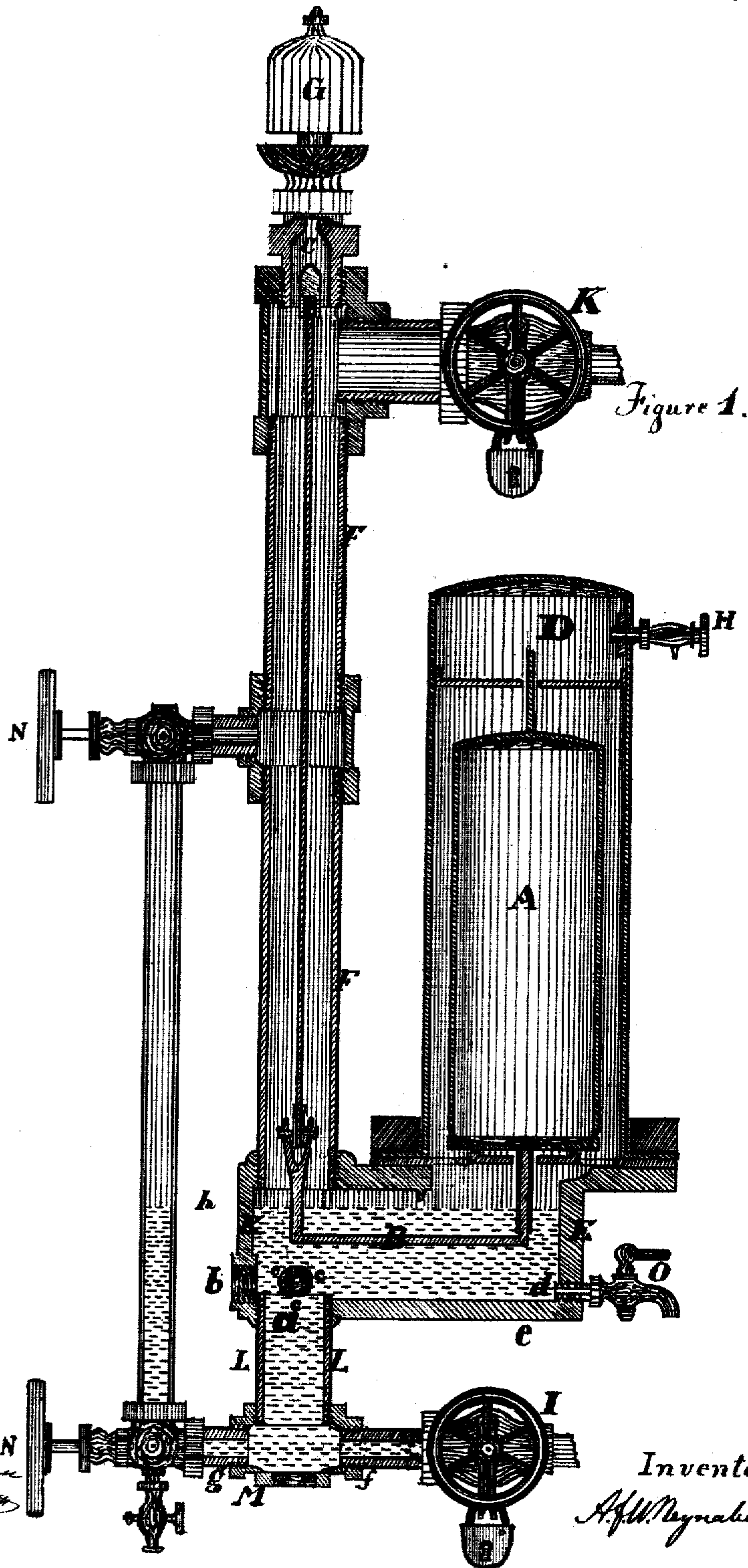


A. F. W. Meynaber, *2. Sheets Sheet 1.*

Indicator.

No. 108618.

Patented Oct. 25. 1870.



Witnesses:

J. M. Brown N
Henry Hartmann
J. E. H. H. H.

Inventor:

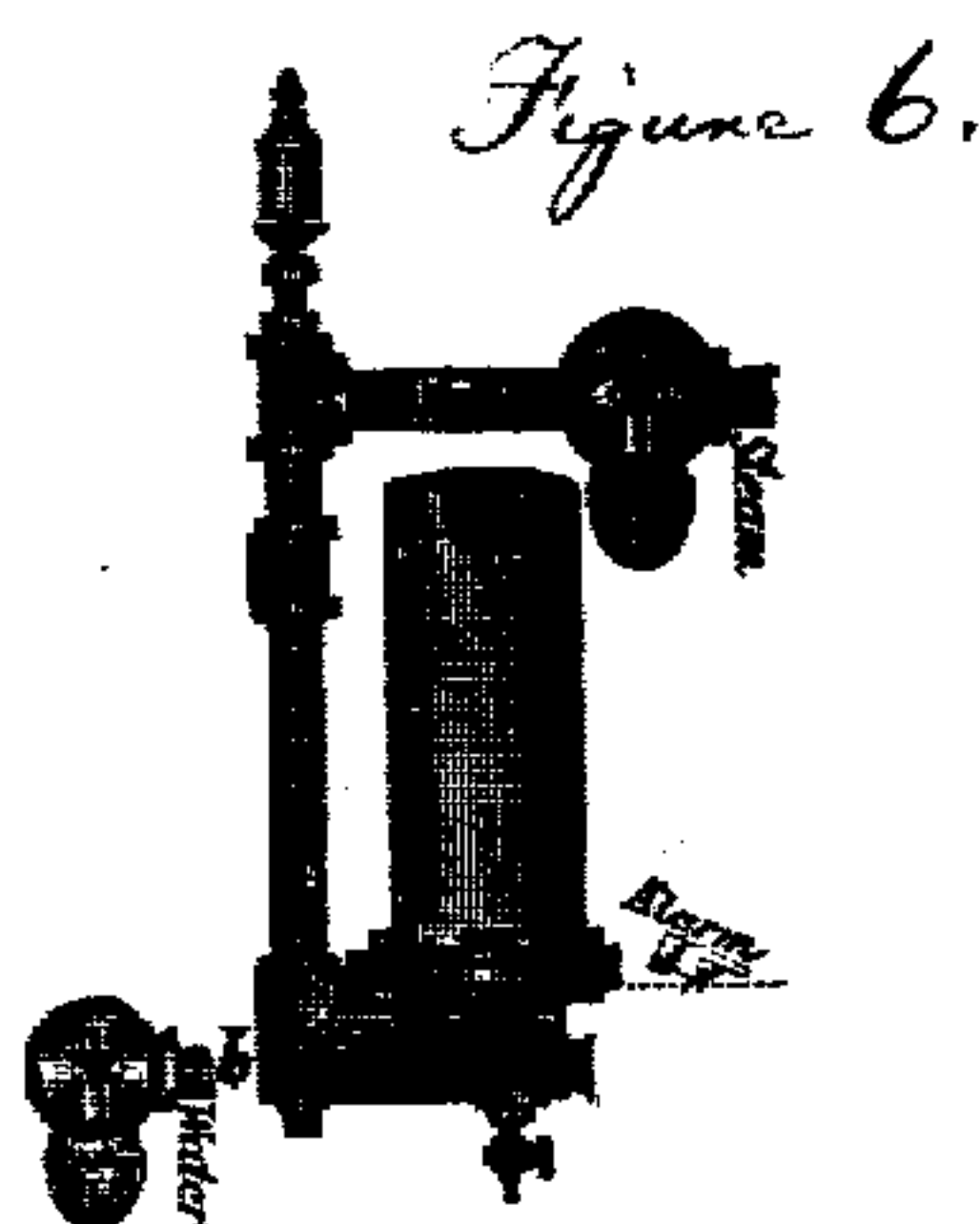
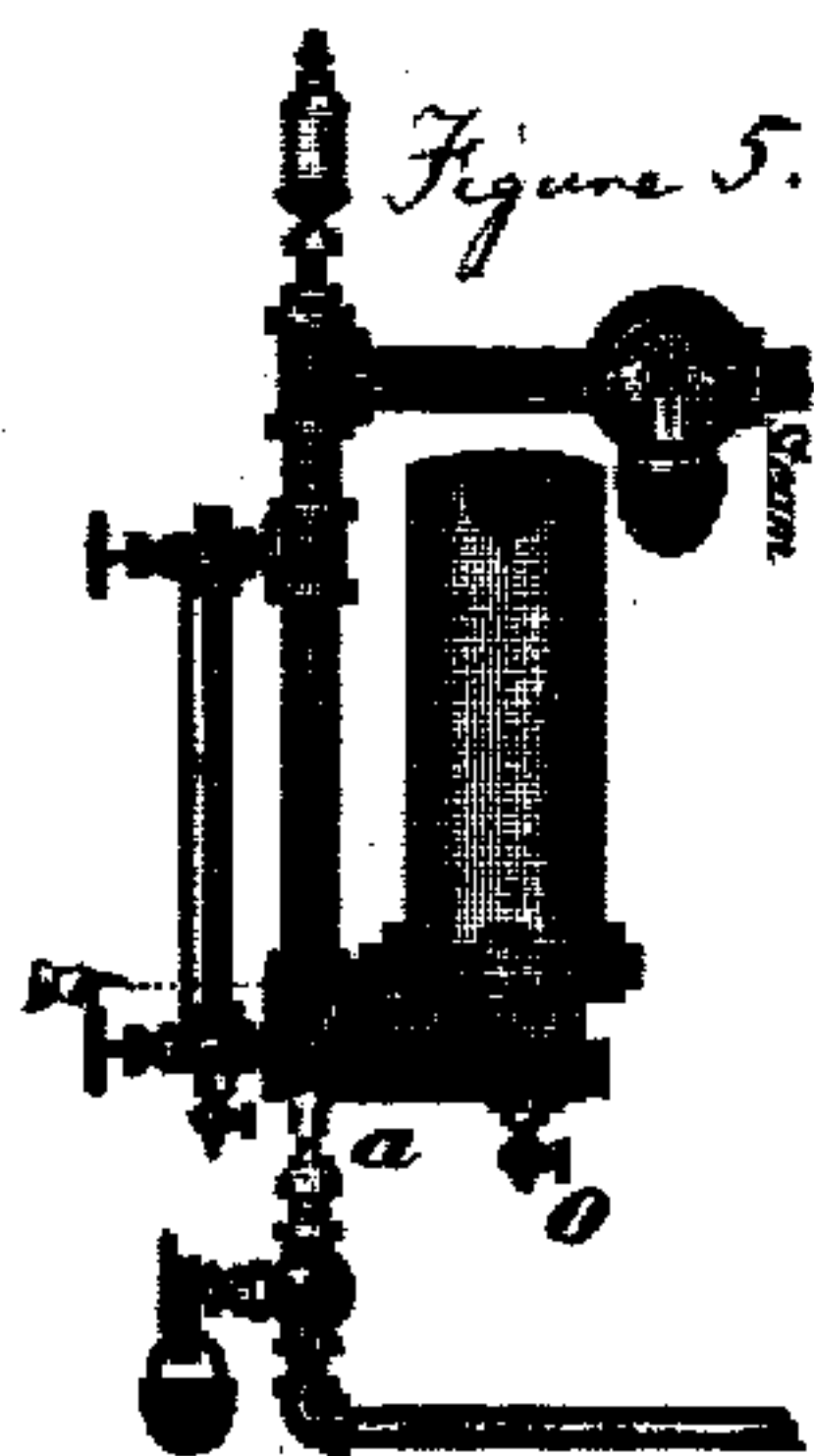
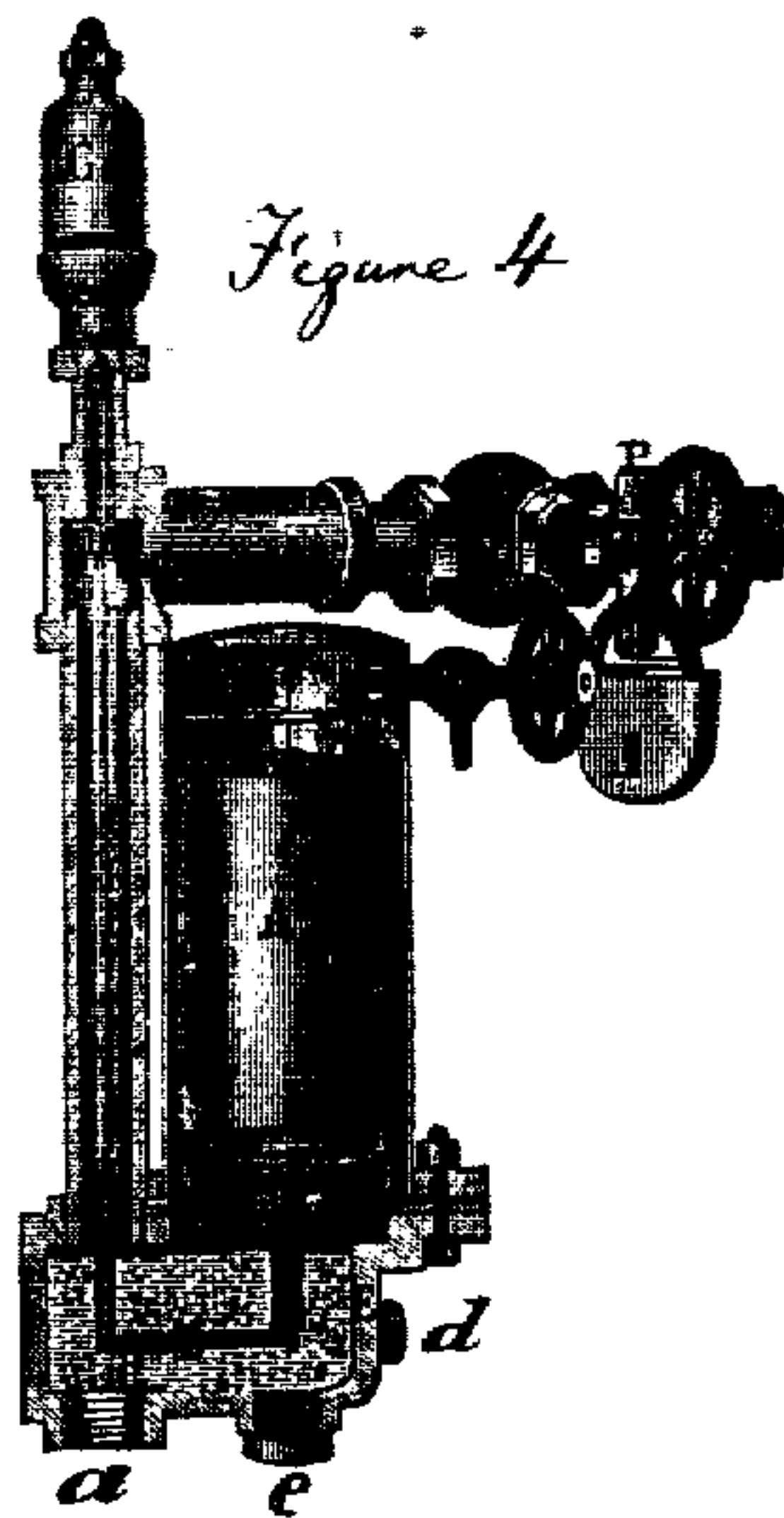
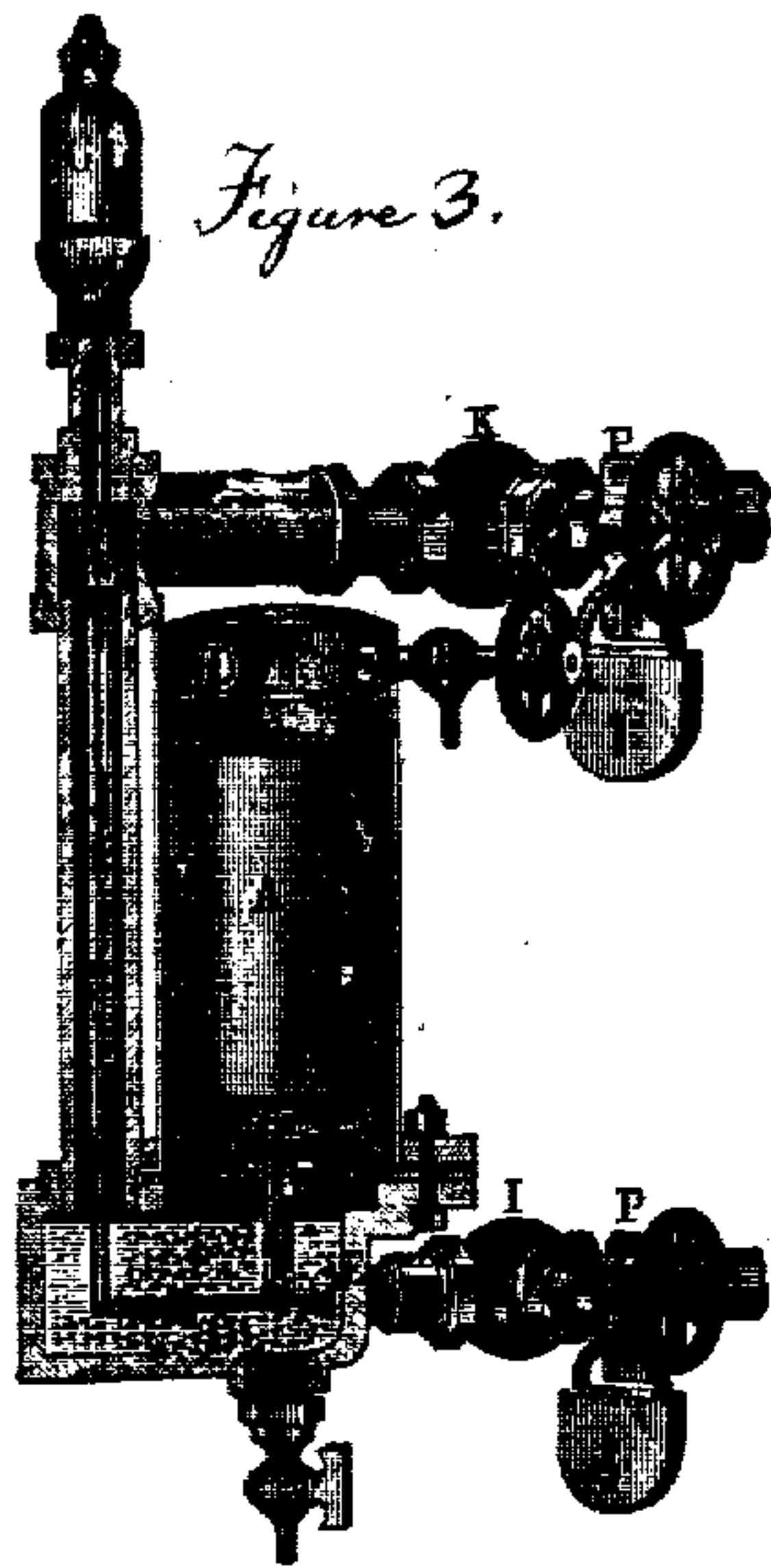
A. F. W. Meynaber.

A. F. W. Neynaber, *2, Sheets, Sheet, 2.*

Indicator.

No. 108618.

Patented Oct. 25. 1870.



Witnesses:

John Bramm
Henry Hartmann.

Inventor

A. F. W. Neynaber

United States Patent Office.

ADOLPHUS F. W. NEYNABER, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 108,618, dated October 25, 1870; antedated October 20, 1870.

IMPROVEMENT IN LOW-WATER INDICATORS.

The Schedule referred to in these Letters Patent and making part of the same

I, ADOLPHUS F. W. NEYNABER, of Philadelphia, in the county of Philadelphia, in the State of Pennsylvania, have invented certain Improvements in the construction and attachment of my Low-water Indicators for Steam-Boilers, patented November 24, 1868, known as Neynaber's Monitor Low-water Indicator, of which the following is a specification.

Nature and Objects of the Invention.

The first part of my invention relates to the improvement in the construction of the cast-iron bracket to make it capable of being attached to a boiler in the improved manner.

The second part of my invention relates to the improved mode of making the attachment of my indicator with a steam-boiler.

Description of the Accompanying Drawings.

Figure 1 is a vertical section of the monitor low-water indicator, with glass water-gauge in the state when blowing the alarm-whistle, and showing the means and the point of the new connection with the boiler, embodying my invention.

Figure 2 is a perspective view of the same.

Figure 3 is a view of the indicator, showing the connection with the boiler as formerly used.

Figures 4, 5, and 6 are views of the Neynaber monitor low-water indicators, showing how the connections for water and glass water-gauge can be made under different circumstances.

General Description.

- A is the float.
- B is the rod connecting the float with the plunger of the valve C.
- D is the cylinder, in which the float is inclosed.
- E is the bracket.
- F is the vertical pipe.
- G is the alarm-whistle.
- H is the gauge or air-cock.
- I is a stop-valve for the water connection.
- K is a stop-valve for the steam connection.
- L is a nipple screwed into the bracket E, and connecting-T M with the bracket.
- N is a glass water-gauge.

O is a blow-off cock.

P is an arrangement for locking the stop-valves, to prevent tampering with the indicator.

This indicator differs from the one patented November 24, 1868, in having the connection for water-valve I either at *a*, *b*, *c*, or *f*, fig. 1, (see also figs. 4, 5, and 6,) instead of having the connection at *d*, fig. 3.

The object of this change in the point of connection is to obtain a quicker action of the indicator when the water in the boiler and in bracket E falls to the point *h*, fig. 1.

If the water connection for valve I is made at *d*, fig. 3, and steam begins to enter bracket E and cylinder D when the water therein is cool, the steam will condense, and, in place of it, water will be drawn from the boiler, as the connection with the water of the boiler has not been interrupted yet; and this operation will go on until the water in the cylinder is heated to the boiling-point; but if the connection for valve I is made at *a*, *b*, *c*, or *f*, fig. 1, (see also figs. 4, 5, and 6,) and steam begins to enter bracket E, the pressure of the steam on the water prevents the water from being drawn up from the boiler, and, instead of water, steam is drawn into bracket E, as shown in fig. 1, and the alarm is given instantaneously.

The connection for water-gauge N can be made according to circumstances, at *b*, *c*, or *g*.

Thus it will be seen that, by making the connection for valve I at *a*, *b*, *c*, or *f* of the indicator with the boiler, the alarm will be given quicker than when the connection for valve I would be made in the former way at *d*. This forms the improvement which I have made.

Claims.

I claim as my invention—

1. The construction of bracket E, substantially as and for the purpose hereinbefore set forth.
2. The mode to connect my indicator with a steam-boiler, substantially as and for the purpose hereinbefore set forth.

ADOLPHUS F. W. NEYNABER.

Witnesses:

WM. BRANN,
HENRY HARTMANN.