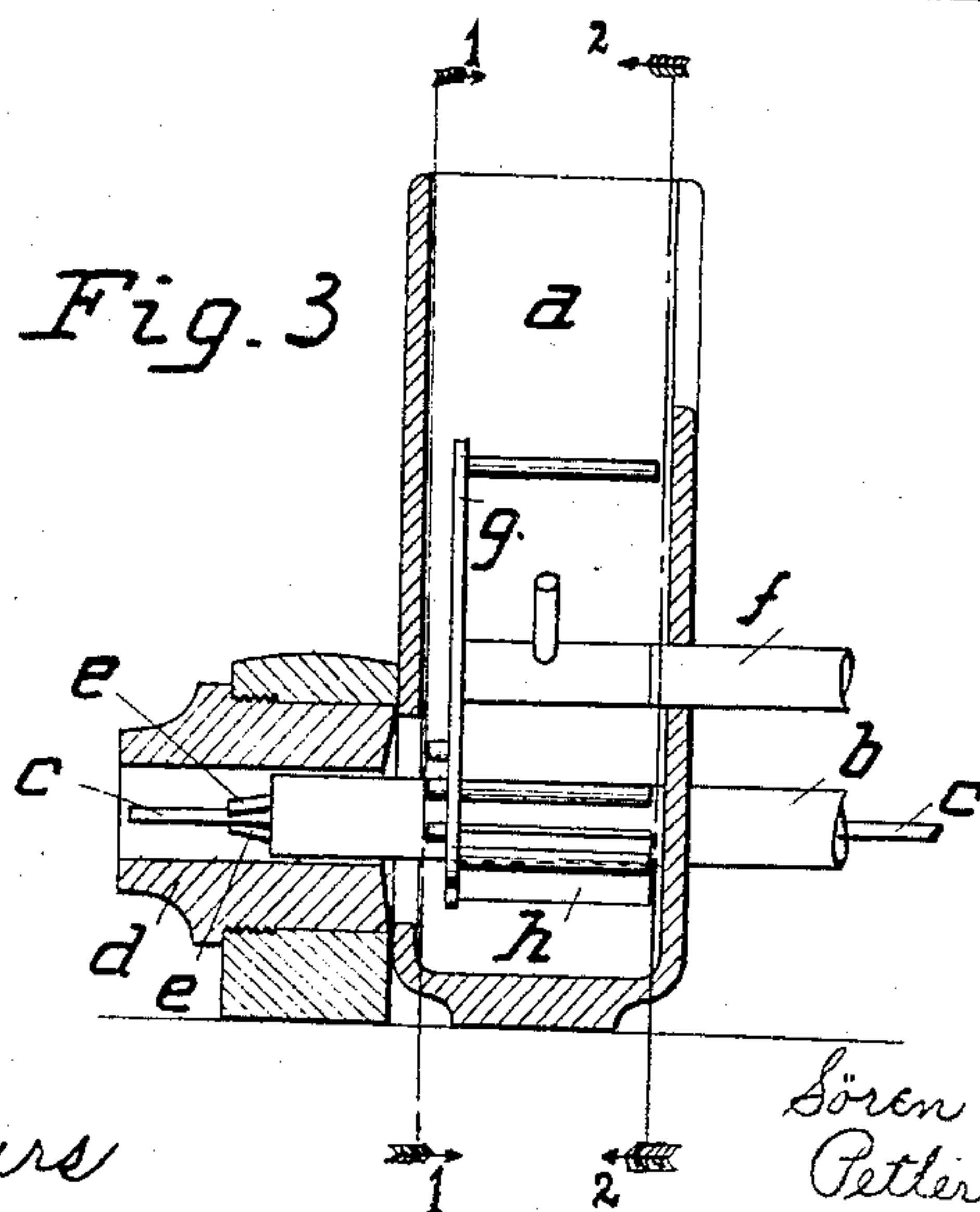
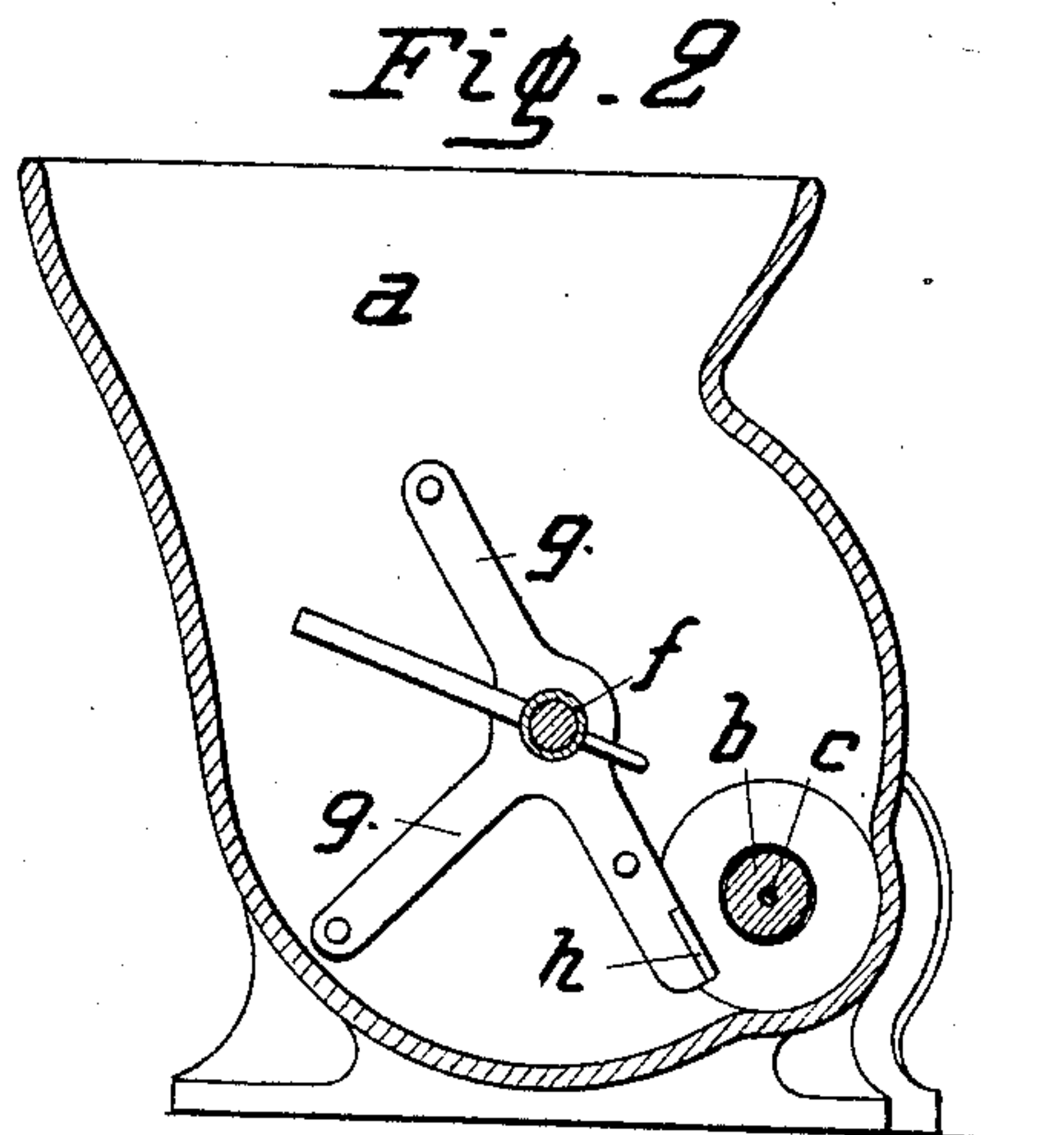
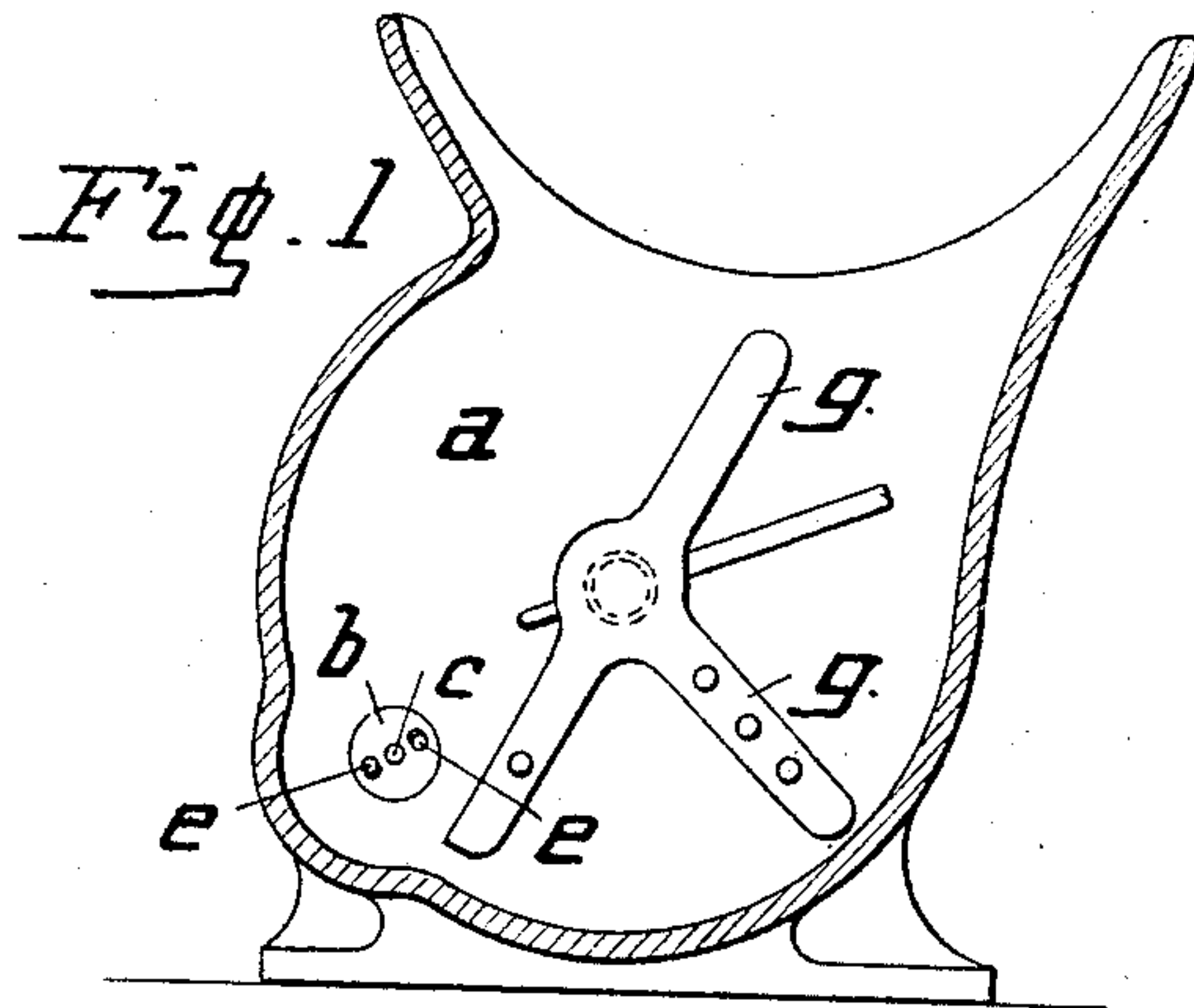


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PATENTED SEPT. 24, 1907.

P. ERIKSSON & S. P. NIELSEN.
CORE PRESSING APPARATUS.

APPLICATION FILED MAY 14, 1906.



Witnesses:

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UNITED STATES PATENT OFFICE.

PETTER ERIKSSON, OF LUND, AND SÖREN PETER NIELSEN, OF VESTERAS, SWEDEN.

CORE-PRESSING APPARATUS.

No. 866,852.

Specification of Letters Patent.

Patented Sept. 24, 1907.

Application filed May 14, 1906. Serial No. 316,788.

To all whom it may concern:

Be it known that we, PETTER ERIKSSON, residing at Lund, and SÖREN PETER NIELSEN, residing at Vesteras, both in Sweden, and subjects of the King of Sweden, have invented certain new and useful Improvements in So-Called Core-Pressing Apparatuses for Producing Cores for Casting Purposes; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

In a number of apparatus hitherto used for making cores for casting purposes the core-sand is packed by hand into a core-box, whereafter the core is either pushed out by a piston or else the box is made in parts and divided lengthwise into two halves, so that it can be opened and the core taken out. Neither of these methods give a perfect core, the former case because the core on being forced out has a part of the core compacted too hard, and in the latter case because it does not leave the core perfectly even on the surface. There are also apparatus which automatically, that is, by means of an endless screw, pack the core-material and continuously deliver the complete cores, but these apparatus are very complicated, can only operate with a core-material consisting of certain compounds which greatly increase the cost of the manufacturing and require besides a great consumption of power and are exposed to much wear.

The present invention enables the manufacture of continuous cores of great accuracy and of uniform compactness throughout at a relatively great speed with small expenditure of power.

The invention is illustrated on the accompanying drawings in which like parts are similarly designated.

Figures 1 and 2 show cross-sections of the device taken respectively on the lines 1—1 and 2—2 of Fig. 3, and Fig. 3 a longitudinal section partly in elevation of the machine.

The core-sand, suitably moistened, is fed to the feed-box *a* from a reservoir not shown in the drawings. In the lower part of the feed-box the plunger or core forming-device proper is mounted. This latter consists of a pressure-piston or plunger *b* passing through two oppositely situated openings in the side walls of the feeding-box and receives an axial reciprocation. The plunger is, in order to form vent-holes through the cores, provided with a central hole, into which is put a pin or rod *c* projecting somewhat beyond the compacting end or active face of the plunger. On the outside of the feed-

box and in alinement with the plunger is placed a core-mold *d*, into which the core-sand, at each forward movement of the plunger, is automatically forced and packed, the finished core being at the same time forced out in the shape of a cylinder through the outer end of the core mold, so that it will be projected in front thereof and rest on a plate placed adjacent the exit end of the mold, said plate not being shown.

In order that the sand may not be unevenly packed, which would be the case in using a plane plunger end, this latter is provided with two or more obliquely projecting pins *e*. The object of these is that when the plunger is drawn back, from the core mold to tear up or break down the inner end of the core in the mold, so that the plunger when pressing another charge of sand into the mold at the next stroke will not pack the same against a hard, smooth or plane surface. Unless this is done the finished core would not have sufficient cohesion but would at the least touch fall in pieces with plane fractures between the successive charges of sand. In order to make the core perfectly uniform, the sand fed to the plunger must be uniform and the feeding even so that the plunger at each stroke forces the same quantity of sand into the mold. The feeding of the sand is therefore effected by a suitable feeding device, preferably of the type, shown in Fig. 3. Above plunger *b* and somewhat to the side thereof there is mounted a shaft *f* parallel to the plunger, said shaft *f* being provided with a series of arms and rods *g*, which by means of the shaft receive a swinging motion and thereby mix the sand on its way downward while a plate or the like *h*, mounted on one of the arms *g*, at each reciprocation of the plunger, holds a sufficient quantity of sand to the plunger end. Plunger *b* and shaft *f* suitably receive their motion from any suitable gearing device driven by a rotating shaft that is actuated by hand or in any other suitable way.

By means of the herein described device it is obvious that not only cylindrical cores of any diameter whatever may be produced but also cores of any other cross-section whatever.

For different dimensions the core mold and the plunger need only be exchanged, the cross-section of the latter always being somewhat smaller than that of the core. The vent hole will obviously always be exactly in the center of the core.

We claim:—

1. In a core forming machine the combination with a receptacle for core material having openings therethrough, a core mold adjacent one of the openings, a reciprocable plunger in the receptacle to force material into the mold, in combination with means to break up the end of the

core adjacent the plunger as the plunger is withdrawn from the mold.

2. In a machine such as described, the combination with the core forming plunger and a core mold, of means
5 on the end of the plunger to break up the end of the core adjacent the plunger as the latter is withdrawn from the mold.

3. In a machine such as described, the combination with the core forming plunger and a core mold of in-
10 clined pins on the end of the plunger to break up the end of the core as the plunger is withdrawn from the mold.

In testimony, that we claim the foregoing as our invention, we have signed our names in presence of two subscribing witnesses.

PETTER ERIKSSON.

SÖREN PETER NIELSEN.

Witnesses to the signature of Mr. Eriksson:

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E. A. LINDEGREN.

Witnesses to the signature of Mr. Nielsen:

CHRISTIAN NILSSON,

P. F. BLOMKVIST.