

(No Model.)

P. H. HUTCHINSON, Jr.
PUMP.

No. 566,179.

Patented Aug. 18, 1896.

FIG. 1.

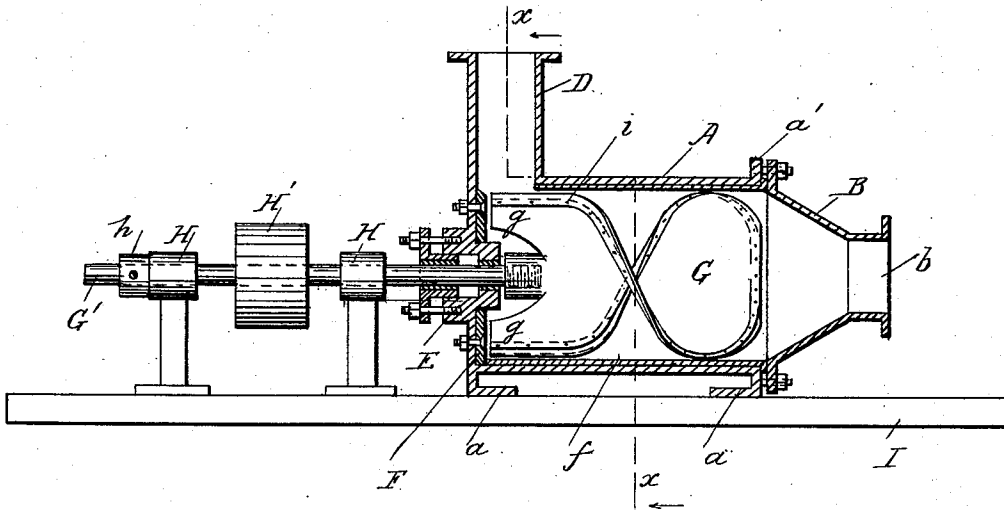
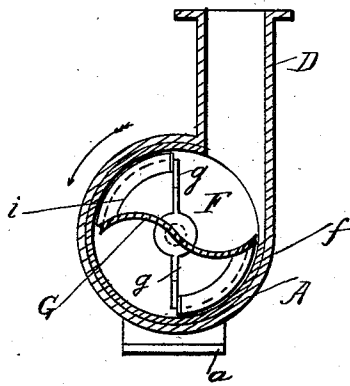


FIG. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

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PUMP.

SPECIFICATION forming part of Letters Patent No. 566,179, dated August 18, 1896.

Application filed December 23, 1895. Serial No. 573,072. (No model.)

To all whom it may concern:

Be it known that I, PHILIP H. HUTCHINSON, Jr., a citizen of the United States, residing at Stono, in the county of Berkeley and State of South Carolina, have invented certain new and useful Improvements in 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.

This invention relates to pumps, and more particularly to those pumps used for pumping water containing considerable debris, as met with in mining operations.

This invention consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a longitudinal section through the pump. Fig. 2 is a cross-section taken on the line *xx* in Fig. 1.

A is a horizontally-arranged cylinder provided with feet *a* and a flange *a'* at its rear end.

B is a conical cover secured to the flange *a'* and provided with a pipe *b* for the attachment of the suction-pipe.

The front end of the cylinder is provided with an outlet-pipe D, arranged on its side at a tangent to its periphery.

E is a stuffing-box on the front end of the cylinder. This stuffing-box is of approved construction, and it and its gland are preferably bushed with brass or other soft metal.

F is a liner-plate of hard metal, such as steel, secured to the end of the cylinder, and *f* is a liner-tube of similar material secured inside the cylinder.

G is a spiral piston shaped somewhat like the blade of an auger, and having radially straight portions or projections *g* on its front end, which comes under the outlet-pipe.

G' is a piston-rod, which is secured to the said piston and which passes through the said stuffing-box. The piston-rod is journaled in two bearings H and is provided with a collar *h* for receiving the thrust.

H' is a belt-pulley for revolving the piston. The piston has wearing-plates *i* of hard metal, such as steel, secured to its edges. The cylinder and the bearings are secured on a base-plate I.

When the piston is revolved rapidly, the water and debris is drawn in by the spiral piston and is forced up the discharge-pipe by centrifugal force by the parts *g*. The use of two bearings prevents the piston from being in absolute contact with the cylinder liner-tube, and there is also no wear on the stuffing-box. The sharp sand and gravel of the debris cut away the liner and the wearing plates, and these parts are removed as often as necessary and are replaced by new ones.

What I claim is—

A debris-pump, comprising a horizontal cylinder greater in length than in diameter and provided with a tangential outlet-pipe at its front end, a liner-plate secured to the front end of the cylinder, a cylindrical liner-tube secured within the cylinder, a conical cover secured to the rear end of the cylinder and provided with a suction-pipe, and a single-blade auger-shaped piston provided with radially straight portions formed of a continuation of its said blade and arranged under the outlet-pipe, substantially as set forth.

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

PHILIP H. HUTCHINSON, JR.

Witnesses:

I. C. BROWN,
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