

No. 755,913.

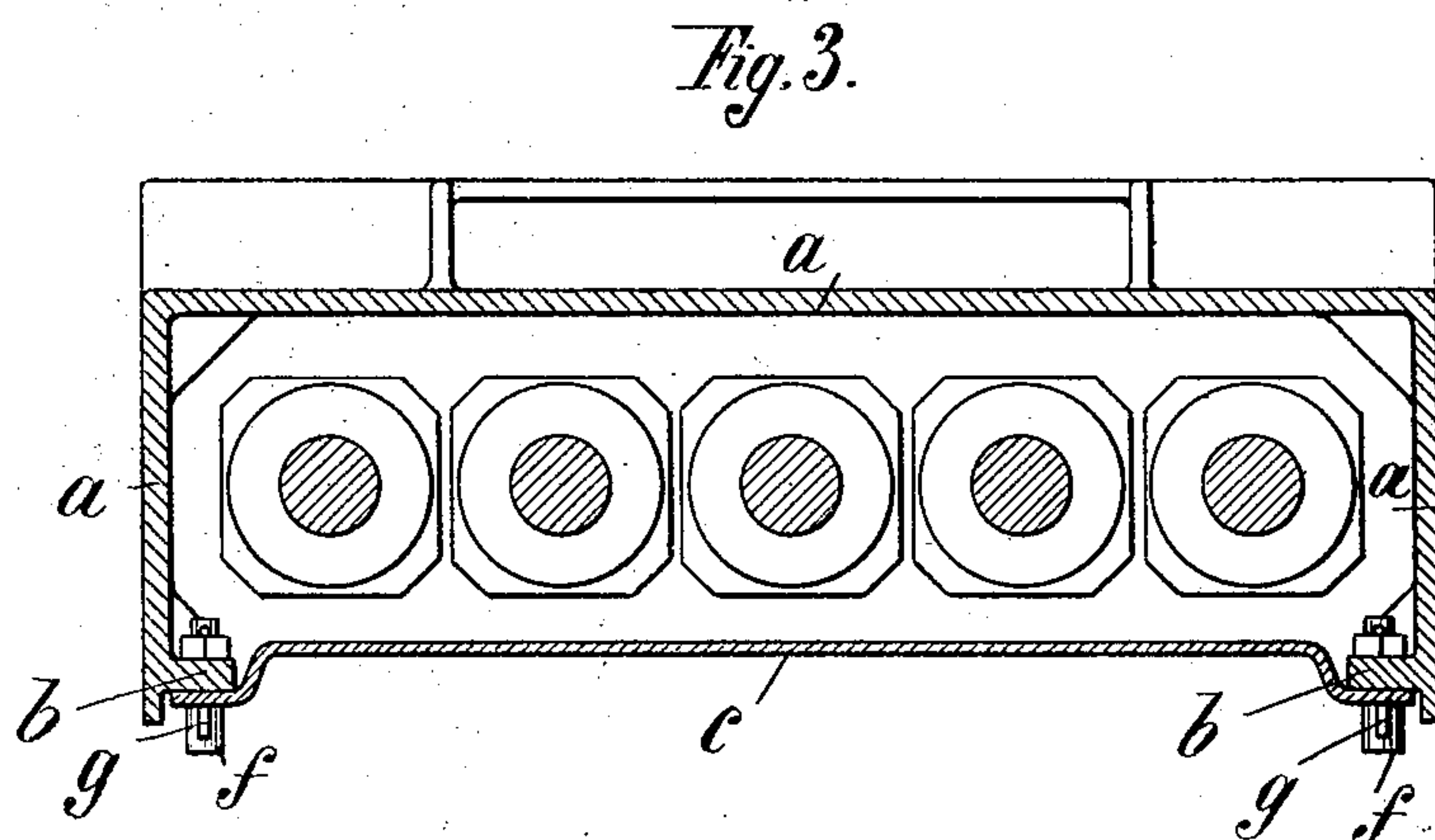
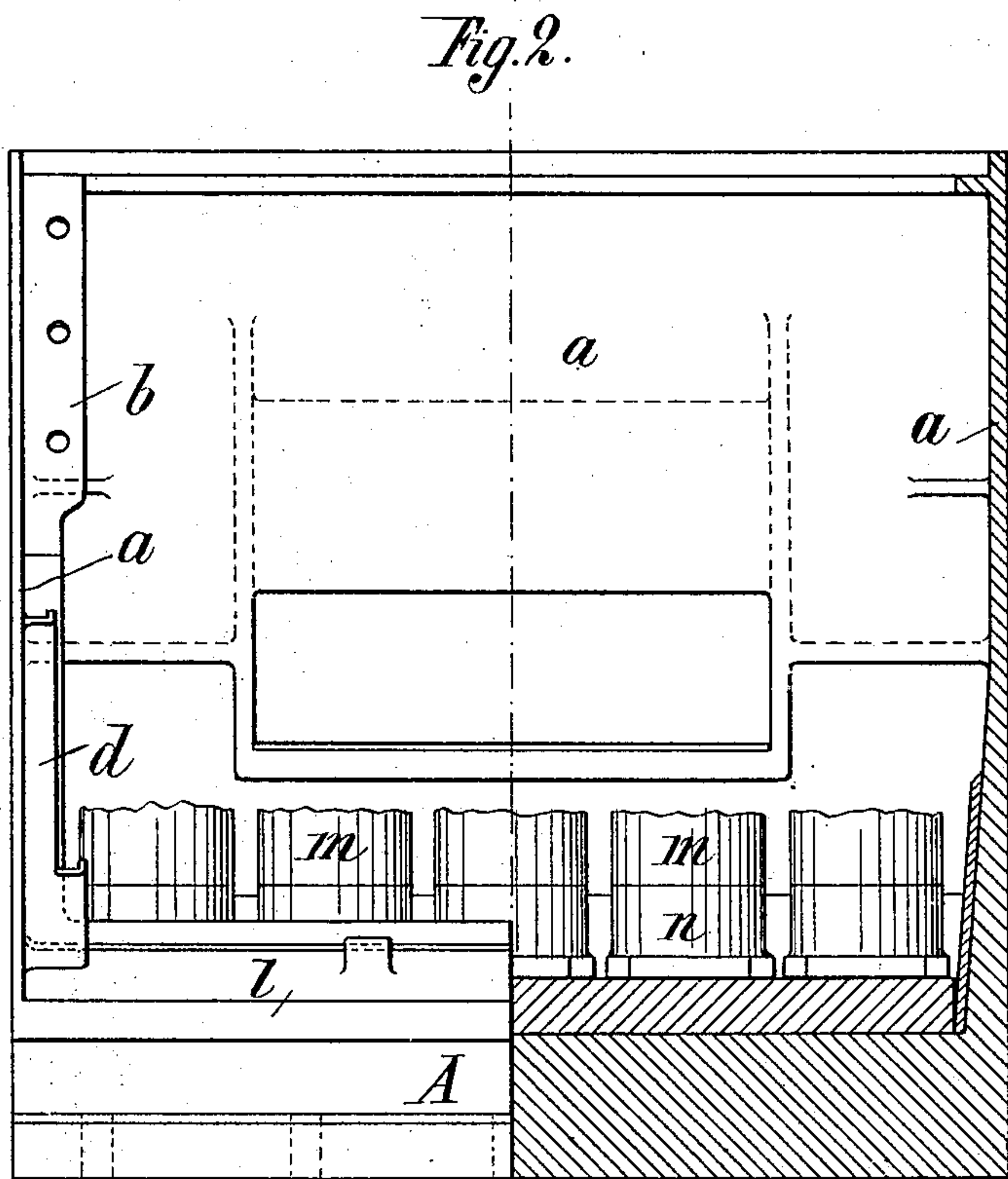
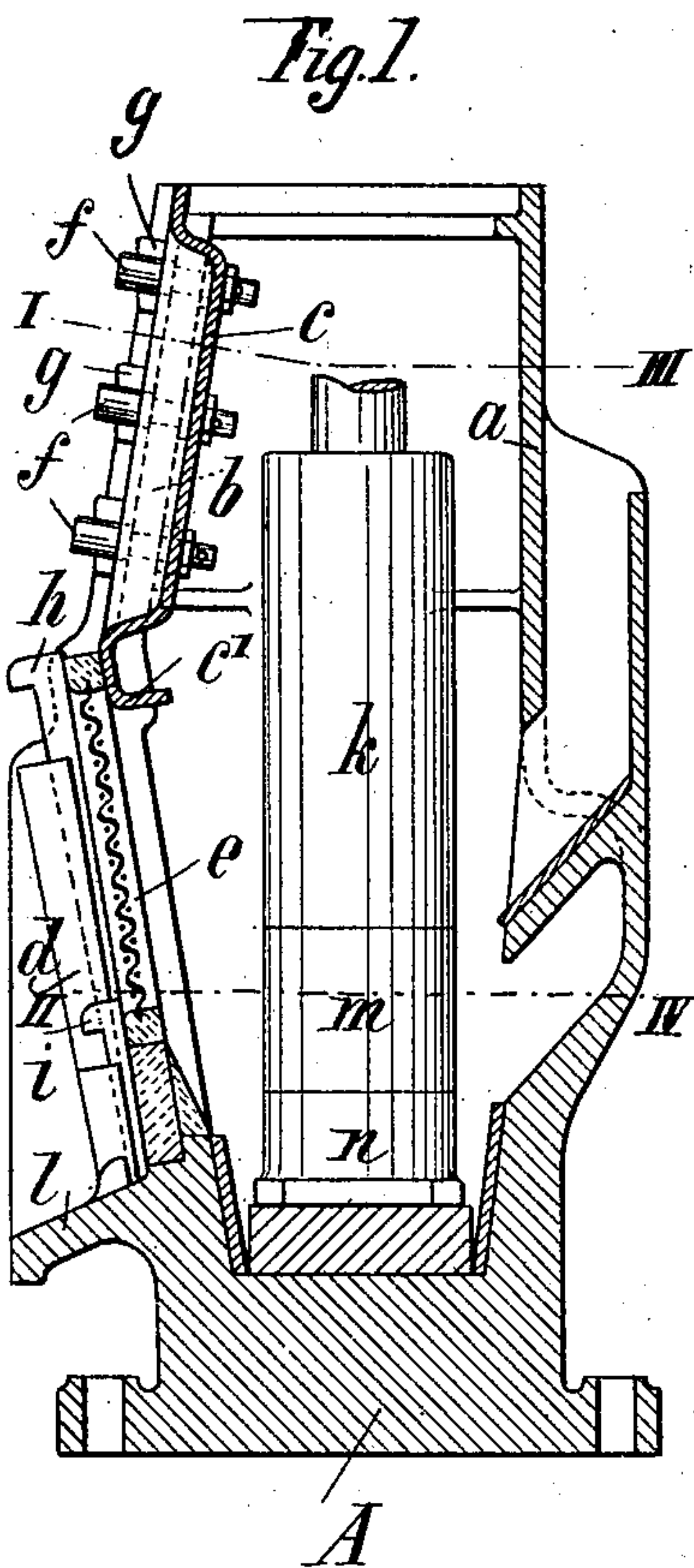
PATENTED MAR. 29, 1904.

D. B. MORISON.
MORTAR BOX FOR STAMP MILLS.

APPLICATION FILED JULY 6, 1901.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

Edwin
W. Sommers

Inventor,
Donald Barnes Morison

by *Charles B. Smith*

Attys

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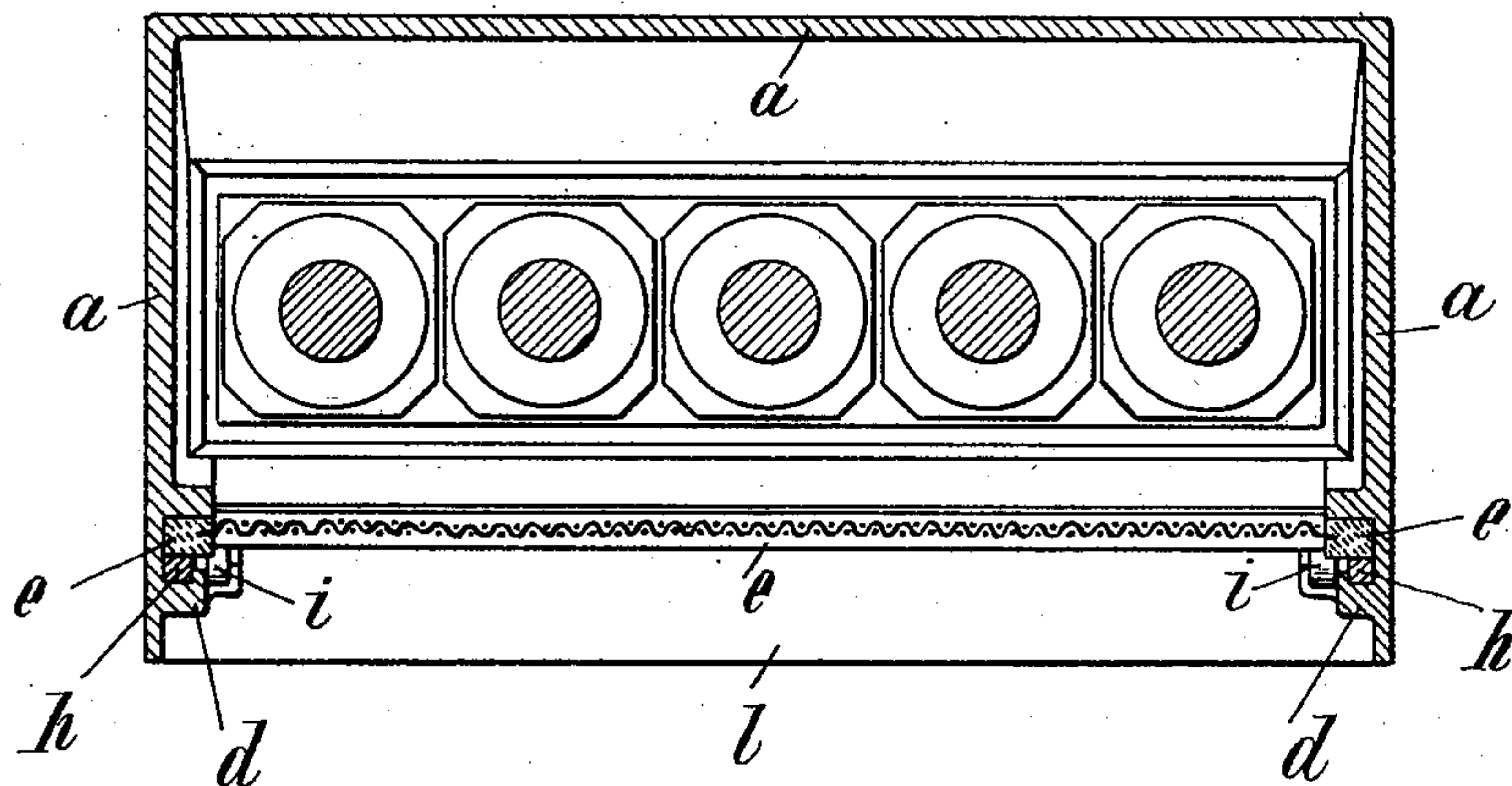
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MORTAR BOX FOR STAMP MILLS.

APPLICATION FILED JULY 6, 1901.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 4.



Witnesses:

B. H. Lommers
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Att'y.

UNITED STATES PATENT OFFICE.

DONALD BARNS MORISON, OF HARTLEPOOL, ENGLAND.

MORTAR-BOX FOR STAMP-MILLS.

SPECIFICATION forming part of Letters Patent No. 755,913, dated March 29, 1904.

Application filed July 6, 1901. Serial No. 67,326. (No model.)

To all whom it may concern:

Be it known that I, DONALD BARNS MORISON, a subject of the King of Great Britain and Ireland, residing at Hartlepool, in the county of Durham, England, have invented certain new and useful Improvements in Mortar-Boxes for Stamp-Mills, of which the following is a specification.

My invention relates to improvements in mortar-boxes or coffer of stamp-mills such as are used for crushing mineral ores or other substances.

In cast-iron mortar-boxes as at present usually constructed the walls of the upper portion of the body above the screen-opening extend completely around the four sides of the box and form a part of the main casting. In built-up or so-called "sectional" mortar-boxes they are permanently attached to one another and to the body of the structure by riveted joints. Therefore in the case of either mode of construction the wall or bridge of metal extending from end to end of the box above the screen-opening is irremovable.

Although mortar-boxes are open at the top, the construction of a stamp-mill is such that in practice the screen-opening is the means of ingress or egress for the stamp-heads, shoes, dies, false bottom, &c. The accessibility of the interior of the mortar-box and the facility for the entry or removal of the above-named elements is limited by the dimensions of the screen-opening. This leads to numerous difficulties and delays, more especially in connection with the removal of the stems from the heads and the heads from the mortar-box. It is well known that these difficulties and delays have been accentuated by the great increase which has taken place during recent years in the weight of stamps and to the consequent increase in the length and weight of the heads, which have to be handled in a confined space and maneuvered out through the screen-opening.

It is the object of this invention to minimize the above-mentioned difficulties attending the removal and replacement of stems, heads, &c., by such a construction as will give the mortar-box the strength, rigidity, and simplicity so necessary in milling practice and

also afford increased facility of access to the interior of the mortar-box by making the main body entirely open at the screen side from the discharge-lip upward and closing in the upper portion of the front of the box above the screen-opening by means of a portable front which can be easily and quickly removed and replaced.

In the accompanying drawings, Figure 1 is a vertical section of a cast mortar-box constructed and arranged in accordance with my invention. Fig. 2 is a front elevation of the same, partly in section, the portable front and the screen being removed; and Figs. 3 and 4 are horizontal sections on lines I III and II IV, respectively, of Fig. 1.

Similar letters refer to similar parts throughout the several views.

The main body of the cast mortar-box A is entirely open at the screen side from the discharge-lip *l* upward. The rear and side walls *a* of the mortar-box are extended to the usual height. The side walls are provided with flanges *b* or the equivalent for the attachment of the portable front *c* and with stepped flanges *d* for the attachment of the screen or screen-frame *e*, respectively. The portable front *c* may be cast, or made in wood, or built up as a composite front of wood and iron, or constructed of metal plates and angles; but a particular construction provided by my invention is a front which is dished centrally, as shown in Figs. 1, 3, and 4, to give rigidity to the structure as a whole and is flanged inwardly at the base *c'*, so as to give special rigidity to that portion forming the joint between the portable front and the screen or screen-frame *e*, respectively, or the portable front may be otherwise dished and flanged so as to meet the requirements of any particular design. This dished and flanged front is preferably made of steel plate and is at once light, rigid, and of great strength with no rivets or joints of any kind, and is therefore a construction eminently suitable for the rough work to which milling plant is subjected. The portable front *c* is preferably jointed to the mortar-box by means of bolts *f*, attached to the flanges *b* and provided with vertically-disposed downward-fitting cotters *g*, passing

through cotter-holes in the ends of the said bolts, a construction which is practically unaffected by the intense vibration and which affords facilities for the rapid removal or attachment of the portable front.

The removable screen *e* is jointed to the mortar-box and the portable front *c c'* by means of cotters *h* and *i*, inserted between the screen-frame *e* and the flanges *d* of the side walls of the mortar-box, as this is evident from the drawings without further explanation.

When the screen and the portable front are removed, the front of the mortar-box is perfectly open, and the stems and heads *k* can be removed laterally or adjusted as required, while the shoes *m* and dies *n* can be removed and replaced and the interior of the box cleaned with far greater ease than is possible by ordinary constructions.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A mortar-box having a two-part removable front, comprising a lower screen-section of usual design, and a stiffened sheet-metal section detachably supported by the box-frame inside the plane of the screen, each section being independently removable, substantially as set forth.

2. A mortar-box having a two-part removable front, comprising a lower screen-section of usual design and a stiffened sheet-metal section centrally dished, said sections independently removable, substantially as set forth.

DONALD BARNES MORISON.

Witnesses:

J. BARRWELL STROVER,
T. HARRY TINGLE.