

**No. 631,776.**

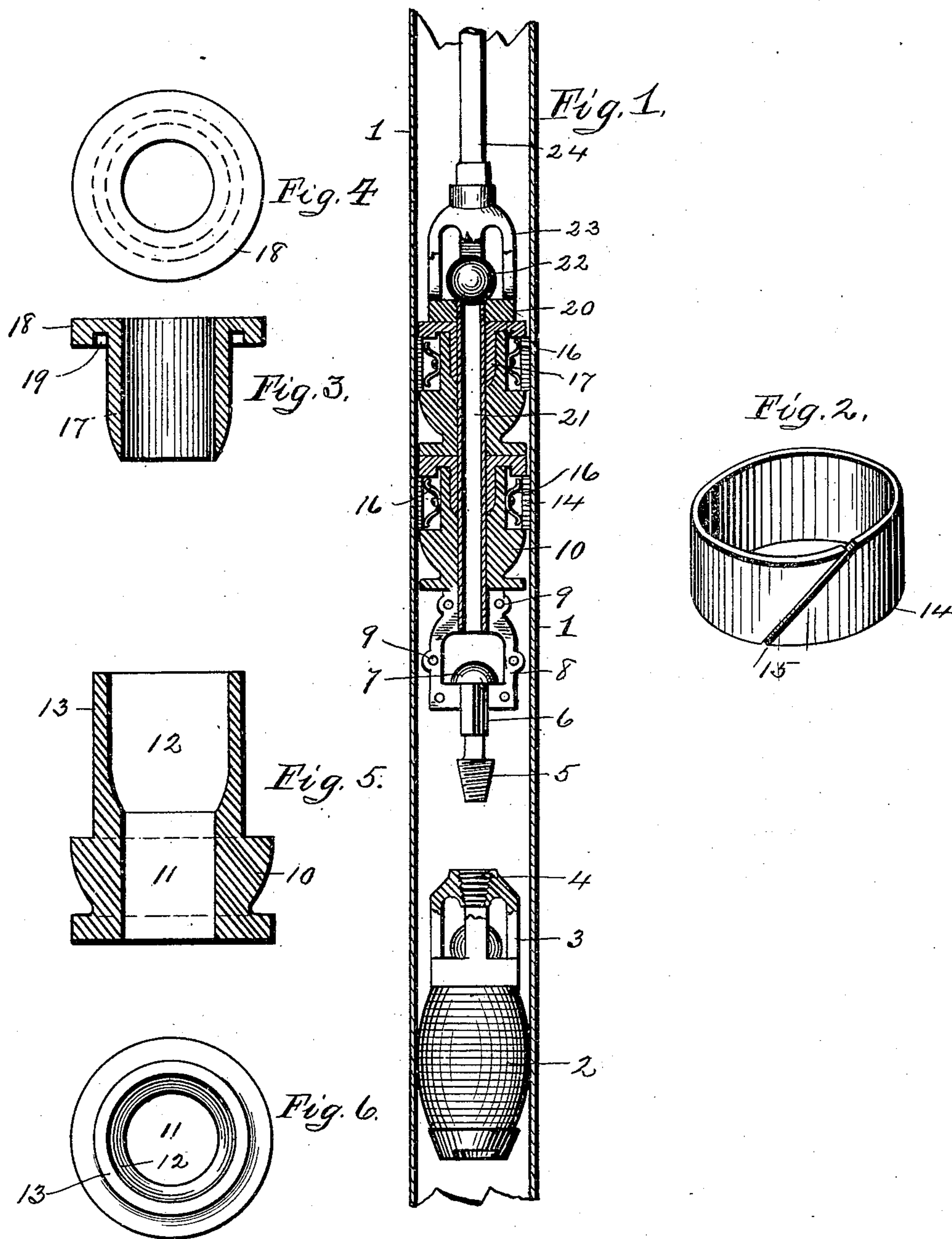
Patented Aug. 29, 1899.

**J. H. COOK.**

## PUMPING APPARATUS FOR OIL WELLS.

(Application filed Apr. 17, 1899.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

JOHN HADDON COOK, OF PITTSBURG, PENNSYLVANIA.

## PUMPING APPARATUS FOR OIL-WELLS.

SPECIFICATION forming part of Letters Patent No. 631,776, dated August 29, 1899.

Application filed April 17, 1899. Serial No. 713,303. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN HADDON COOK, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Pumping Apparatus for Oil-Wells; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improved pumping apparatus for oil-wells; and it consists in certain details of construction and combinations of parts, as will be fully described hereinafter.

In the accompanying drawings, Figure 1 is a side sectional elevation taken through the moving pistons and working barrel of my improved apparatus, which is constructed and arranged in accordance with my invention. Fig. 2 is an enlarged perspective view of one of the metallic packing-rings. Fig. 3 is an enlarged side sectional elevation of one of the glands used for confining the packing-rings in position. Fig. 4 is a plan view of the same. Fig. 5 is an enlarged central sectional elevation of one of the cups separating the packing-rings the one from the other. Fig. 6 is a plan view of the said cup.

To construct a "working barrel" or oil-well pump in accordance with my invention, I first provide the cylinder 1, of a suitable size and form of construction, and fit the same at the base with what is known in the art as a "stand-valve," consisting of a packing 2, a cage 4, and ball-valve 3. This stand-valve is a well-known feature in all oil-wells, and therefore will not be particularly described.

Arranged within the working barrel 1, above the stand-valve, are a series of "cups" or pistons, each of which consists of an annular casting 10, (see Figs. 5 and 6,) having a central bore, the one portion 12 for the reception of a gland 17 and the other to receive and fit neatly about a central tube 21. The external portion of this cup 10 is formed with a less diameter at the top 13 than at the base, in order that suitable springs 16 may be arranged between the same and the inner surface of the packing-rings above mentioned.

Arranged in connection with each of these cups previously described are glands 17, formed to fit closely about the central tube 21 and enter the enlarged bore 12 of the cup, and the said gland provided with a peripheral flange 18 (see Figs. 3 and 4) of a diameter equal to that of the enlarged portion of the cup 10. Intermediate of this flange 18 and the shoulder 10 of the cup is a packing-ring, which consists of a thin metallic strip of casting 14 in the form of a circle (see Fig. 2) provided with a cut or kerf 15, formed diagonally in order to make a spring-packing bearing against the side walls of the working barrel. Intermediate of this spring-packing 14 are placed a number of springs 16, attached to the cup 10 by means of short screws or rivets, and the said springs used for the purpose of placing a tension upon the spring-packing to keep the same at all times expanded and a close neat fit in the working barrel. Any number of these cups, glands, and packing-rings above described may be arranged the one above the other within the working barrel and held or confined in position about a central tube 21. This tube 21 is provided at the top with a screw-thread in order that the base 20 of a suitable valve-cage 23 may be attached thereto. This cage 23 is provided with an ordinary ball-valve 22, such as is well known in the art, and is attached or connected to the sucker-rods 24 now used in all oil-wells. The lower extremity of this tube 21 is fitted by means of a screw-thread to a sectional frame 8, the one section joined together by means of rivets 9 in a manner that will permit of the clamping and confining of a square-neck pin 6, provided at the lower end with a tapering threaded pin 5. This tapering threaded pin last mentioned is for the purpose of engaging with a threaded socket 4, formed in all stand-valves, by means of which the said valve may be withdrawn from the well.

The advantage of this construction of a working valve over those now in use is obvious, as the metallic packing-rings will outwear (by actual test) several sets composed of leather, "composition," rubber, gasket, &c.

Having thus described my invention, I claim—

A working valve for an oil-well pump consisting of the tube 21, the cups 10 arranged thereon, the glands 17, the divided packing-rings 14, the springs 16, the upper cage 23  
5 and valve 22, the divided frame 8, and pin 5 attached thereto all arranged and combined for service, substantially as and for the purpose described.

In testimony whereof I have hereunto affixed my signature in the presence of two or subscribing witnesses.

JOHN HADDON COOK.

Witnesses:

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JOHN REED.