P. GREDT.

INDUCTION FURNACE.

APPLICATION FILED AUG. 31, 1906.

950,911.

Patented Mar. 1, 1910.

2 SHEETS—SHEET 1.

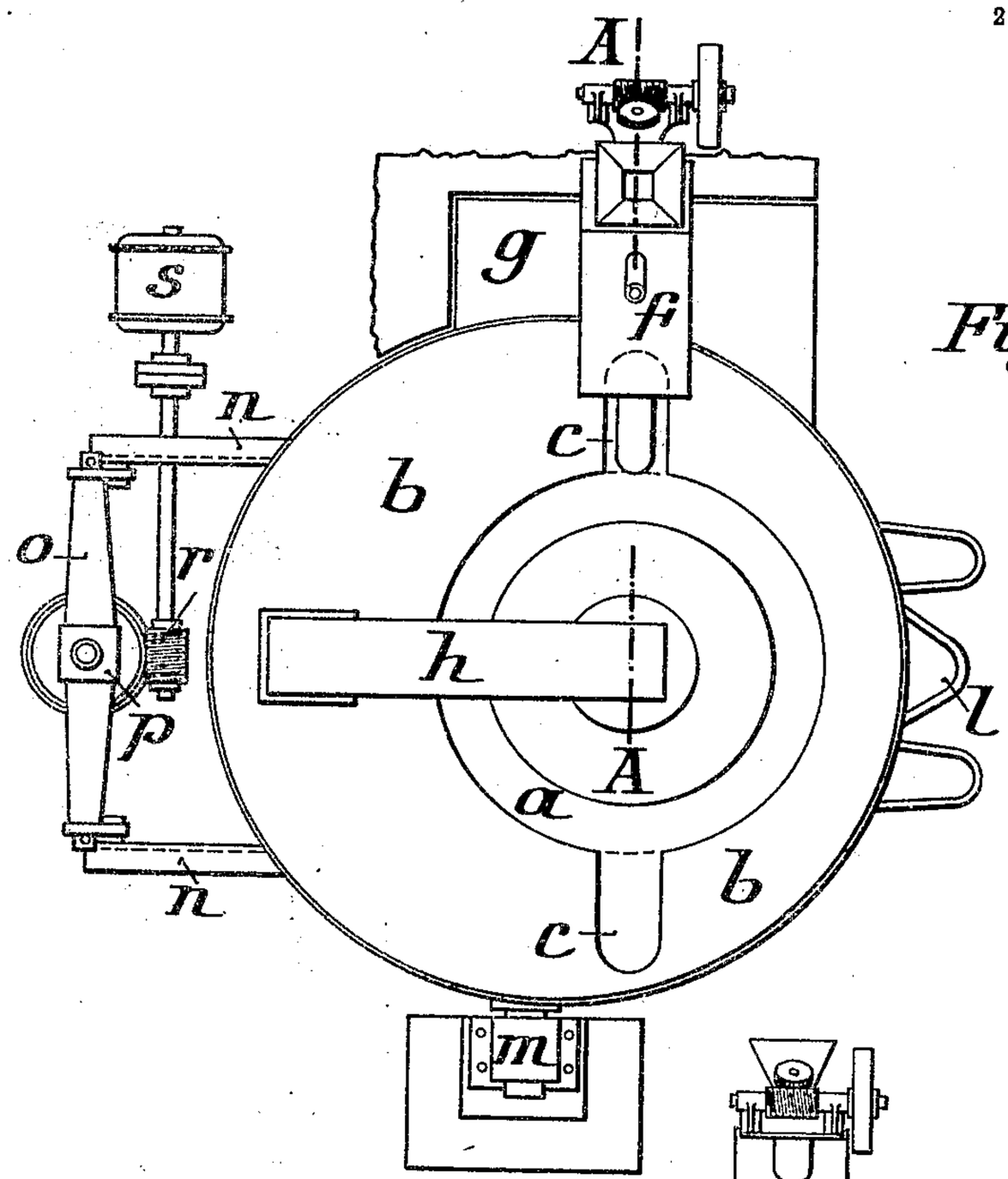
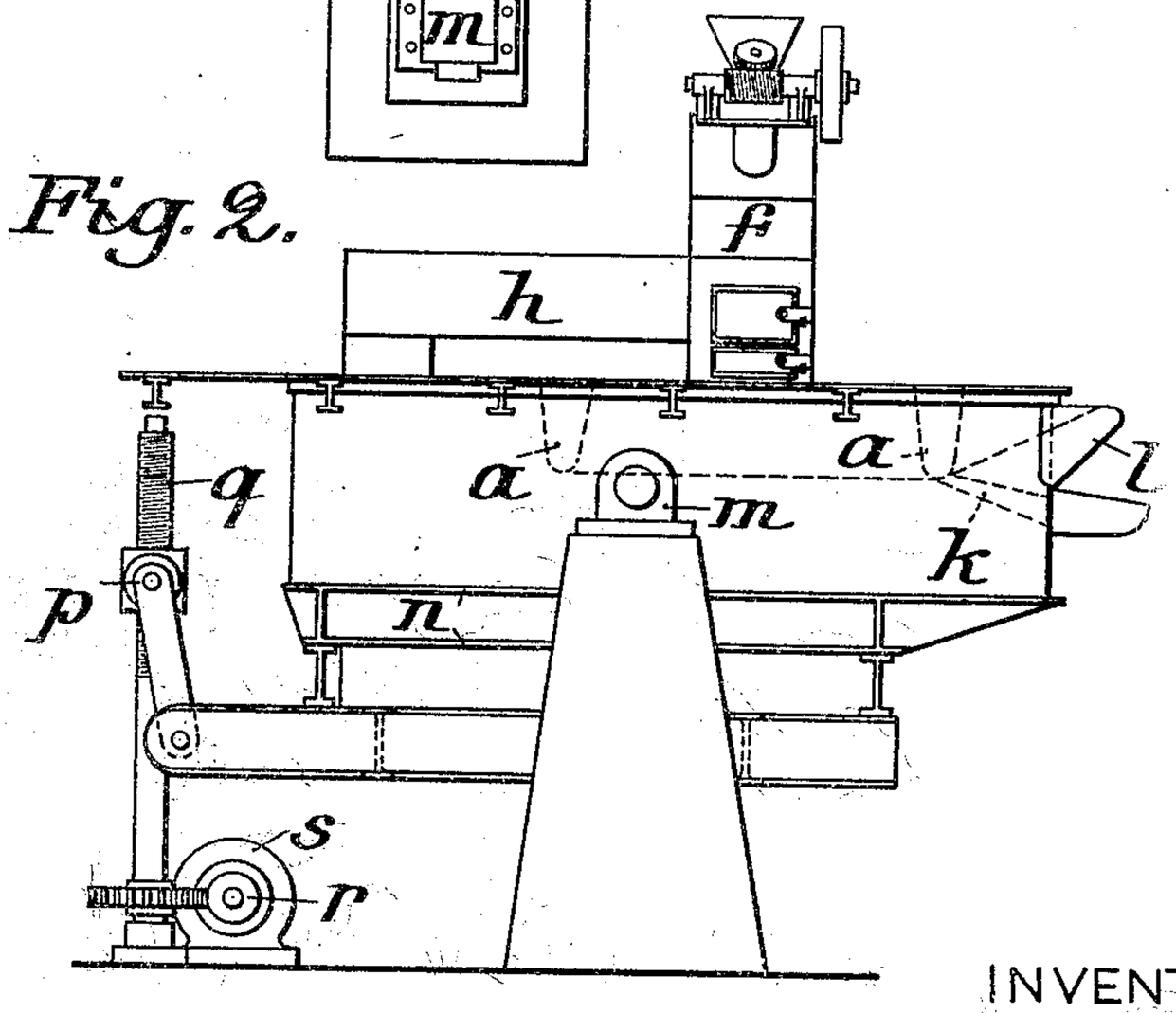


Fig. 1.

Fig. 2.



WITNESSES

Jean Kerr

Percy Jean Clarke

INVENTOR

Paul Gredt

P. GREDT.

INDUCTION FURNACE.

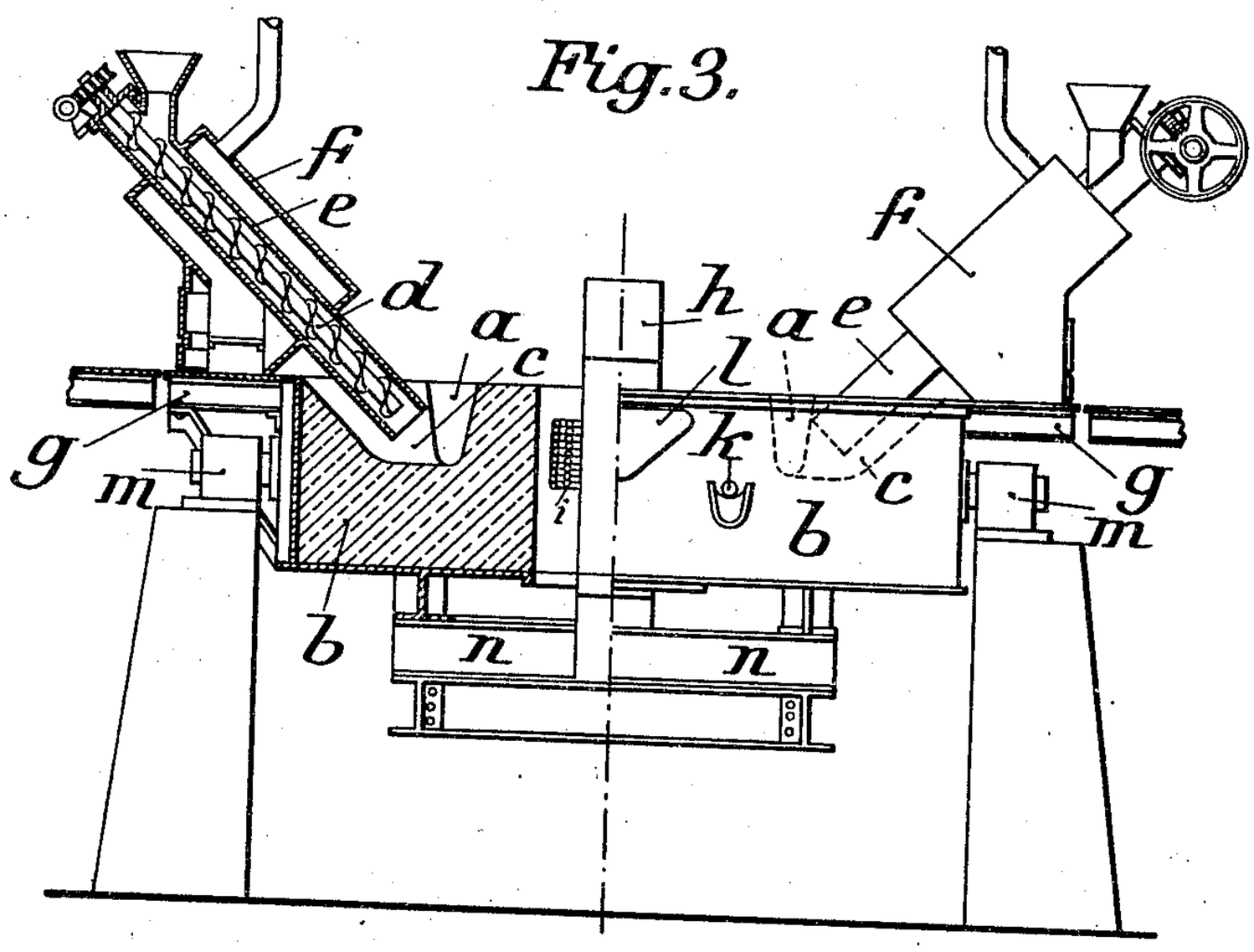
APPLICATION FILED AUG. 31, 1906.

950,911

Patented Mar. 1, 1910.

2 SHEETS—SHEET 2.

Fig. 3.



WITNESSES

INVENTOR

Paul Gredt

UNITED STATES PATENT OFFICE.

PAUL GREDT, OF LUXEMBURG, LUXEMBURG.

INDUCTION-FURNACE.

950,911. Specification of Letters Patent. Patented Mar. 1, 1910.

Application filed August 31, 1906. Serial No. 332,852.

To all whom it may concern:

Be it known that I, PAUL GREDT, a subject of the Grand Duchy of Luxemburg, residing at Boulevard de la Foire, Luxemburg, in the Grand Duchy of Luxemburg, engineer, have invented certain new and useful Improvements in Induction-Furnaces, of which the following is a specification.

My invention relates to electric induction furnaces for treating metals or ores or mixtures of both.

The object of the invention is to supply such furnaces with suitable means for introducing the ores or other additions into the molten bath of metal contained in the furnace, for economically distributing the said additions and for permitting of running off the metal or the slags.

A furnace according to this invention is represented in the annexed drawings, of which—

Figure 1 is a plan view of the furnace, one of the two ore feeding devices being omitted. Fig. 2 is a side view of said furnace, Fig. 3 is a front view and partly a vertical cross-section through the furnace along the line A A of Fig. 1.

The same reference letters are used for similar parts throughout all the figures.

a is the annular groove or channel forming the hearth of the furnace which is cut out of the brick-work *b* of the furnace.

c c are the sumps into which the ores or other additions have to be introduced.

The feeding device is shown in Fig. 3, in elevation on the right side and in vertical cross-section on the left side. It consists of a conveyer worm *d* revolving in a tube *e*, surrounded by a furnace or heating drum *f*, so as to previously heat the ores or other additions to be introduced into the bath. Platforms *g* are located at both sides of the furnace and firmly connected to the same to support the feeding device.

h is the iron core of the transformer and *i* is the primary coil connected to the poles of the electric generator.

Tapping holes *k k* are provided in the brick-work ending at different levels of the channel or groove *a* so as to allow of the total or partial discharging of the molten bath or the molten slag. Furthermore a nozzle *l* is provided by which if desired either the slag or the molten bath may be discharged. For this purpose means are provided for inclining or tilting the furnace. In the preferred construction which is represented in the drawings, the furnace is supported by bearings *m* and a skeleton-frame *n n* is secured to the furnace and linked to a cross-bar *o* engaging by a nut *p*, a male screw *q* which is turned by the worm *r* secured to the axis of the electromotor *s*.

Having now particularly described and ascertained the nature of my said invention and the best means I know of carrying the same into practical effect, I say that what I claim is:—

1. In electric oscillatory induction furnaces, the combination of an annular hearth, sumps or compartments for introducing the necessary additions, and means for introducing the said additions under the surface of the bath contained in the furnace.

2. In electric oscillatory induction furnaces the combination of an annular hearth, compartments for introducing the necessary additions, chutes or channels communicating with the furnace and extending nearly to the bottom of the melting channel, and conveying rotary worms contained in the said chutes or channels.

3. In electric oscillatory induction furnaces, the combination of an annular hearth, chutes or channels attached thereto, rotary worms for introducing the necessary additions into the bath contained in the said chutes, and a heating jacket surrounding the said chutes or channels.

4. In electric oscillatory induction furnaces, the combination of an annular hearth, sumps or compartments for introducing the necessary additions, means for introducing the said additions under the surface of the bath contained in the furnace, and tapping holes placed at different levels for drawing off either the slag or the molten bath.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses this 31st day of July 1906.

PAUL GREDT.

Witnesses:

JEAN CHARLES PRINTZ,

JEAN PIERRE BRUENE.