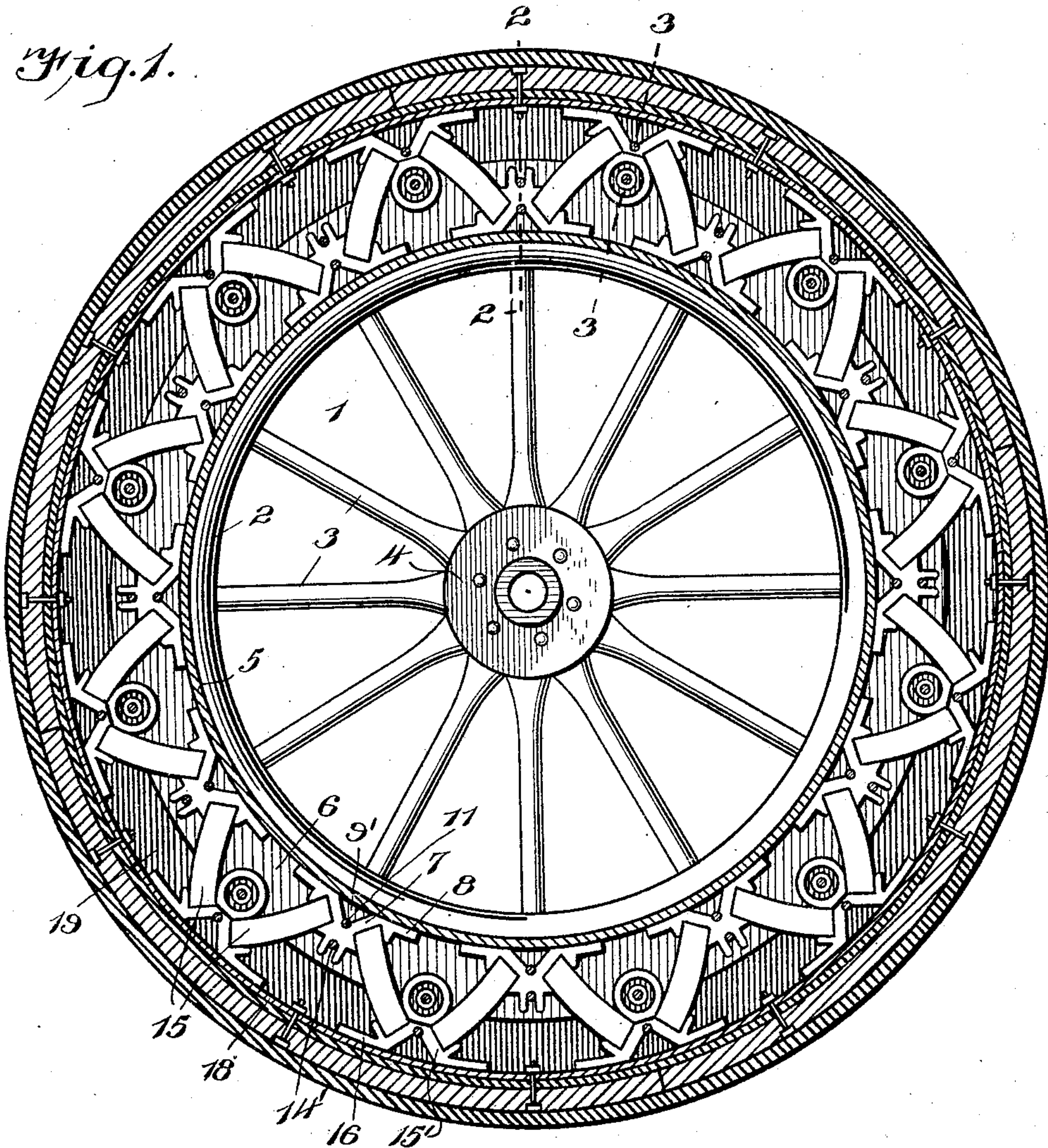
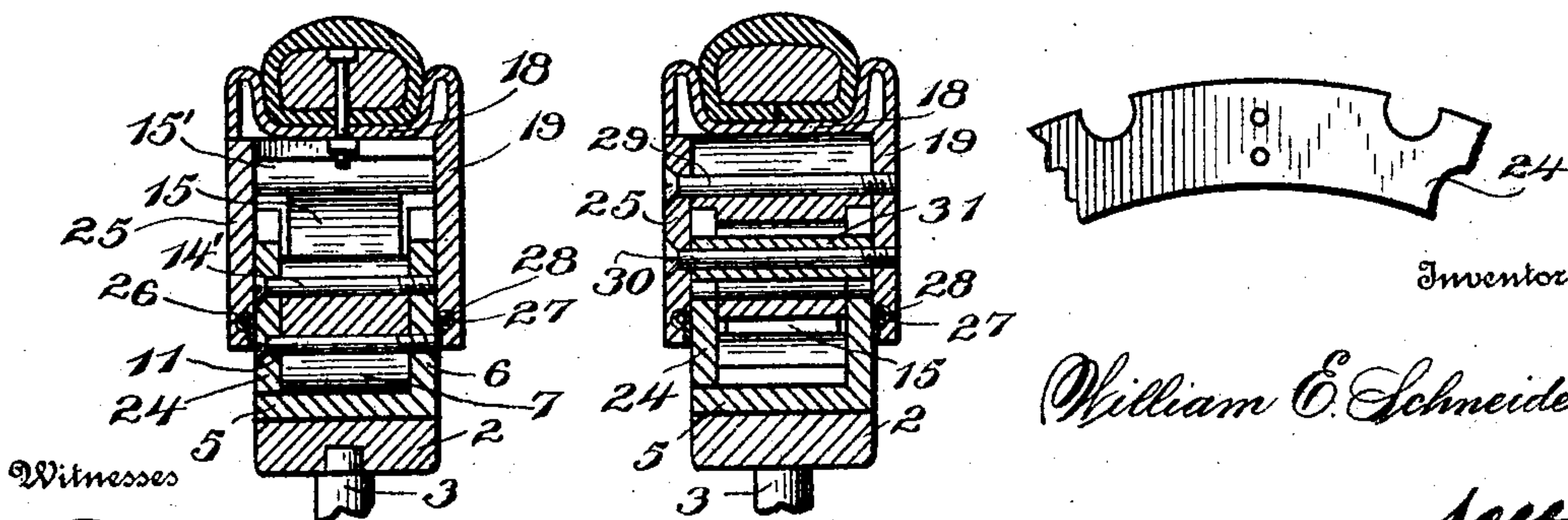


Fig. 2.

Fig. 3.

Fig. 4.



Witnesses

J. P. Britte
E. C. Duff

Inventor

William E. Schneider

By

C. E. Duff
Attorney

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2 SHEETS—SHEET 2.

Fig. 5.

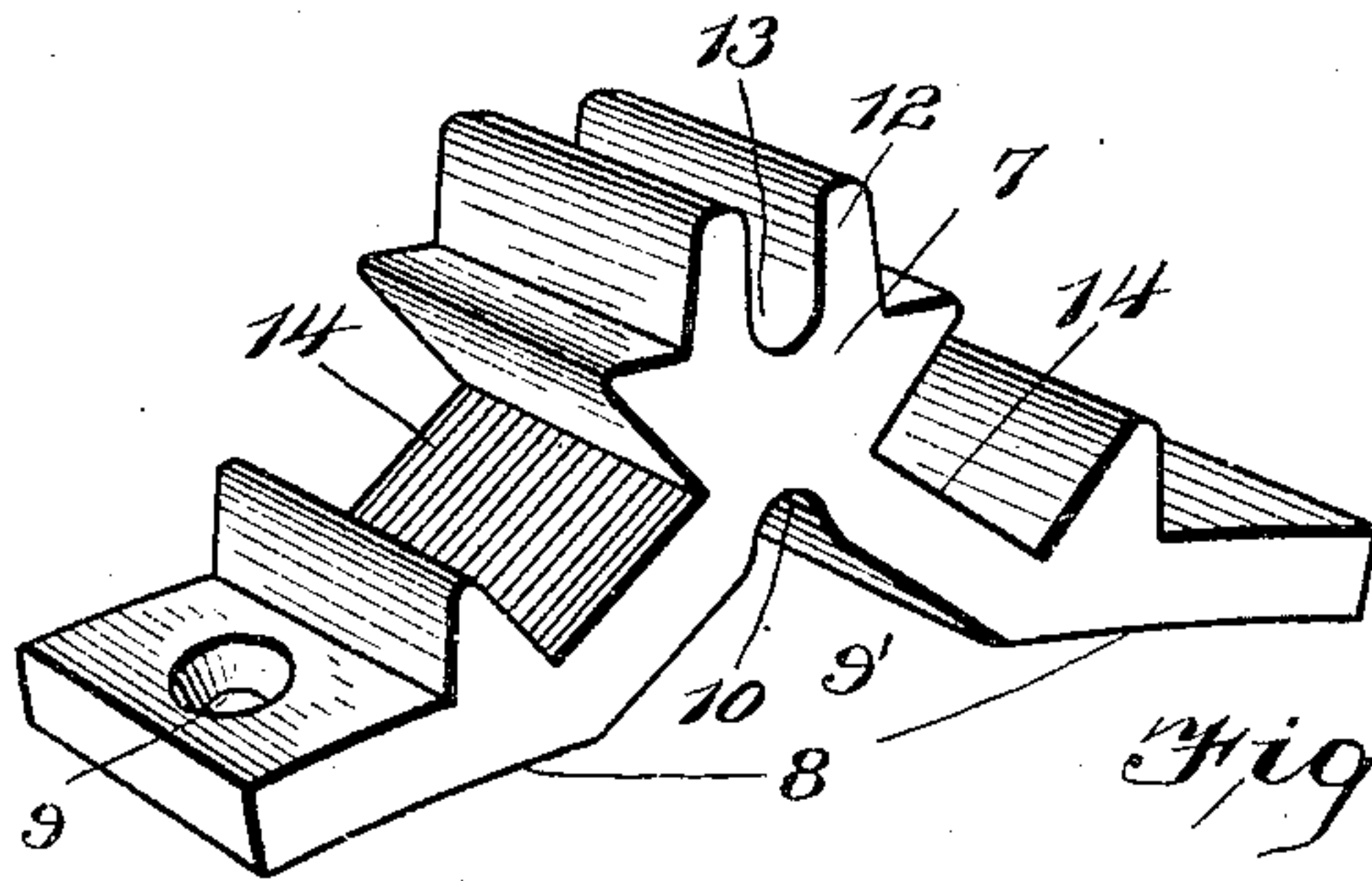


Fig. 6.

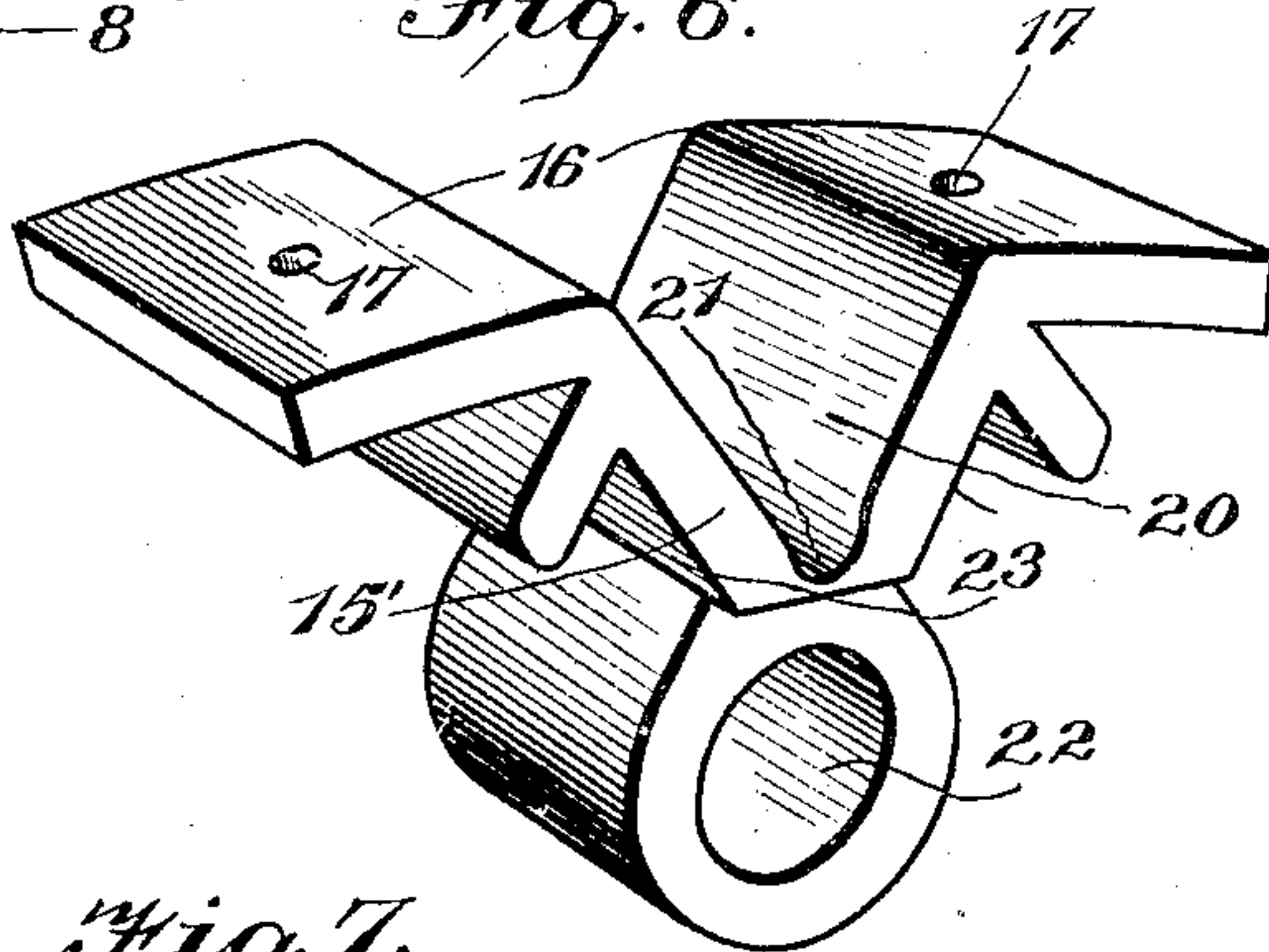
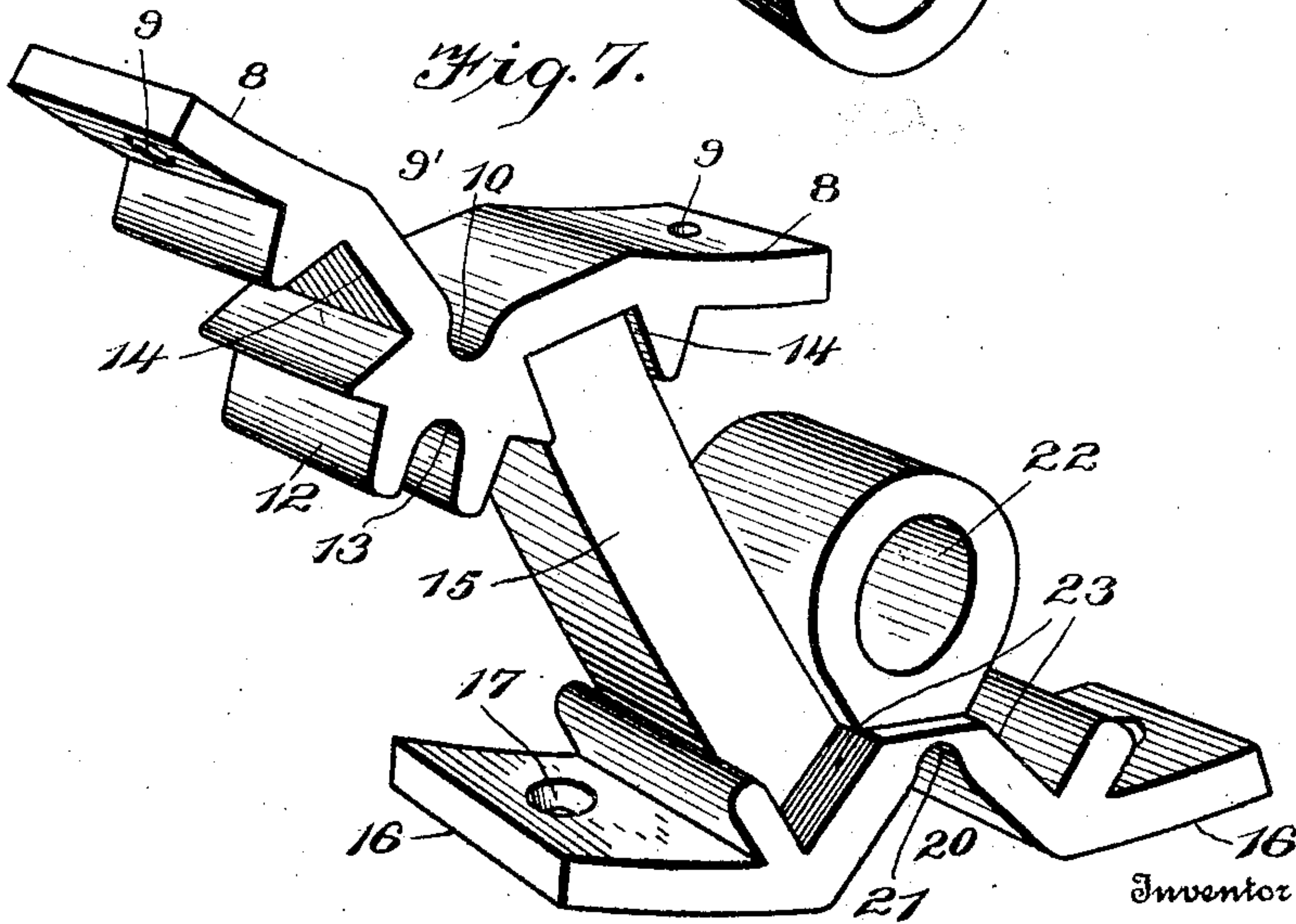


Fig. 7.



Inventor

William E. Schneider

Witnesses

T. P. Britt
E. C. Duffey

By

O. E. Duffey & Son

Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM EDWIN SCHNEIDER, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO SCHNEIDER MANUFACTURING COMPANY OF NEW JERSEY, A CORPORATION OF NEW JERSEY.

VEHICLE-WHEEL.

No. 878,158.

Specification of Letters Patent.

Patented Feb. 4, 1908.

Application filed February 25, 1907. Serial No. 359,195.

To all whom it may concern:

Be it known that I, WILLIAM EDWIN SCHNEIDER, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Vehicle-Wheels; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to vehicle wheels, but more particularly to a resilient wheel to be used on automobiles.

My invention has for its object to provide certain improvements in construction over my United States Patent No. 841,578, dated January 15, 1907.

A more specific object of my invention is to provide an improved construction for holding and supporting the diagonal struts between the felly of the wheel and the axle thereof.

My invention further consists in the construction and arrangement of the face plates in combination with the diagonal struts, and means for holding the same in position.

With these objects in view my invention consists in the novel construction of the stops or castings for securing and holding in their proper relative positions the flexible diagonal struts,

My invention further consists in the novel construction and arrangement of the face plates covering the diagonal struts and stops or castings.

My invention also consists in certain other novel details of construction and in combination of parts which will be first fully described and afterwards specifically pointed out in the appended claims.

Referring to the accompanying drawings: Figure 1 is a vertical longitudinal sectional view through a wheel constructed in accordance with my invention. Fig. 2 is a transverse vertical view through the tire and felly of a wheel taken on line 2—2 of Fig. 1. Fig. 3 is a similar view taken on line 3—3 of Fig. 1. Fig. 4 is a fragmentary view of a portion of one of the face plates. Fig. 5 is a perspective view of one of the inner stops or castings. Fig. 6 is a perspective view of one of the

outer stops or castings, and Fig. 7 is a perspective view illustrating one of the outer and one of the inner stops or castings together with one of the flexible diagonal struts in position.

Like numerals of reference indicate the same parts throughout the several figures in which,

1 indicates the wheel having a felly 2, spokes 3 and hub 4. Arranged on the felly 2, as shown in Figs. 2 and 3, is a rim 5 having a rectangular flange or face plate 6 formed thereon and extending outwardly therefrom. Arranged on said rim 5 at suitable intervals are the inner stops or castings 7, as shown in Fig. 1, said inner stops or castings 7 being provided with a base 8 and perforations 9 for the reception of a bolt or screw in order to hold the said stop or casting in position on the rim 5. The central lower portion of the stop or casting 7 is cut away at 9' terminating in a transverse groove 10 for the reception of a transverse bolt 11; while the extreme upper portion 12 of the said stop or casting is provided with a transverse groove 13 for the reception of a bolt 14'. On each side of the center of the said stop or casting 7 and at substantial angles of forty-five degrees is formed a trough 14 for the reception of the diagonal struts 15.

Referring now to Fig. 1 and also to Fig. 6 it will be seen that outer stops or castings 15' are arranged at intervals intermediate the inner stops or castings 7, said stops or castings 15' being provided with a base 16 perforated at 17 to receive bolts or screws for securing said outer stops or castings to the tire channel or rim 18, said tire channel or rim 18 preferably comprising a rectangular flange or face plate 19 extending inwardly and normally over-lapping the rectangular flange or face plate 6 on the rim 5. The base of the outer stops or castings 15' is cut away centrally at 20 terminating in a transverse groove 21; while an enlarged transverse preferably circular opening 22 is provided above the groove 21. On each side of the groove 21 and at substantial angles of forty-five degrees are formed two troughs 23 for the reception of the diagonal struts 15.

Referring now to Figs. 2 and 3 it will be seen that there is arranged on the rim 5 of the felly 2 a flange or face plate 24, said flange or face plate 24 together with the flange or face plate 6 act as a cover for the inner stops or

castings 7 as shown in Fig. 1. It will be seen that a flange or face plate 25 is arranged to cover the outer stops or castings 15', said face plate 25 normally over-lapping the said inner face plate 24 as clearly shown in Figs. 2 and 3. It will be seen from these figures that an annular groove 26 is provided on the inner sides of the face plates 19 and 25 near the inner edges thereof, within which groove is arranged a packing 27 of felt or other material held in position within the said grooves by means of a cord or wire 28, in such manner that a perfectly dust tight connection is formed between the inner face plates 26 and 24 and the outer face plates 19 and 25.

Having thus fully described the several parts of my invention, the same are assembled as follows: The rim 5 on the felly 2 being firmly secured in position by any suitable means the inner stops or castings 7 are arranged at suitable intervals on said rim 5, for instance as shown in Fig. 1; the inner face plate 24 is then placed in position as shown in Fig. 2 and the bolts 11 and 14' are passed through said face plate 24, through the inner castings 7 lying within the transverse grooves 9 and 13 in said castings, and finally entering the flange or face plate 6 on the rim 5. By this construction the inner stop or castings 7 together with the face plates 6 and 24 are firmly tied together all vertical and transverse movement of the parts being prevented. The diagonal flexible struts 15 can then be inserted in the trough 14 in the said lower stops or castings 7, and the outer stops or castings 15' are then secured on the inner side of the tire channel or rim 18 at intervals, as for instance as shown in Fig. 1, each of said outer stops or castings 15' being located between the inner stops or castings 7 as clearly shown in Fig. 1, said stops or castings 15' being secured to the tire channel or rim 18 by bolts or screws passing through perforations 17 in the base 16 thereof. The outer stops or castings being thus secured in position, the same together with the tire channel or rim, and the integral flange or face plate 19 is placed in position as shown in Fig. 1, and the outer ends of the flexible struts 15 are placed within the troughs 23 in the said outer stops or castings, the outer flange or face plate 25 is then placed in position as shown in Figs. 2 and 3 and suitable bolts 29 and 30 are passed through the face plate 25, through the outer stops or castings 15' lying in the groove 21 thereof, and within the transverse opening 22 and finally passing into the flange or face plate 19 formed on the tire channel or rim 18. A stop 31 is arranged within the transverse opening 22 in the outer stop or casting 15' through which the bolt 30 directly passes as shown in Fig. 3, said stop 31 being arranged for the purpose of limiting the approach of the face plates 19 and 25 in such manner that

the bolts 29 and 30 drawing the face plates 19 and 25 together will not cause the binding of said face plates on the inner face plates 6 and 24. By this construction the outer flanges or face plates 19 and 25 together with the tire channel or rim 18, the outer stops or castings 15' and the outer portions of the struts 15 are securely tied in position, all lateral movement of the parts being prevented.

In operation the flexible diagonal struts 15 are free to compress longitudinally and bend laterally when the wheel is under strain and any longitudinal compression of the said struts will obviously cause the outer stops or castings 15' together with the tire channel or rim 18 to approach the inner castings or stops 7, and as the flanges or face plates 19 and 25 normally over-lap the flanges or face plates 6 and 24, said face plates 25 and 19 are free to move vertically over the said face plates 6 and 24 while the packing 27 between the said face plates prevents the ingress of dust, dirt or sand.

The face plates and tire channel as shown in the drawings have been made the subject matter of a co-pending application, Serial No. 359,194, while the tire as shown has been made the subject matter of a co-pending application 359,193.

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

1. In a wheel of the character described the combination with the felly, of a rim or band around the periphery thereof, a series of stops arranged on said rim or band, a tire for said wheel, a series of stops associated with said tire, a series of obliquely disposed struts each having one end thereof in engagement with one of the first mentioned stops and the other end thereof in engagement with one of the last mentioned stops, each of said series of stops being provided with troughs for the reception of the struts, substantially as described.

2. In a wheel of the character described the combination with the felly, of a series of stops associated therewith, a tire for said wheel, a series of stops associated with said tire, a series of diagonal struts each having one end thereof in engagement with one of the first mentioned stops and the other end thereof in engagement with one of the last mentioned stops, each of said series of stops being provided with a trough to receive each of said struts, substantially as described.

3. In a wheel of the character described the combination with the felly thereof, of a series of stops associated therewith, a tire for said wheel, a series of stops associated with said tire, a series of diagonal struts interposed between the two series of stops, and a trough on each of said stops to receive said struts, substantially as described.

4. In a wheel of the character described

the combination with the tire and felly thereof, of a series of inner stops, a series of diagonal struts accommodated thereby, each of said stops being provided with a trough for
5 said struts and provided with a transverse groove in the base thereof to accommodate a transverse bolt, and provided with a transverse groove in the outer portion thereof to accommodate a transverse bolt, substantially as described.
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5. In a wheel of the character described the combination with the tire and felly thereof, of a series of inner stops, a series of outer

stops, a series of diagonal struts accommodated by said stops, a face plate on each side
15 of each of said two series of stops, each of said series of stops being provided with transverse grooves to accommodate transverse bolts for fastening the two pairs of face plates together, substantially as described. 20

In testimony whereof, I affix my signature, in presence of two witnesses.

WILLIAM EDWIN SCHNEIDER.

Witnesses:

C. HUGH DUFFY,
C. M. FORREST.