

F. Kettler,
Fire Engine,

N^o 24,876.

Patented July 26, 1859.

Fig. 1.

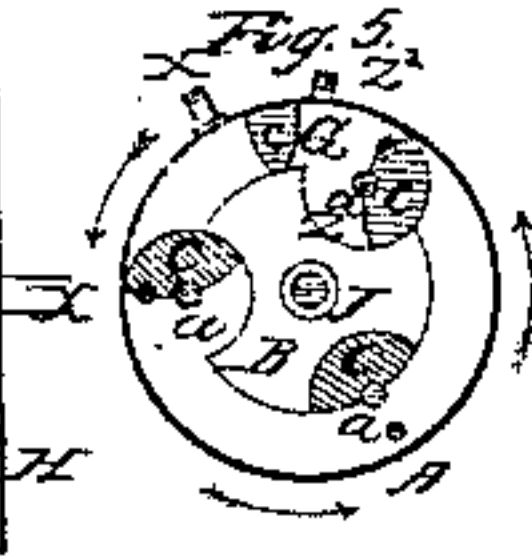
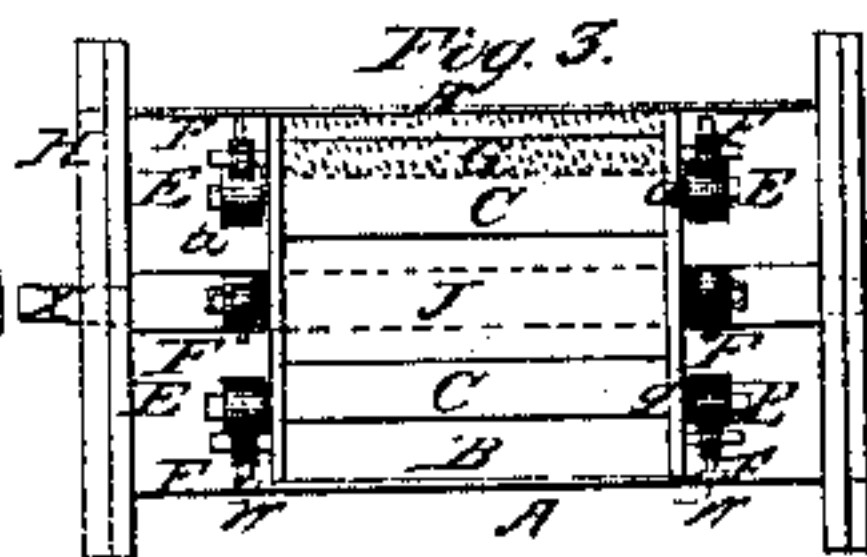
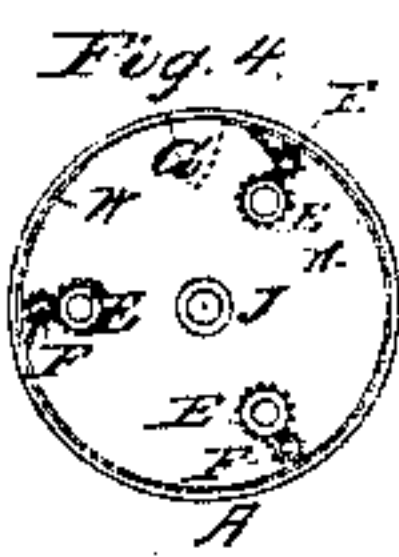
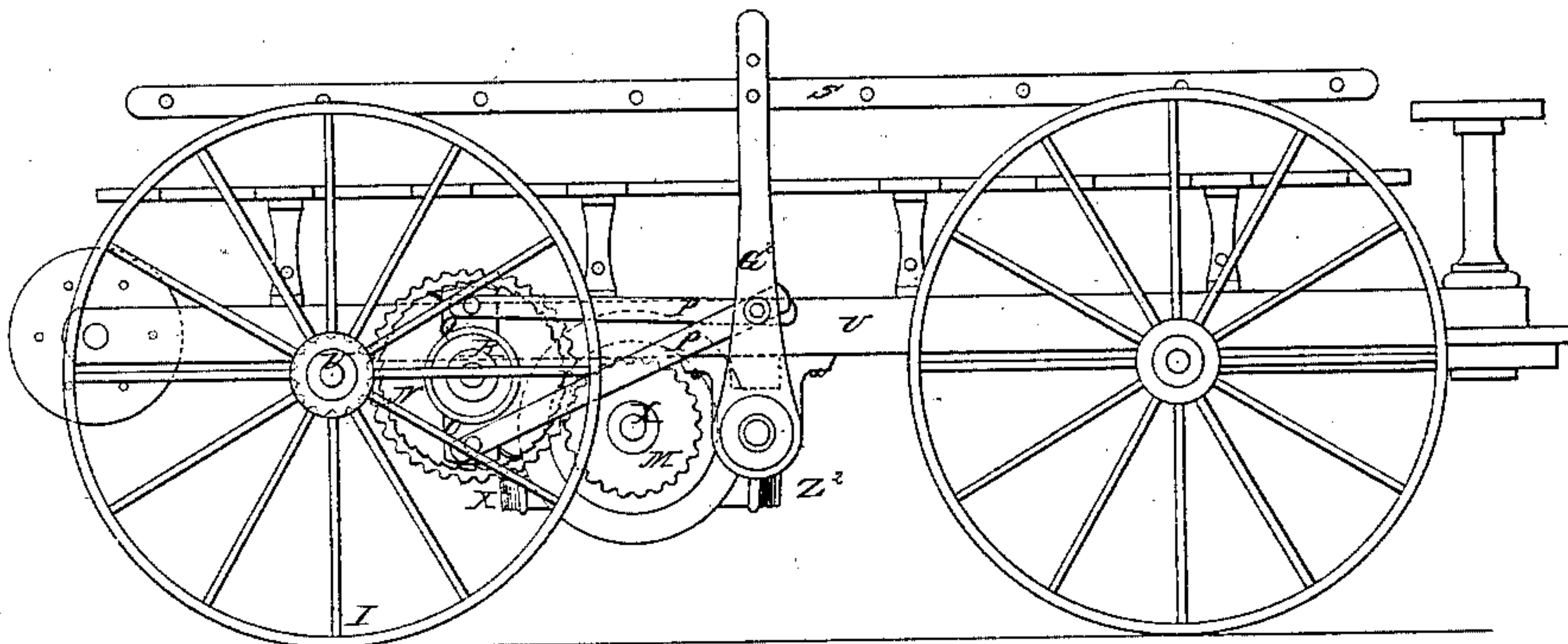
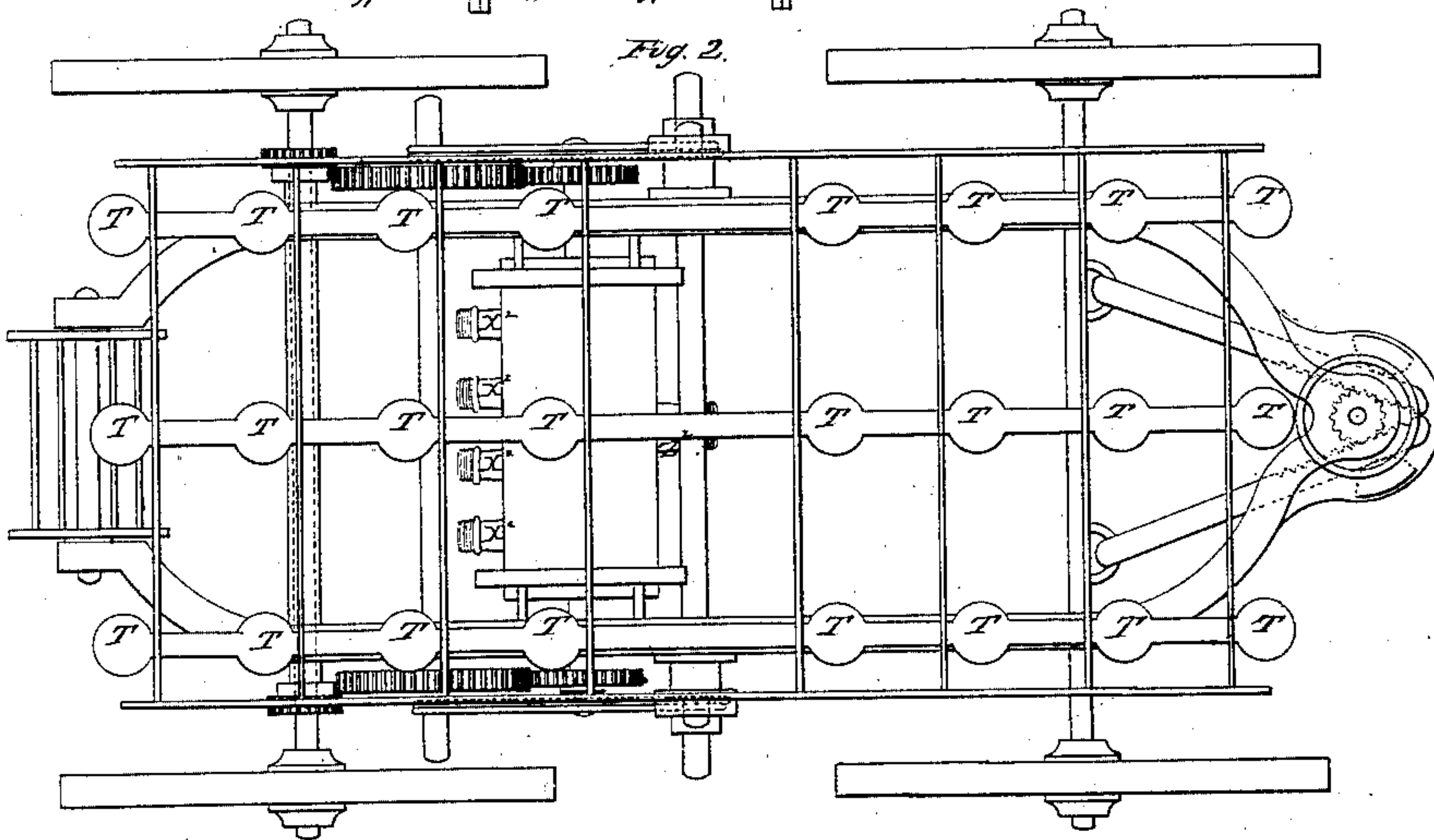


Fig. 2.



Witnesses
C. W. Hunt
John H. Hockinghead

Inventor
Frederic Kettler

UNITED STATES PATENT OFFICE.

FREDERIC KETTLER, OF MILWAUKEE, WISCONSIN.

FORCE-PUMP.

Specification of Letters Patent No. 24,876, dated July 26, 1859.

To all whom it may concern:

Be it known that I, FREDERIC KETTLER, of the city and county of Milwaukee and State of Wisconsin, have invented a new and
5 original Machinery of a Force-Pump to Supply an Engine with Water; and I do hereby declare that the following is a full and exact description of the same.

This engine has one horizontal pump
10 which will throw out every minute seven hundred gallons of water, when the engine is of common size. Through the operation and construction of the machinery the water will be forced more regular and in a greater
15 quantity through the discharge pipes of the engine.

Similar letters refer to like parts.

Figure 1 represents a side elevation of the engine and Fig. 2 a plan. Figs. 3, 4 and 5
20 represent different views of the cylinders A and B.

The cylinder A is fastened with screws to the frame U of the engine and has two covers H on its sides which are fastened air-
25 tight, when the machinery is working.

X are the journals of an axis J which passes airtight through those covers H.

B is a solid rotary cylinder which is intended to work as piston in the cylinder or
30 pump A.

Z are the grooves which are cut in the surface of the cylinder B.

g are the two flanges of cylinder B.

C are the valves which have an elliptical
35 form. They are so constructed as to work exactly between the flanges g, also within the view of the cylinder A and in the grooves which are cut in the cylinder B. Every valve has two journals a which passes freely
40 through the flanges g. On the outer side of the flanges g the toothed wheels E are represented and secured on the journals a.

W is a part of a ring and is fastened within the periphery of the cylinder A. G is a pivot which is also fastened within the cyl- 45
inder A.

F represents a pinion on which a lever is attached which serve to open the valves C when it comes in contact with the ring W and to shut them again when they come in
50 contact with the pivot G.

The pipes X are secured to the cylinder A and are intended to draw the water out the well and force it, by means of the piston in Figs. 3, 4 and 5 described, through 55
the discharge pipe Z².

M is a pinion which is secured on the journal X.

The spurwheel N and the cranks O may be moved freely on the axis R by the levers 60
G² and the rods P. Those levers G² will, when they are moved from the left to the right etc., participate a rotary motion to the spurwheel N and further to the machinery in the cylinder A. This rotary motion may 65
also be obtained by eccentrics, etc.

S₁ is a frame which is attached on the levers G² to work by.

T are the seats for the workmen.

The wheels I and the pinions d are fas- 70
tened on the shaft U. Those pinions d are driven by the spur-wheels N and will be used to drive the engine through the streets. These pinions d have to be shifted when the
75 pump A is in operation.

What I claim as my invention is—

The combination and arrangement of a force pump as herein described, for the purpose set forth.

FREDERIC KETTLER.

Witnesses:

W. MERTZ,

JOHN S. HOLLINGSHEAD.