

(No Model.)

J. J. HAHN.
PUMP.

No. 507,811.

Patented Oct. 31, 1893.

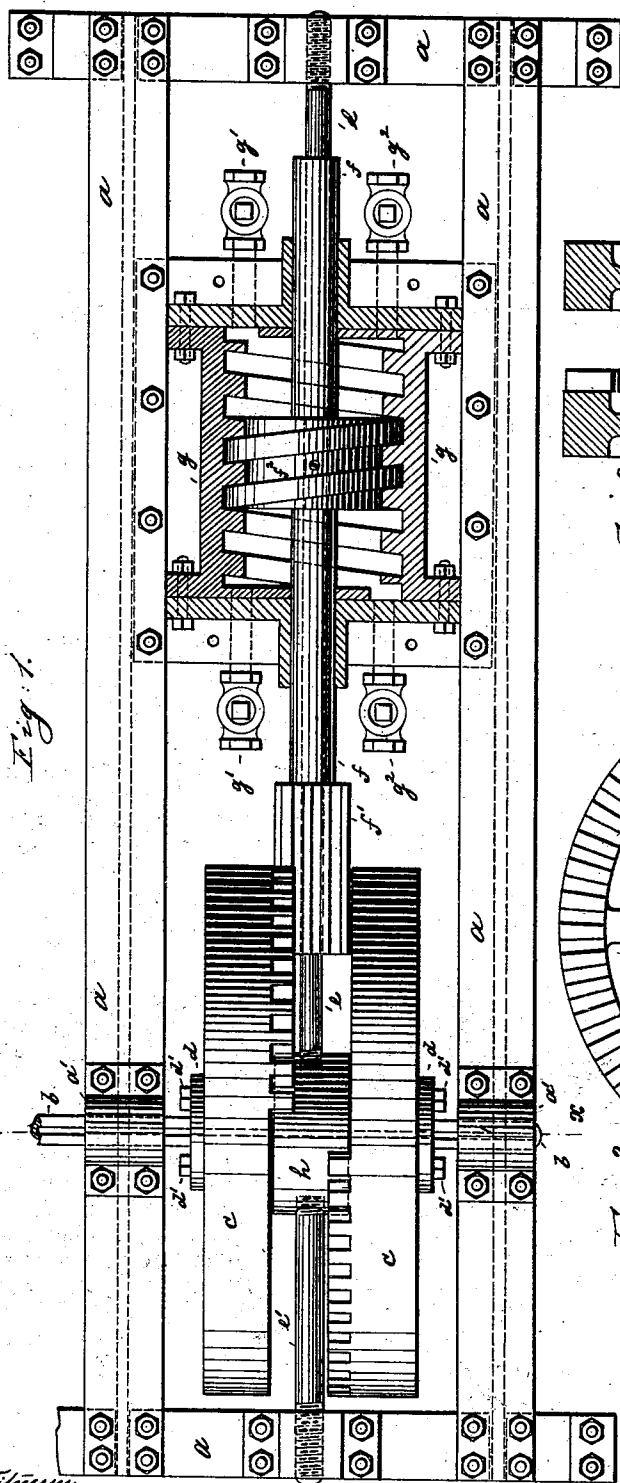


Fig. 1.

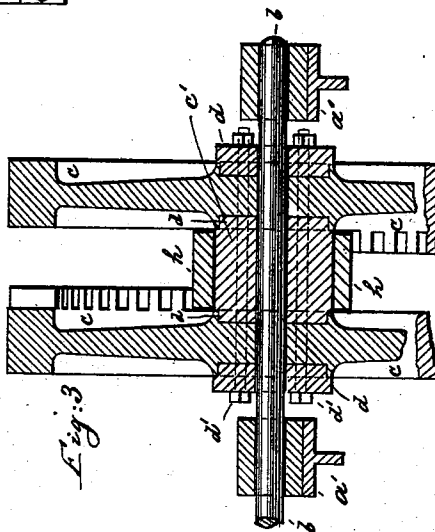


Fig. 3.

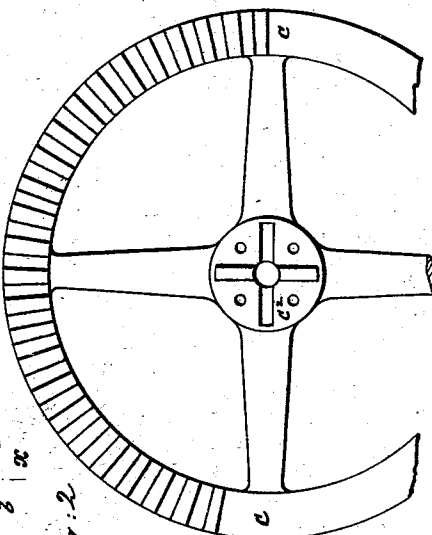


Fig. 2.

Witness:
Wm. Schuch.
Jonghman.

Inventor
John J. Hahn, per
Roeder & Briesen, atty.

UNITED STATES PATENT OFFICE.

JOHN J. HAHN, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO ADOLPH SCHINKEL, OF SAME PLACE.

PUMP.

SPECIFICATION forming part of Letters Patent No. 507,811, dated October 31, 1893.

Application filed June 10, 1893. Serial No. 477,137. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. HAHN, of New York city, New York, have invented an Improved Pump, of which the following is a specification.

This invention relates to a pump for injecting water and steam into steam boilers and for other purposes and which is so constructed that the water or steam is put under a very great direct pressure.

In the accompanying drawings: Figure 1 is a top view partly in section of my improved pump. Fig. 2 is a side elevation of one of the wheels *c*, and Fig. 3 a cross section on line *x*, Fig. 1.

The letter *a*, represents the frame of the pump and *b*, is the driving shaft turning in suitable bearings *a'*, of the frame. The shaft *b*, is provided with a pair of face wheels *c*, *c*, joined by a common hub *c'*, which is secured thereto by clamp plates *d*, and bolts *d'*. To prevent slipping, the wheels *c*, are grooved at their center as shown at *c''*, Fig. 2, to receive corresponding projections on the clamp plates.

The teeth of the wheels are so placed, that they extend over little less than one half the circumference of the wheels and that the teeth of one wheel are placed opposite the plain portion of the other wheel. Through the frame *a*, there extends a longitudinal shaft *e*, upon which there is free to revolve and reciprocate a tubular piston rod *f*, provided at one end with a longitudinally grooved cog-cylinder *f'*. This cog cylinder is placed between the wheels *c*, *c*, and its teeth are engaged alternately by the teeth of the wheels *c*, as the latter revolve, so that thereby the cylinder is revolved intermittently backward and forward. To the tubular rod *f*, there is secured a screw piston head or plunger *f''*, engaging the tapped inner face of the pump cylinder *g*. Inlet ports *g'*, *g'*, and outlet ports *g''*, *g''*, are

located at each end of the cylinder. In order to secure a proper bearing for the shaft *e*, the hub *c'*, is surrounded by a collar *h*, into which the end of the rod is fitted. An additional short rod *e'*, between the collar *h*, and the frame *a*, serves to properly brace and strengthen the parts.

The machine is driven by a belt placed upon either one of the wheels *c*, or it is driven from the shaft *b*, in which latter case the wheels are keyed to the shaft by a groove and feather. The wheels *c*, on being revolved will alternately engage the cog-cylinder *f'*, to revolve the same and with it the piston *f''*, alternately in opposite directions. As the piston is threaded and engages the tapped cylinder, it will by its revolution be reciprocated to operate the pump in the well known manner. With my improved construction, the piston is driven with great force and will eject the water or steam, under a heavy direct pressure.

What I claim is—

1. The combination of a tapped pump cylinder with a threaded piston, a tubular piston rod, a longitudinal shaft extending through the tubular piston rod and with gearing for intermittently revolving the piston rod in opposite directions, substantially as specified.

2. The combination of a tapped pump cylinder, with a screw piston, a tubular piston rod, a cog cylinder secured thereto, a pair of face wheels adapted to alternately engage the cog cylinder, a collar *h*, surrounding the hub of the face wheels and with a rod *e*, connected to the collar and extending through the tubular piston rod, substantially as specified.

JOHN J. HAHN.

Witnesses:

F. V. BRIESEN,
ADOLPH SCHINKEL.