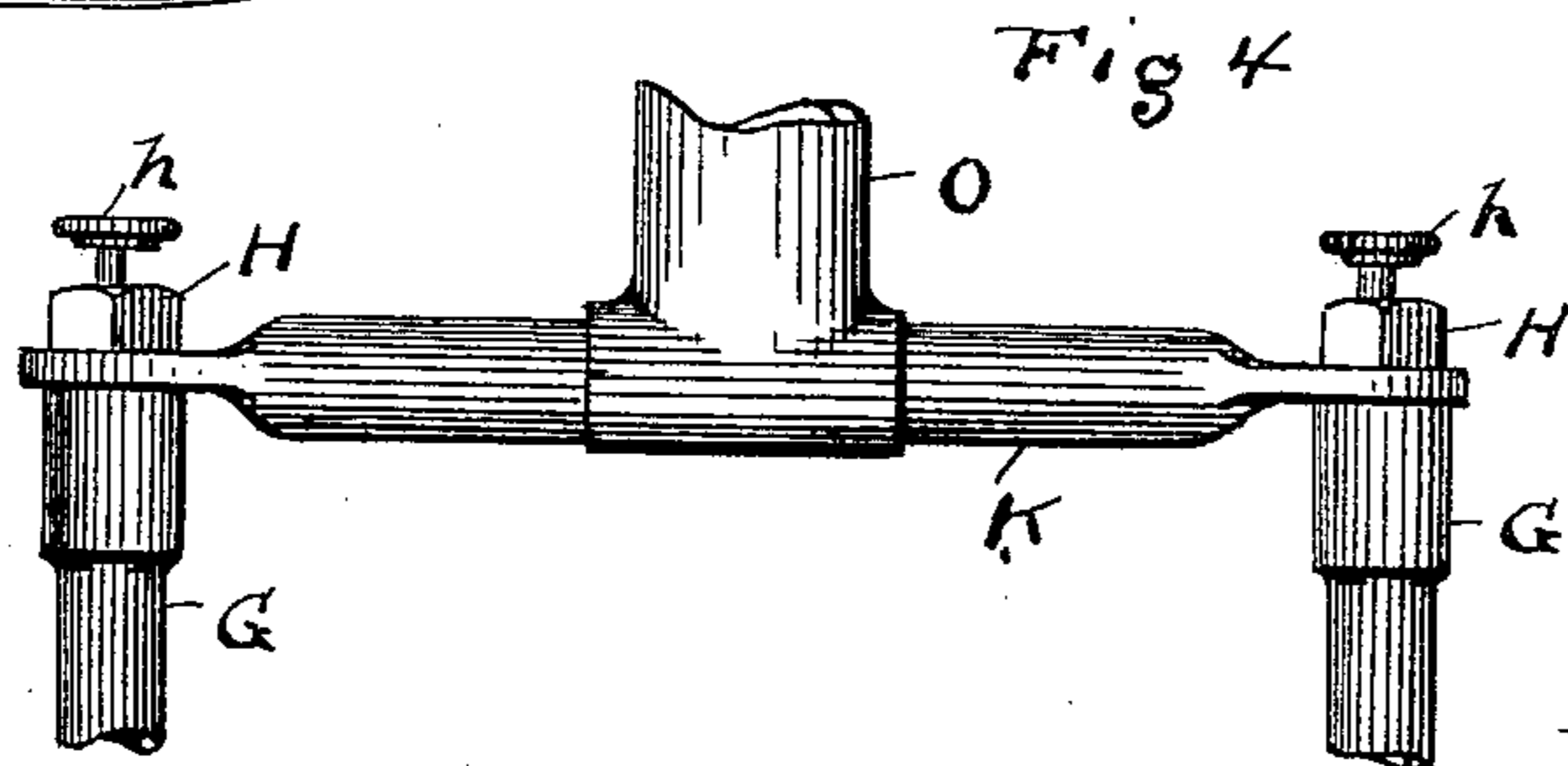
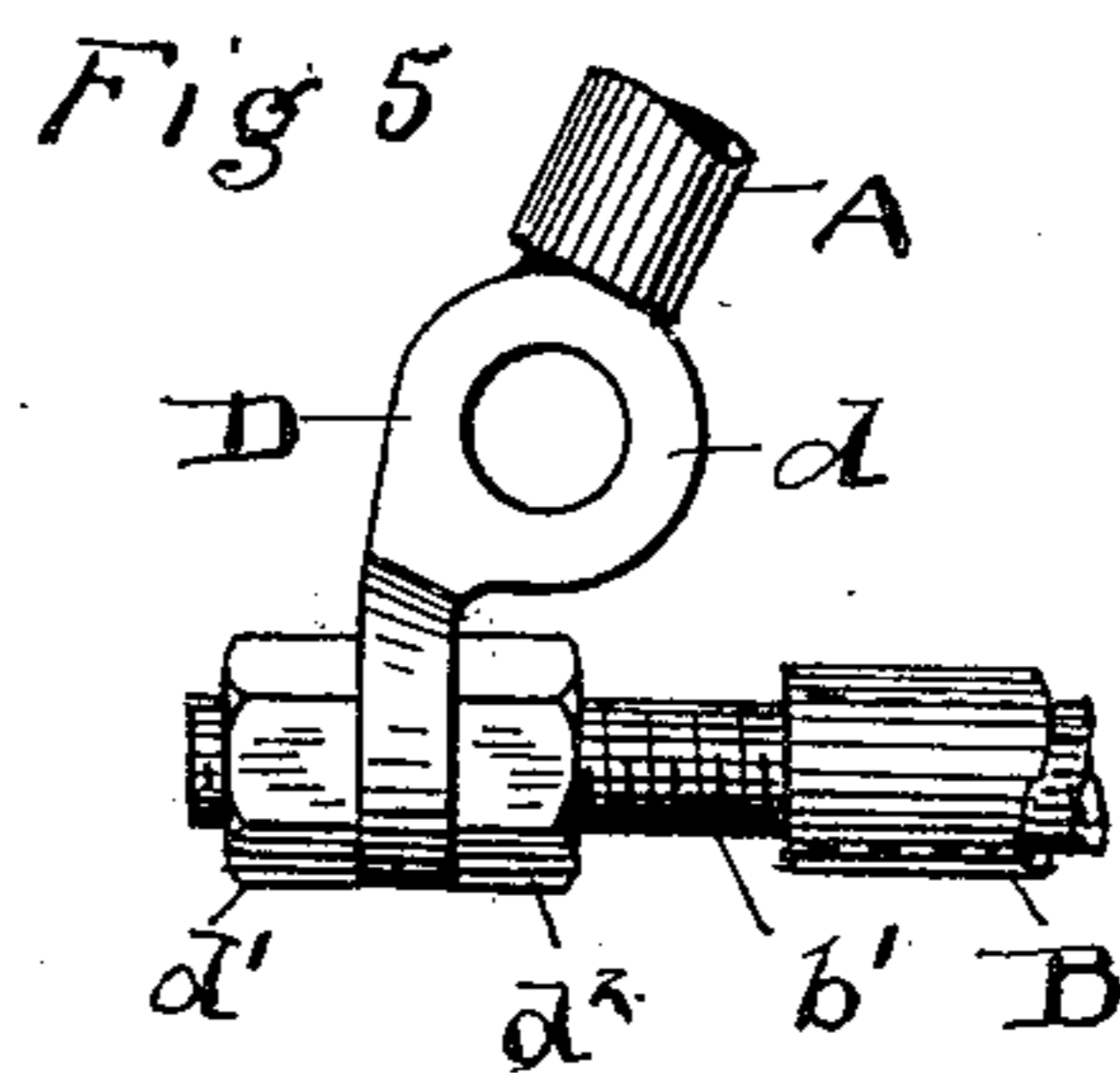
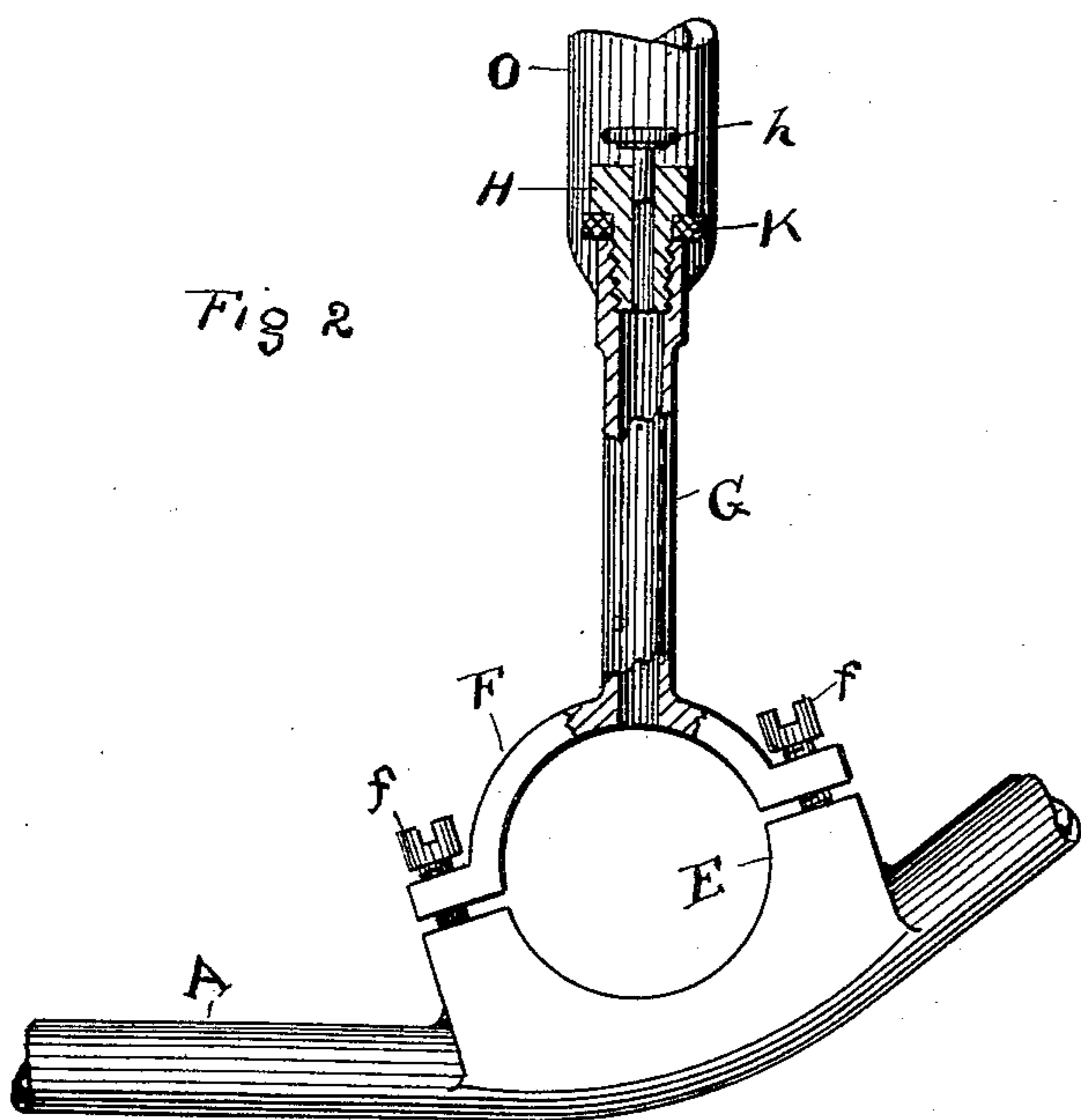
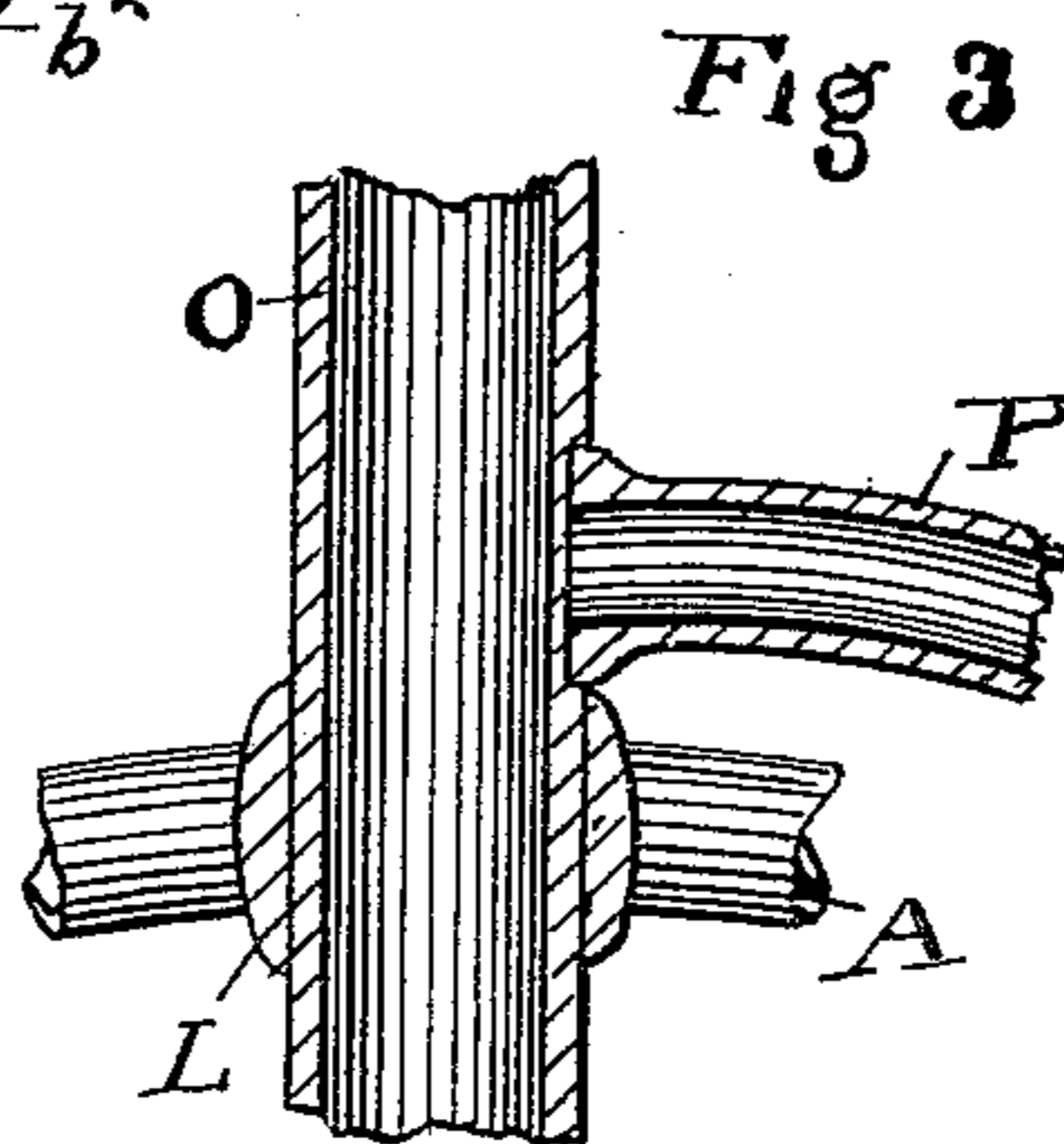
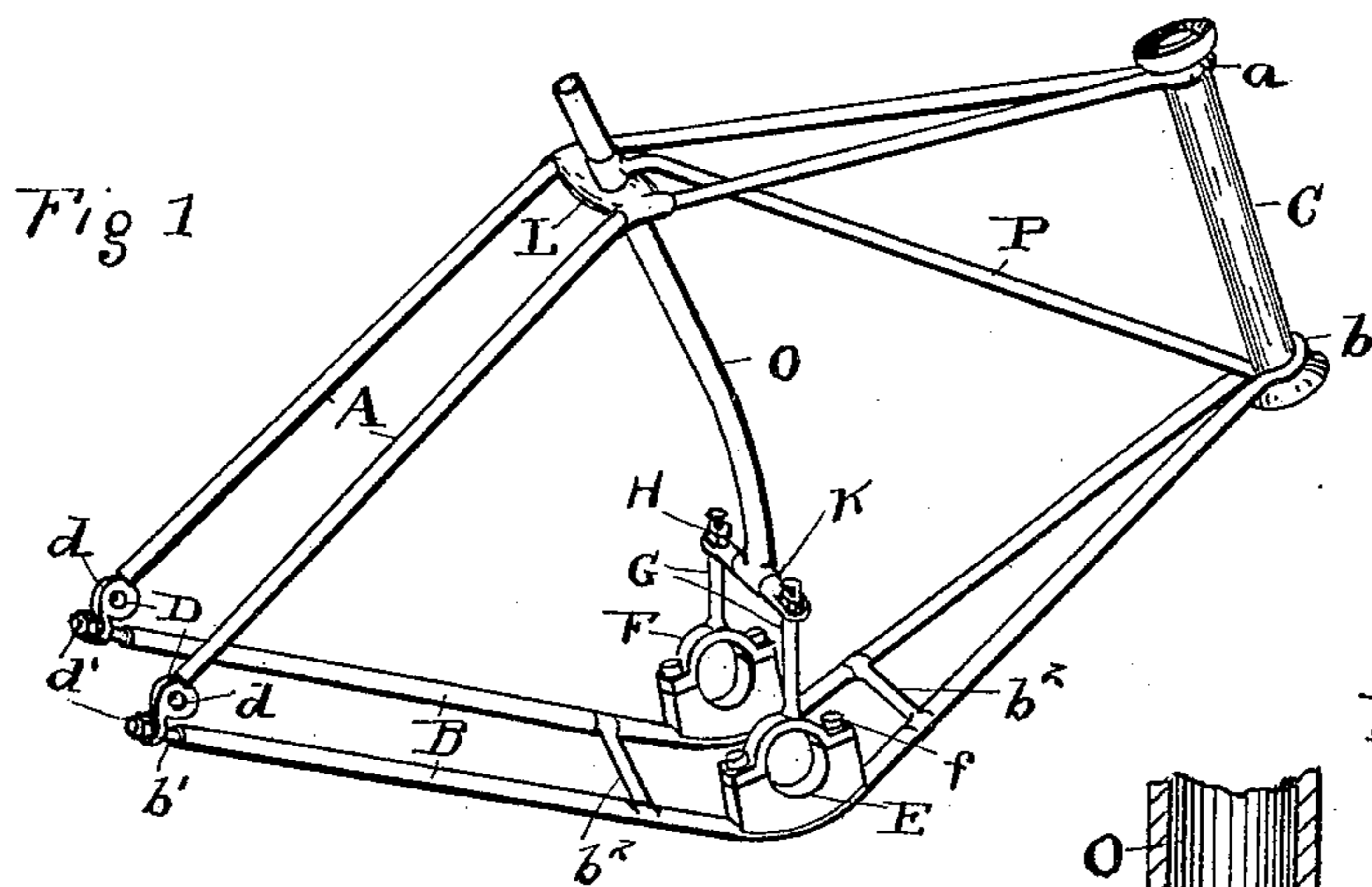


(No Model.)

A. WINTON.  
BICYCLE FRAME.

No. 500,177.

Patented June 27, 1893.



ATTEST.  
R. B. Moser.  
H. L. McLane.

INVENTOR.  
Alexander Winton

By H. F. Fisher,  
ATTORNEY

# UNITED STATES PATENT OFFICE.

ALEXANDER WINTON, OF CLEVELAND, OHIO.

## BICYCLE-FRAME.

SPECIFICATION forming part of Letters Patent No. 500,177, dated June 27, 1893.

Application filed July 27, 1892. Serial No. 441,414. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER WINTON, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Bicycle-Frames; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to bicycle frames, and the invention consists in the construction of a frame substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings Figure 1 is a perspective view of my improved frame, shown independently of the wheel and sprocket mechanism. Fig. 2 is an enlarged side elevation of the central and lower portion of the said frame showing one of the bearings for the sprocket wheel, and a vertical central section of the post above said bearing which forms one of the side supports over the saddle post, and illustrating the manner of fastening the cross tube which supports the saddle post. Fig. 3 is a vertical central section of the part of the saddle post where it passes through the upper part of the frame, and showing a cross section of the cross piece in which it is supported, and a longitudinal section of the upper part of the front brace, this view serving to show the relation, arrangement, and connection of the said several parts. Fig. 4 is an enlarged elevation of the saddle post supporting tube and standards, with the saddle post broken off, and Fig. 5 is an enlarged elevation of the joint or connection formed at the rear of the frame by which the upper and lower portions of the frame are adjustably united.

The frame herein shown and described has certain peculiarities and advantages of construction which distinguish it from other frames in this art known to me, among which may be mentioned the upper and lower portions marked A, B, respectively. It will be noticed that the upper portion A and the lower portion B are each formed of a single tube bent midway of its length, as at *a* and *b*, respectively, around the head C and cramped firmly thereon, and thence extend to the rear

of the machine where their ends are united by an adjustable joint or connection, D, each end of tube A being united to the corresponding end of tube B below. The connections or unions D are firmly brazed or otherwise secured in or upon the ends of the part A, and have each a transverse eye *d* for the spindle of the sprocket wheel, and an eye at right angles thereto for engagement with the threaded extremity *b'* of the end of the tube B. Nuts *d'* and *d''* on the end *b'* bear against the end of the said connection on opposite sides thereof and serve to take up slack in the drive chain by moving the sprocket wheel back more or less as occasion requires, there being spring enough in the parts to allow this to be done. Suitable cross braces *b''*, connect the parts A and B of the frame, front and rear of the pedal shaft bearings E. These bearings are brazed to the tube B, and have removable cap pieces F having posts, G, integral therewith. Screws *f* fix the caps F upon the bearings E, and give rigidity to the parts. The tubular posts G are threaded interiorly at their upper ends for screws H, which pass through the eyes in the flattened end of the short cross tube or piece K, which forms the lower support for the saddle post, brazed thereon. The screws H have oil passages through them and suitable plugs *h* close these passages.

By attaching the bearings E, as here shown, in the angle of the tubular bottom portion of the frame, I am enabled to strengthen the frame at the point of greatest strain and at the same time give the best possible support to the bearings. Formerly the bearings of the pedal shaft were suspended from or supported beneath the frame, and could not serve the important purpose this new arrangement affords.

Another important advantage of the foregoing construction is the facility and ease with which the sprocket wheel, cranks, and all can be released and removed, and all without any hammering about the frame, and without any possible injury to it. Thus, if the sprocket wheel and attached parts require removal, nothing is required but to remove screws *f* and H, which is the work of a moment, take off the cap F and its post, and the said parts can be bodily lifted out. Then if

any repairing is to be done it can be done away from the frame. In like manner the parts are easily and quickly restored to place.

A tubular cross brace, L, connects and strengthens the tubes A of the frame at their top and center at the point where the said tubes are bent, and the saddle post O passes centrally through this cross piece or tube. A brace P is brazed to the saddle post just above this cross piece, but may be fixed on the cross piece if preferred, and its lower end is fixed in the angle of the head C and the lower portion B of the frame.

An exceedingly light frame is the result of the foregoing construction, and one also that is exceptionally firm and serviceable for the weight and metal used. The shape of the frame likewise has much to do with its strength and utility, because, by reason of this shape, the tubes are bent to the best advantage for strength and to prevent breakage.

It will be seen that the branches or arms of the upper tube or part A, midway between their ends and the head C, are bent or bowed upward, while the corresponding arms or branches of tube or part B are bent or bowed downward at their middle. This construction or formation, coupled with the connection of the said arms at their rear ends and their proximate nearness at the front on standard C, give essentially a diamond shape to the frame.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The frame shown and described, consisting of the tubes —A— and —B— bent midway of their ends around the respective ends

of the head —C—, and the ends of the said tubes on each side connected at their rear, cross braces between the sides of the frame above and below, the centrally supported saddle post and the diagonal brace —P—, substantially as described.

2. The frame consisting of the head —G—, the tube —A— bent midway of its length about the upper end of said head, the tube —B— bent midway of its length about the lower end of said head, and the ends of said tubes on each side of the frame constructed to be adjusted one upon the other, the upper end of each tube —A— and —B— having bearings for the spindle of the rear wheel and the said tubes bent to form a substantially diamond shaped frame, substantially as described.

3. The frame constructed as herein described and provided with bearings for the pedal shaft on the top of the lower portion of said frame, and removable cap pieces having standards affixed thereto supporting the saddle post, substantially as described.

4. The main frame, bearings for the pedal shaft secured on the top portion of the lower part of the said frame, the caps for said bearings having standards, the saddle post, and a cross piece rigid with the lower end of said post and detachably secured at its ends to said standards, substantially as described.

Witness my hand to the foregoing specification.

ALEXANDER WINTON.

Witnesses:

H. T. FISHER,  
NELLIE L. McLANE.