

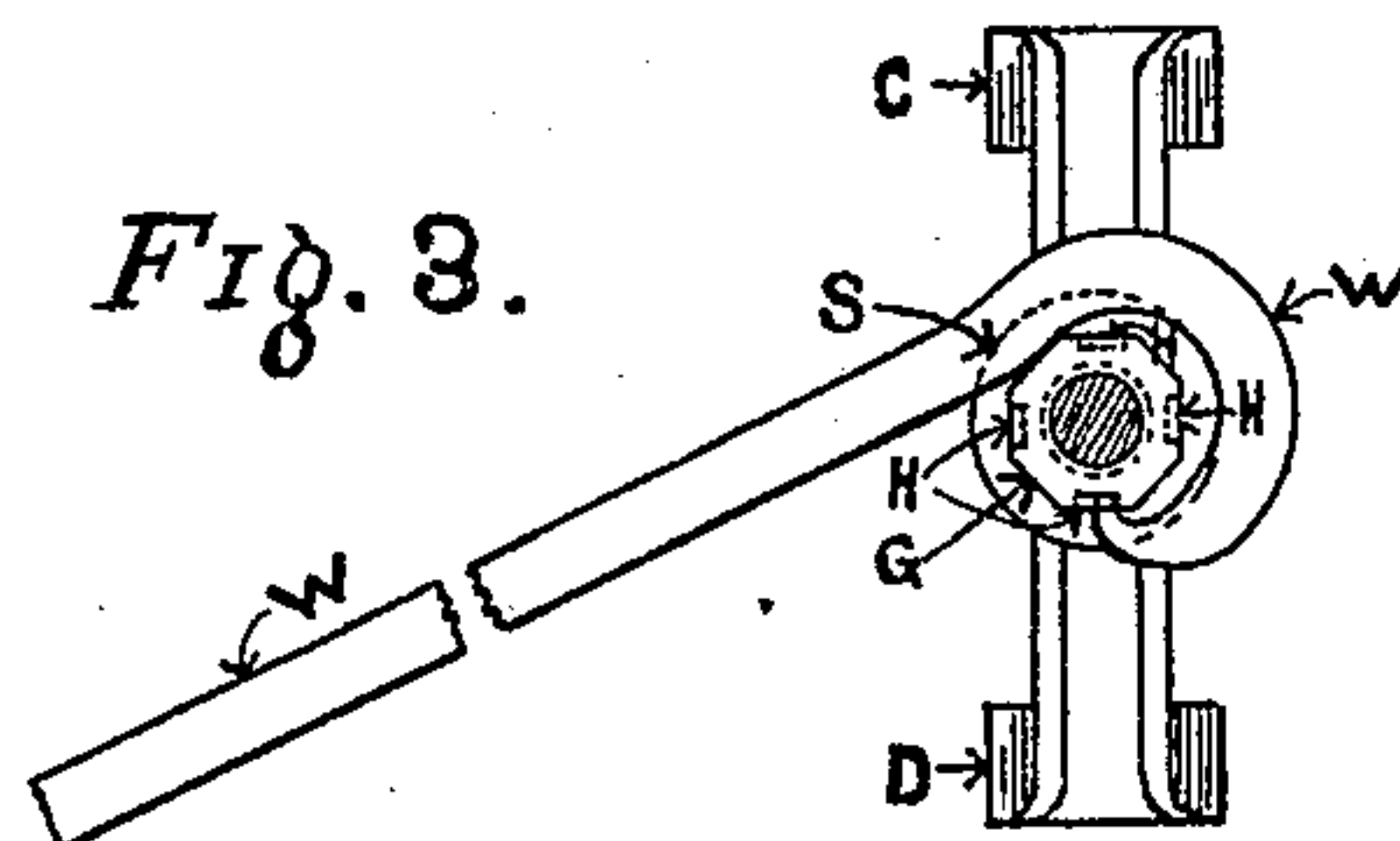
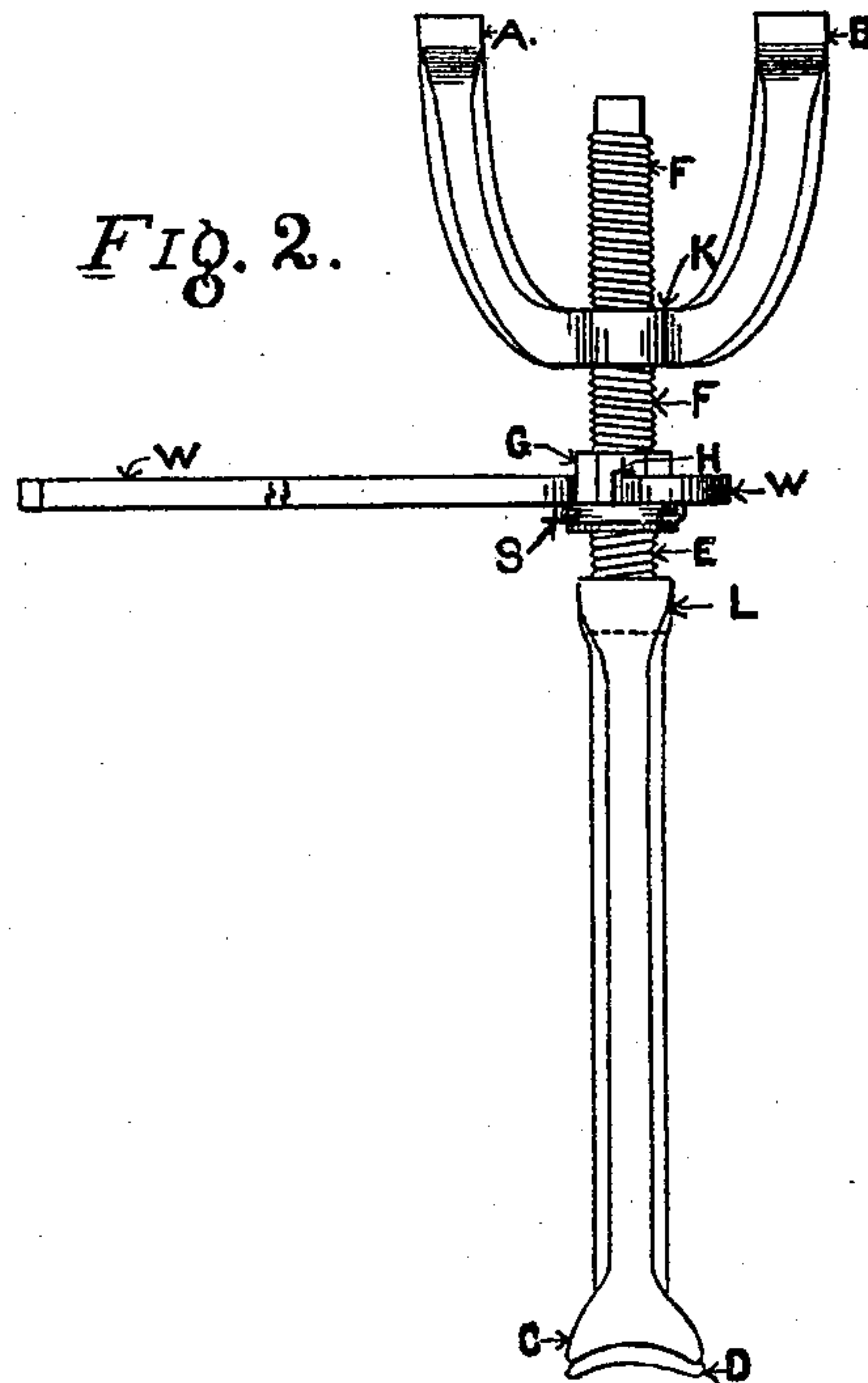
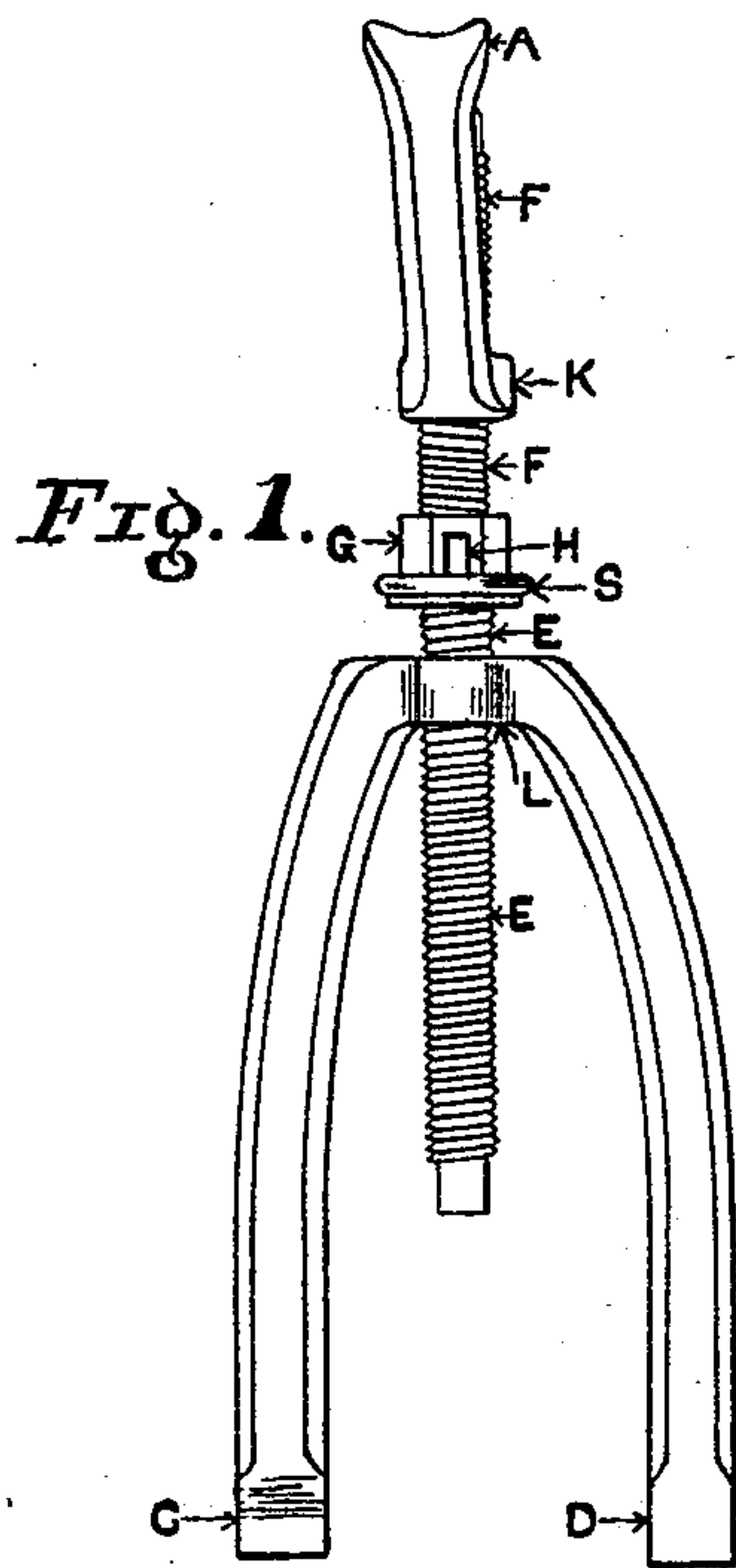
(No Model.)

J. E. WATTS.

COMBINATION TOOL FOR TIRE TIGHTENERS, &c.

No. 459,802.

Patented Sept. 22, 1891.



Witnesses.

Erwin Taylor
Anna E. Canan.

Inventor.

John E. Watts

UNITED STATES PATENT OFFICE.

JOHN E. WATTS, OF TOPEKA, KANSAS.

COMBINATION-TOOL FOR TIRE-TIGHTENERS, &c.

SPECIFICATION forming part of Letters Patent No. 459,802, dated September 22, 1891.

Application filed July 21, 1890. Serial No. 359,412. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. WATTS, a citizen of the United States, residing at Topeka, in the county of Shawnee, in the State of Kansas, have invented a new and useful Combination-Tool for Tire-Tighteners, Spoke-Inserters, and Lifting-Jacks, to be used by blacksmiths and carriage and wagon makers, of which the following is a specification.

My invention relates to improvements in tools for tightening tires, setting spokes, and lifting-jacks.

The objects of my invention are, first, to provide a device that will enable a person to set a tire without having it cut; second, to give the wheel the proper dish and no more without having the tire cut; third, to set and tighten a tire quickly; fourth, to straighten a wheel that is out of dish; fifth, to use the same device as a lifting-jack, and, sixth, to provide a machine that will enable a person to insert a new spoke without cutting the tires.

I attain the objects by the mechanism illustrated in the accompanying drawings, in which—

Figures 1 and 2 are vertical views of the same machine. Fig. 3 is a view of a section looking from above.

Similar letters refer to similar parts throughout the several views.

The machine is in four pieces, including the wrench.

A and B represent a brace, stirrup, or staple shaped piece of iron, preferably having a threaded orifice at K, slightly bent out of the vertical line at K, giving a slight angle from A to K and B to K.

C D is a larger staple or stirrup shaped piece of iron, having the leg D a little longer than the leg C, with a screw-threaded orifice at L, through which the screw E E revolves.

F F G E E is a bolt, preferably having right and left handed screw-threads cut on the same at different ends and having a stationary nut G in the center, which nut is of octagonal shape and has slots or orifices at H on every other face for the wrench W to play in. This nut has also a projection on the

bottom at S, upon which the wrench rests while playing.

W represents the wrench (shown more clearly in Fig. 3) with a dog-shaped point. It is slipped over the bolt at F and is of such shape that the point will slip over the corners of the nut G and catch in the slots at H, so as to turn the bolt E F. The wrench can be easily detached and inserted on the side in reverse manner for the purpose of unscrewing the bolt E F.

Having thus described the various parts, I will endeavor to show how the same may be operated.

C and D are inserted in a wheel on the hub between spokes, C resting on the hub outside the wheel and B on the hub within. A and B are put under a felly between two spokes. The wrench is inserted and the bolt E F is unscrewed, which forces the staple-shaped pieces of iron apart, driving A and B up against the felly and forcing C and D down on the hub, lifting the felly off the spoke. When sufficient pressure has been applied, small leather washers or similar devices can be inserted on the head of the spoke, fixing two at a time, and thus the whole wheel can be properly adjusted and accordingly tightened by tightening two spokes at a time. If the wheel has too much dish, the frame can be shifted so as to bring the long arm on the hub outside of the spokes and the short arm on the hub inside, or the upper frame can be turned so as to bring the angle inclining inward instead of outward, and thus by the two frames any dish can be obtained that is desired. The ends of the frames are notched slightly, so as to fit on hubs or fel-
lies. When it is desired to insert a new spoke, C and D are put in their places along-side of the spoke to be removed, A and B are turned around, so as to be in the same plane with C and D, a piece of iron is laid across from A to B, and the power is applied by the wrench to the felly at one spoke. Sufficient power can be applied to lift the felly clear from the spoke, a new spoke can be inserted, and the felly dropped back in its place.

The same device can be used for a lifting-

jack for wagons or carriages, the double-action thread moving the bolt rapidly.

I claim—

5 The combination, with a rotatable screw-threaded bolt and means for operating it, of a brace at one end and a suitably-shaped piece at the other end, one of the legs of the latter being somewhat longer than the other,

so that by its use a proper dish may be imparted to a wheel, substantially in the manner and for the purpose specified.

JOHN E. WATTS.

Witnesses:

ANNA E. CANAN,
IRWIN TAYLOR.