

(No Model.)

S. SIEMANG.
METHOD OF CASTING ARMOR PLATES.

No. 450,776.

Patented Apr. 21, 1891.

Fig. I

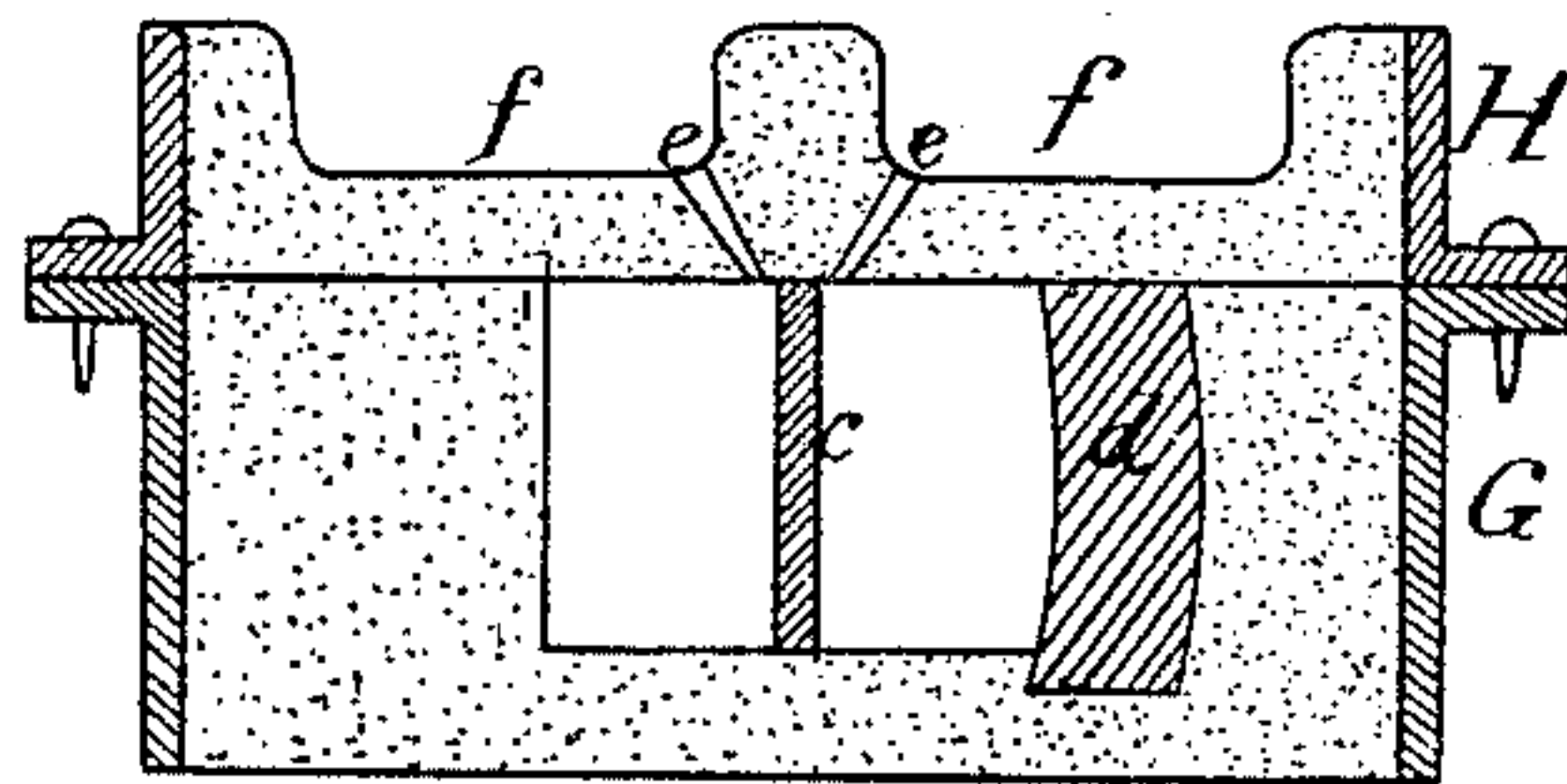


Fig. II

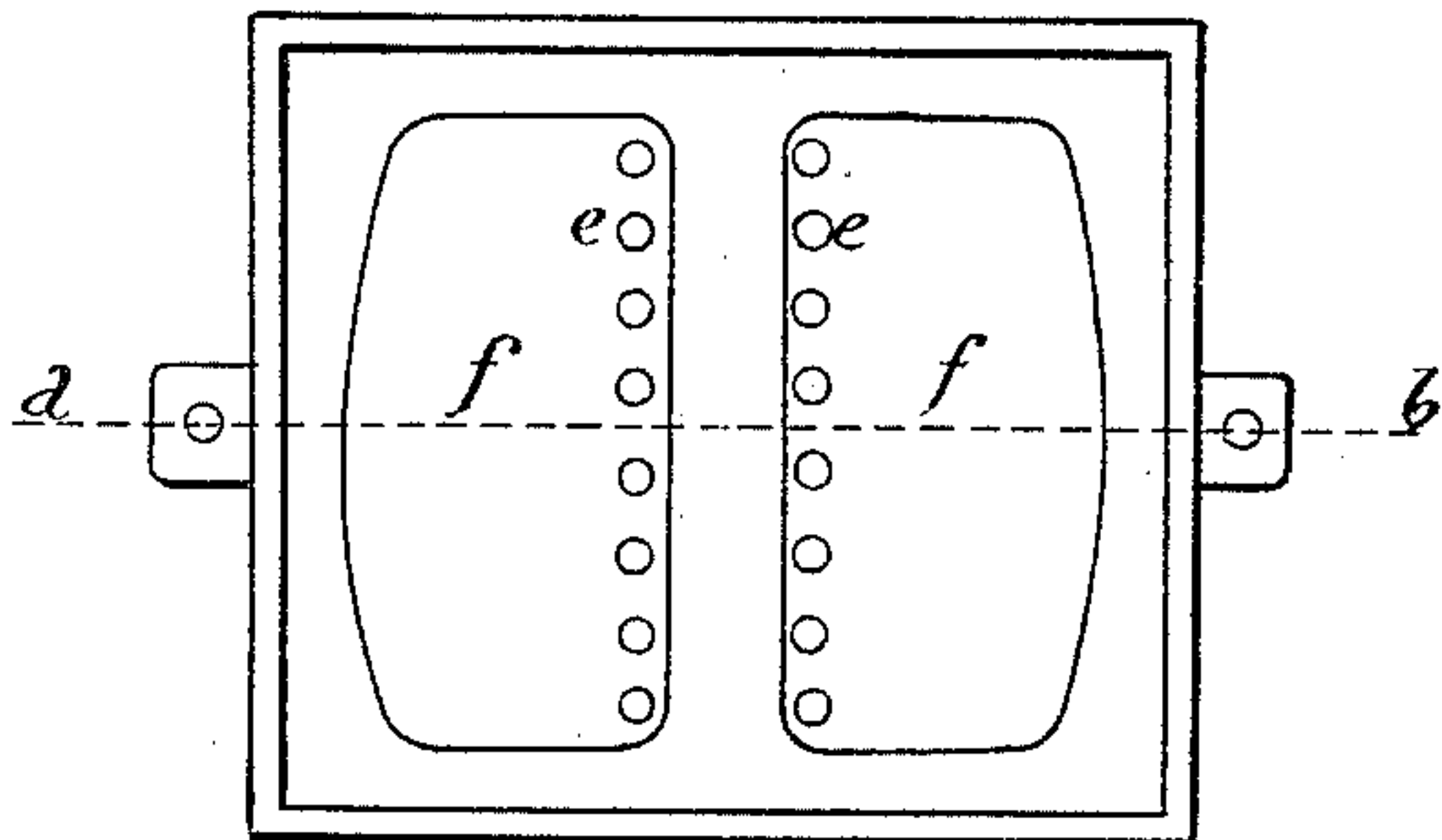
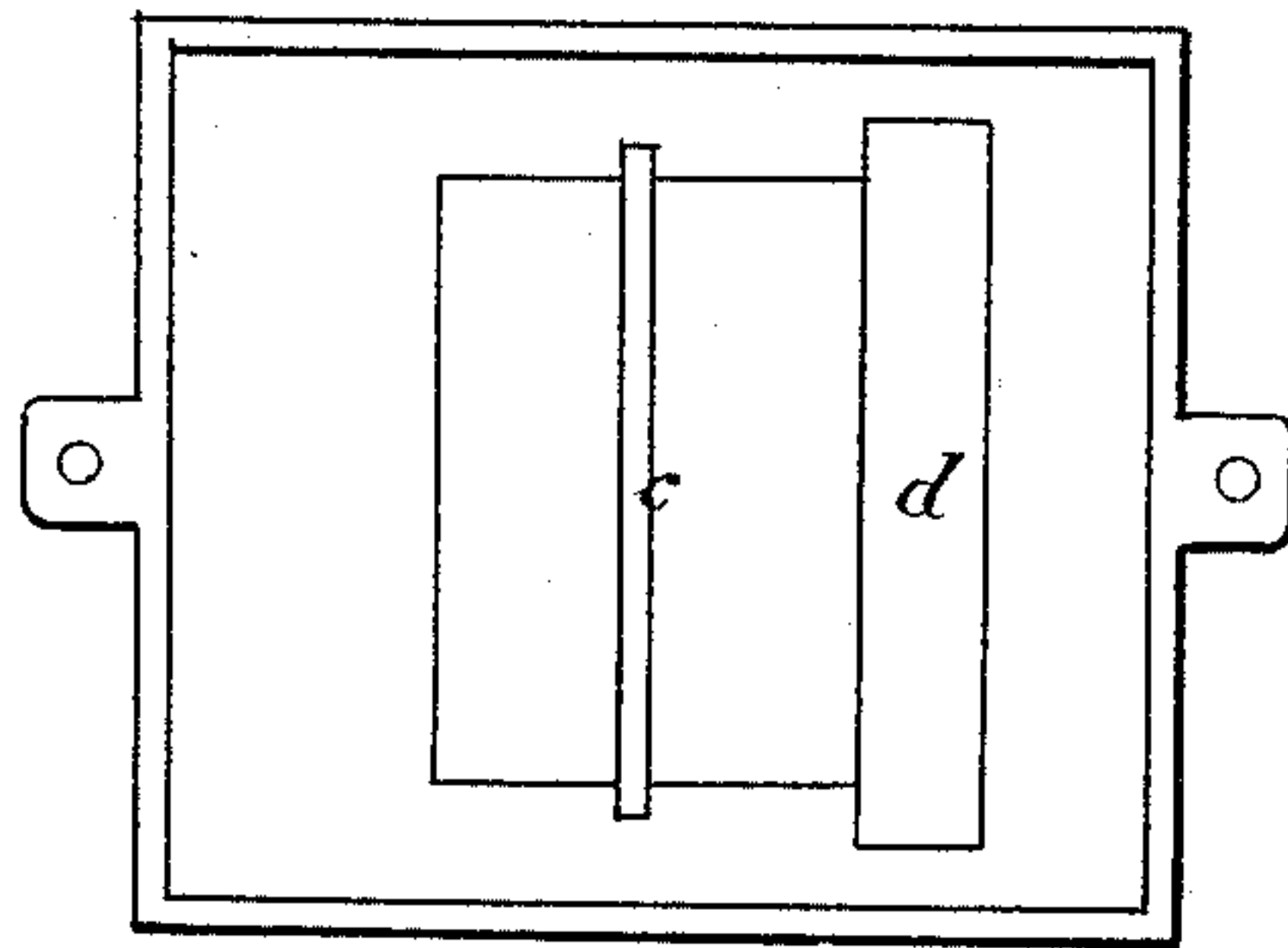


Fig. III



Witnesses.

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STEFAN SIEMANG, OF VIENNA, AUSTRIA-HUNGARY.

METHOD OF CASTING ARMOR-PLATES.

SPECIFICATION forming part of Letters Patent No. 450,776, dated April 21, 1891.

Application filed April 27, 1887. Serial No. 236,303. (No model.)

To all whom it may concern:

Be it known that I, STEFAN SIEMANG, of the city of Vienna, in the Austro-Hungarian Empire, have invented certain new and useful Improvements in the Process for the Manufacture of Compound Chilled Castings for Armor-Plates, of which I declare the following to be a true and correct specification.

My invention relates to a process for the manufacture of compound chilled castings, which consists, substantially, of welded cast-iron and wrought-iron and steel.

In the accompanying drawings, Figure 1 is a cross-section of the mold in closed position on the line *a b* in Fig. 2. Fig. 2 is a top view of the cover or lid of the mold; and Fig. 3 represents a top view of the mold, the lid or cover being removed.

In order to carry my said invention into effect, those parts of the mold into which a coating of chilled cast-iron is to be cast consists, essentially, of a piece of good conducting material *d*, preferably made of iron or steel, and if it is desired that the other parts of the casting are to remain gray the remaining parts of my said mold must consist of clay, loam, sand, or other fire-proof material which is a bad conductor of heat. The upper part *H* of the mold (shown in Fig. 1) is provided with suitable funnels *f f*, in which funnels ordinary ports or openings *e e e* are made; but it will be evident that this upper part *H* is unnecessary for open castings.

The piece of iron or steel to be welded is represented in Figs. 1 and 3 in the form or shape of a plate *c*, and in order to prepare the same I proceed in the following manner: The said iron or steel plate *c* is well cleaned and then immersed either cold, or preferably red-hot, in a bath of fluid iron or steel, and the immersion is repeated, and the plate is then moved about in the same until a portion of the fluid metal in the bath begins to adhere to the surface of the piece of metal or plate *c*. The moment when the two metals begin to amalgamate can be readily detected by an experienced eye, and the piece of metal or plate *c* is then rapidly removed and placed in the mold. The upper part *H*, Fig. 1, is

put in place, and the fluid metal—that is, so-called “chilled iron,” which has a tendency to become white when rapidly chilled—is poured into the mold until the latter is full. The molten iron is preferably poured simultaneously into both compartments of the upper part *H* of the mold; but it can also be poured into the same one after the other, provided the operation takes place with sufficient rapidity to prevent the second side from cooling down too much. It must be here remarked that if the operation is to be successful the inlet-ports *e*, Figs. 1 and 3, for pouring in the fluid metal, must be arranged along the piece of wrought-iron or steel, so that the iron poured into the mold will play or run over the entire breadth and length of the piece of steel or wrought-iron, in order to promote the better welding of the two metals. The piece *D* is preferably warmed to prevent the air from collecting in bubbles on the hardened surface, and covered with a thin coating of graphite where it comes in contact with the molten metal.

It is hardly necessary to mention that the piece of wrought-iron or steel can be composed of several parts, and that one or more pieces *c c* of wrought-iron or steel can be laid in the mold or cast together in the same and that wrought-iron and steel plates can be combined.

Having now particularly described my invention, I declare that what I claim is—

The herein-described process of manufacturing compound castings, consisting in heating to a red heat a wrought-iron or steel plate, then immersing the same in a bath of fluid iron or steel, then agitating the plate therein, then placing said plate in a suitable mold, and then pouring molten iron into said mold and against the surface of said plate, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

STEFAN SIEMANG.

Witnesses:

EDMUND JUSSON,
VICTOR TISCHLER.