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Patented Jan. 16, 1900.

S. C. EISENHART.
ADJUSTABLE HANDLE BAR FOR BICYCLES.

(Application filed Nov. 30, 1895.)

(No Model.)

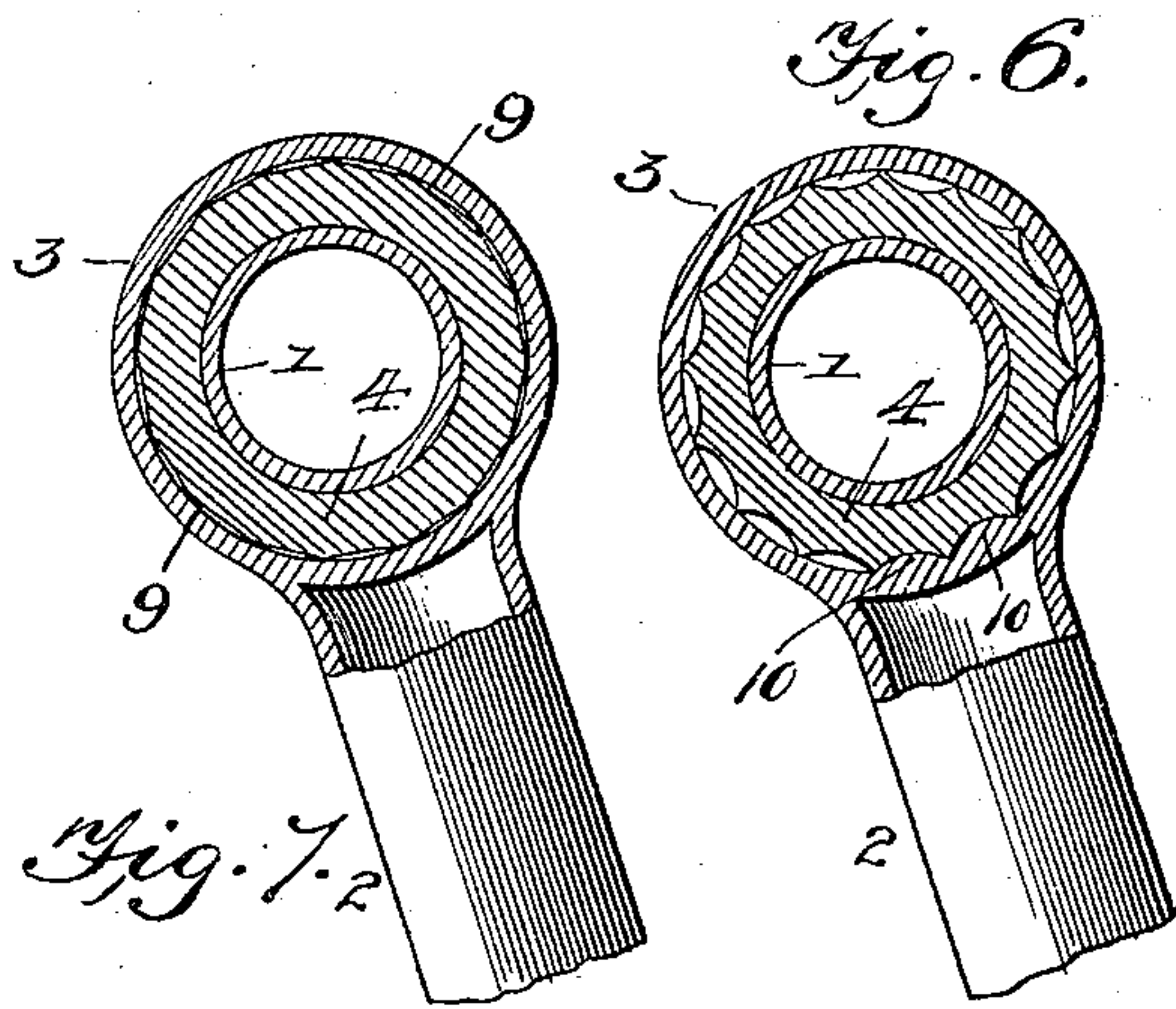
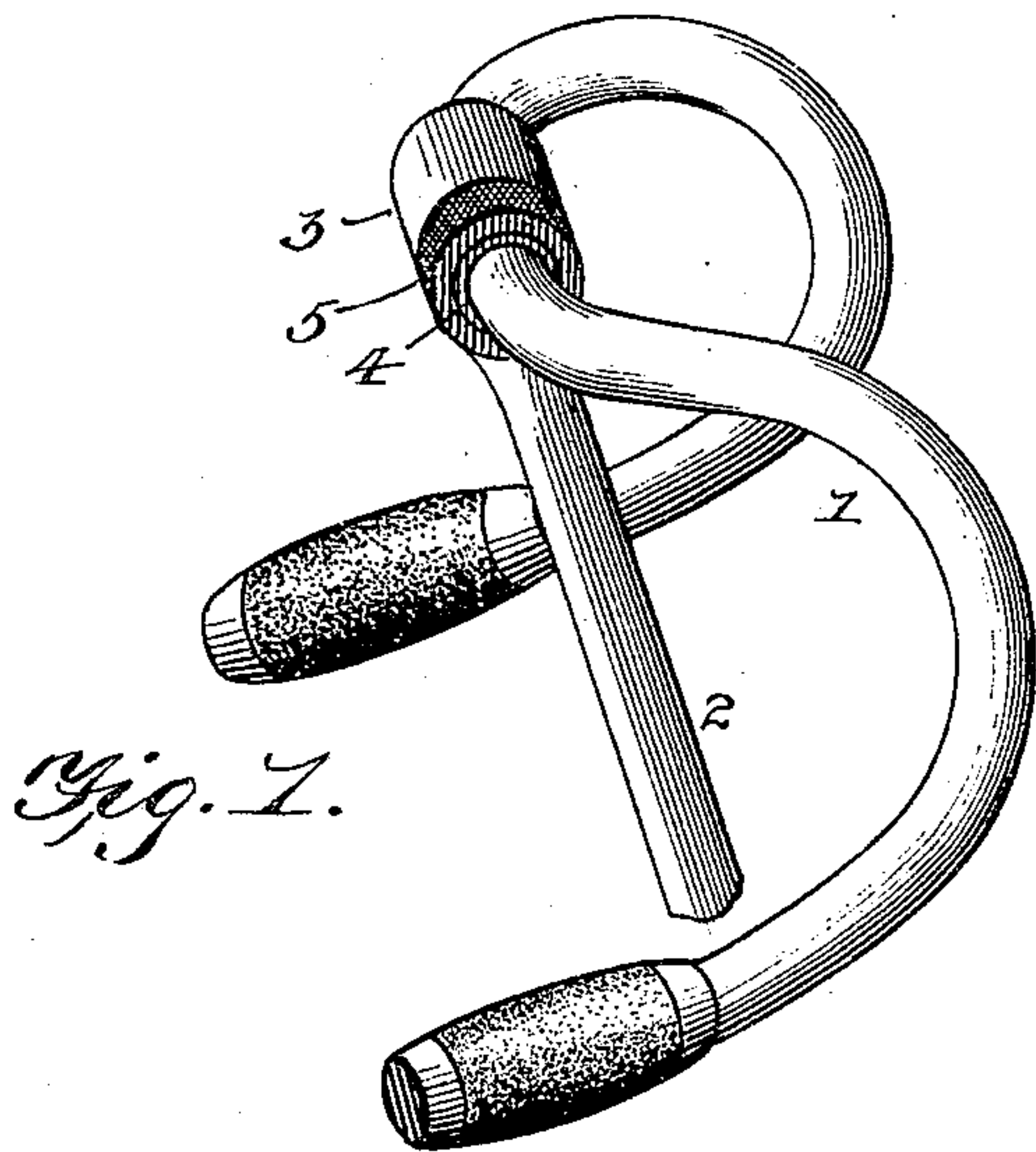


Fig. 7. 2

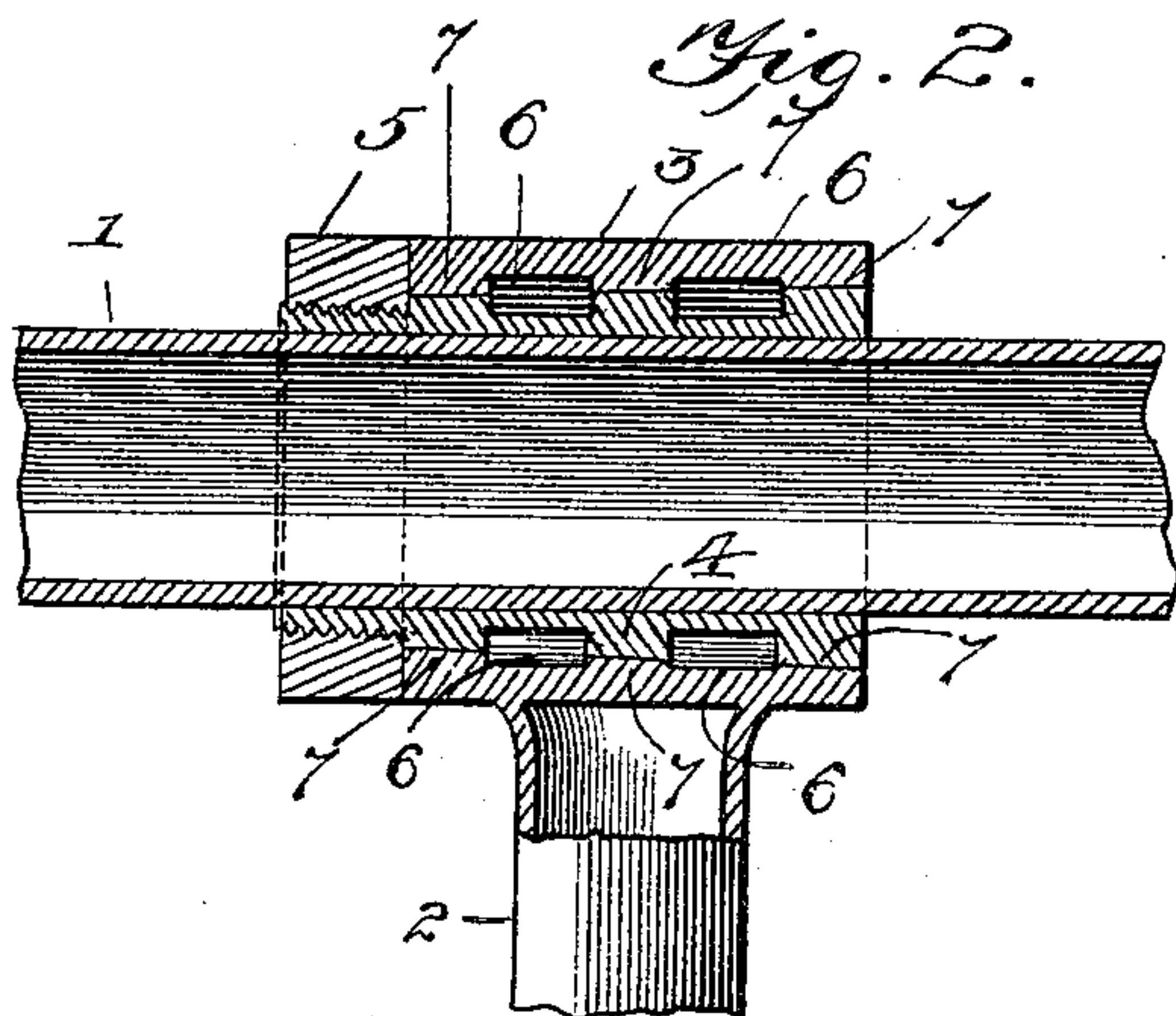


Fig. 3.

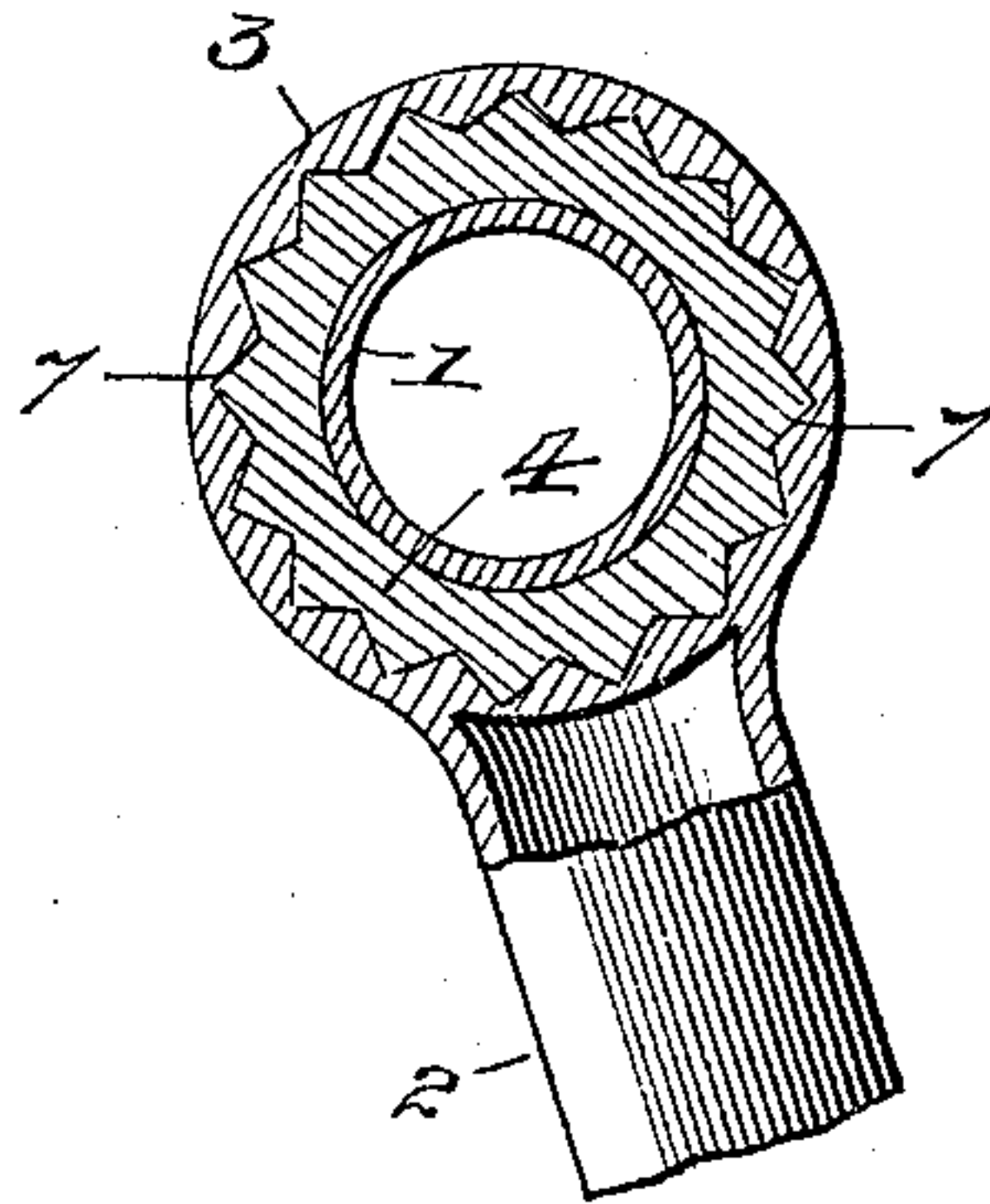


Fig. 4.

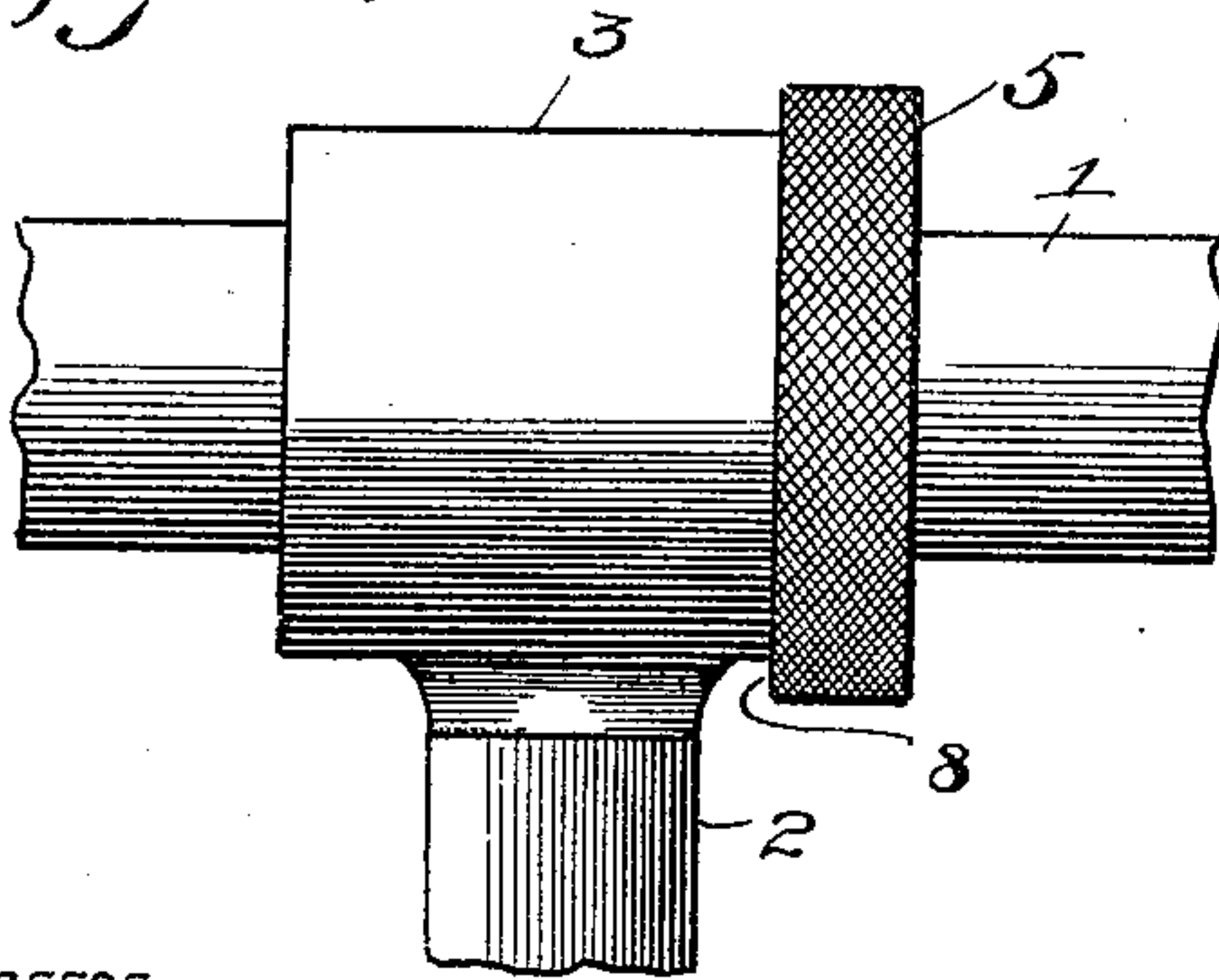
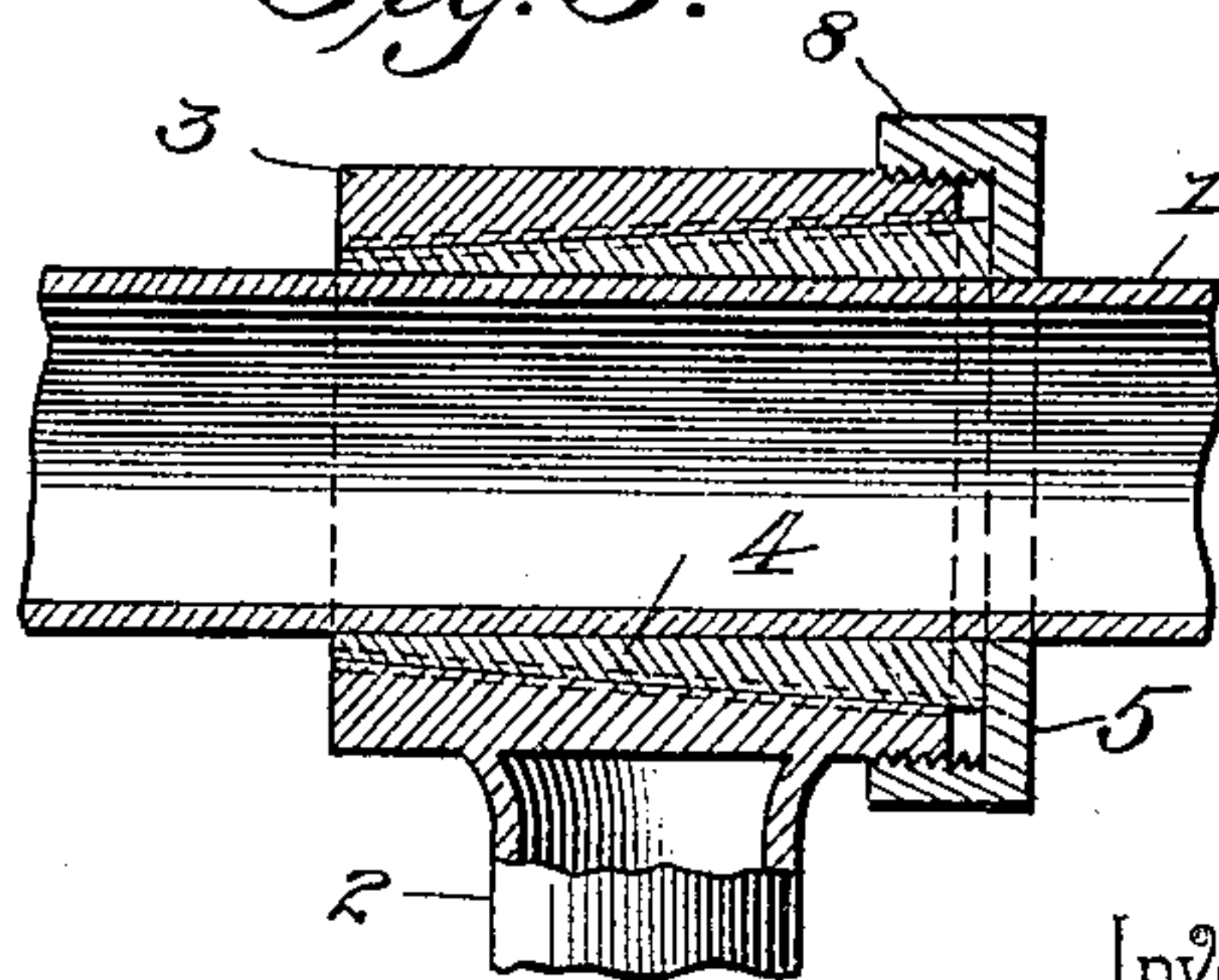


Fig. 5.



Witnesses

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ADJUSTABLE HANDLE-BAR FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 641,442, dated January 16, 1900.

Application filed November 30, 1895. Serial No. 570,644. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL CHARLES EISENHART, a citizen of the United States, residing at York, in the county of York and State of Pennsylvania, have invented a new and useful Adjustable Handle-Bar for Bicycles, of which the following is a specification.

This invention relates to an improvement in adjustable handle-bars, and has for its object to provide means connected directly with the head of the machine and within easy reach of the rider while in the saddle whereby the central portion of the handle-bar may be revolved any desired amount within the eye of the stem for adjusting the position of the handles, the ultimate object being to adapt the machine for hill-climbing, racing or scorching, and ordinary road-riding.

Various plans have been heretofore devised for adjusting the handle-bar of a bicycle for the purposes above pointed out; but in the majority of cases it has been necessary for the rider to dismount from the saddle and to employ a wrench or similar device, while in other instances the adjusting means have been so bulky and unsightly as to render the device undesirable.

The object of the present invention is to overcome these objections and provide a simple device which is compact, which may be operated instantly by the rider while in the saddle, and which will grip the handle-bar firmly and hold the same as rigidly in its adjusted position as if the said handle-bar were a part of the stem.

To this end the invention consists in certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and finally embodied in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a sufficient portion of a handle-bar and stem to illustrate the application of the present improvement. Fig. 2 is a sectional view taken longitudinally of the handle-bar. Fig. 3 is a vertical section at right angles to Fig. 2. Fig. 4 is a view in elevation, showing a slight modification in the form of the adjusting device. Fig. 5 is a sectional view of the device shown in Fig. 4, taken longitudinally of the handle-bar. Figs. 6 and

7 illustrate different forms of sleeve and eye providing for the adjustment of the handle-bar, the said views being in section.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

Referring to the accompanying drawings, 1 designates a handle-bar which is preferably made tubular and has its end portions deflected from a right line in any approved manner and provided with the usual handles or grips.

2 indicates the hollow or tubular stem, which is ordinarily adjustably mounted in the tubular steering-head or fork-stem, and 3 an eye rigidly connected to the upper end of the stem and transversely apertured to receive the handle-bar 1.

To the center of the handle-bar is rigidly secured a stationary sleeve 4, having a longitudinal extent approximately equal to the width of the eye 3, the said sleeve being, however, extended to one side of and beyond one end of the eye, as shown in Fig. 2, where it is externally threaded to receive an annular nut 5, the peripheral surface of which is knurled for facilitating the manipulation thereof. The inner working surfaces of the eye 3 and sleeve 4 are formed with annular grooves 6, which normally register with each other, as shown in Fig. 2, and the meeting surfaces of the eye and sleeve between such grooves are formed with circular series of tapering corrugations or teeth 7, the length of which is somewhat less than the width of the annular grooves 6. These tapering corrugations or teeth are adapted to register and mesh with each other when adjusted into the position shown in Fig. 2, or the corrugations of the stationary sleeve 4 are capable of being moved longitudinally into the grooves or spaces between the corrugations of the eye. Such adjustment may be effected by means of the knurled nut 5 bearing against one end of the eye, and when in such last-named adjustment it will be apparent that the handle-bar is free to be turned or revolve within the eye for adjusting the handles to the desired elevation. After the handle-bar has been brought to the desired angle the nut 5 is turned in such manner as to bring the corrugations of the eye

and sleeve into engagement, and by reason of the taper or inclination of the corrugations or teeth the handle-bar, with its sleeve, may be advanced through the eye 3 until the said teeth mutually bind, thus effecting a perfectly tight and rigid joint or connection.

It will be understood that the handle-bar and its stationary sleeve 4 are moved through the eye by reason of the nut 5 bearing against the shouldered end of the eye.

Instead of threading the sleeve 4 and engaging the nut 5 therewith the eye 3 may be threaded at one end and the nut 5 provided with an internally-threaded lateral annular flange 8, screwing thereon, the web of the nut in this instance bearing against one end of the stationary sleeve 4 and serving when turned to force said sleeve into engagement with the eye in a manner similar to that above described. This last-named arrangement is illustrated in Figs. 4 and 5. The form of the corrugations or teeth may be either as shown in Fig. 3, in which a V-shaped tooth is employed, or as illustrated in Fig. 6, in which segmental or rounded teeth are formed upon the inner surface of the eye and adapted to be engaged with corresponding recesses or depressions in the sleeve 4, or as shown in Fig. 7, in which the sleeve is formed with numerous corresponding flattened surfaces 9 and the inner surface of the eye left smooth and adapted to be engaged by the ridges or angles between such flattened surfaces when the sleeve 4 is advanced through the eye 3. If desired, a limited number only of teeth or corrugations may be formed upon the inner surface of the eye 3, as shown at 10 in Fig. 6, while the corresponding recesses or depressions in the sleeve 4 may be extended entirely around the said sleeve. In the latter event the teeth or corrugations 10 will be formed preferably at the point of junction of the eye with the stem 2, so as to obtain the greatest strength.

By means of the construction above described it will be seen that all the rider has to do is to reach forward with one hand and turn the knurled nut 5 until the teeth or corrugations on the sleeve and eye are capable of being drawn out of engagement and moved into the grooves or recesses 6. Thereupon the handle-bar may be adjusted to any desired angle, according as to whether it is the purpose to adapt the machine to hill-climbing or scorching or to ordinary road-riding. The handle-bar having been brought to the desired position, the nut 5 is turned, thereby advancing the corrugations or teeth of the sleeve and eye again into engagement and firmly locking the handle-bar in its adjusted position.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

1. In a bicycle, the combination with the handle-bar stem having a transverse hollow head or eye provided on its inner surface with an annular series of longitudinally-arranged corrugations, each two adjacent annular series of corrugations being separated by an annular groove, of a longitudinally-movable and revoluble handle-bar having thereon corresponding annular series of corrugations, similarly separated by annular grooves, the width of said grooves being at least equal to the width of the adjacent series of corrugations, and means for holding the corrugations of the head and handle-bar in engagement.

2. In a bicycle, the combination with the handle-bar stem having a transverse hollow head or eye provided on its inner surface with a series of longitudinally-arranged beveled corrugations extending its whole length, and with exterior screw-threads at one end thereof, of a longitudinally-movable and revoluble handle-bar having a tapered stationary sleeve rigid therewith and provided with corresponding longitudinally-arranged beveled corrugations, adapted to register with those within the said hollow head or eye, and a nut adapted to engage against an end of said sleeve, and having a flange provided with interior screw-threads for union with the exterior screw-threads on the adjacent end of said head or eye.

3. In a bicycle, the combination with the handle-bar stem having a transverse hollow head or eye, the bore of said head or eye tapering from one end to the other and being formed with longitudinally-arranged beveled corrugations extending from end to end thereof, of a longitudinally-movable and revoluble handle-bar having a stationary integral tapered sleeve rigid therewith and formed with corresponding longitudinally-arranged beveled corrugations equal in length to the length of said transverse hollow head or eye, and adapted to register with the corrugations therein, and a nut for holding the handle-bar from moving longitudinally after it has been adjusted.

4. In a bicycle, the combination with the handle-bar stem having a transverse hollow head or eye provided on its inner surface with longitudinally-arranged beveled corrugations normally extending from end to end, of a longitudinally-movable and revoluble handle-bar having thereon a corresponding series of beveled corrugations, the said corrugations of both the head or eye and handle-bar being cut away at one or more points to form annular grooves or recesses into which the divided portions of the corrugations may be moved, and a nut for holding the handle-bar from moving longitudinally after it has been adjusted.

5. An adjustable handle-bar, consisting of a handle-bar stem having a transverse hollow head or eye provided on its inner surface with longitudinally-arranged beveled corrugations normally extending from end to end, but interrupted or cut away intermediate of said

ends, a longitudinally-movable and revoluble
handle-bar provided with a stationary integral
tapered sleeve rigid therewith provided with
corresponding longitudinally-arranged bev-
5 eled corrugations also correspondingly cut
away or interrupted intermediate of their
ends, whereby the corrugated portions of the
said hollow head or eye may be moved in line
with the cut-away portions of the said sleeve
10 to permit revoluble adjustment of the han-
dle-bar, and a nut for restoring the corrugated

portions of both parts into engagement with
each other, after adjustment, and locking
them against endwise movement.

In testimony that I claim the foregoing as 15
my own I have hereto affixed my signature in
the presence of two witnesses.

SAMUEL CHAS. EISENHART.

Witnesses:

C. M. KING,
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