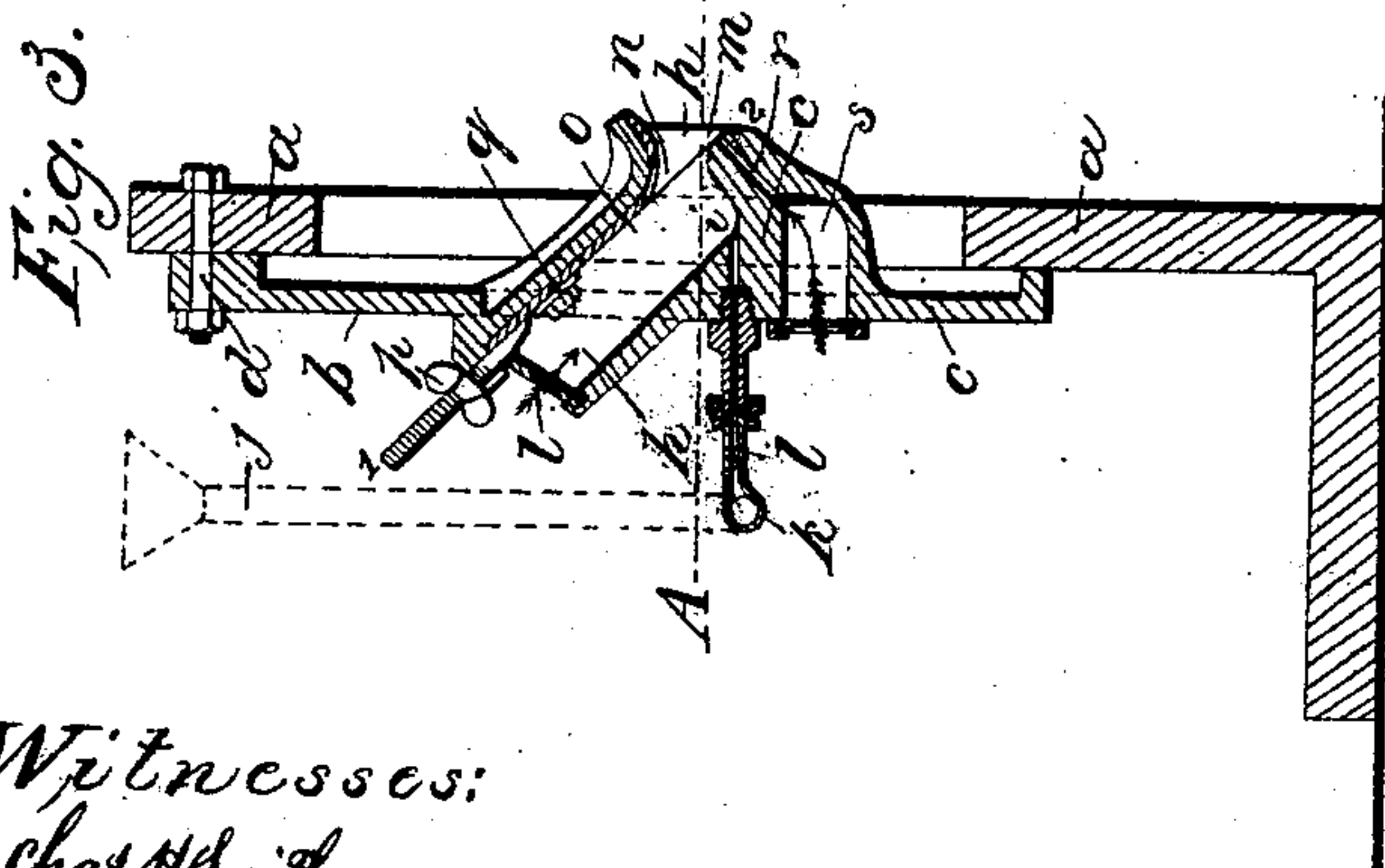
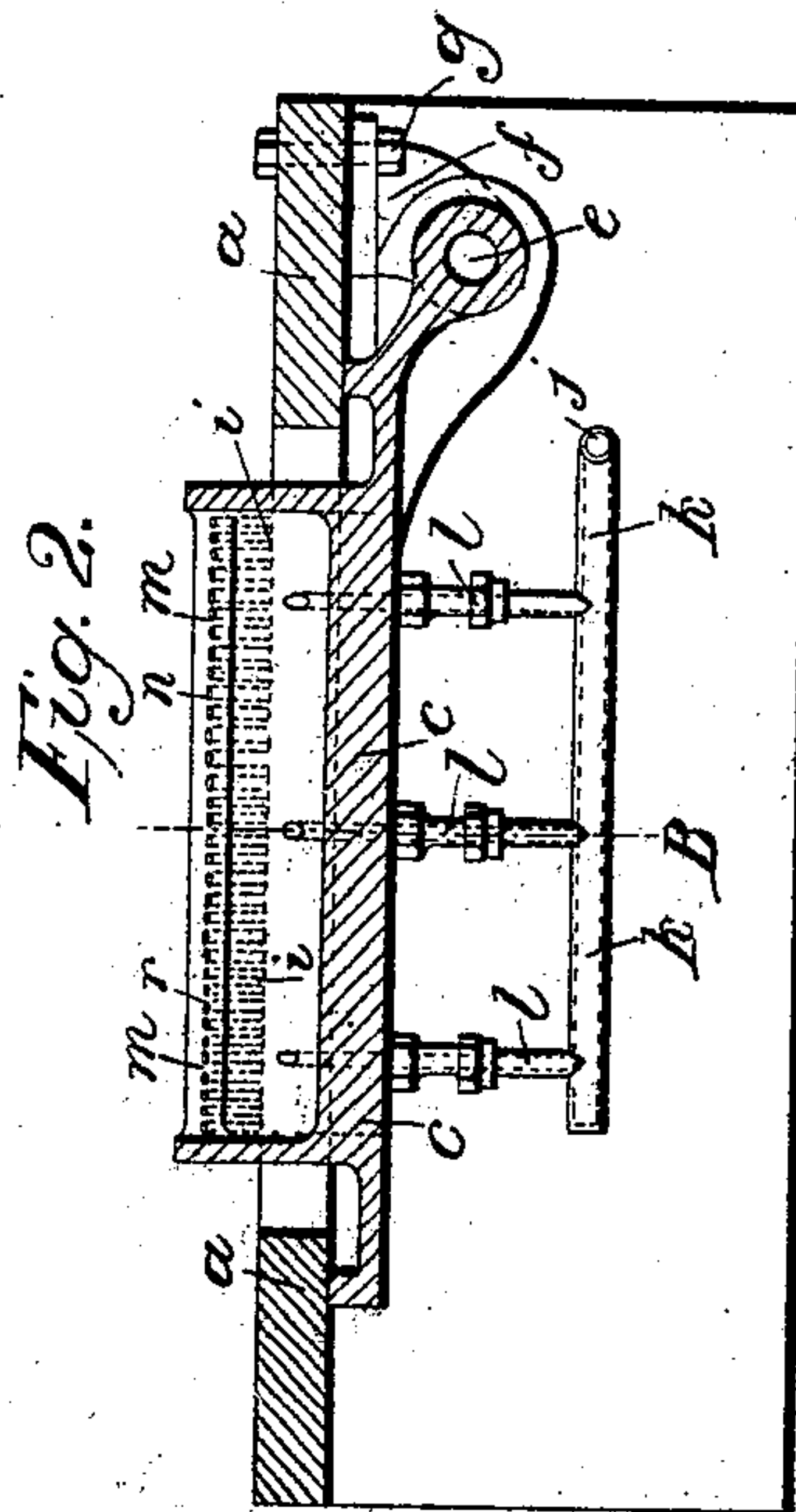
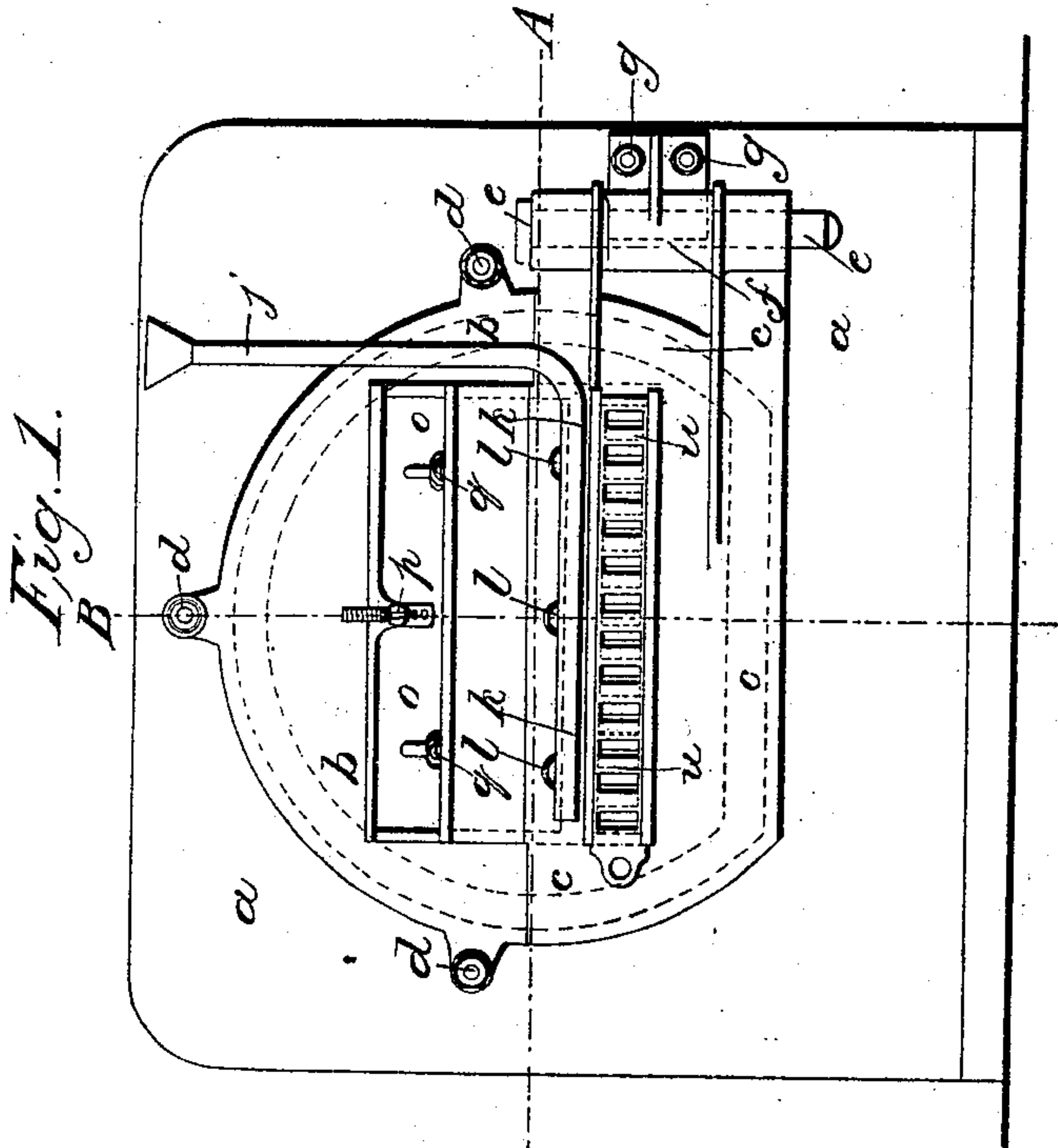


A. DE LANDSEE.
Hydrocarbon Burner.

No. 100,268.

Patented Mar. 1, 1870.



Witnesses:
Chas. H. Smith
Geo. A. Walter.

Inventor:
Adolph de Landsee.
per Lemuel H. Perrell.
Attorney.

UNITED STATES PATENT OFFICE.

A. DE LANDSÉE, OF PARIS, FRANCE.

HYDROCARBON-BURNER.

Specification forming part of Letters Patent No. 100,268, dated March 1, 1870.

To all whom it may concern:

Be it known that I, ADOLPHE DE LANDSÉE, civil engineer, of 13 rue Gaillou, Paris, France, have invented certain new and useful Improvements in Grates for Burning Liquid Fuel; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention has reference to a particular construction and form of grate, to which the liquid fuel is fed in a continuous stream, or drop by drop, from a reservoir situated in any convenient place.

My apparatus, when applied to a steam-boiler, is placed over an opening corresponding in place to the ordinary fire-door, and is composed of two main parts divided by a horizontal line, the upper one of which is permanently attached to the front of furnace or boiler, as the case may be, while the lower half or door is fixed to the same by means of a vertical hinge, enabling it to be readily opened and closed. In this lower half I form two apertures, the upper one of which is terminated by a shallow trough, into which the liquid fuel is fed, and which serves also for the passage of air, while the lower one consists in a series of small holes serving to direct a second current of air on the flame issuing from the upper aperture toward the boiler.

In the accompanying drawing, Figure 1 is a front elevation of one of my complete apparatus; Fig. 2, a sectional plan of same through A A, Figs. 1 and 3; and Fig. 3, a vertical section of same taken through B B, Figs. 1 and 2.

a is the front of furnace or boiler, to which my apparatus is attached.

b is the upper half and *c* the lower half of my said apparatus, the former of which is permanently attached to *a* by the bolts *d d d*, while the latter is fitted to and swings on the hinge-pin *e*, carried in the part *f*, which is attached to the face *a* by the bolts *g g*.

These two halves are constructed so as to unite at the line 1 2, Fig. 3, and when united

they form the inclined passage *h h*, the lower half of which contains the trough *i*.

The liquid fluid is admitted into the trough by the vertical pipe *j* and horizontal nozzles *k k k*, united to said half *c* by brass pipes and union joints *l*.

The supply of liquid to the trough is regulated so as never to overflow the lip *m*. Thus a clear space, *m n*, is always reserved for the passage of the intermingled gases and air.

In order to regulate said space I make use of the sliding plate *o*, raised or lowered by the nut *p* and set in place by the nuts *q q*. This plate *o* also serves to protect the cast-iron mouth-piece from the effects of intense heat, and is itself easily replaced when injured by the heat.

The lower half or door *c* also contains, as above stated, the apertures by means of which a second current of air is injected on the flames. These apertures consist in one or several rows of holes, *r r*, Figs. 2 and 3, leading from the common external passage *s*.

In order to regulate the amount of air admitted both above and below the flame, independently of the means indicated with respect to plate *o*, as well as to interrupt at any time approximately all passage of air to the grate, I make use of sliding doors *t u*, adapted externally at the orifices of said passages.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The particular construction of upper half *b* of said grate, with its sliding and regulating plate *o* and accessory parts.

2. The particular construction of lower half or door *c*, with its trough *i*, supply-pipe *j k*, and accessory parts, all attached to said door *c*.

3. The method of feeding air by two separate currents, one above and the other below the flame of burning liquid, substantially as specified.

A. DE LANDSÉE.

Witnesses:

F. OLCOTT,
J. U. ZUST.