

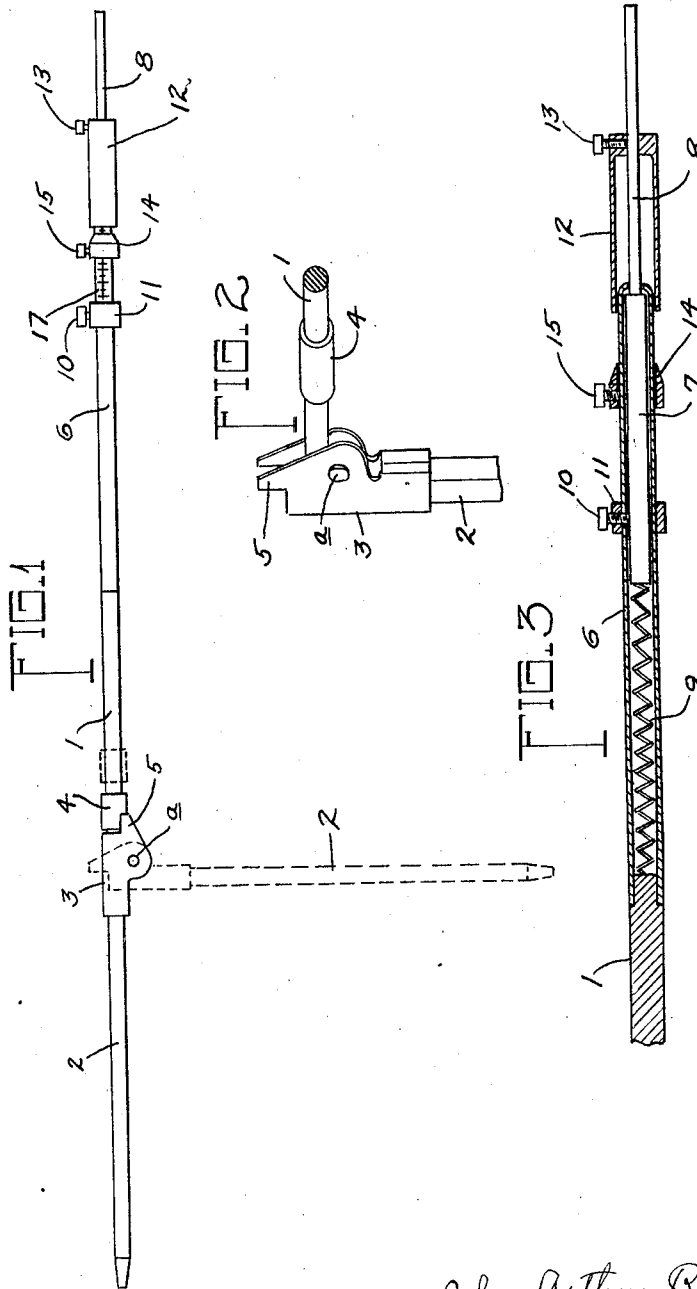
June 15, 1926.

1,589,048

J. A. BUSSARD

WHEEL ALIGNER FOR AUTOMOBILES

Filed Feb. 4, 1925



INVENTOR.
John Arthur Bussard.
BY Walter N. Haskell.
his ATTORNEY.

UNITED STATES PATENT OFFICE.

JOHN ARTHUR BUSSARD, OF ROCK ISLAND, ILLINOIS.

WHEEL ALIGNER FOR AUTOMOBILES.

Application filed February 4, 1925. Serial No. 6,713.

My invention has reference to wheel aligners for automobiles, which tools are in common use in garages and repair shops for assisting in setting the wheels, more specially the front ones, at the proper angle with relation to each other, so as to develop a minimum amount of wear on the tires of such wheels. Some of these devices now in use are inaccurate, or are easily made to give a false reading by the presence of a grain of dirt or other sediment getting into the parts. As a result the setting of the wheels is frequently faulty, such fact not being discovered until a considerable amount of harm has been done to the tires. The chief purpose of the present invention is to provide a simple and efficient tool, by the use of which correct readings of variations in the wheels can be had.

Another purpose thereof is to produce a tool which can be readily detached from its position between the wheels, after the proper markings have been taken, and which can also be reduced to a compact space for storage.

In the drawings:

Fig. 1 shows the tool in its entirety.

Fig. 2 is an enlarged detail of the joint between the parts 1 and 2.

Fig. 3 is a longitudinal section of the gauge end of the tool.

One end of the tool is of a solid rod formation, consisting of two sections 1 and 2, having a jointed connection by means of a coupling 3, fixed to the part 2, and having a pivotal connection with the end of the part 1, as at *a*. Said sections are held normally in line by means of a sleeve 4, slidable on the part 1, and engaging a pair of projections 5 on the coupling 3. By moving said sleeve out of engagement with said projections, the part 2 can be turned at an angle with the part 1, as shown in broken lines in Fig. 1. For storage purposes the section 2 can be folded against the part 1.

Fixed to the opposite end of the section 1 from the section 2 is a tubular section 6, in which is slidable a rod 7, having a reduced portion 8, projecting through an opening in the end of the section 6. Between the end of the section 1 and the rod 7 is an extensible coiled spring 9, the tendency of which is to hold said rod with the part 8 in extended position, as shown in Fig. 3. The rod 7 can be fixed in position by means of

a thumb-screw 10, threaded in a collar 11, secured on the outer face of the section 6. Slidable on the end of the section 6 is a sleeve 12, provided with a set-screw 13, by means of which it may be secured to the extension 8. Slidable on the section 6, between the collar 11 and sleeve 12, is a gauge 14, provided with a thumb-screw 15, by means of which it may be set in position on the section 6. The sleeve 12 is usually positioned on the extension 8 so that the end of the sleeve slightly over-laps the end of the section 6, with the part 8 fully extended, as shown in Fig. 3.

In the use of a tool of the kind mentioned, it is usual to take a measurement at the forward sides of the wheels, at a certain height from the ground, and another measurement at the rear sides, at the same height, the difference in measurements, if any, showing the variation in the inclination of the wheels. In the present tool, the end of the section 2 is placed on the inner face of one of the wheels, and the end of the extension 8 against the inner face of the opposite wheel, at a corresponding point, the length of the tool being such that it is necessary to telescope the parts 6 and 7 to conform the same to the spacing of the wheels, which is properly a little less at the front of the wheels than at the rear thereof. One effect of the positioning of the tool between the wheels is to move the sleeve 12 inwardly upon the tube 6 and upon this being done the gauge 14 is moved until it is in contact with the end of said sleeve, in which position it is fixed by means of the thumb-screw 15. The tool is then removed, the screw 10 loosened, and the tool replaced at a corresponding height at the rear side of the wheels, the sleeve 12 and rod 7 being again moved inwardly, with the end of the sleeve 12 in proximity to the gauge 14. The sleeve and rod are then fixed in position by means of the set-screw 10, and the tool again removed from the wheels. The variation between the front and rear of the wheels will be indicated by the spacing between the gauge 14 and sleeve 12, which can be readily measured by a rule or other instrument, or if desired the rod 6 may be provided with a scale, as at 17, upon which the variation can be read. If there is no spacing between the gauge and sleeve, it indicates that the wheels are rotating in parallel planes, and that a correc-

tion should be made. Other variations from a correct setting are similarly shown, and changes can be made accordingly.

In positioning the tool the ends thereof have yieldable movement with relation to each other, but in removing the tool the connection between the ends is a rigid one, and such removal is facilitated by releasing the folding end of the tool, and turning the same at an angle with the main part of the rod, as before mentioned.

What I claim, and desire to secure by Letters Patent, is:

1. A device of the class described, comprising a body member having a tubular end portion, an end piece telescoped therein, and provided with a gauge slidable on said body member, and a gauge slidable on said body member, in proximity to said first-named gauge, and provided with means for attachment to said body member.

2. A device of the class described, comprising a body member having a tubular end portion, an end piece telescoped therein, and provided with a gauge operable on said body member, means for holding said end piece in fixed position, and a gauge movable on said body member, in proximity to said first-named gauge, and provided with means for attachment to said body member.

3. A device of the class described, comprising a rod, having a hollow section at

one of its ends, an end-piece slidable in said hollow section, a gauge fixed to said end-piece, and slidable at one of its ends on said rod, a gauge slidable on said rod, in proximity to said first-named gauge, and provided with means for attachment to said rod, means for holding said end-piece yieldably in an extended position, and means for fixing said end-piece in position in said rod.

4. A device of the class described, comprising a rod, provided at one of its ends with a hollow section, and at the opposite end with a foldable section, an end-piece slidable in said hollow section and provided with a gauge operable upon said rod, and a gauge slidable on said rod, in proximity to said first-named gauge, and provided with means for attachment to said rod.

5. A device of the class described, comprising a rod, provided with a scale at one of its ends, a gauge slidable on said end of the rod, and provided with a contact member for engagement with an automobile wheel, a gauge slidable on said rod in proximity to said first-named gauge and provided with means for attachment to said rod, and means for holding said contact member with said first-named gauge in fixed position with relation to said last-named gauge.

In testimony whereof I affix my signature.

JOHN ARTHUR BUSSARD.