A. CUNNINGHAM.

Combined Sand-Pumps and Center-Bits for Oil-Wells.

No. 211,709. Patented Jan. 28, 1879.

Fig 1.

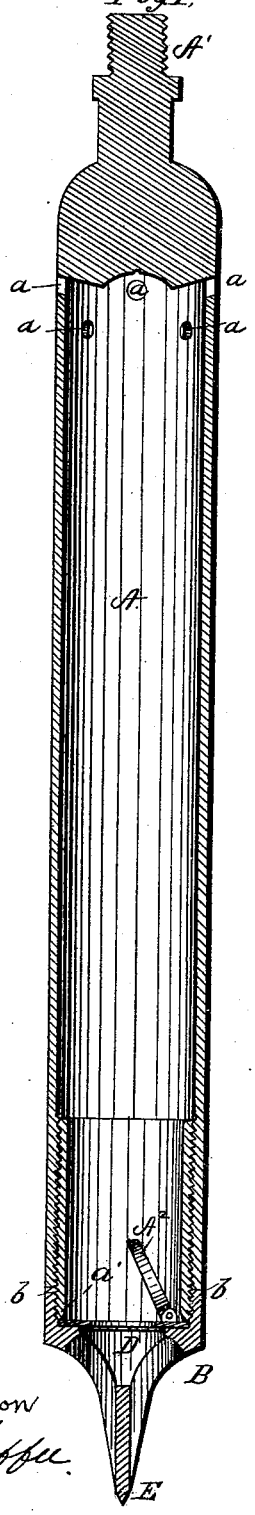


Fig 2

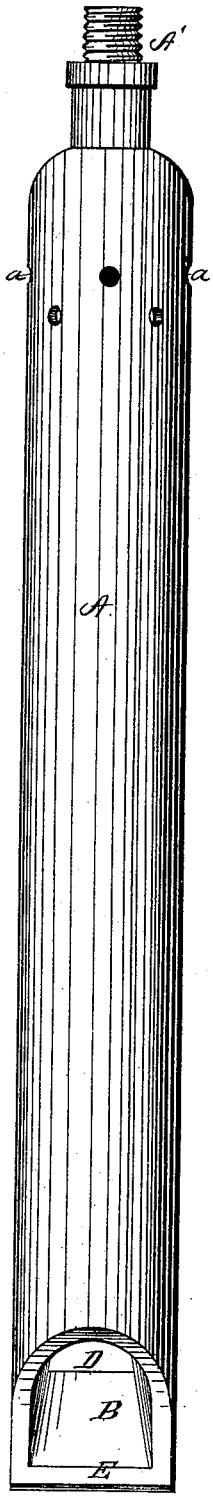
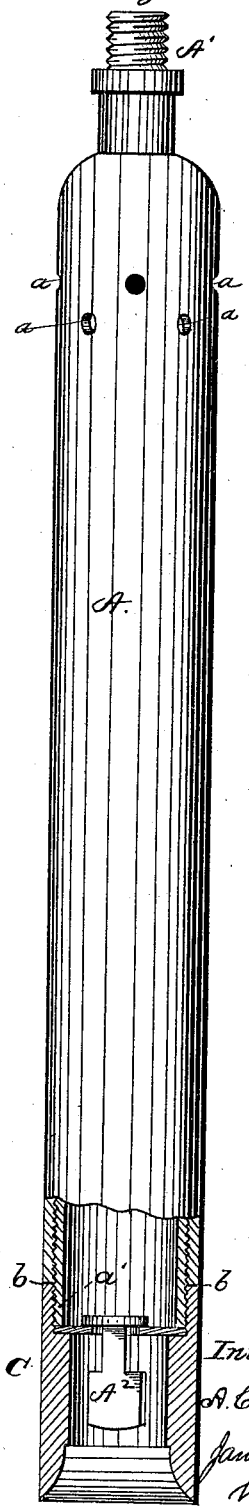


Fig 3.



Witnesses

E. E. Masson

M. E. Chaffee

Inventor

A. Cunningham

By

James E. Boyce

his Atty

UNITED STATES PATENT OFFICE.

ANDRUS CUNNINGHAM, OF PLEASANTVILLE, PENNSYLVANIA.

IMPROVEMENT IN COMBINED SAND-PUMP AND CENTER-BIT FOR OIL-WELLS.

Specification forming part of Letters Patent No. **211,709**, dated January 28, 1879; application filed May 15, 1878.

To all whom it may concern:

Be it known that I, ANDRUS CUNNINGHAM, of Pleasantville, in the county of Venango and State of Pennsylvania, have invented a new and useful Improvement in Combined Sand-Pump and Center-Bit for Oil and Artesian Wells; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a vertical section of my improved sand-pump with the bit attached, and showing the edge of said bit. Fig. 2 is an elevation of the same, showing the side of the bit. Fig. 3 is a side elevation with the lower part partly in section, showing the bowl substituted for the bit.

My invention relates to a combined sand-pump and center-bit, whereby the different attachments can be made available according to the condition of the débris in an Artesian or oil well.

A represents a sand-pump, having a pin, A^1, for the introduction of a rope-socket for operating the same. It is also provided with the ordinary pump-valve A^2. The upper end of said pump has a number of apertures, *a a a*, &c., for the egress of air and liquid. The lower end is provided with a screw-threaded sleeve, *a'*, having securely screwed thereon a bit, B, or a bowl, C. The bit B is provided with a straight cutting-edge, E, and also with an opening, D, for allowing the débris to enter the pump.

The bit B is used for stirring up the sediment, as a narrow bit can penetrate condensed sand or drillings much easier than an ordinary sand-pump.

When the débris in the well is in a semi-liquid condition the bowl is substituted for the bit, and is operated in like manner.

In operating my pump for settled sand, I insert the bit B, screwing it securely against the shoulder *b*. As the débris enters the pump the air or liquid in the pump is forced through the apertures *a a a a*, thus more effectually cleaning the well.

When the débris in the well is more liquid than solid, I remove the bit and attach the bowl, which removes the débris like an ordinary sand-pump.

The straight-edged bit B or the bowl C is connected to the internally-threaded cylinder A by means of the internal sleeve, *a'*, to produce a smooth surface the whole length of the tool without requiring any forging or chamfering of the parts.

I claim—

A sand-pump formed of the combination of a pump-cylinder, A, having perforations *a* near its upper extremity, and an internal screw-thread cut in its lower end, with a threaded sleeve, *a'*, and a perforated bit, B, having a straight cutting-edge, E, interchanging with a bowl, C, substantially as shown, and for the purpose described.

In testimony whereof I, the said ANDRUS CUNNINGHAM, have hereunto set my hand.

ANDRUS CUNNINGHAM.

Witnesses:

JAMES C. BOYCE,

W. R. EDELEN.