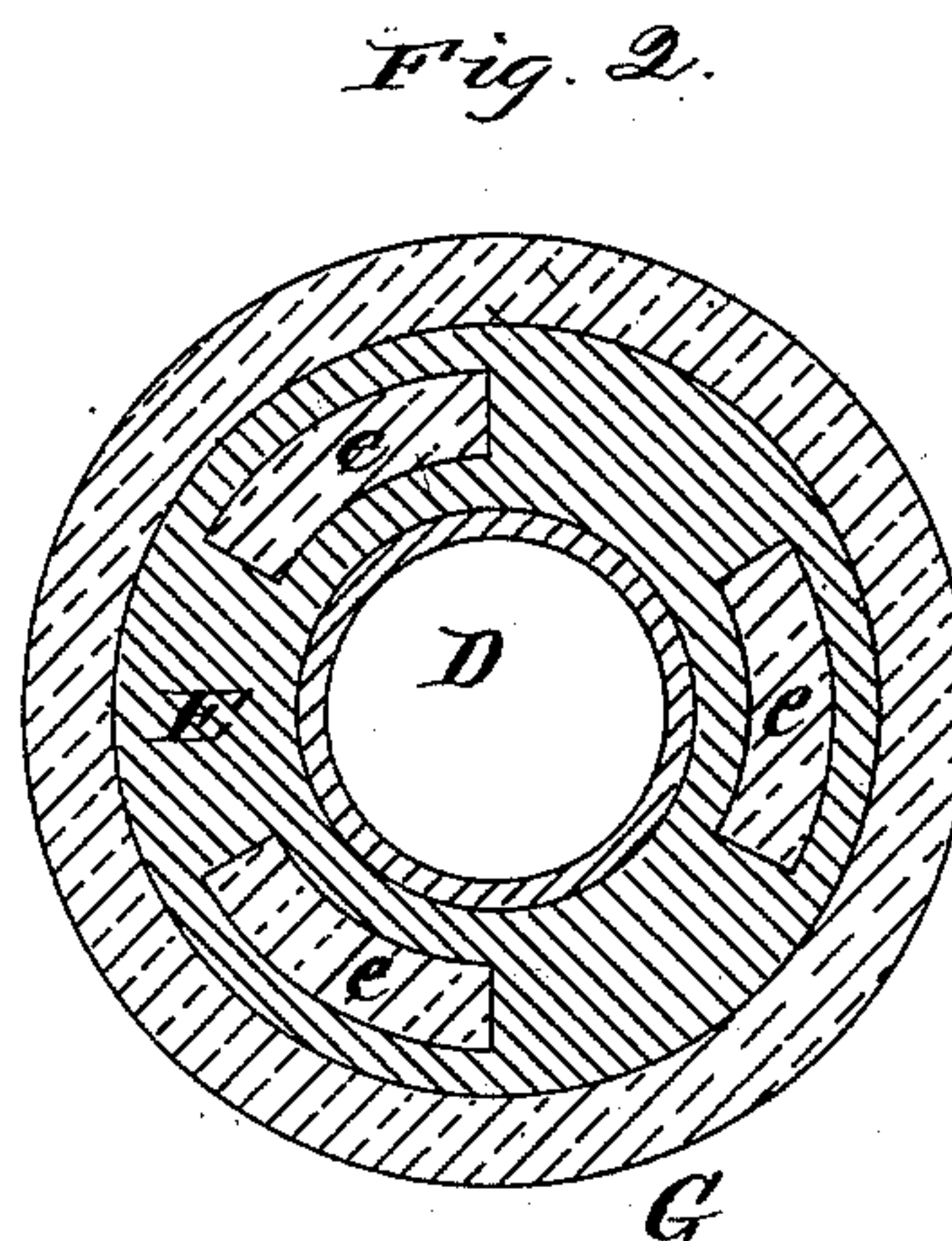
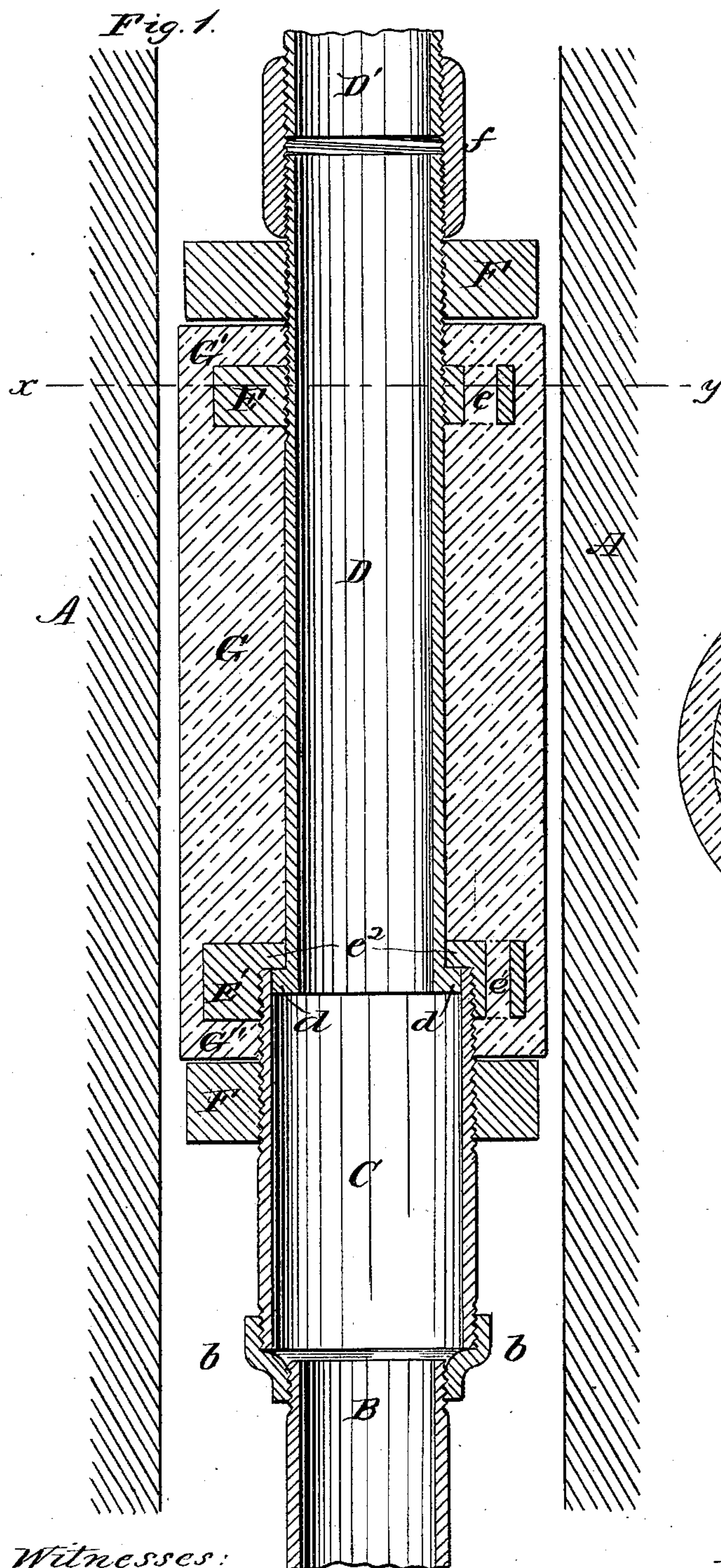


(No Model.)

H. H. DOUBLEDAY.  
Oil Well Packers.

No. 232,013.

Patented Sept. 7, 1880.



Witnesses:

N. A. Low

L. H. Marshall.

Inventor:

Henry H. Doubleday



# UNITED STATES PATENT OFFICE.

HENRY H. DOUBLEDAY, OF WASHINGTON, DISTRICT OF COLUMBIA.

## OIL-WELL PACKER.

SPECIFICATION forming part of Letters Patent No. 232,013, dated September 7, 1880.

Application filed July 7, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY H. DOUBLEDAY, of Washington, District of Columbia, have invented certain new and useful Improvements in Oil-Well Packers; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 is a vertical section of my improved packer. Fig. 2 is a transverse section taken on the dotted line *x y* of Fig. 1.

In the drawings, *A A* represent the walls of the well; *B*, a section of tubing extending to the bottom of the well, and constituting, in connection with the parts *C E'*, an anchor to support the other parts of the packer against downward thrust.

*b* is a reducer connecting the upper end of the tubing-section *B* with the cylinder *C*, of greater diameter.

*E'* is a flange provided with circular slots *e'* and secured upon the upper end of the cylinder *C*, the upper portion of the flange *E'* projecting inwardly and constituting a flange, *e*<sup>2</sup>, which projects beyond the inner face of the cylinder *C*.

*D D'* is an eduction-tube extending to the top of the well, and through which the oil is discharged.

*d* is a flange projecting outwardly from the lower end of the tube-section *D*, which slides within the cylinder *C*, forming a telescopic joint, and from an examination of the drawings it will be readily understood that when the eduction-tube is withdrawn from the well the flange *d* engages with the flange *e*<sup>2</sup>, and thereby supports the weight of the lower tube-section.

*E'* is a flange similar to that shown at *E* and screwed upon the upper end of the tube-section *D*.

*F F'* are flanges screwed upon the tube-section *D* and cylinder *C* in close contact with the ends of a rubber annulus, *G G'*, the tube-sections *D D'* being united by means of a thimble or coupling, *f*. The rubber annulus has inclosed within it, near its lower end, the

flange *E'*, and near its upper end the flange *E*, during the process of manufacture and before the rubber is vulcanized. Thus it will be seen that the rubber not only incloses the flanges but extends through the slots *e e'*, thereby firmly connecting the central portion, *G*, with the upper and lower portions, *G'*.

From an examination of the drawings it will be readily understood that the packer may be operated in the following manner:

When it is lowered into the well the weight of the lower section of tubing or anchor insures that the rubber annulus shall be extended to its full length, as shown in the drawings. When the lower tubing-section reaches the bottom of the well, and its farther descent is thereby checked, the weight of the upper tubing-section will be thrown upon the annulus, and, expanding it centrally of its length, force it against the walls of the well, thereby effectually preventing water from passing from the upper part of the well into its lower part through the annular space between the tubing and the wall of the well, and also preventing oil and gas from passing upward through said annular space past the packer.

This packer is intended more especially for use in connection with tubing through which oil is pumped by means of a working barrel and valves located in the lower section, *B*, and pumping-rods which extend to the top of the well through the sections *D D'*. When thus used its construction will be found desirable, because it forms a water-tight connection between the upper and lower tube-sections, from the fact that the joint between the flanges *E E'* and the cylinder *C* and tube-section *D* is made tight, and that the flanges *E E'* are so firmly embodied in the rubber annulus that no liquid can pass between them.

While I prefer to use the flanges *F F'* to supplement the flanges *E E'* in assisting to support the weight of the upper section of tubing, yet it is apparent that they (the flanges) may be dispensed with, as under ordinary circumstances the flanges *E E'* will effectually expand the rubber and pack the well.

It will be found desirable under some circumstances to invert the position of parts shown in the drawings—that is to say, in such manner that the cylinder *C* shall be arranged

above the annulus and connected with the upper tubing-section; but such inversion will not materially affect the operation of the packer.

I do not in this application claim any invention except that recited in the claim, preferring to claim all other novel features in other applications already filed and of earlier date, of which this is a division.

What I claim is—

10 In an oil-well packer, the combination of the cylinder C, the flange E', the tube-section D,

the flange E, and the rubber annulus, the flanges being embedded in both ends of the annulus, thereby making a water-tight connection between the upper and lower tube-sections, substantially as set forth. 15

In testimony that I claim the foregoing I have hereunto set my hand.

HENRY H. DOUBLEDAY.

Witnesses:

J. S. BARKER,  
M. P. CALLAN.