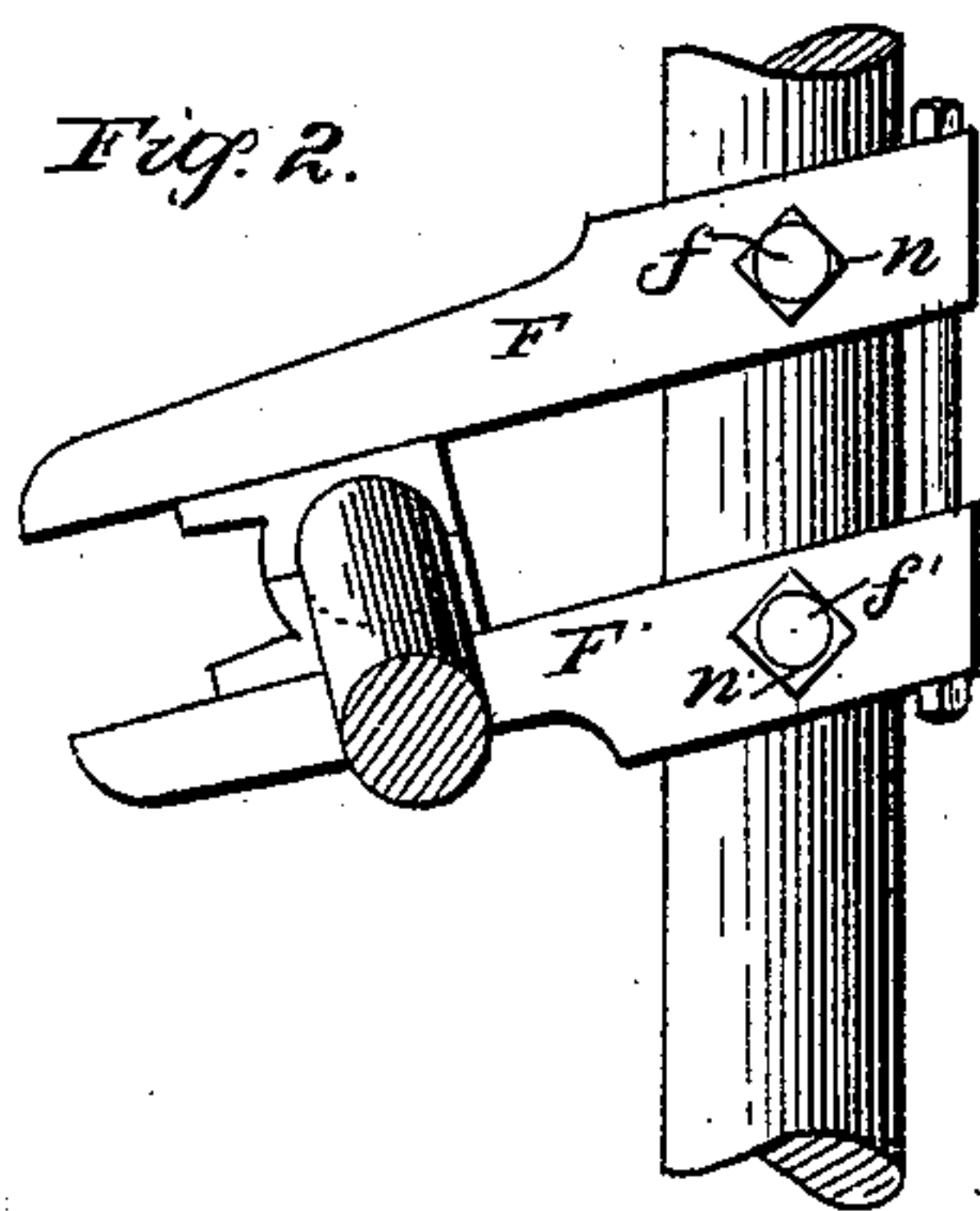
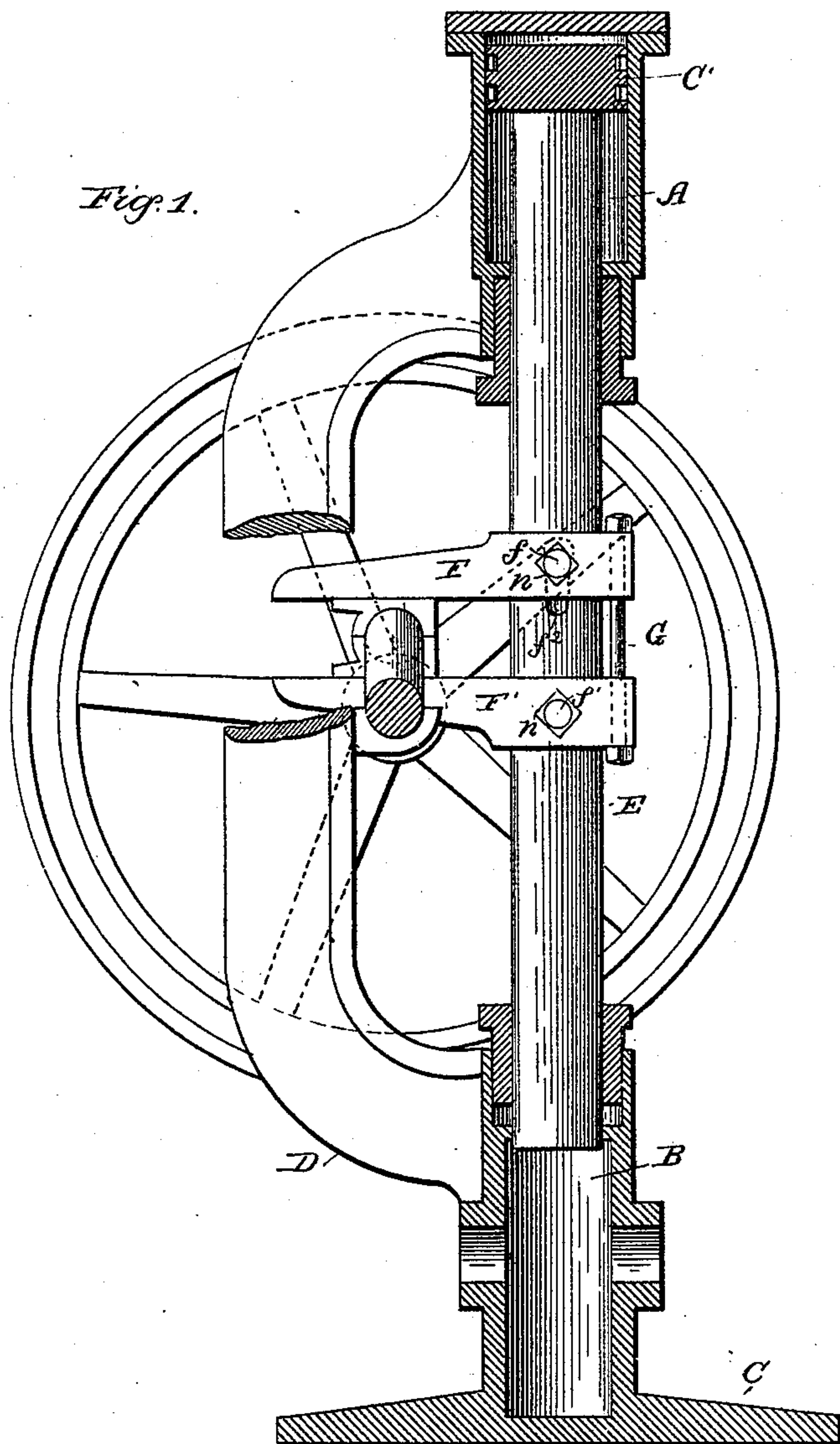


(No Model.)

W. CLARKSON.  
PUMPING ENGINE.

No. 496,294.

Patented Apr. 25, 1893.



Witnesses.  
*Victor J. Evans*

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# UNITED STATES PATENT OFFICE.

WILLIAM CLARKSON, OF CLEBURNE, TEXAS.

## PUMPING-ENGINE.

SPECIFICATION forming part of Letters Patent No. 496,294, dated April 25, 1893.

Application filed December 20, 1892. Serial No. 455,774. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM CLARKSON, a citizen of the United States, residing at Cleburne, in the county of Johnson and State of Texas, have invented certain new and useful Improvements in Pumping-Engines; and I do hereby 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.

My invention relates to that class of pumping engines employing a combined piston rod and plunger acting in the same vertical line and carrying a crank pin box and cross heads for driving the governing fly wheel.

The object of my invention is to reduce the cost of construction of this class of pumping engine, to simplify and facilitate the mounting and dismounting of the same and to afford ready access to the packing ends of the steam and water cylinders.

It is also my object to provide an improved adjustable yoke for operating the crank in lieu of the sliding box and cross heads.

In the accompanying drawings forming a part of this specification Figure 1, is a side elevation partly in section. Fig. 2, is a detail view showing a modification of the adjustable yoke.

Referring more particularly to the drawings A, denotes the steam cylinder and B, the water cylinder.

C. denotes the bed plate and D, a standard.

E. denotes the piston rod and plunger having the steam piston C' cast integral therewith.

F, and F', denote two arms secured to the piston rod by screw-threaded bolts  $f$ ,  $f'$ , and clamp nuts  $n$ ,  $n'$ . The arm F, is rigidly secured to the piston rod by the bolt  $f$ , and nut  $n$  and the arm F', is adjustably secured to said rod by the bolt  $f'$ , and nut  $n'$ , said rod having a vertical slot  $f^2$ , cut therein as shown in dotted lines to receive said bolt  $f'$ .

G, denotes a set screw which passes through the rear ends of the arms F, F', said ends projecting to one side of the piston rod as shown.

As shown in Fig. 1, I cast the steam and water cylinders the standard and bed plate

in one piece, the standard meeting the steam cylinder above the lower or packing end thereof, and the water cylinder at a point below its upper or packing end. Thus the packing ends of each cylinder are disengaged and readily accessible upon all sides. This construction also gives greater strength besides always insuring the proper alignment of the two cylinders.

By dispensing with a multiplicity of parts I greatly decrease the cost of construction and provide a pump frame with steam and water cylinders mounted intact and ready to receive the piston, piston rod, and plunger avoiding the careful adjustment necessary where these parts are constructed separately, in mounting the same afterward.

My piston, piston rod, and plunger having the adjustable yoke are designed especially for this construction and are readily mounted in the same and as readily dismounted for purposes of repair and renewal. To mount the same the plunger end of the piston rod is first passed through the steam cylinder. The adjustable yoke is then secured in place and the plunger mounted in the water cylinder.

It will be seen that by my construction the crank is placed to one side of the piston rod and plunger and the crank pin works in the yoke to and from said rod.

To adjust the yoke in case of wear in the same, the clamp nut  $n'$ , is first released and the screw G, operated to move the arm F', nearer to the arm F, until the proper adjustment is made. The nut  $n'$  is then tightened to clamp the arm in position.

Any desirable means may be used to connect the adjustable yoke to the piston rod and plunger besides the means shown. As the arms F, F', are only designed to operate the crank and valve gear they may be lightly made.

In Fig. 2, I show a modification of the adjustable yoke, in which the arms F, F', are bent giving an inclined bearing surface for the crank pin to avoid a dead center.

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

In a vertical direct acting pumping engine having a combined piston rod and plunger, the combination of the adjustable yoke consisting of two arms one of which is rigidly  
5 and the other adjustably secured to said piston rod or plunger said arms being connected and adjusted by a set screw substantially as shown and described.

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

WILLIAM CLARKSON.

Witnesses:

A. J. CLENDENEN,  
J. I. KILPATRICK.