No. 881,882. PATENTED MAR. 10, 1908.

J. W. COTTON.

FIFTH WHEEL.

APPLICATION FILED MAY 6, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

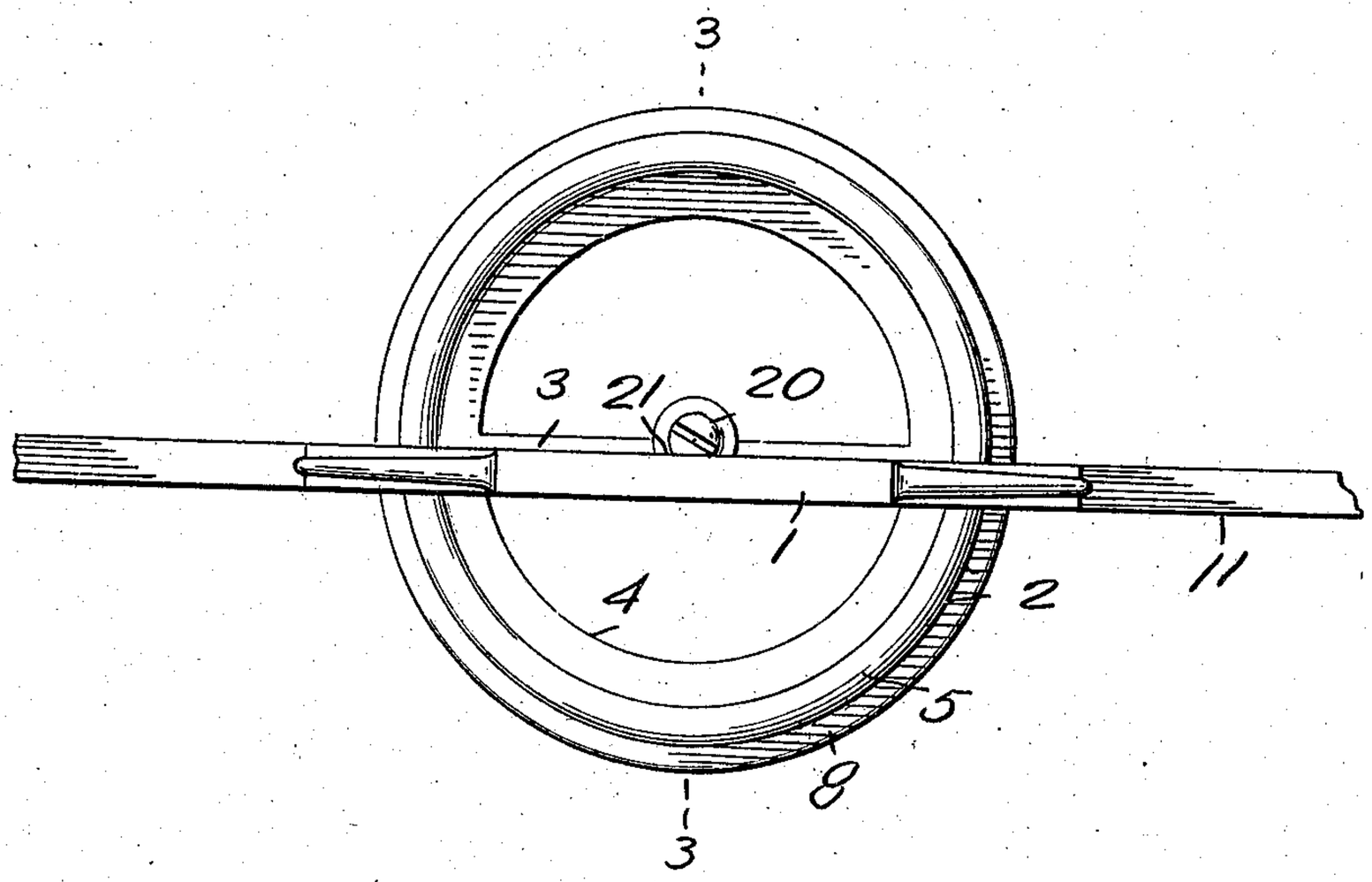


Fig. 3.

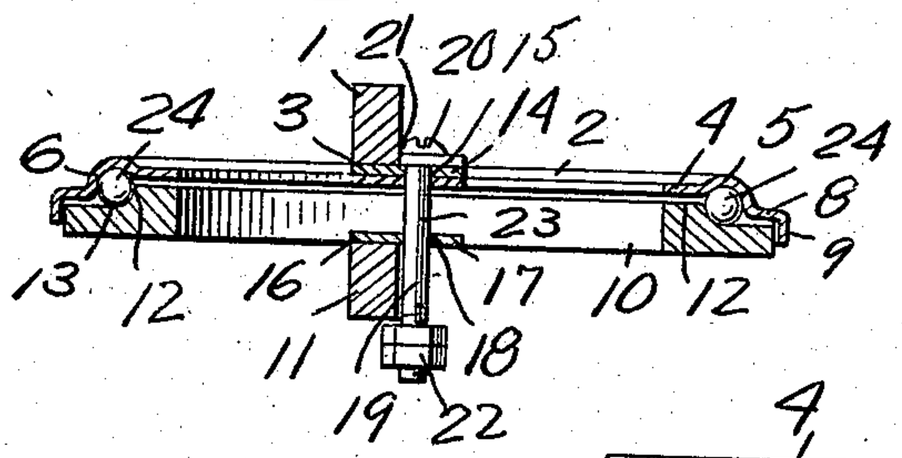
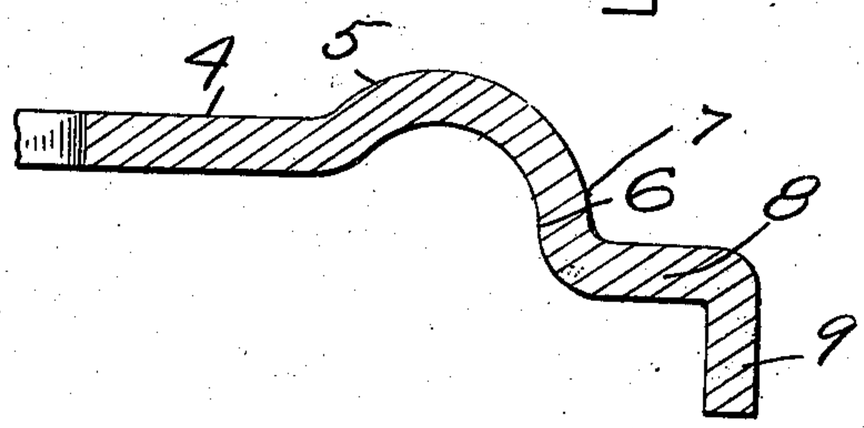


Fig. 5.



Witnesses

G. R. Thomas

John S. Powers.

Inventor

James W. Cotton

By Dandelet & Dandelet

Attorneys

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2 SHEETS—SHEET 2.

Fig. 2.

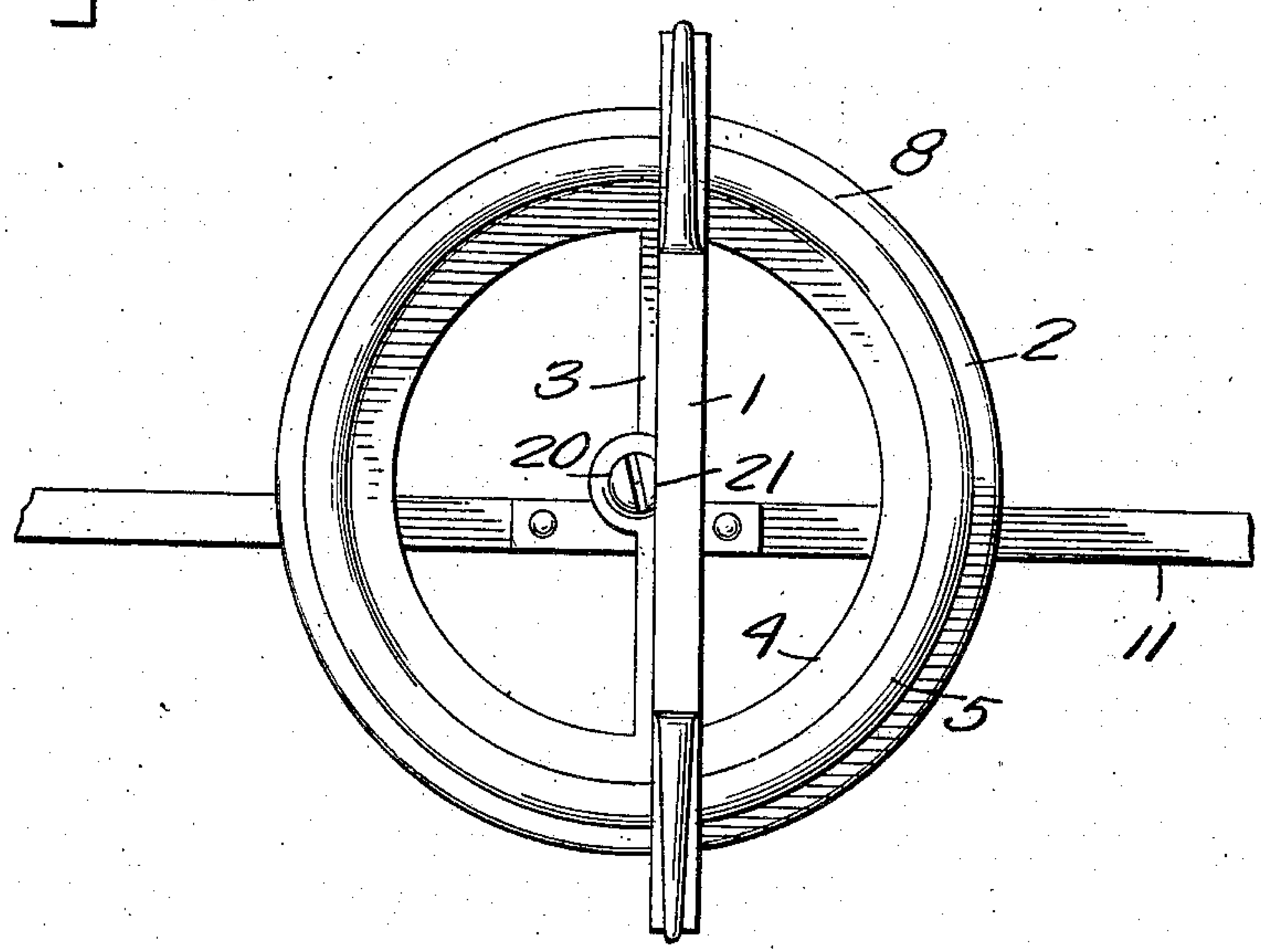
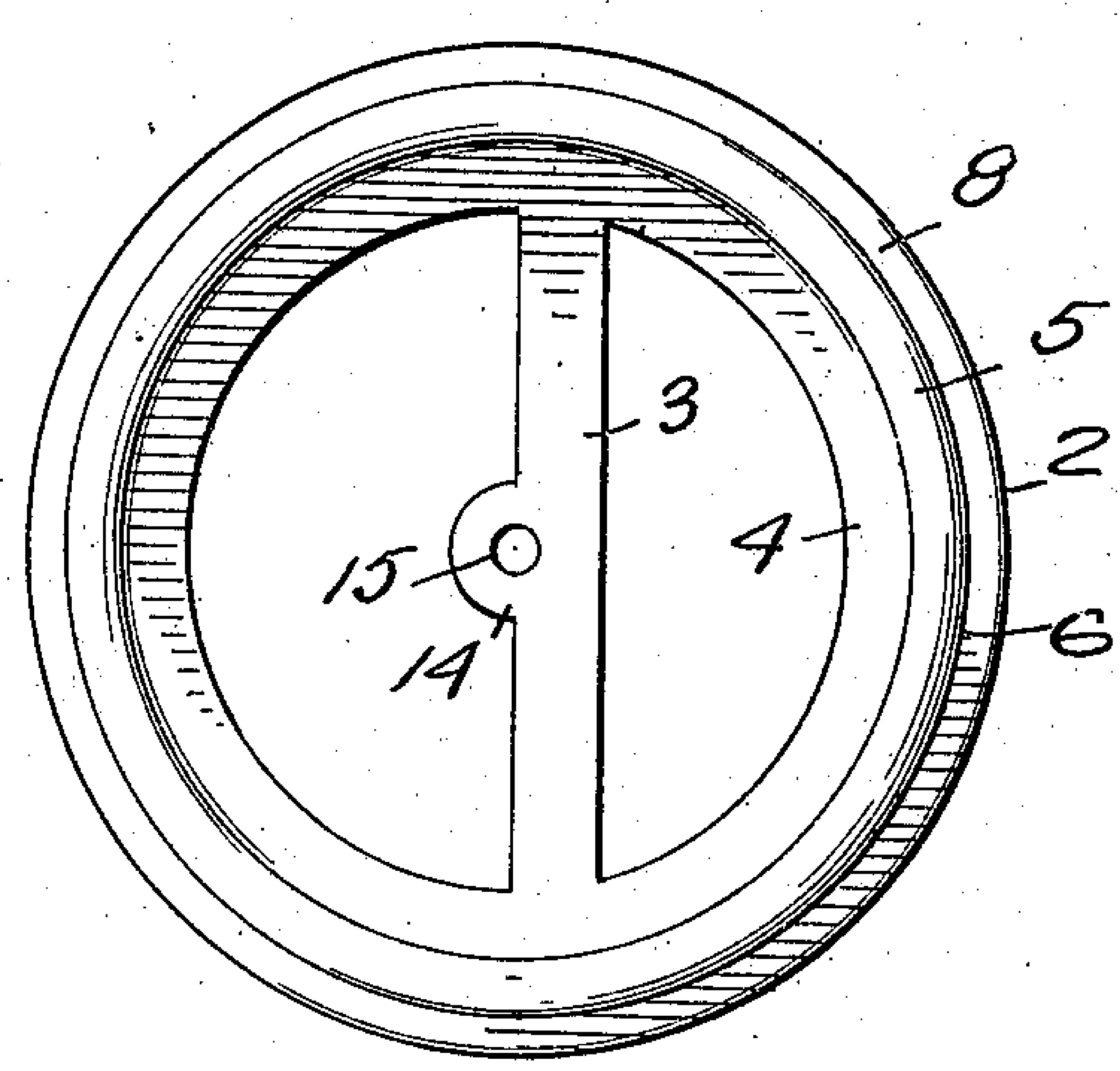


Fig. 4.



Inventor

James W. Cotton

Witnesses

G. R. Thomas

John S. Powers

By Chandlee & Chandlee

Attorneys

UNITED STATES PATENT OFFICE.

JAMES W. COTTON, OF NEWTON, IOWA, ASSIGNOR OF ONE-HALF TO WILLIAM KORSMEIER, OF LAUREL, IOWA.

FIFTH-WHEEL.

No. 881,882. Specification of Letters Patent. Patented March 10, 1908.

Application filed May 6, 1907. Serial No. 372,189.

To all whom it may concern:

Be it known that I, JAMES W. COTTON, a citizen of the United States, residing at Newton, in the county of Jasper, State of Iowa, have invented certain new and useful Improvements in Fifth-Wheels; and I do hereby 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.

This invention relates to new and useful improvements in fifth wheels for vehicles, and it has particular reference to a fifth wheel of that type which embodies superimposed annuli, one of which is rotatable with relation to the other.

In connection with a fifth wheel of the above type, the invention aims as a primary object to provide a novel construction, combination, and arrangement of parts, the details of which will appear in the course of the following description, wherein reference is had to the accompanying drawings forming a part of this specification, like numerals of reference designating similar parts through the several views, wherein,

Figure 1 is a top plan view of a fifth wheel constructed in accordance with the present invention. Fig. 2 is a plan view of the wheel, with the parts in a different position from that shown in Fig. 1, the stationary parts being disposed at an angle to one another. Fig. 3 is a vertical transverse section on the line 3—3 of Fig. 1. Fig. 4 is a top plan view of an annulus connected to the vehicle, and Fig. 5 is an enlarged fragmentary transverse section to show the construction of the annulus illustrated in Fig. 4.

Referring specifically to the accompanying drawings, the numeral 1 designates a fixed bar secured beneath the vehicle, and the numeral 2 an upper annulus. The annulus 2 is constructed with an integral transverse spanning web 3 along a line off center, which is fastened to the bar 1. Said annulus is preferably stamped from sheet metal, and comprises a flat inner portion 4 in a horizontal plane, and a groove 5 surrounding such portion 4 and passing downwardly. Said groove is of greater depth than the portion 4, so that a shoulder 6 is afforded, and the outer wall of said groove is of greater depth than the shoulder 6. Beyond said outer wall 7 said annulus is offset horizontally, as at 8, and the material thus offset is formed with a depending annular shoulder 9. The annulus 2 is imposed on a second annulus 10, which carries an axle-tree 11, the latter spanning said second annulus along a line off center in one position thereof with relation to said first-named annulus, coincident with the line of said fixed bar. The annulus 10 is formed with an inner raised portion 12, and with an outer runway 13 of less depth than the portion 12.

In the assembled relation of the parts, the flat portion 4 rests on the portion 12, the groove 5 is disposed wholly above the runway 13, the offset portion 8 rests upon the outer edge portion of said runway, and the shoulder 9 surrounds and bears against the perimeter of the annulus 2. The web 3 is formed with a central projecting lug 14 having an opening 15 coincident with the center of the respective annuli in their superimposed relation. A member 16 is fastened upon the upper surface of the axle-tree 11, and said member 16 is formed with a projecting lug 17 having an opening 18, the lug 17 and opening 18 being coincident with the lug 14 and opening 15. A pin 19 is projected centrally through the openings 15 and 18 in their registering relation, said pin at its upper end being provided with a head 20 having a flattened side 21 bearing against the side of the bar 1, and at its lower end carries lock nuts, or other fastening means 22. The function of the flattened side 21 is to prevent rotation of the pin during the relative rotatory movement of the annuli, whereby the movement of the fastening means is unaffected. It is preferred that the central portion of said pin, which is projected through the openings 15 and 18, be plain or unthreaded, as at 23.

From the foregoing description, it will be seen that a fifth wheel constructed in accordance with the present invention is easily accessible for the purpose of repairs. Ball-bearings 24 are arranged between the grooves 2 and the runway 13, and by loosening the nuts 22 ready access may be had to said groove when it is desired to insert or remove any of the ball-bearings 24. The annuli may be disassembled without much labor and in a comparatively short time, owing to the articulation between the superimposed parts, and their assemblage is a matter of equal simplicity. Aside from this the web 3 takes up the strain from the annuli, and not only strengthens the annulus 2 but the structure

as an entirety. The arrangement of the pivot lugs serves to center the lines of strain towards the center of said annuli rather than towards the perimeter thereof, so that lateral motion and wear is greatly reduced in actual use.

From the foregoing description, it will be seen that simple and efficient means are provided for accomplishing the objects of the invention, but while the elements herein shown and described are well adapted to serve the function set forth, it is obvious that various minor changes may be made in the proportions, shape, and arrangement of the several parts, without departing from the spirit and scope of the invention, as defined in the appended claims.

What is claimed, is—

In a fifth wheel of the type described, an annulus 2 having an inner flat portion 4, an annular corrugation stamped thereinto concentric to said flat portion, the corrugation affording an annular groove 5 in the underface of said annulus, said corrugation having an outer depending wall portion affording an annular shoulder 6, a flat annular portion 8 projecting outwardly from said shoulder and a portion 9 depending from said portion 8 and affording a second annular shoulder, a second annulus 10 formed with an inner annular raised portion 12 and having an outer annular runway portion 13 of less depth than the portion 12, the portion 13 being disposed within the confines of the shoulder 9, and ball bearings disposed partially in the groove 5 and resting on the runway portion 13, said ball bearings being confined between the shoulder 6 and the raised portion 12.

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

JAMES W. COTTON.

Witnesses:

C. W. GUESSFORD,

FRANK BALDWIN.