

(No Model.)

W. H. BIRGE.

SAND PUMP.

No. 311,945.

Patented Feb. 10, 1885.

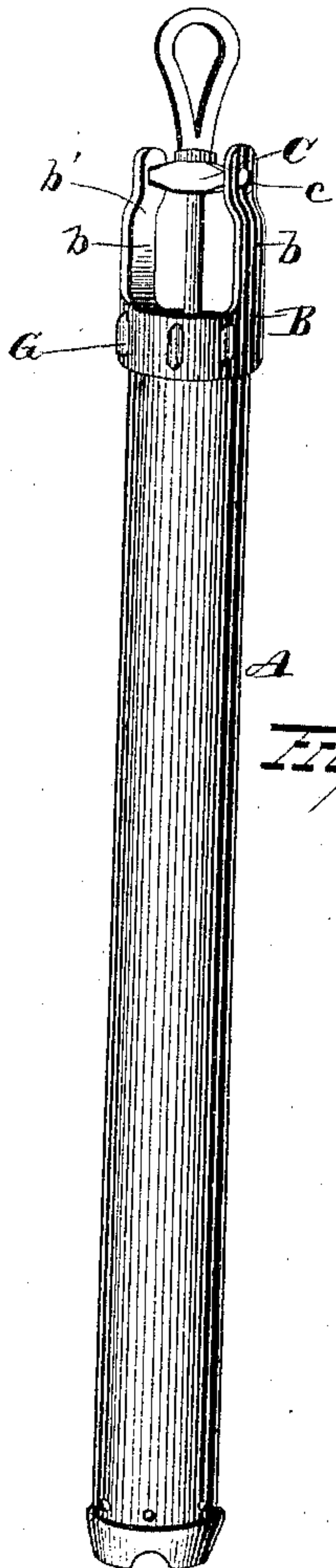


Fig. 1.

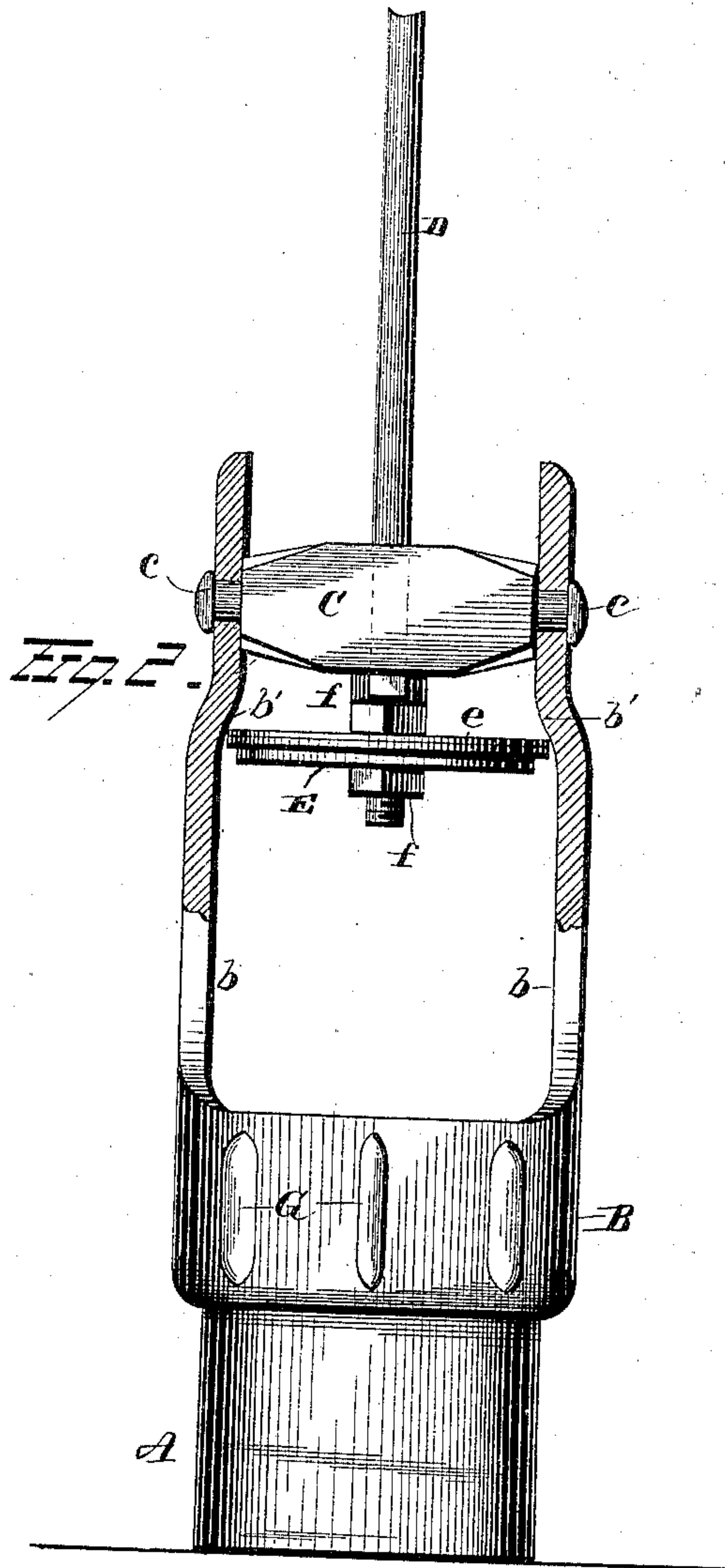


Fig. 2.

WITNESSES

George F. Downing.  
S. G. Nottingham

INVENTOR

William H. Birge.  
By Leggett & Leggett.  
Attorneys.

# UNITED STATES PATENT OFFICE.

WILLIAM H. BIRGE, OF FRANKLIN, ASSIGNOR TO THE OIL WELL SUPPLY COMPANY, (LIMITED,) OF OIL CITY, PENNSYLVANIA.

## SAND-PUMP.

SPECIFICATION forming part of Letters Patent No. 311,945, dated February 10, 1885.

Application filed February 7, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. BIRGE, of Franklin, in the county of Venango and State of Pennsylvania, have invented certain new and useful Improvements in Sand-Pumps; 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 an improvement in sand-pumps which are used in removing the drillings or mud from oil-wells or other deep wells where it is necessary to lower and raise the pump many times, and thereby subject it to wear by contact with the sides of the well. These pumps, when loaded with sand, are too heavy for the drillers to handle readily, and they are raised by a sand-line and allowed to fall on the derrick-floor, when the lower end is raised and the mud or sand allowed to run out.

The object of my present invention is to provide a strong and durable pump which shall combine simplicity and economy in construction with durability and efficiency in use; and with these ends in view my invention consists in the parts and combinations of parts, as will be more fully described, and pointed out in the claim.

In the accompanying drawings, Figure 1 is a view in perspective of the pump; and Fig. 2 is an enlarged view, partly in elevation and partly in section, of the upper end of the pump.

A represents the cylinder of the pump, provided at the bottom with suitable perforations for allowing the sand to enter the cylinder. The top of the cylinder A is provided with an annular collar, B, having two diametrically-opposite upwardly-extending arms or standards, *b*. These standards are drawn toward each other near their upper ends, forming the shoulders *b'*, and these upper portions are perforated to receive the ends *c* of the rocking bar C. The ends *c* project a little outside the standards *b*, and are upset to keep the standards from spreading. The bar C is shouldered against the inner surfaces of the standards *b*, and is transversely perforated to receive the

plunger-rod D, said plunger-rod being allowed an easy sliding motion therein. The lower end of the plunger-rod is threaded and provided with a metal disk, E, somewhat less in diameter than the hole in the cylinder A, and faced with the leather disks *e* on its upper side. These leather disks are slightly larger than the hole in the cylinder A, and may act as a valve to allow the air to escape during the downward stroke of the piston by slightly lifting. The disks E and *e* are secured in their positions on the rod D by means of the lock-nuts *f* and suitable washers. When the pump is raised from the well, the plunger-rod may project upward, and when the pump is allowed to fall on the floor the rocking bar C and the open space between the standards *b* allow the plunger-rod to remain upright while the lower end of the pump is raised and contents emptied. The drawing in of the standards *b* where the ends of the rocking bar project relieves these ends from the wear against the sides of the well, which wear is taken by the main body of the standard or by suitable projecting ribs, G, placed at convenient distances about the collar B.

I do not wish to limit myself strictly to the construction herein set forth, as it is evident that slight changes may be made without departing from the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a sand-pump, the combination, with a cylinder, a ring or collar secured to the upper end of said cylinder, and provided with longitudinal ribs or projections, and the bent standards formed integral with said ring or collar, of a rocking bar journaled in the upper ends of said standards, and a plunger-rod passing through the bar, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM H. BIRGE.

Witnesses:

A. G. EGBERT,  
JAMES MILLER.