

No. 619,602.

Patented Feb. 14, 1899.

W. M. McKOWN.
BICYCLE PUMP.

(Application filed June 30, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

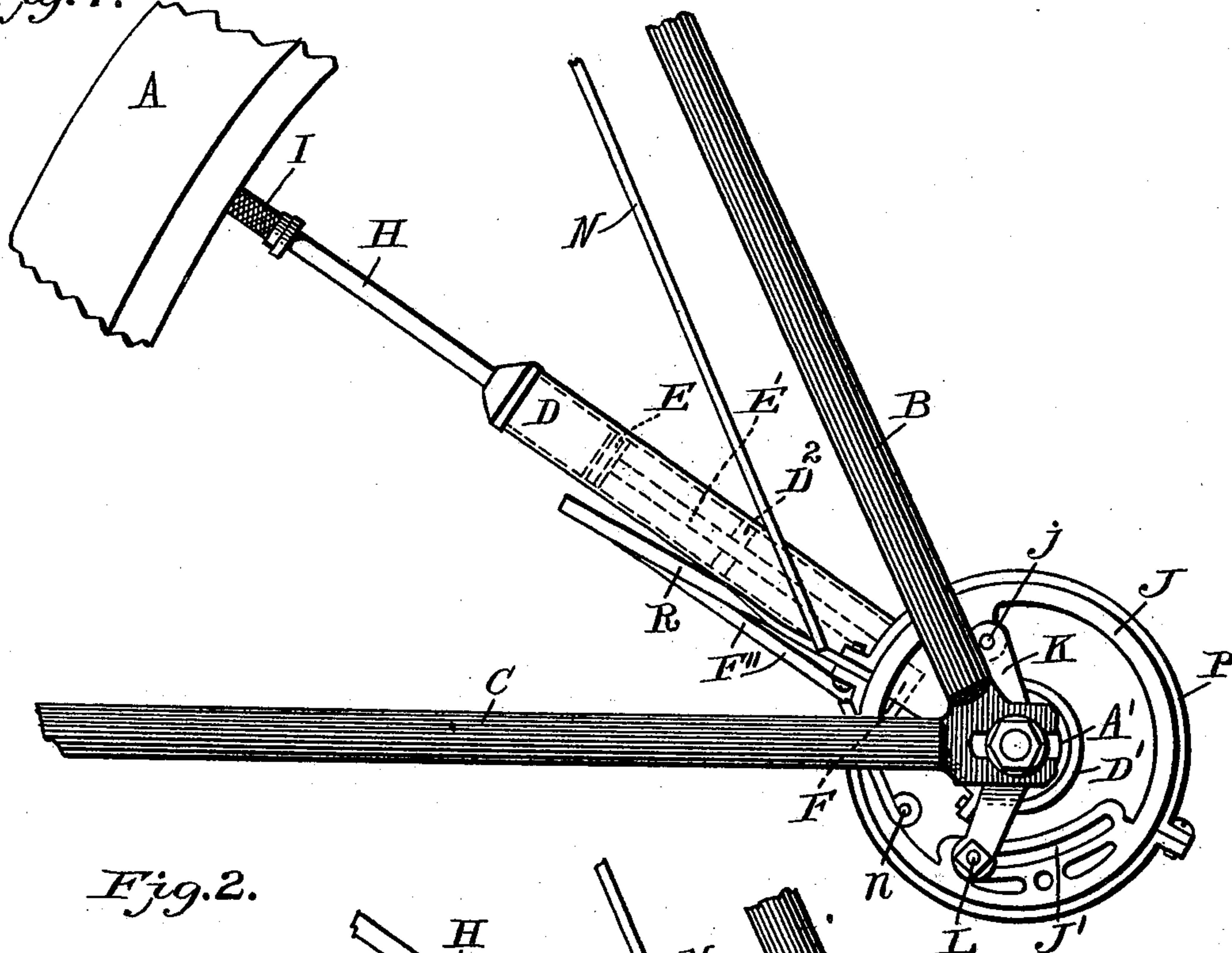


Fig. 2.

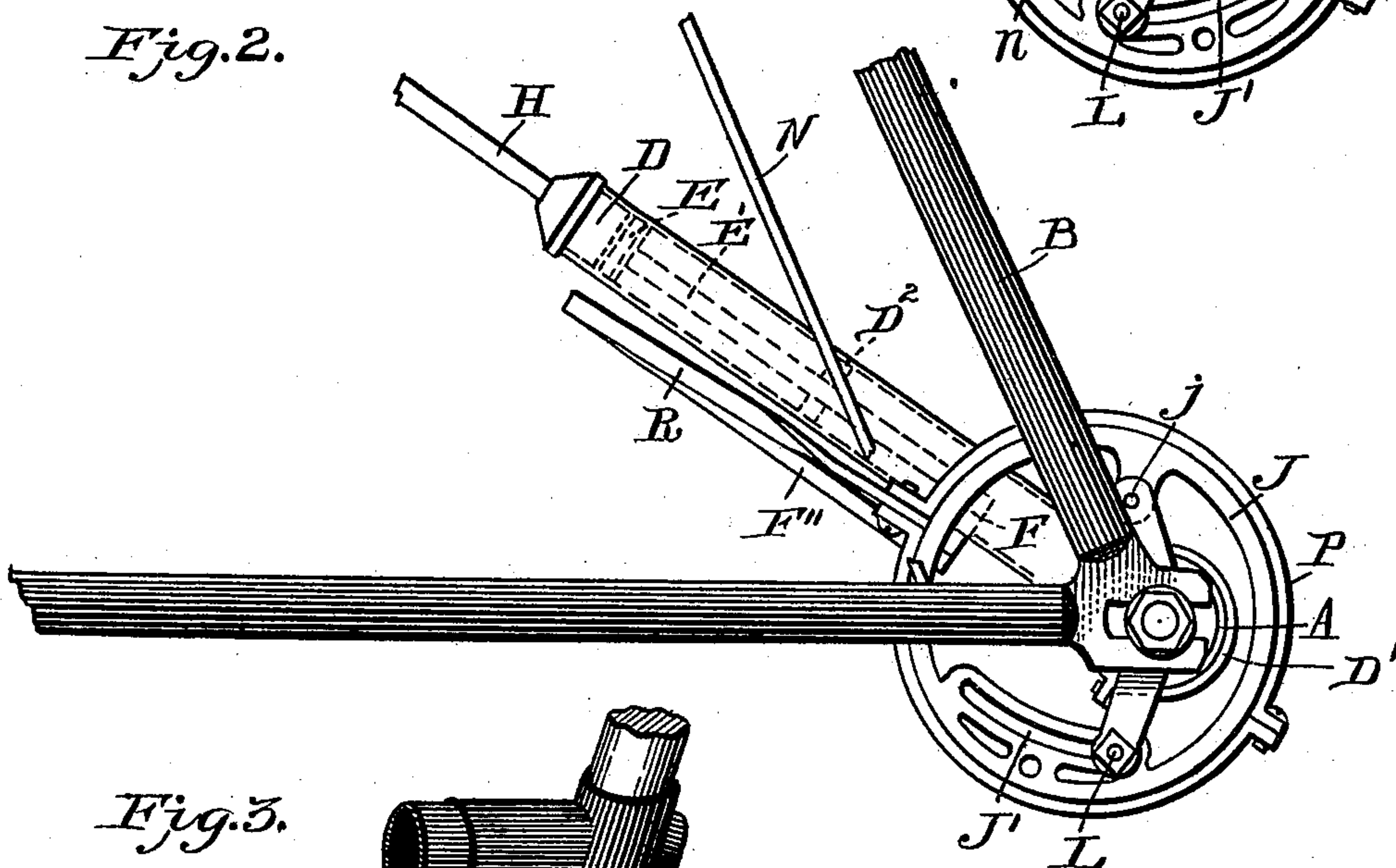
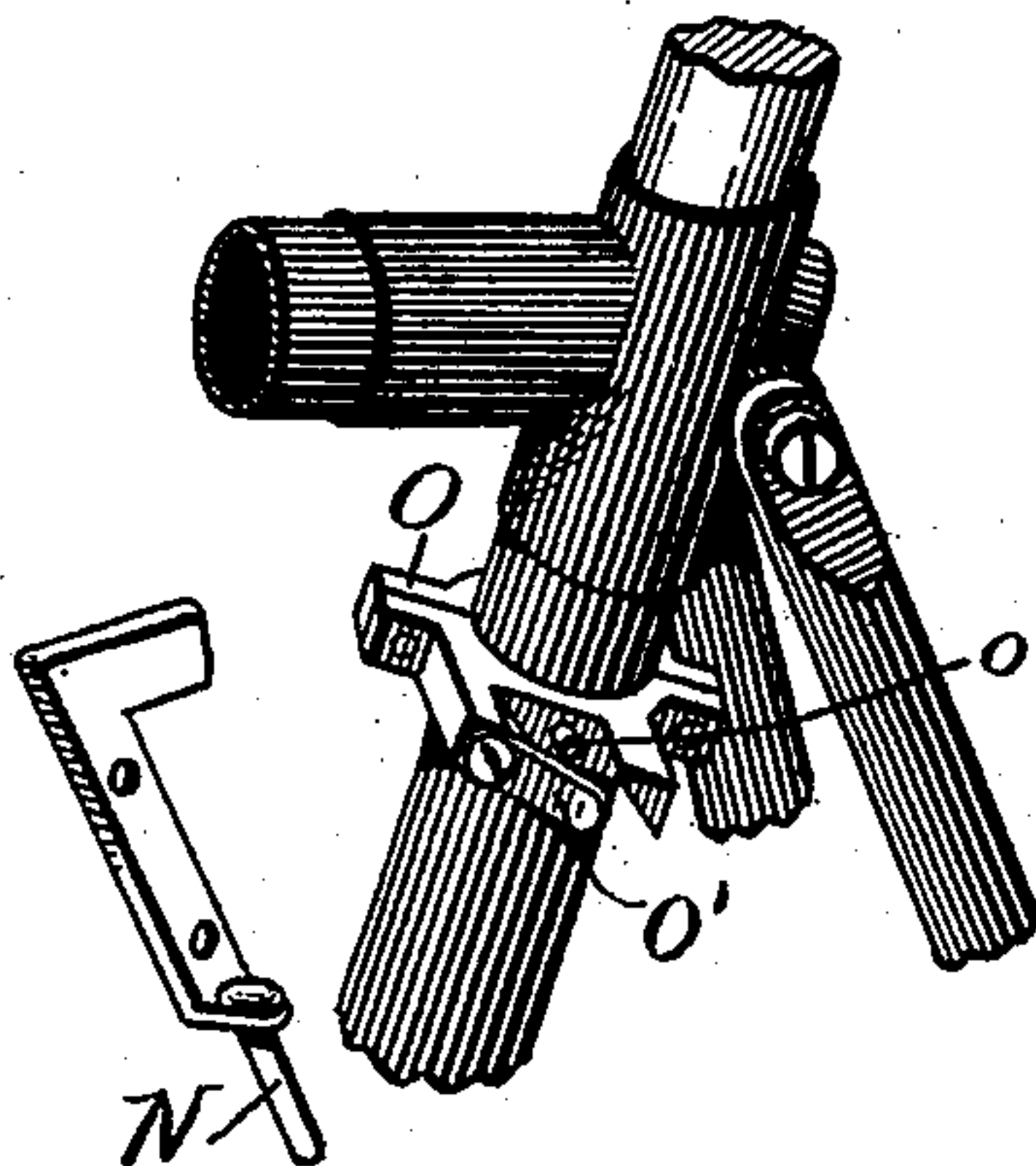


Fig. 3.



Witnesses.

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Fig. 8.

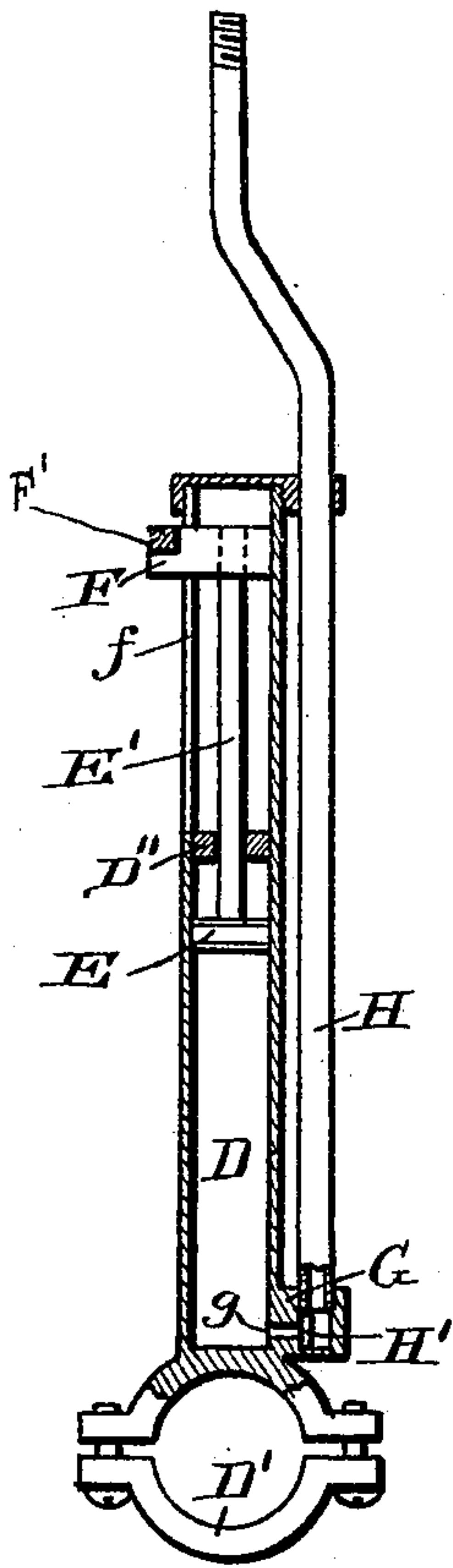


Fig. 5.

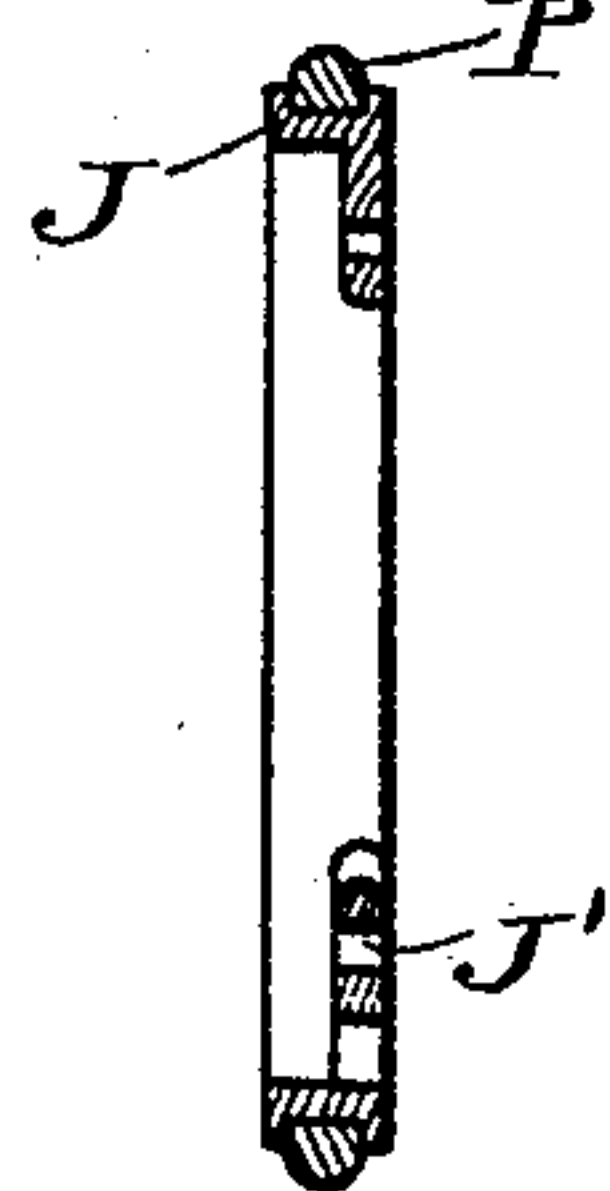


Fig. 6.

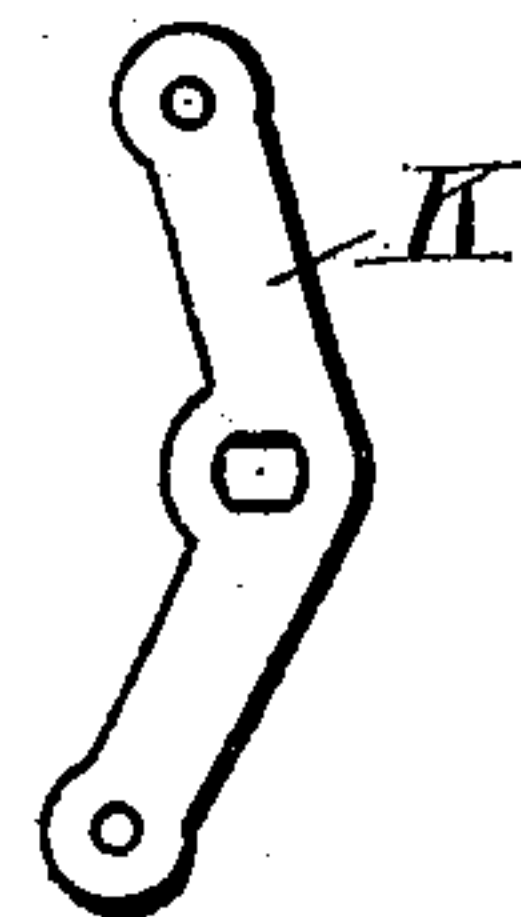


Fig. 4.

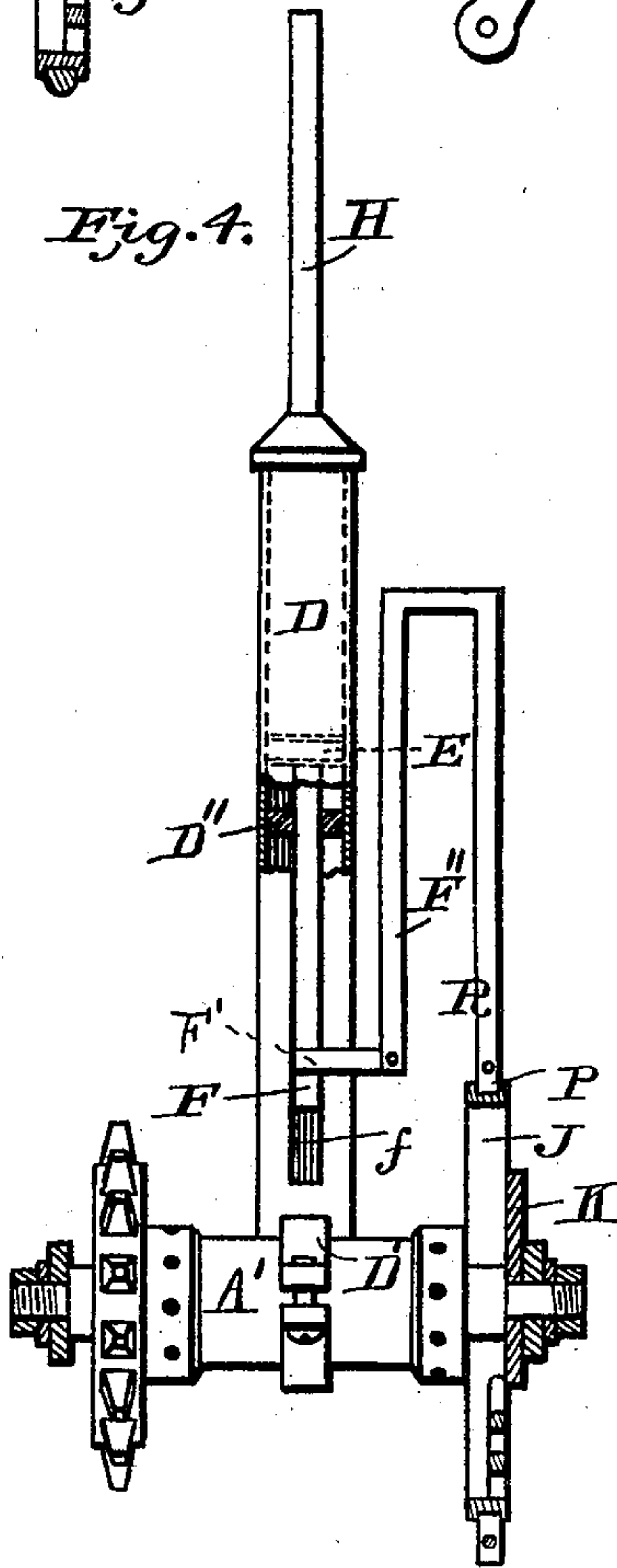
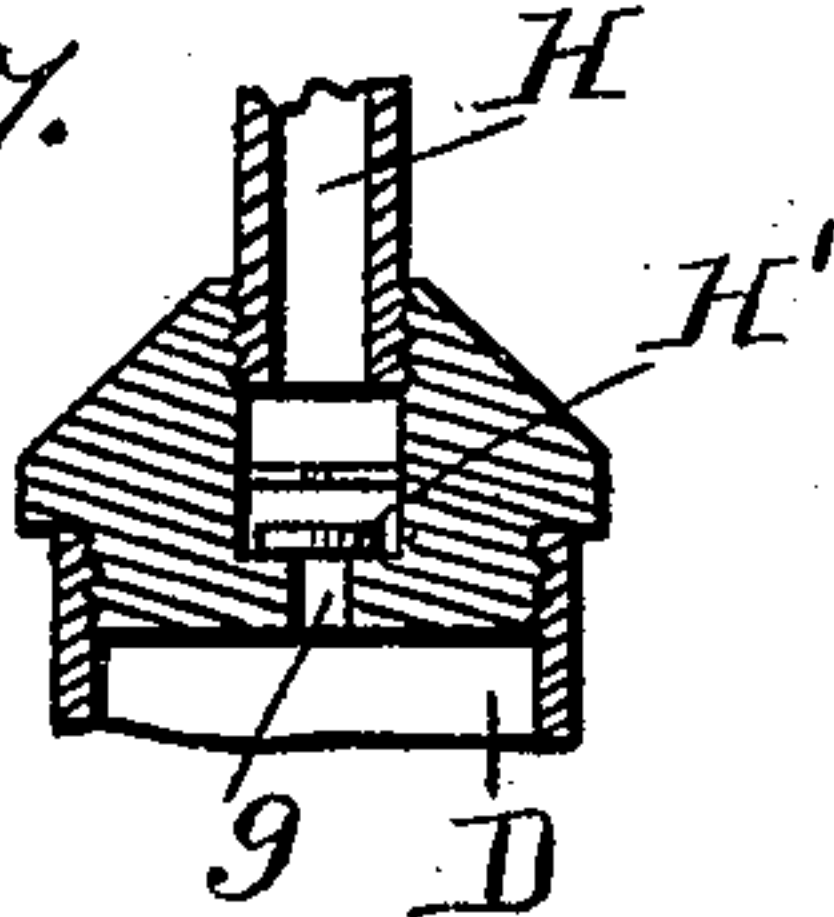


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM MAYS MCKOWN, OF LOUISVILLE, KENTUCKY.

BICYCLE-PUMP.

SPECIFICATION forming part of Letters Patent No. 619,602, dated February 14, 1899.

Application filed June 30, 1898. Serial No. 684,834. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MAYS MCKOWN, a citizen of the United States, and a resident of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Bicycle-Pumps; 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 letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side elevation of a portion of a bicycle, showing my invention applied thereto. Fig. 2 is a similar view with the eccentric in operative position. Fig. 3 is a detail view showing means for adjustably securing the upper end of the shifting-rod. Fig. 4 is a view, partly in section and partly in front elevation, showing the pump and its connections. Figs. 5, 6, and 7 are detail views; and Fig. 8 is a view, partly in section and partly in front elevation, showing a modification.

This invention is designed to provide an automatic pump of improved character for inflating the pneumatic tires of bicycles and other vehicles, together with means whereby such pumps may be thrown into and out of operation at will.

With this object in view the invention consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

Referring to the accompanying drawings, wherein I have shown my improved pump as applied to the rear wheel of a bicycle, the letter A designates the wheel, B the rear fork of the frame, and C the lower rear brace-bars.

D designates a pump-cylinder which is rigidly but removably secured to the hub A' of the wheel A within said wheel, by means of a two-part clip D', one-half of which is preferably formed integrally with the base of the cylinder. Working in the outer end portion of the said cylinder is a valved piston or plunger E and a piston-rod E'. At its inner end portion said rod has secured thereto an arm F, which extends out through an elongated longitudinal slot *f* in the inner end portion

of the pump-cylinder, and which is bent laterally, as shown at F'. At the outer end of the slot *f* the cylinder is fitted with an internal gland-ring D'', which not only forms an additional guide for the piston-rod in its movement, but which also acts as a guard to prevent the entrance of dust and dirt to the pump through the slot *f*. At the outer end portion of the cylinder is an exhaust-port *g*, which extends out through the end wall of the cylinder into an extension G, and screwed into or otherwise secured in said extension and communicating with the said port is an air-tube H, whose outer end portion is coupled to the usual valve-tube I of the tire. H' is a check-valve seated in the said extension. The pump and this air-tube are, as shown, entirely within the wheel between the spokes thereof, the arm F of the piston-rod being extended out through the spokes at one side. Connected to the arm F' is a forwardly-extending-rod F''.

J is a peripherally-grooved eccentric ring which is pivoted at *j* to a bracket-arm K, which is secured to the axle of the rear wheel. This ring surrounds the outer end portion of the wheel-hub at the opposite side from the small sprocket-wheel or other drive-gear device and is formed with an arcuate slot J', which is engaged by a stud L, carried by the opposite end portion of the arm K. Connected to the said ring at *n* is a shifting-rod N, which extends to such a point on the frame as to enable it to be readily reached and operated by the rider. In the present instance I have shown this rod as extending to a point near the upper end of the seat-post, the latter being provided with a clip device O, having a stud *o*, which is adapted to engage either one of two small holes in the upper portion of the said rod, and thereby secure it in either of its two positions. Said clip device also has a guard-spring O'. Fitted around or embracing the said ring J is a strap P and connecting this strap with the forwardly-extending arm F'', which is connected to the arm F' of the piston-rod, is a connecting rod or arm R.

Normally or when it is not desired to have the pump in action the eccentric ring J is concentric with the axle, and the straps turn idly thereon. To bring the pump into action, the shifting-rod N is pulled upwardly, which moves the said ring off center or into eccen-

tric relation to the axis of the wheel A, as shown in Fig. 2, thereby giving sufficient movement to the strap as the wheel rotates to actuate the plunger of the pump through the connecting-rod R.

The device is applied to the front wheel of a bicycle or to any other wheel having a pneumatic tire in the same manner as above described, the only change required being in the arrangement of the shifting-rod, which can be readily done by the mechanic.

The device may be applied to any wheel now in use, no change in the construction of the wheel or in its supporting-frame or in the tire being required.

Fig. 8 shows a modified form of the invention, wherein the piston is fitted to work in the base end portion of the cylinder, the lateral slot being in the outer end portion thereof and the connecting-rod R being connected directly to the laterally-extending arm F' of the piston-rod, the intermediate rod F'' being omitted. In this construction the air-tube H connects with the base portion of the cylinder, as shown. The general operation of the pump as so modified is the same as in the form first described.

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

1. In an automatic pump for pneumatic tires, the combination of a frame, an axle carried thereby, a wheel loosely mounted on the said axle, a pump-cylinder carried by the wheel, its piston and piston-rod, an air-tube which connects the said cylinder with the cavity of the tire, an eccentric ring pivoted to the frame, a strap loosely fitted to the said ring, a connection between the said strap and the piston-rod and a shifting device connected to the said ring whereby it may be moved into either concentric or eccentric relation to the axis of the said wheel, substantially as specified.

2. The combination with a wheel mounted to turn loosely on its axle and having a pneu-

matic tire, of a slotted pump-cylinder secured to the hub of said wheel between the spokes thereof, a piston and piston-rod working in the said cylinder, an arm attached to the said rod and extending out through the slot of the cylinder and forwardly thereof, an air-tube connecting the outer end portion of the cylinder with the valve-tube of the tire, an eccentric mounted on the frame which supports the axle of the wheel, a strap fitted thereto, a connection between said strap and the arm of the piston-rod, and a shifting device connected to said eccentric whereby it may be moved into either eccentric or concentric relation to the axis of said wheel, substantially as specified.

3. In an automatic pump for inflating pneumatic tires, the combination with the pump carried by the wheel, of an eccentric ring pivoted to the frame in which the wheel is journaled, a strap fitted to the said ring, and connection between the said strap and the piston-rod of the pump, together with a shifting-rod connected to the said ring whereby it may be moved to concentric or eccentric relation to the axis of the said wheel, substantially as specified.

4. In an automatic pump for inflating pneumatic tires, the combination with a pump carried by the wheel, of an eccentric ring pivoted to the frame and having an arcuate slot concentric with its pivot, a fixed stud engaging the said slot, a shifting-rod connected to the said ring whereby it may be moved into eccentric or concentric relation to the axis of the said wheel, means for securing the said shifting-rod in both positions of adjustment, and a strap fitted to the said ring and operatively connected with the piston-rod of the pump, substantially as specified.

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

WILLIAM MAYS MCKOWN.

Witnesses:

ALBERT STRULY,
H. E. PELLE.