

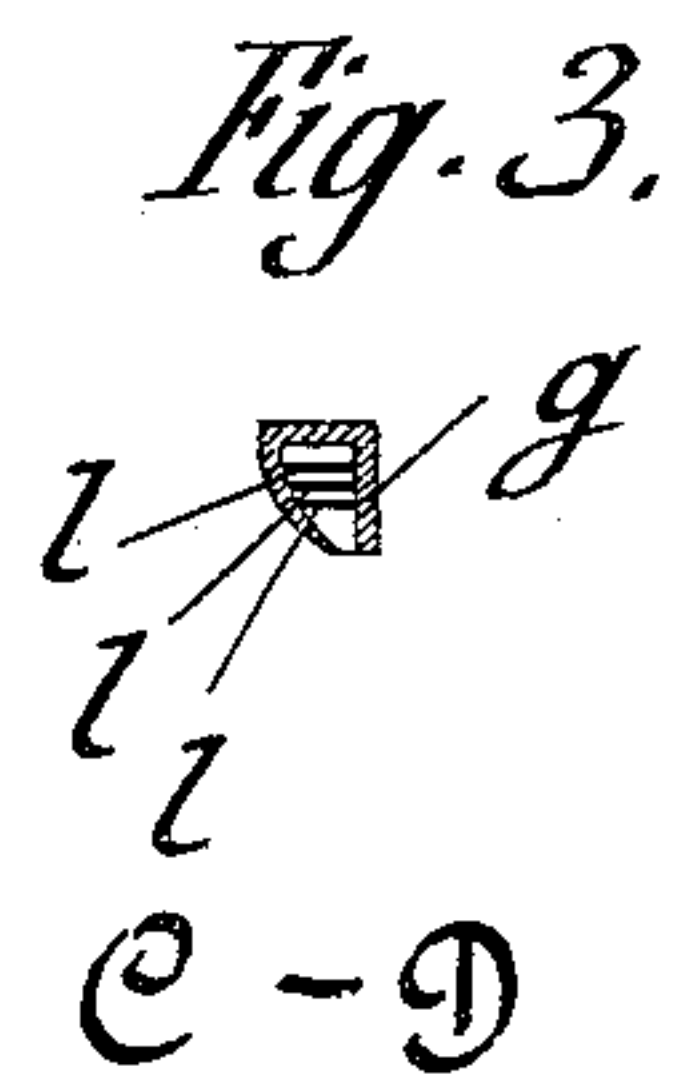
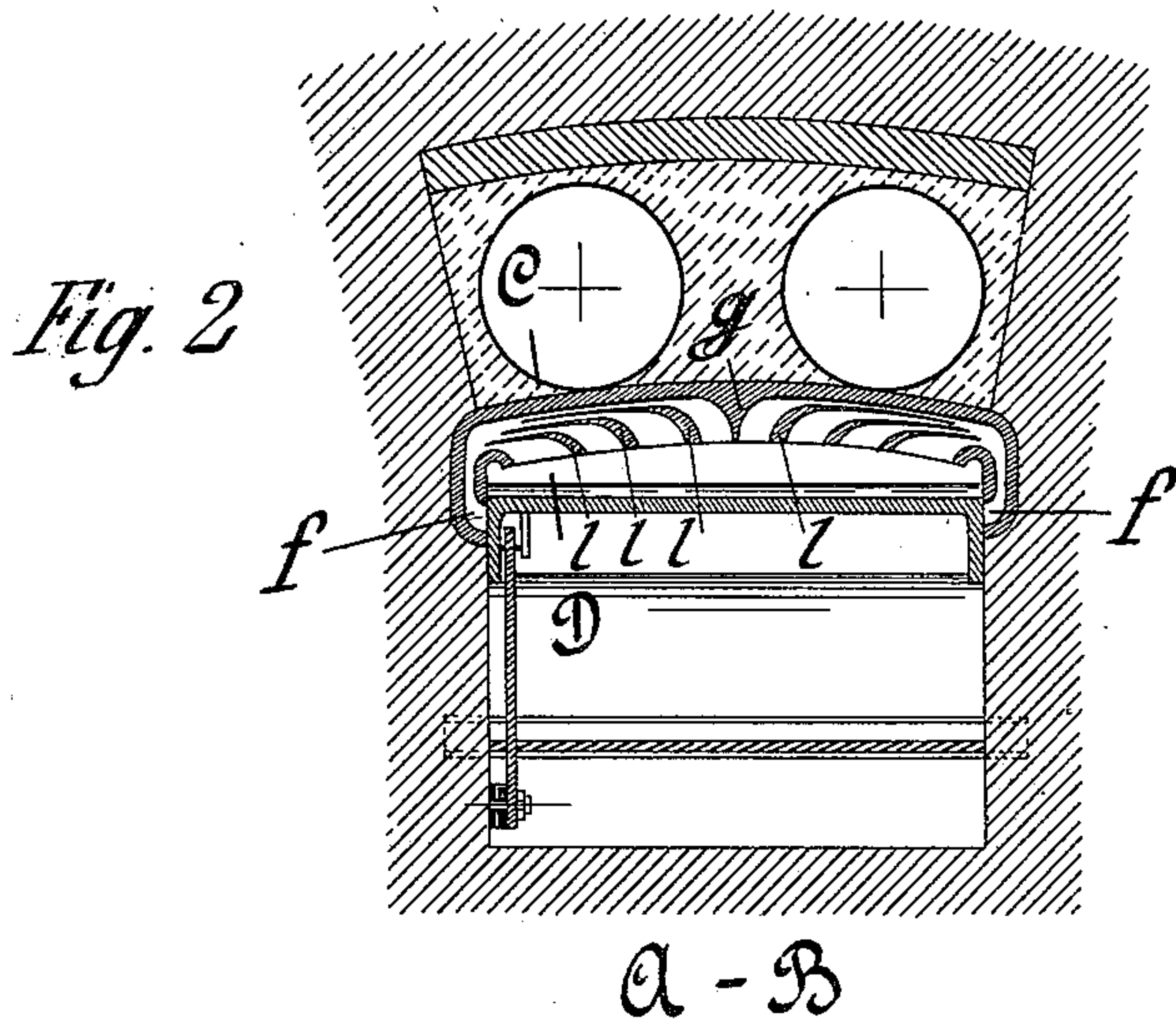
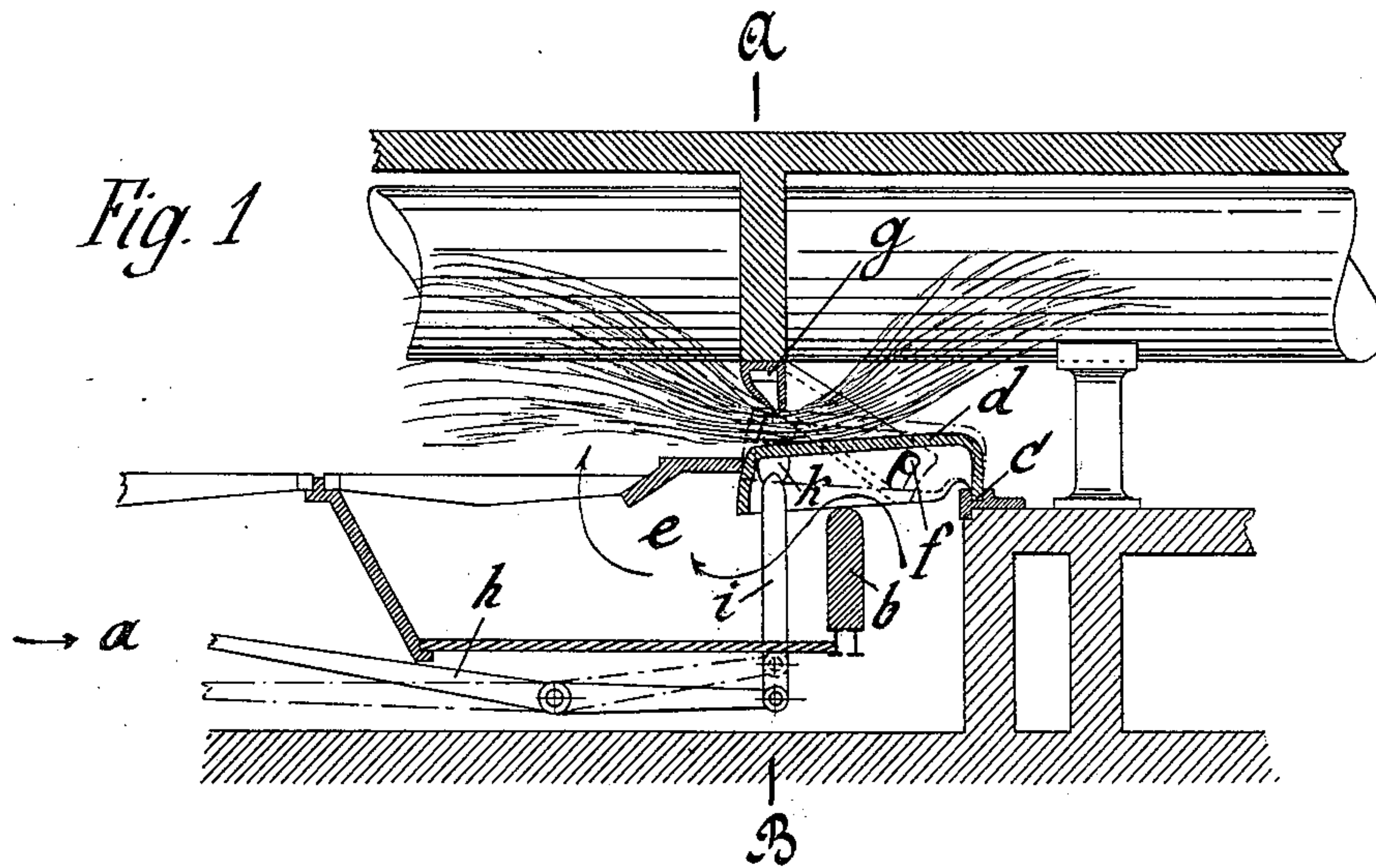
No. 659,312.

Patented Oct. 9, 1900.

P. MATHIAS.
FEEDING AIR DEVICE FOR FURNACES.

(Application filed Apr. 30, 1900.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

PAUL MATHIAS, OF LEBERAU, GERMANY.

FEEDING AIR DEVICE FOR FURNACES.

SPECIFICATION forming part of Letters Patent No. 659,312, dated October 9, 1900.

Application filed April 30, 1900. Serial No. 14,862. (No model.)

To all whom it may concern:

Be it known that I, PAUL MATHIAS, a citizen of the German Empire, residing at Leberau, in the Province of Alsace, Germany, have
5 invented a new and useful Feeding Air Device for Furnaces, of which the following is a specification.

My invention concerns the better utilization of fuel by a complete combustion of the
10 unconsumed elements of the fire-gases coming from the fire-grate.

According to this invention the fire-gases leaving the grate will be held back as required by the hollow bridge-wall and mixed with
15 superheated air at the place where confined.

Figure 1 is a view in longitudinal section of the apparatus. Fig. 2 is a sectional view on the line A B of Fig. 1. Fig. 3 is a detail view on the line C D of Fig. 2.

20 A part of the air entering at *a* is drawn past the tongue *b* and the detached cast-iron concave hollow bridge-wall *d*, standing at *c*. The greater portion reaches *e* under the rear part of the grate. A smaller portion rising
25 through flues *f* of the hollow bridge-wall in the sides of the furnace streams into a hollow arch *g* for distributing heated air. This hollow arch further heats the already greatly heated air and mixes it with the compressed
30 fire-gases, whereby their unconsumed elements are entirely consumed behind the hollow bridge-wall.

By an arrangement of levers consisting of a double-armed lever *h* and the prop-lever *i*,
35 on which rests the hollow bridge-wall *d*, with

its inside knobs *k* in front, the hollow bridge-wall can be lifted, and the smoke-gases can by contracting the opening between the bridge-wall and the arch be retained at the lower part of their U-shaped outlet during their
40 proper intermixing with the superheated air led thither.

Of particular importance is the arrangement of the hollow arch *g* for distributing heated air. In its hollow interior, which is
45 solidly narrowed downward and open for the exit of the air, partitions *l l l* are constructed. These have the object to make as complete as possible the distribution of the air and the mixing of the fire-gases with this previously-
50 heated air led into the distributing hollow arch above the movable bridge-wall.

What I claim, and desire to secure by Letters Patent of the United States, is—

The combination with a furnace, of a hollow bridge-wall, a hollow arch *g* located above
55 the bridge-wall, flues *f* connecting the arch and the bridge-wall, partitions *l* in the arch *g* for distributing the heated air, and means for raising and lowering the bridge-wall, in
60 order to contract and enlarge the opening between the bridge-wall and the arch.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PAUL MATHIAS.

Witnesses:

AUGUST THORTE,
ERNST CHAMLEY.