

Mitchell & Stone,

2. Sheets, Sheet. 1.

Rotary Steam Engine.

No. 94,906.

Patented Sept. 14. 1869

Fig: 2.

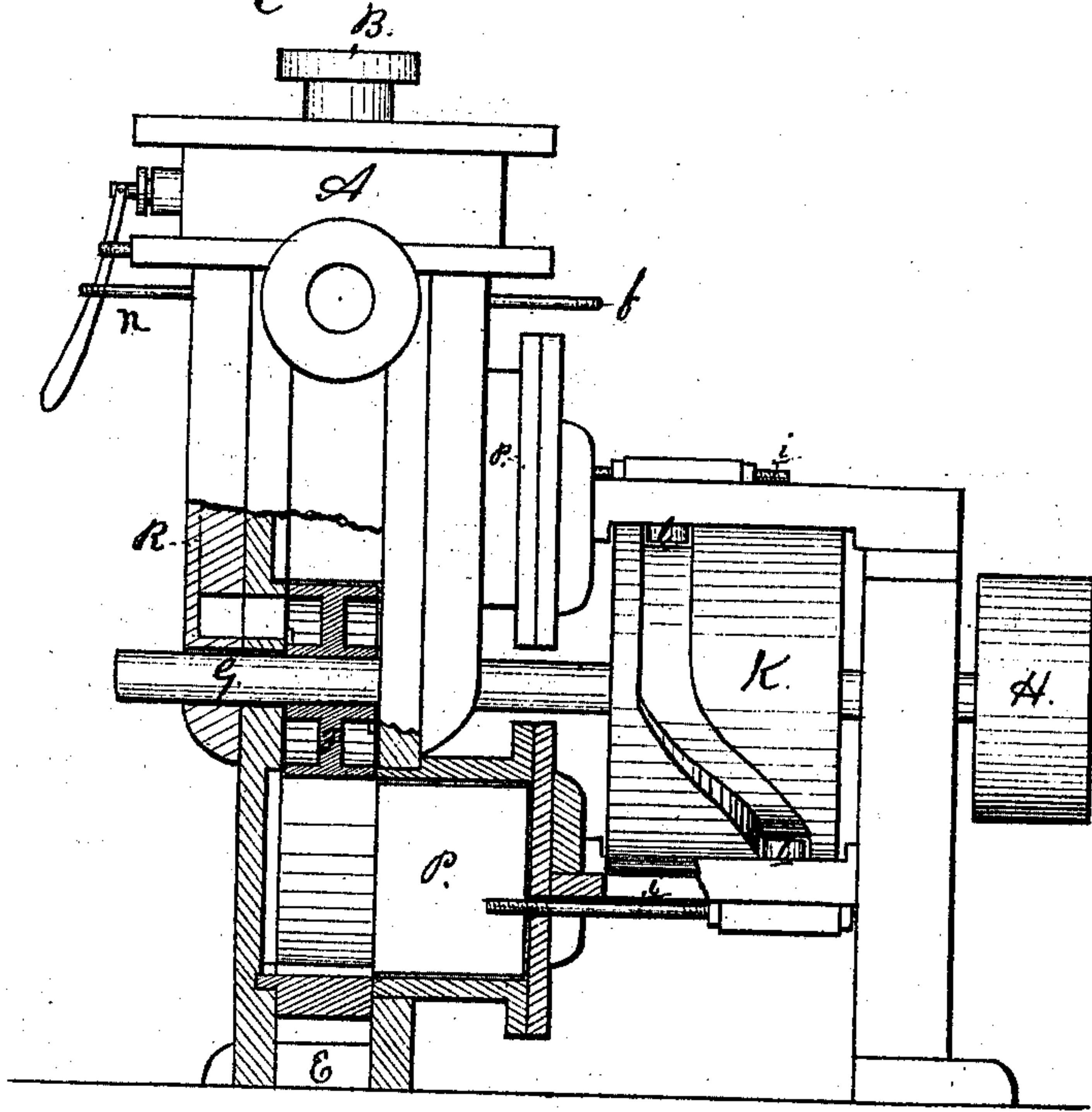
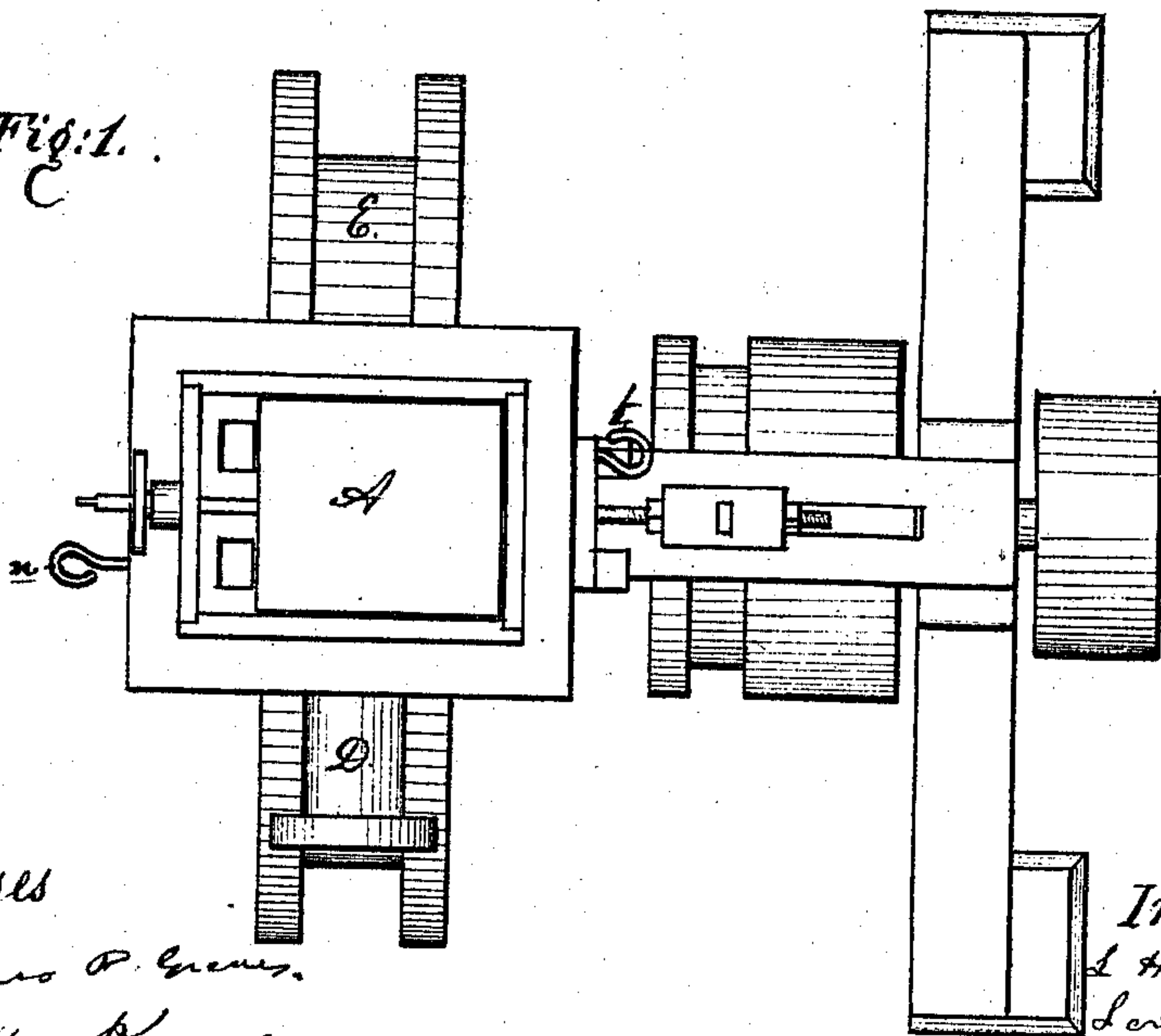


Fig: 1.



Witnesses

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Fig. 3

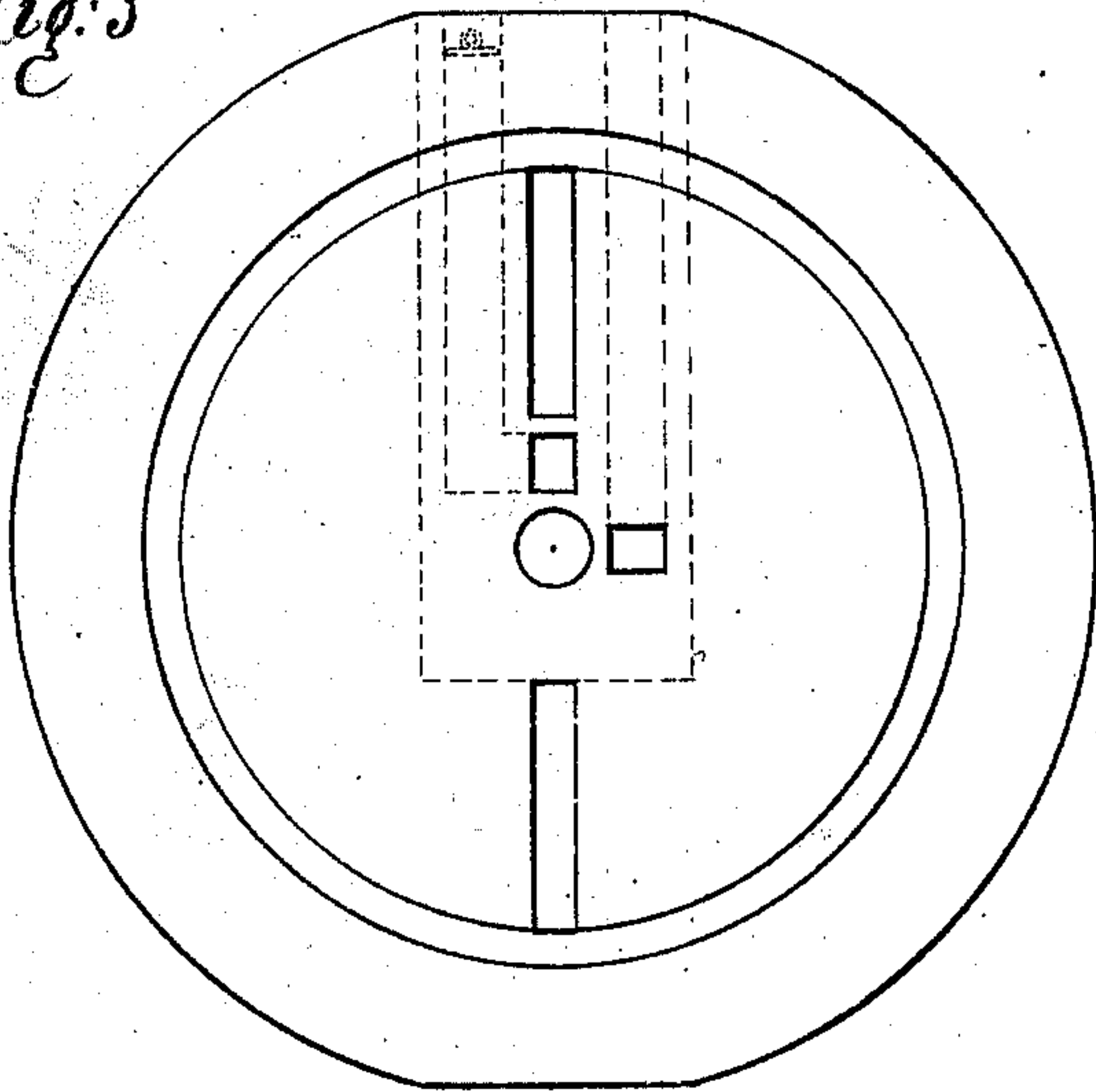


Fig. 4.

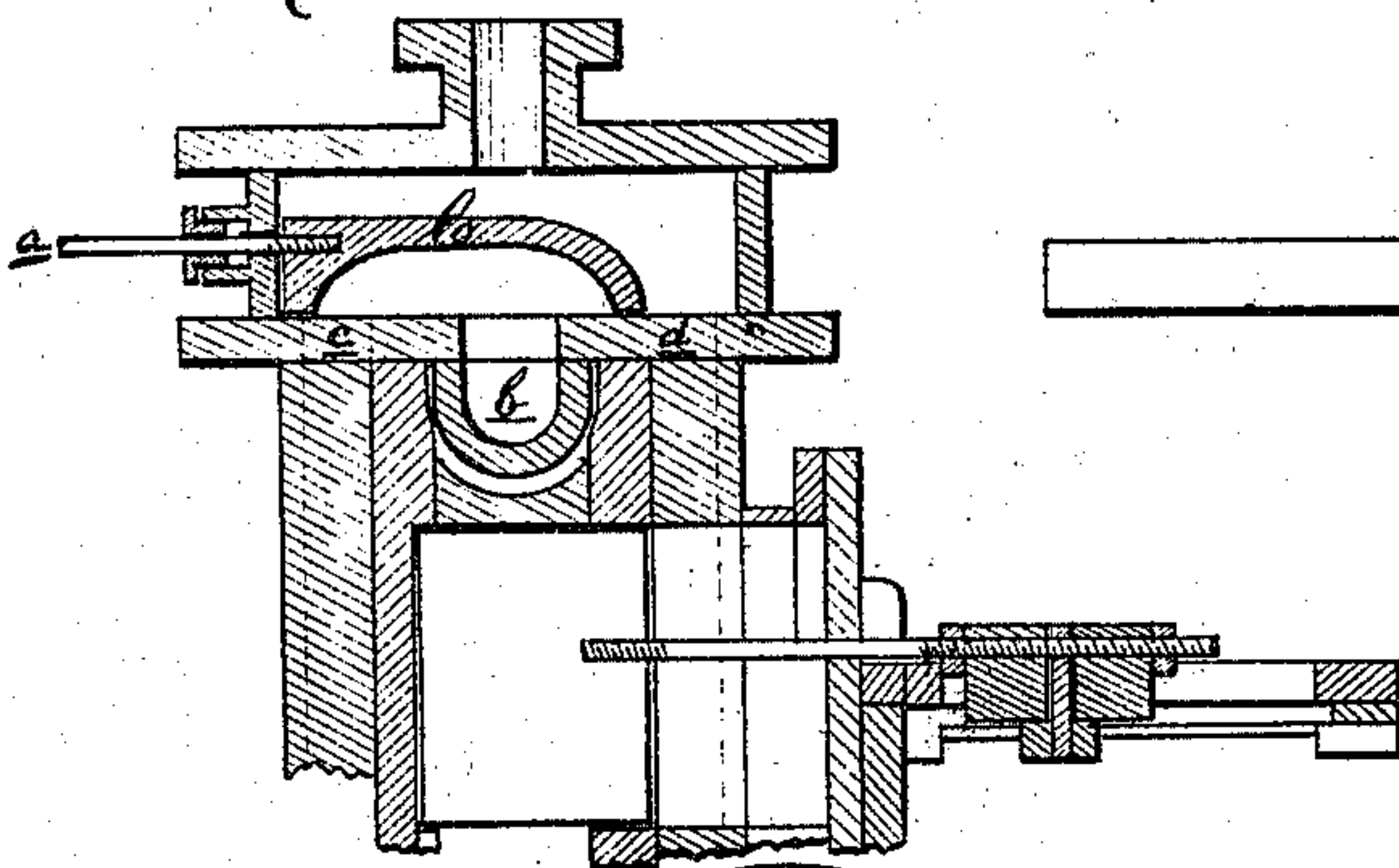


Fig. 7.

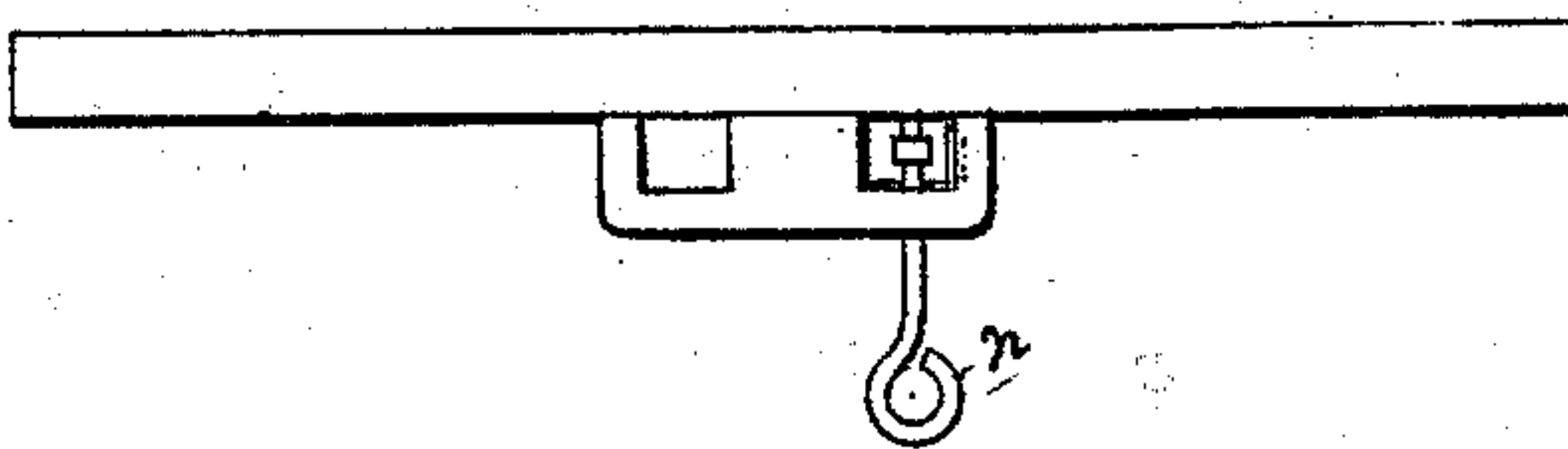


Fig. 5

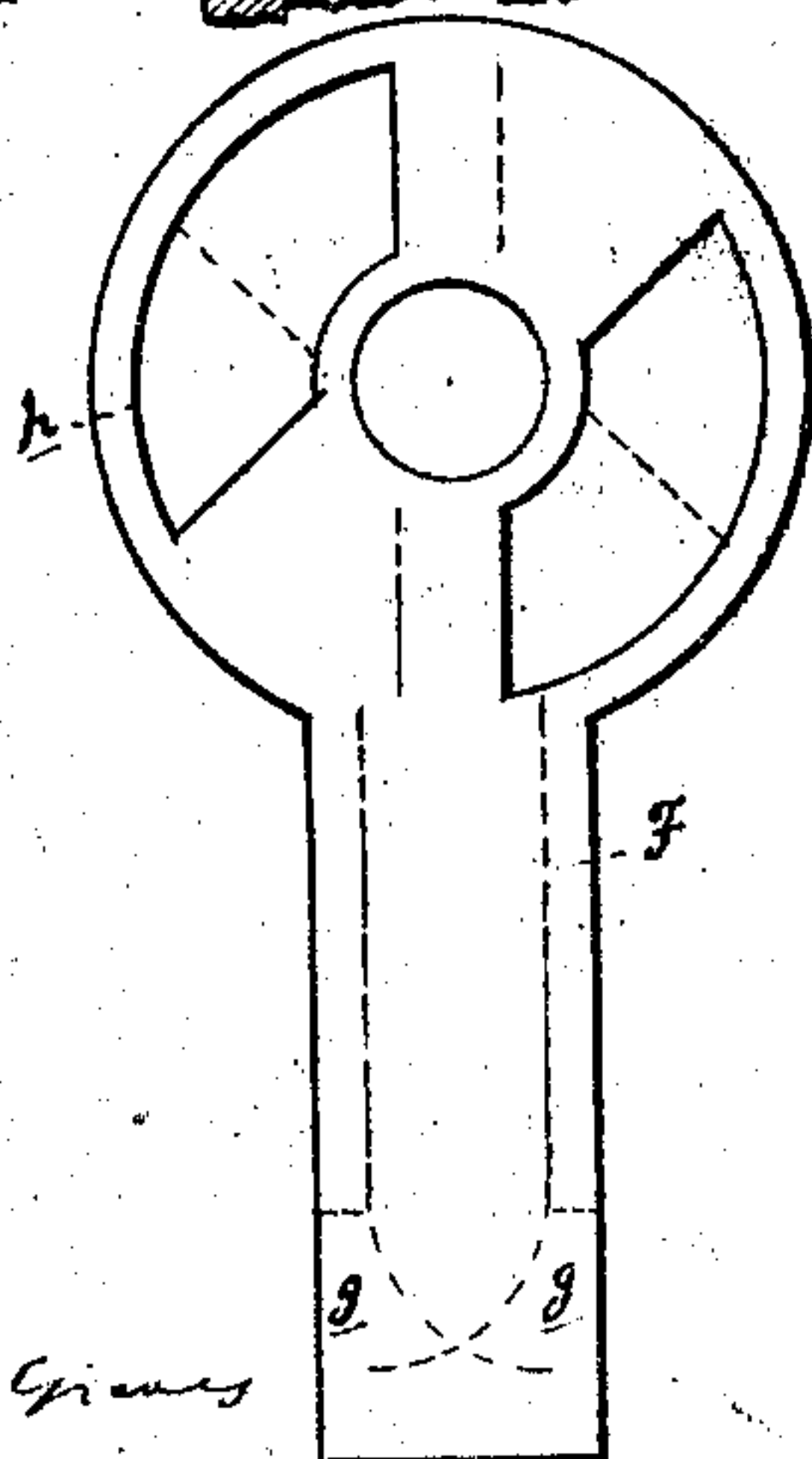
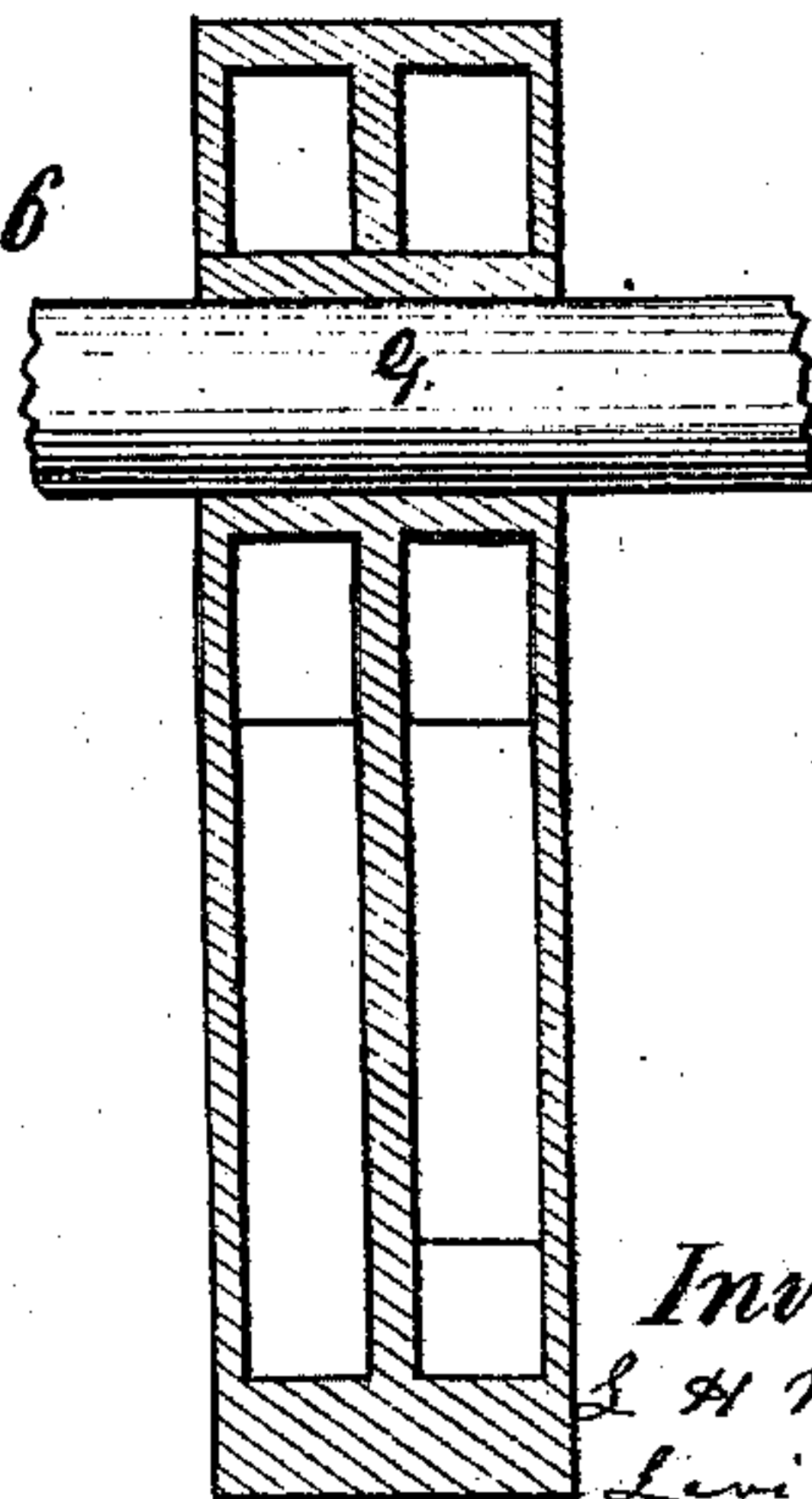


Fig. 6



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United States Patent Office.

LEWIS H. MITCHELL AND LEVI STONE, OF MOUNT VERNON, OHIO.

Letters Patent No. 94,906, dated September 14, 1869.

IMPROVEMENT IN ROTARY STEAM-ENGINES.

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

To all whom it may concern:

Be it known that we, LEWIS H. MITCHELL and LEVI STONE, of Mount Vernon, in the county of Knox, and State of Ohio, have invented a new and valuable Improvement in Rotary Steam-Engines; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1, of the drawings, is a plan view of my invention.

Figure 2 is a side view, with a portion broken off.

Figures 3, 4, 5, 6, and 7, are details.

Our invention relates to steam-engines; and

It consists mainly in the construction and novel arrangement of devices intended to secure the benefits of both the expansive and reactive power of the steam.

The letter A, of the drawings, represents a steam-chest, and

Letter B, the pipe, for steam leading thereto.

The letter C represents a sliding valve, working in said steam-chest by means of the piston *a*.

We make an opening in the centre of the bottom of the steam-chest, represented by the letter *b*.

We also make two openings in the front part of the bottom of the steam-chest, and two similar openings in the bottom thereof, at its rear, to allow the passage of steam, as hereinafter mentioned.

The openings in the front part of said bottom are shown by the letter *c*, and those in the rear by the letter *d*.

The opening *b* leads to the exhaust-pipe D.

We place a valve in one of the openings, *d*, the handle of which is shown at *f*, to aid in regulating the movements of the steam from the chamber.

The letter E represents the cylinder, and

Letter F, the arm rotating therein.

This arm is fully represented by fig. 5, the letters *g* being openings through which the steam passes from the hollow head *h*.

The letter G is the shaft of our engine, and

The letter H, the belt-drum, attached to the end thereof.

The letter K represents an eccentric, affixed to shaft G, and operating as hereinafter stated.

The letters P represent sliding bars or abutments, arranged to work in and out of the cylinder, by means of rods *i* and rollers *l*, by which they are respectively connected with the groove in the eccentric K, as shown.

By this arrangement each sliding abutment passes in and out of the cylinder at each revolution of the shaft, and is regularly drawn out of the way of the revolving arm F as it approaches, thereby always keeping the cylinder divided into two compartments, each of which covers one-half part thereof.

The letter R represents a plate, attached to the front side of the outer disk of cylinder E, through which we make openings, corresponding to the openings *c*, and adjoining the same, and through which the steam may be passed from the steam-chest into the cylinder, or from the cylinder to the chest, as may be desirable, the direction of the steam being governed by the valve *n*, placed as shown, the supply always coming through either the openings *c* or *d*, as the operator may direct, and the exhaust passing off through the others.

A reverse motion of the engine is secured by operating the valves to the openings *c* and *d*, at will.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The construction and arrangement of the revolving arm F, with reference to passages *c* and *d*, substantially as described.

2. The construction and arrangement of the valves C, *f*, and *n*, with reference to the openings *c* and *d*, substantially as specified.

In testimony that we claim the above, we have hereunto subscribed our names, in the presence of two witnesses.

LEWIS H. MITCHELL.
LEVI STONE.

Witnesses:

HENRY T. PORTER,
JAMES GILLAN.