

C. M. HEETER.  
WELL PUMPING APPARATUS.  
APPLICATION FILED JULY 22, 1909.

956,346.

Patented Apr. 26, 1910.

Fig. 1.

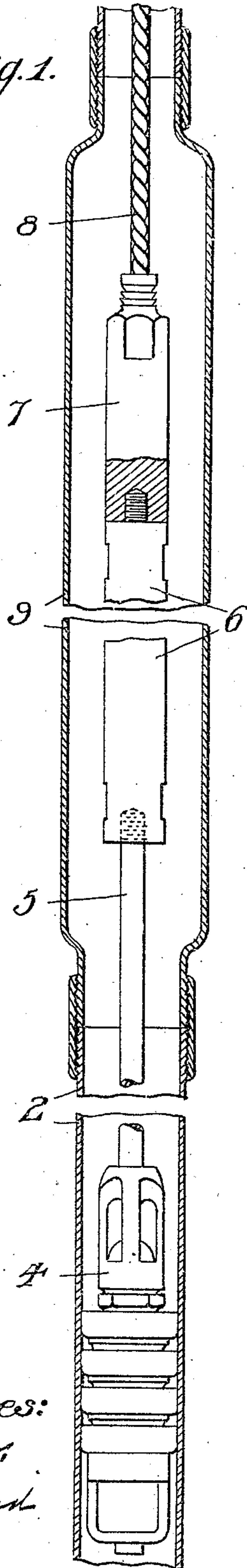
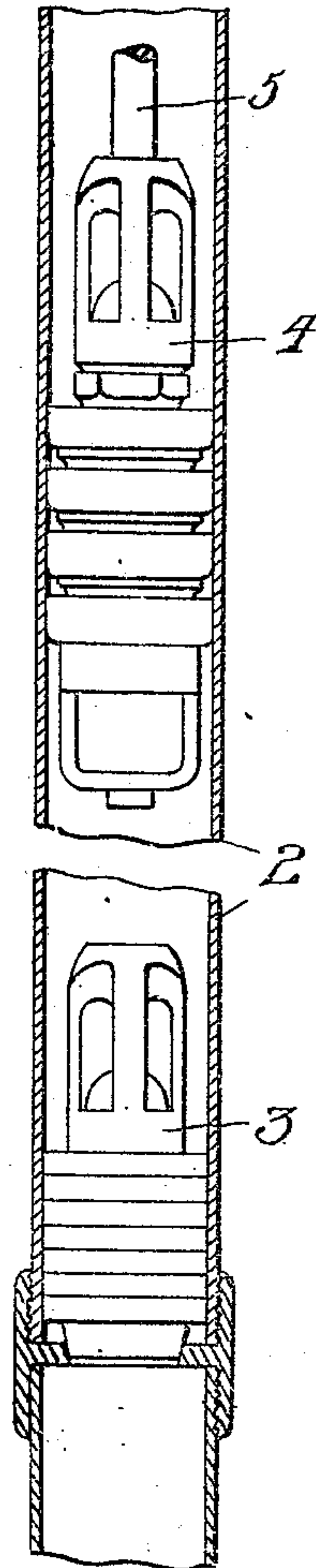


Fig. 2.



witnesses:  
J. P. Hoffman,  
Alberta Richard.

Inventor  
C. M. Heeter,  
By James V. Smith atty

# UNITED STATES PATENT OFFICE.

CHARLES M. HEETER, OF BUTLER, PENNSYLVANIA.

## WELL-PUMPING APPARATUS.

956,346.

Specification of Letters Patent.

Patented Apr. 26, 1910.

Application filed July 22, 1909. Serial No. 508,892.

*To all whom it may concern:*

Be it known that I, CHARLES M. HEETER, a resident of Butler, in the county of Butler and State of Pennsylvania, have invented certain new and useful Improvements in Well-Pumping Apparatus, of which the following is a specification.

Wire cables have largely superseded strings of sucker rods for operating deep well oil pumps, the advantages of the cable over rods being well recognized by those skilled in the art. However, one disadvantage of the cable has been the sluggish movement of the pump on the down stroke. Rods provide a substantially rigid connection so that the plunger may be pushed down as rapidly as desired, but obviously this cannot be accomplished with a wire cable. The sluggish movement is due to the contracted space through which the oil passes around the sinker or sinkers during such downward movement. With the tubing having an inside diameter of two inches, the sinkers are one and a half inches in diameter, thus leaving only a half inch clearance for the oil to flow past the sinkers as the plunger lowers. As the sinkers are usually thirty feet or more in length, this impediment to the downward movement will be readily appreciated. The present invention overcomes this difficulty by so increasing the diameter of that part of the tubing in which the sinkers work as to provide ample clearance, and hence the down stroke is unobstructed and may be accomplished as rapidly as possible.

Figures 1 and 2 are views in vertical section of the lower portion of a well, illustrating the invention.

Referring thereto, 2 designates the pump cylinder or working barrel, provided with the usual standing or foot valve 3.

4 is the plunger which may be connected by rod or stem 5 to the lower end of sinker 6. One or more of these sinker bars may be

used, as required, with rope socket 7 connected to the upper end thereof.

8 is the wire rope or cable for operating the plunger, the same taking the place of sucker rods which were formerly used exclusively for this purpose.

Above the portion of tubing or working barrel 2 in which plunger 4 operates, that portion 9 of the tubing in which sinker 6 and rope socket 7 operate is enlarged to provide ample clearance for the oil to flow therearound. Thus, with the parts proportioned as above indicated, the enlarged part of the tubing may be given an inside diameter of three inches, instead of two inches as formerly, which provides ample space, and results in as rapid a downward stroke as may be desired.

The enlargement is preferably confined to that portion of the tubing in which the sinker and rope socket operate, for while tubing of the increased size might be extended to the top of the well, it would be a mere waste of material as the smaller diameter through which the cable operates is ample for the outflow of oil.

I claim:—

Well tubing having a working barrel portion and a portion of increased diameter above the working barrel and with an upper portion of reduced diameter extending to the top of the well, in combination with a standing valve and a plunger for the barrel, sinker bars in the part of the tubing of enlarged diameter and connected to the plunger, and an operating cable extending from the sinker bars upwardly through the upper portion of the tubing of reduced diameter to the top of the well.

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

CHARLES M. HEETER.

Witnesses:

J. CAMPBELL BRANDON,  
JAMES S. CAMPBELL.