(No Model.)

H. F. GASKILL.

STEAM PUMPING ENGINE.

No. 281,261. Patented July 17, 1883.

Fig 1

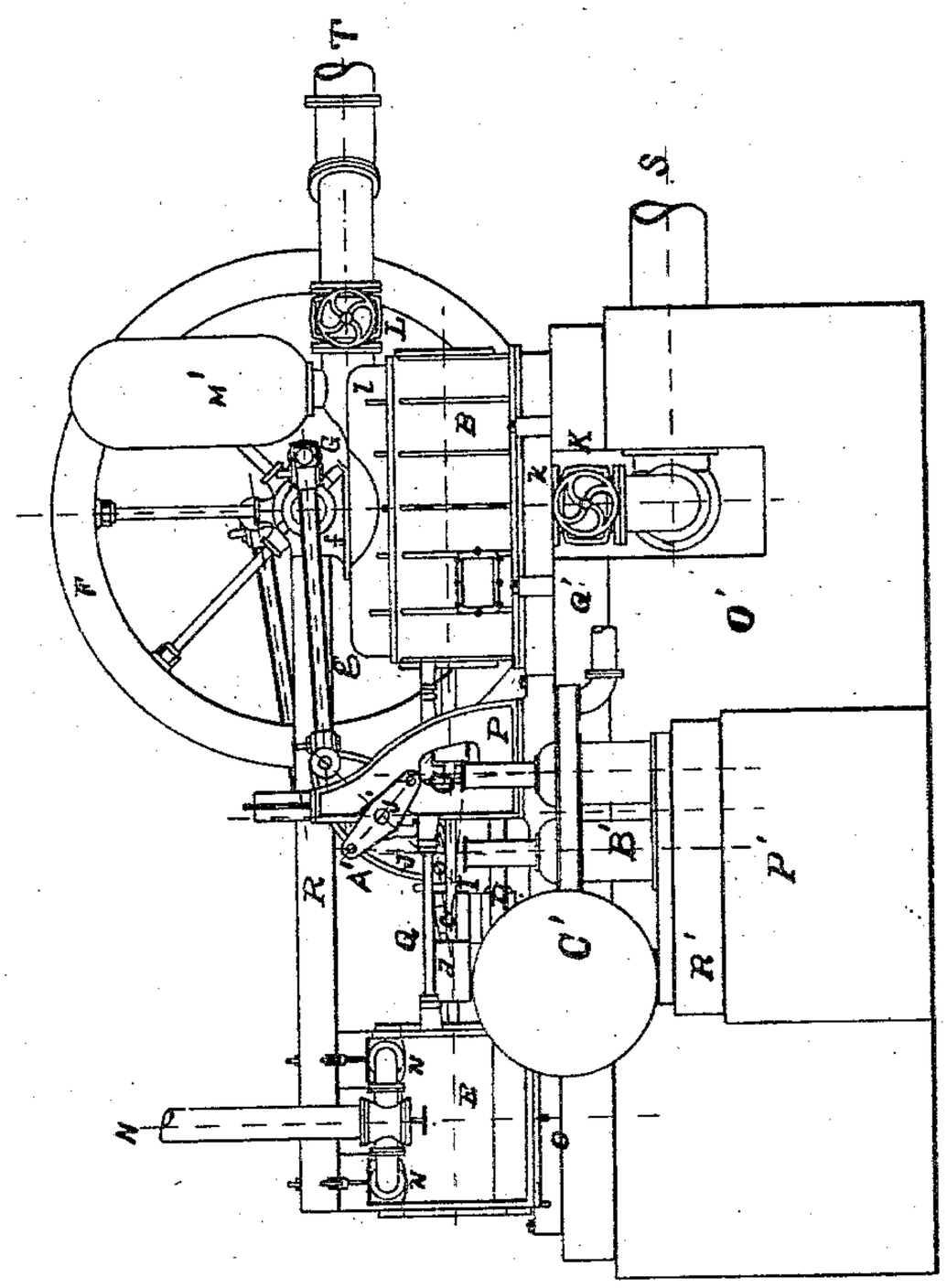
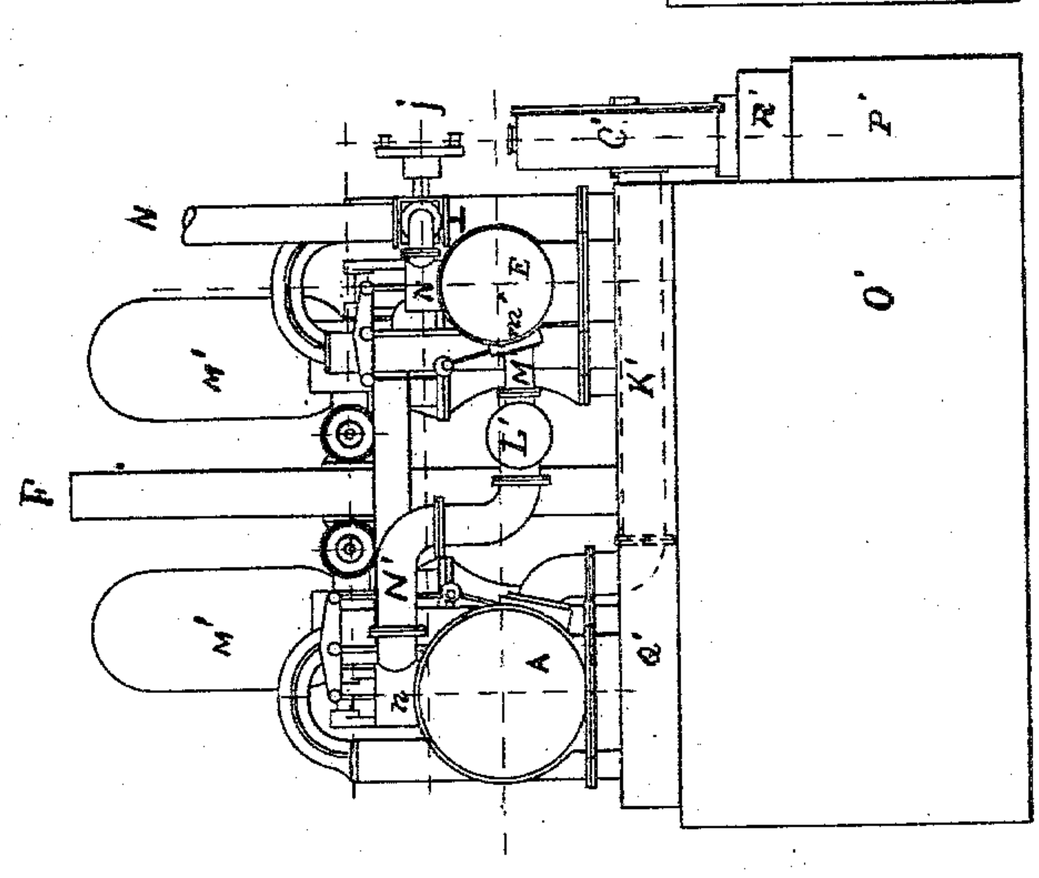


Fig 2



Attest
Chas. J. Bates
W. C. Minard

Inventor
Harvey F. Gaskill
by W. S. Bates, Atty.

UNITED STATES PATENT OFFICE.

HARVEY F. GASKILL, OF LOCKPORT, NEW YORK.

STEAM PUMPING-ENGINE.

SPECIFICATION forming part of Letters Patent No. 281,261, dated July 17, 1883.

Application filed January 2, 1883. (No model.)

To all whom it may concern:

Be it known that I, HARVEY F. GASKILL, of Lockport, in Niagara county, New York, have invented certain Improvements in Steam Pumping-Engines, of which the following is a specification.

My invention is an improvement upon the engine of my Patent No. 263,694, dated September 5, 1882, and relates more especially to compound duplex pumping-engines, though parts of it may be used on pumping-engines of other kinds.

It consists in certain novel combinations of parts, among which the following may be noted as the more important, viz: two pumps arranged side by side; a crank-shaft mounted in bearings on the pumps; a fly-wheel on the crank-shaft and between the pumps; a high-pressure and a low-pressure steam-cylinder arranged side by side and in line with the pumps; two beams intermediately located between the steam-cylinders and the pumps; air-pumps operated from the main beam-shaft; a condenser, &c.

The combinations which constitute my invention are specifically pointed out in the claims at the end hereof.

I am aware that it is common to arrange two engines side by side with pump-cylinders in line with the steam-cylinders; also, that it is common in compound engines of various forms to use a receiver for receiving the exhaust of the high-pressure cylinders and supplying the low-pressure cylinders; also, that the use of cranks, fly-wheels, and beams is common, and these are not my invention.

In the drawings I have represented a compound condensing-engine containing my invention.

Figure 1 of the drawings is a side elevation of the engine from the side on which the air-pumps and condenser are located. Fig. 2 is an end view of the same from the steam end of the engine.

B is a pump. The other pump does not show in the figures, being hidden by B and A.

G is a crank-shaft mounted in bearings *f* on the pumps.

F is a fly-wheel on the crank-shaft, and between the two pumps. The two cranks on the shaft are set at right angles, as shown in Fig. 1.

E is a high-pressure cylinder in line with pump B.

A is a low-pressure cylinder in line with the second pump.

N is the steam-pipe of cylinder E. M is its exhaust.

L′ is a receiver into which cylinder E exhausts.

N′ is a pipe conveying steam from the receiver to the low-pressure cylinder A.

K′ is a pipe through which cylinder A exhausts into the condenser C′.

P is a standard to support bearings for the beam-shaft.

J is a beam.

g is a connecting-rod joining the upper end of beam J with crank G. The lower end of the beam is connected to the piston and pump-rod of cylinder E and pump B. A second beam is similarly arranged with reference to cylinder A and its pump and crank.

j is a secondary beam on the shaft of beam J.

B′ are the air-pumps. Their rods are connected to the ends of beam *j*, and they are operated by it. I have not shown these connections, as they would simply complicate the drawings.

P′ R′ is the foundation for the air-pumps and condenser.

O′ Q′ is the foundation for the main body of the engine.

What I claim is—

1. The combination of the two pumps, the crank-shaft mounted on the pumps, the fly-wheel on the crank-shaft, the high-pressure cylinder in line with one of the pumps, the low-pressure cylinder in line with the other pump, and connecting devices to constitute the whole into an operative machine, substantially as described.

2. The combination of the two pumps, the crank-shaft on the pumps, the fly-wheel on the crank-shaft, the high and low pressure cylinders in line with the pumps, the beams, and connecting devices constituting the whole into an operative machine, substantially as described.

3. The combination of the high and low pressure cylinders arranged side by side, the two pump-cylinders arranged side by side and in line with the steam-cylinders, the receiver, the

beams, the crank-shaft and fly-wheel mounted in bearings on the pumps, and the cranks making an angle with each other, substantially as described.

4. The combination of the pumps, the crank-shaft and fly-wheel mounted on the pumps, the steam-cylinders, the beams, the secondary beam, the condenser and air-pumps, and connecting devices constituting the whole into an operative machine, substantially as described.

HARVEY F. GASKILL.

Attest:
F. H. SEYMOUR,
D. A. DECROW.