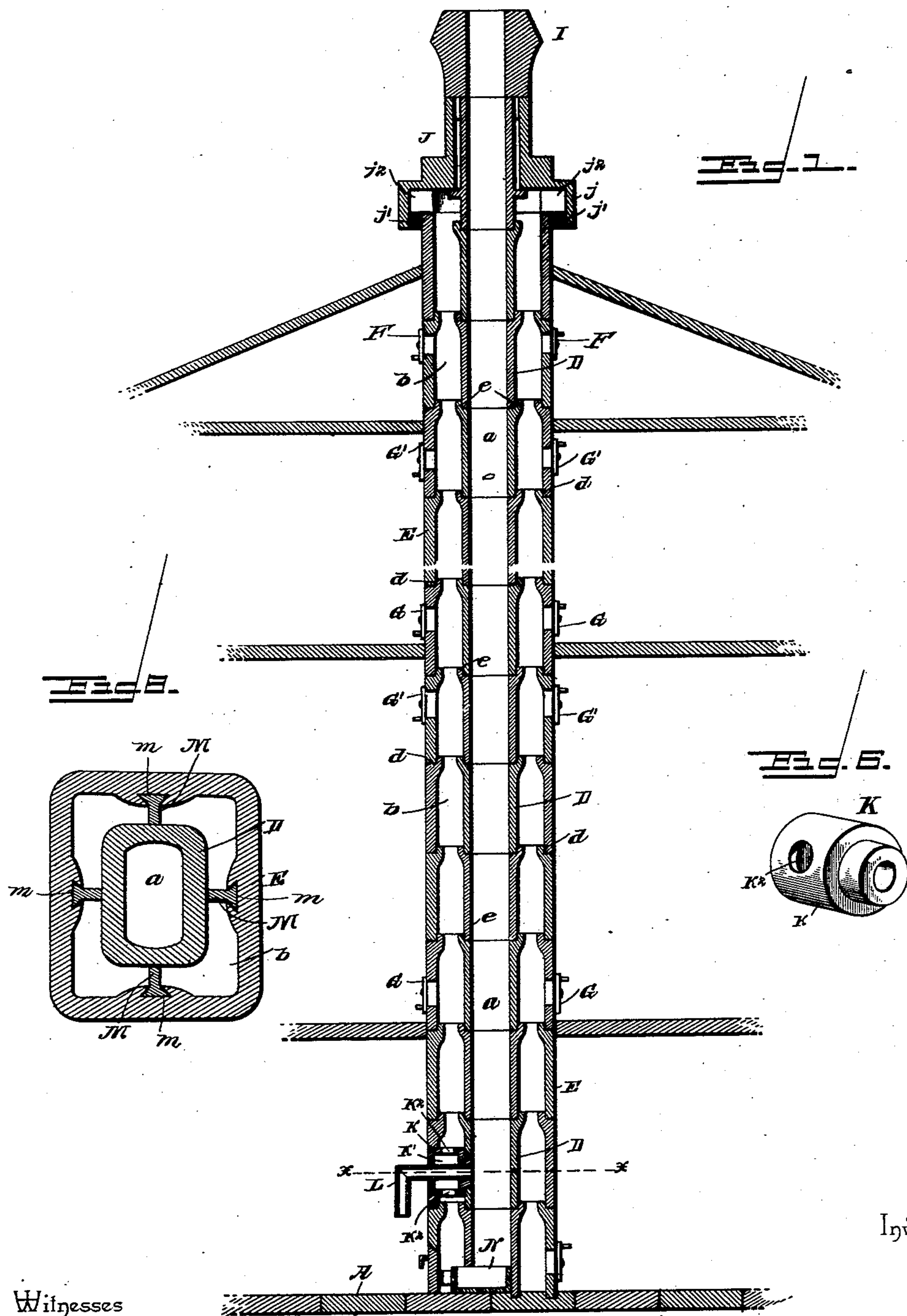


2 Sheets—Sheet 1.

Patented Dec. 1, 1896.



Inventor

Witnesses

E. H. Stewart,
J. K. Siggers.

By *his* Attorneys.

Agents, *Robert C. Moon*
C. Snow & Co.

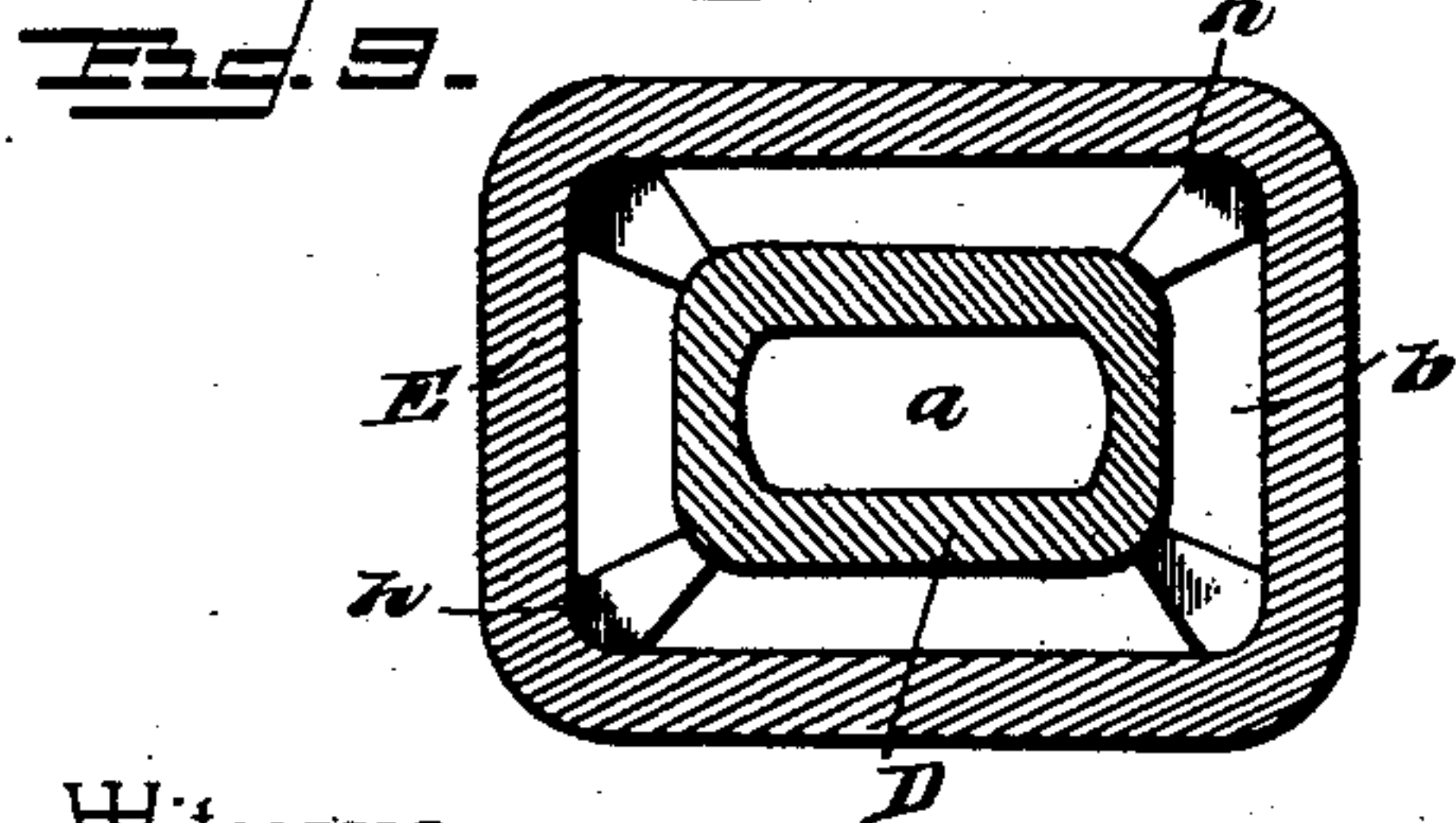
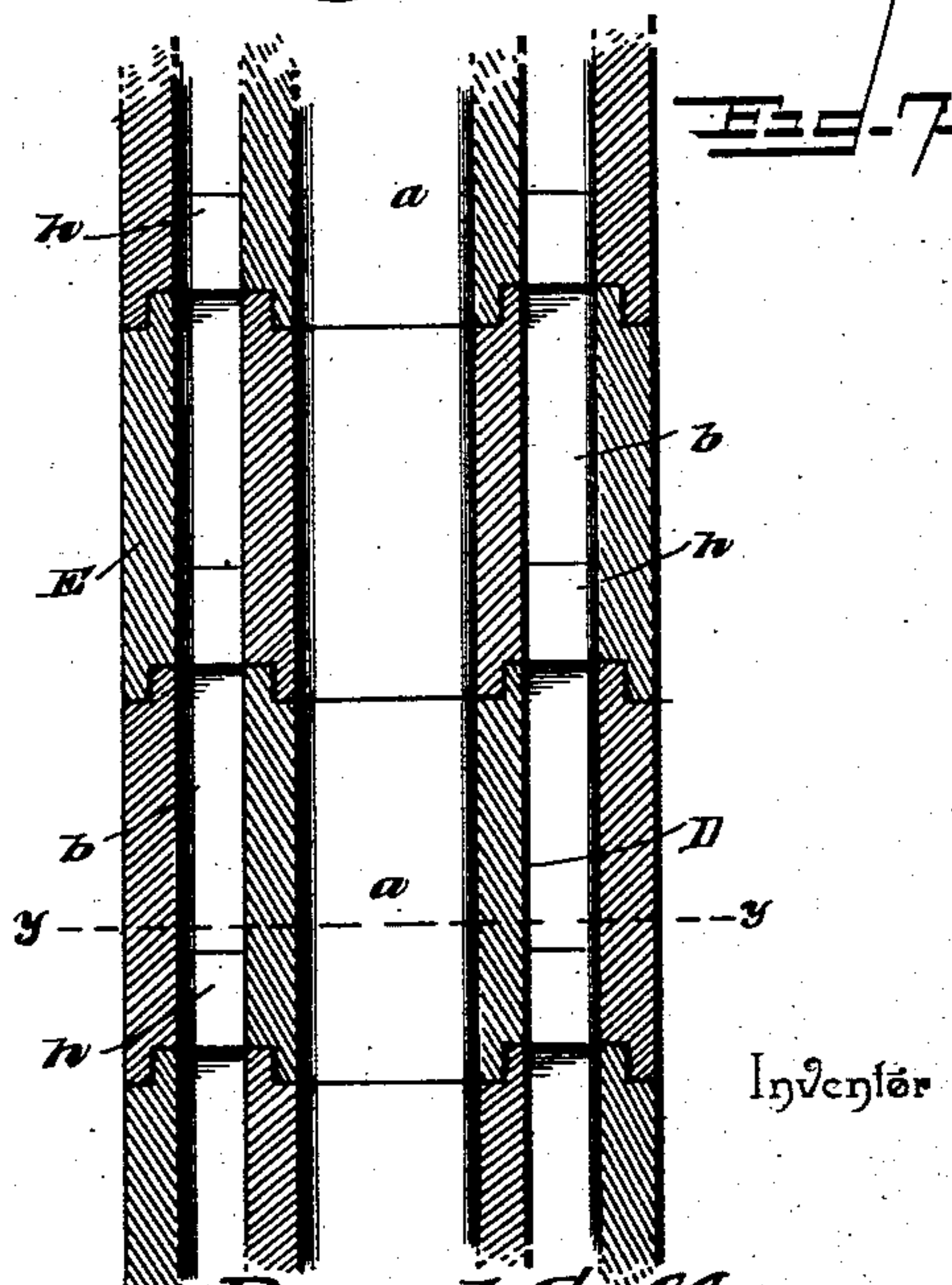
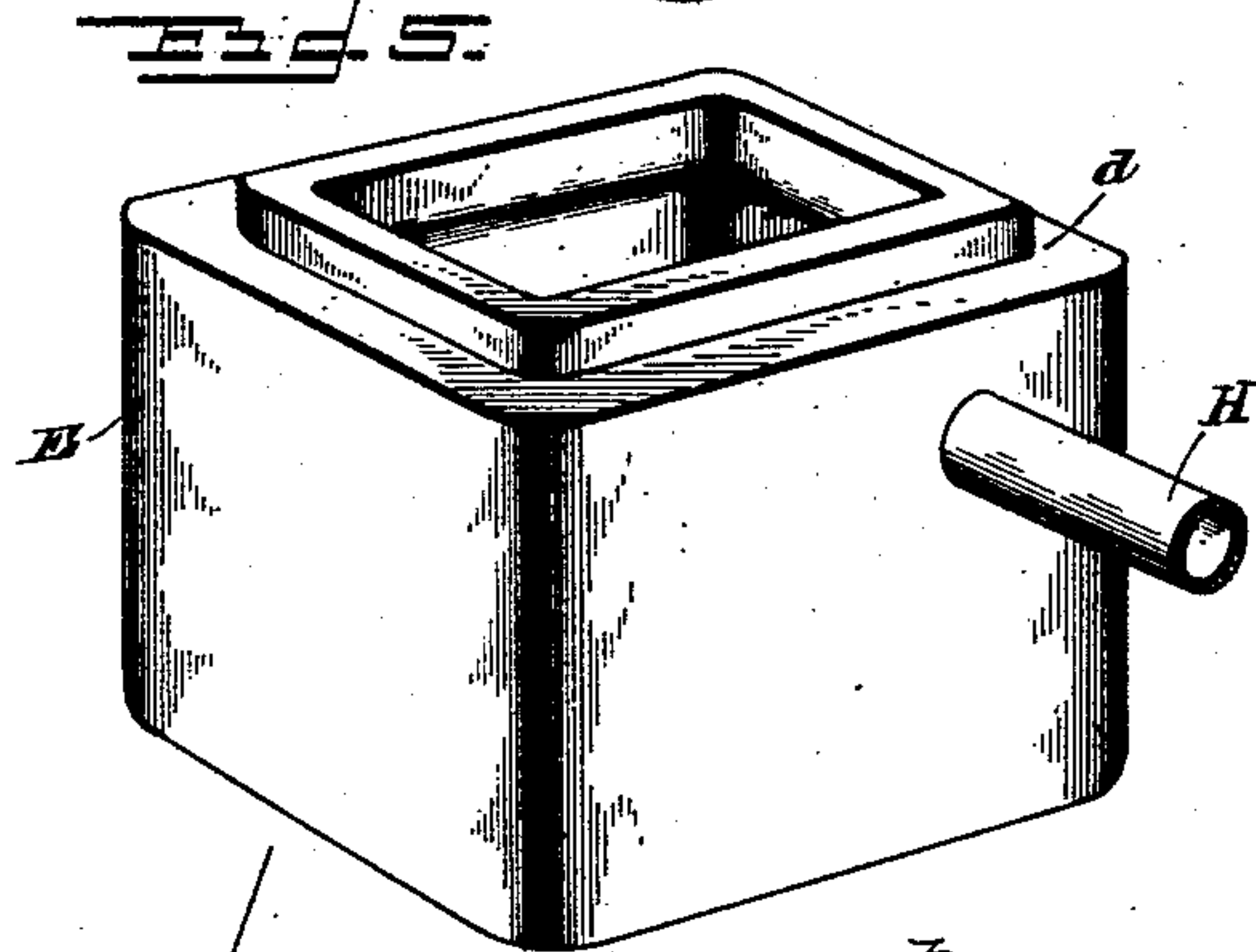
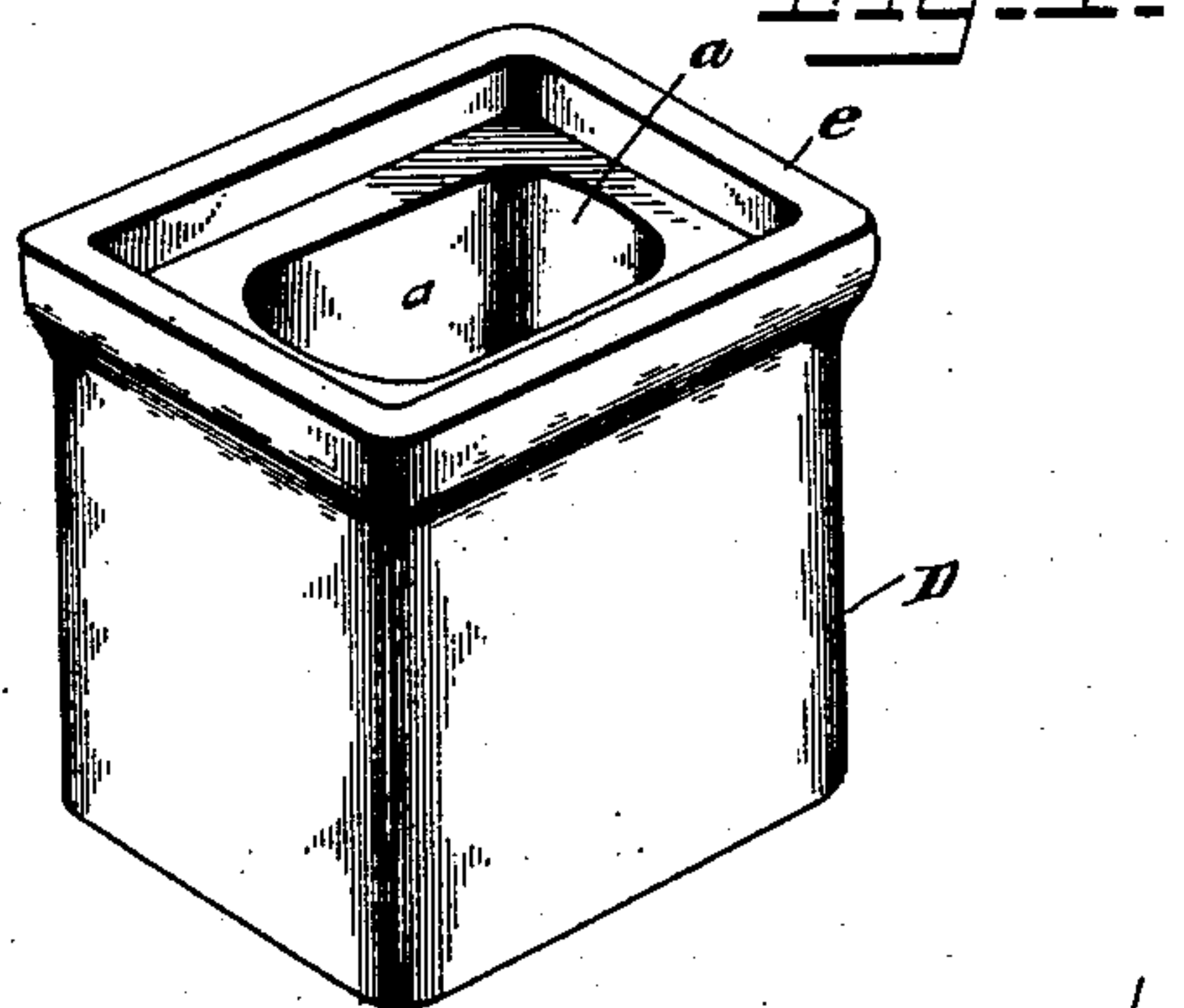
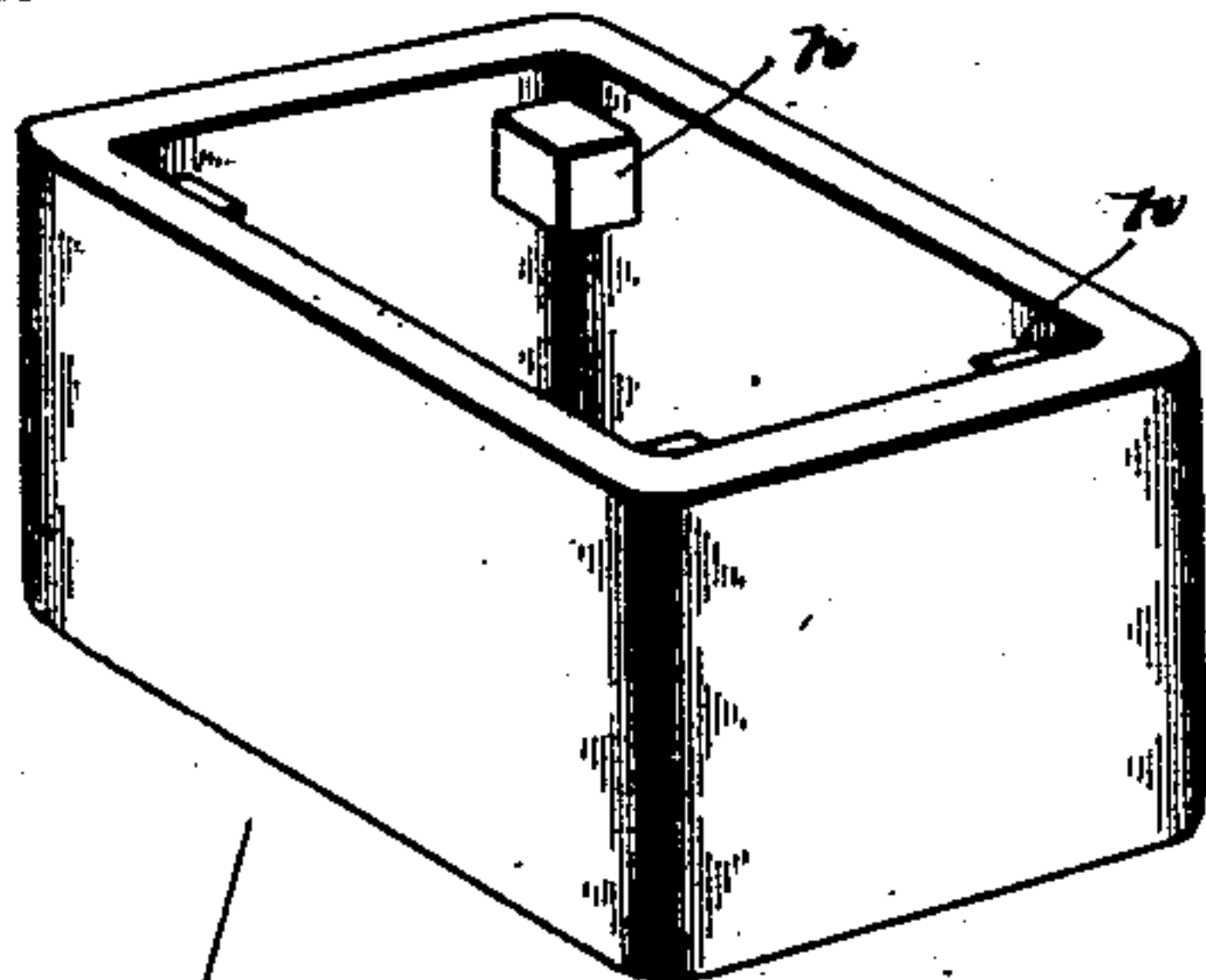
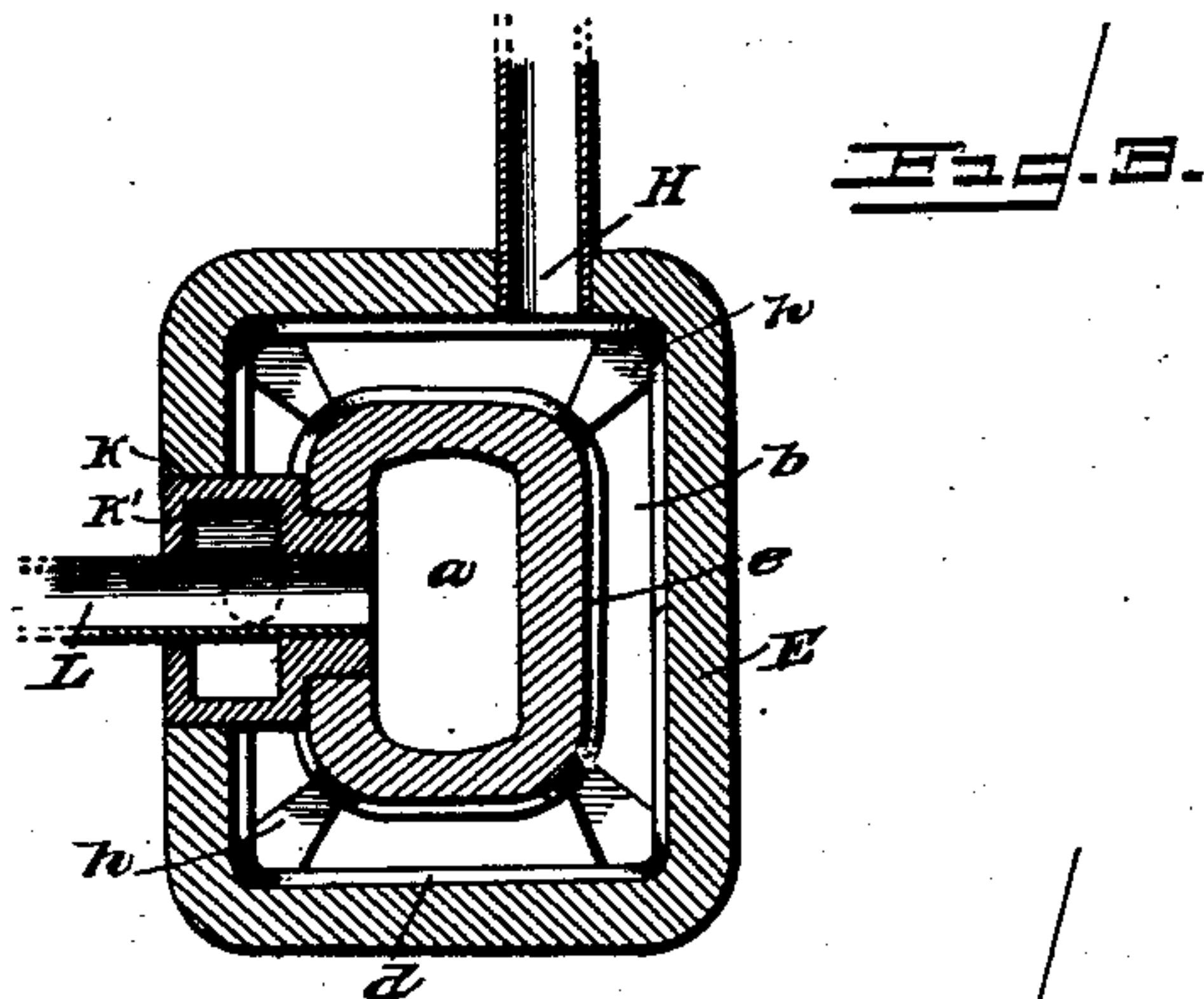
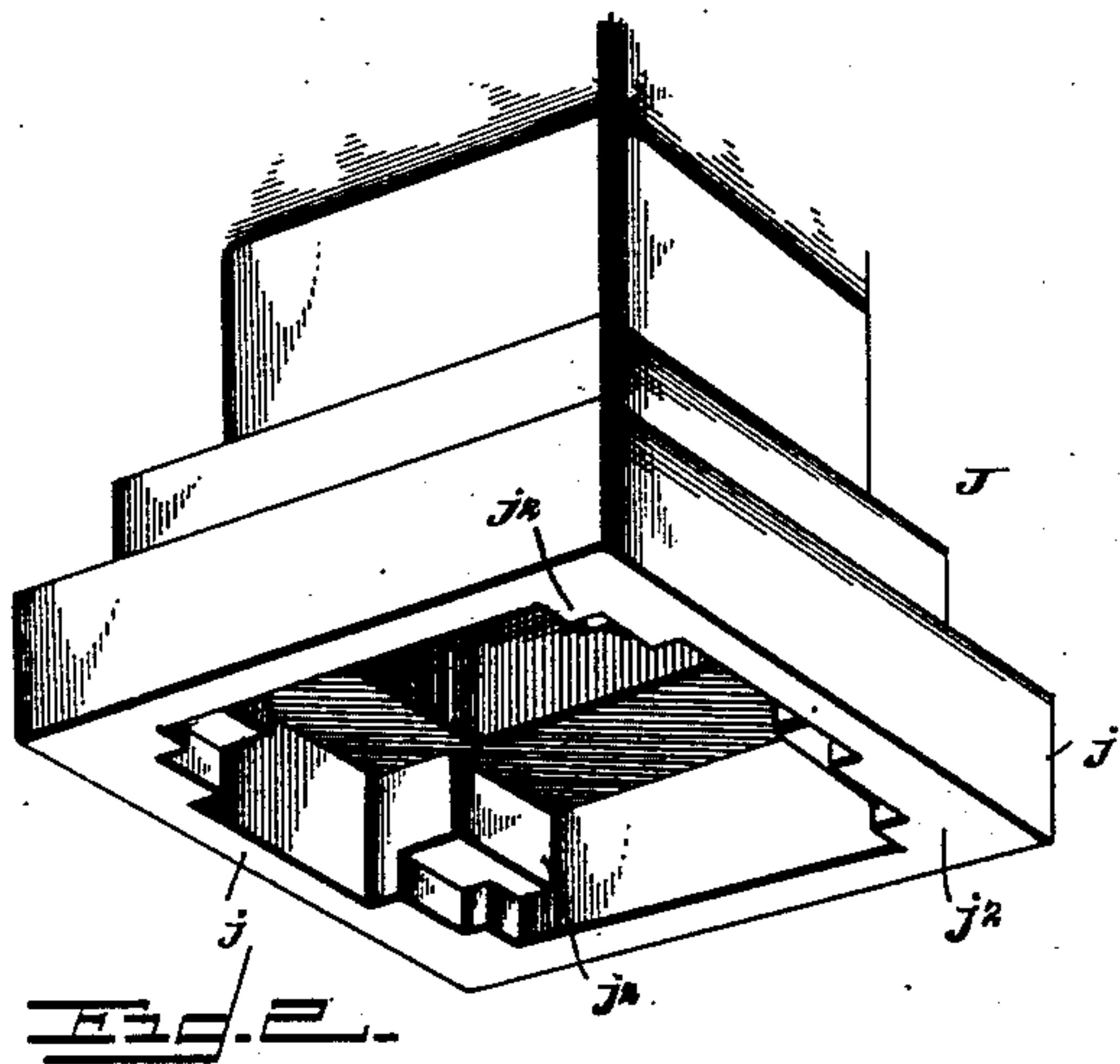
(No Model.)

2 Sheets—Sheet 2.

R. G. MOON.
SAFETY FLUE AND VENTILATOR.

No. 572,174.

Patented Dec. 1, 1896.



Witnesses

E. H. Stewart
J. H. Siggel

By *his* Attorneys: *Robert G. Moon*

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

ROBERT G. MOON, OF BEDFORD, IOWA.

SAFETY FLUE AND VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 572,174, dated December 1, 1896.

Application filed February 14, 1895. Serial No. 538,389. (No model.)

To all whom it may concern:

Be it known that I, ROBERT G. MOON, a citizen of the United States, residing at Bedford, in the county of Taylor and State of Iowa, have invented a new and useful Safety Flue and Ventilator, of which the following is a specification.

My invention relates to flues or chimneys for buildings, chiefly dwellings, or structures which are required to be heated and ventilated.

The main object of the invention is to improve that class of chimneys or flues having independent passages, one for the smoke and gases, the other for cool air, which will both ventilate a room, admitting pure air and carrying off the foul or vitiated air, and at the same time carry off the products of combustion from the heating-stove, that can be erected by any one not skilled in such matters.

A further object of the invention is to secure a perfect ventilation and provide a structure which will be fireproof, simple, durable, and occupy a minimum amount of space, which is a desideratum in the construction of dwellings in cities, where it is required to economize space.

With these and such other objects in view as belong to the peculiar organization and structural disposition of the parts the invention consists of the novel features which hereinafter will be more fully described and claimed, and which are shown in the accompanying drawings, in which—

Figure 1 is a vertical section of a chimney or flue, showing the application of the invention, an intermediate part being broken away. Fig. 2 is a detail view of the upper section for closing the draft-space surrounding the inner or smoke flue. Fig. 3 is a cross-section, on the line *xx* of Fig. 1, on a larger scale. Fig. 4 is a detail view of a section of the inner or smoke flue. Fig. 5 is a detail view of a section of the outer flue. Fig. 6 is a detail of the hollow plug. Fig. 7 shows a modified form of flue having straight sides. Fig. 8 shows a construction by means of which the air-flue can be subdivided into independent air-passages when required. Fig. 9 is a cross-section on the line *yy* of Fig. 7.

The flue is constructed in sections and may

start from the cellar or at any floor desired, a base *A* of concrete, brick, earthenware, or any suitable material being provided, upon which the flue is erected. The flue comprises a smoke-passage *a* and a surrounding air-space *b*, provided between the smoke-flue *D* and the air-flue *E*. The smoke and air flues are similarly constructed, being formed of sections which are placed end to end and have flanges to overlap the joints between the meeting ends. The flanges *c* of the smoke-flue sections are located on the outside to provide a smooth interior surface to the smoke-flue, and the flanges *d* of the air-flue sections are arranged to come on the inside to provide a smooth exterior surface to the air-flue. These flues may have any desired form in cross-section and may be angular or have rounding corners. The roof-section of the air-flue has registers *F*, which can be opened more or less to control the draft of air for ventilating the space between the roof and the ceiling. A register *G* is provided near the floor of each apartment through which the flue passes for the admission of fresh air, and a similar register *G'* is located near the ceiling for the escape of vitiated or foul air. Each room abutting on the flue will be provided with upper and lower registers. Rooms distant from the flue may be connected therewith by pipes *H*. The flues *D* and *E* are kept a fixed distance apart by means of spacing-blocks *h*.

The cap *I* fits upon the top section *J* of the air-flue and is recessed in its lower end to receive the top edge of the smoke-flue and form a close and tight joint therewith. The top section *J* has a lower outer flange *j*, which encircles the top edge portion of the next lower section, leaving a surrounding space *j'* for the escape of the vitiated air. The corner-pieces *j²*, formed in the angles between the side flanges *j*, are notched in their lower ends to receive the corners of the section upon which the part *J* rests, thereby maintaining a proper space *j'*.

A hollow plug *K* is provided to receive the smoke-pipe *L*, and is designed to be fitted in registering openings in the air and smoke flues, the smoke-pipe passing through the ends of the plug and extending into the smoke-flue. This plug *K* extends across the

air-space b , and its inner end is reduced to enter the smaller opening in the smoke-flue and limit the inner movement of the plug when placing it in position. The body k of the plug is considerably larger than the smoke-pipe, so as to provide a surrounding space k' . Openings k^2 , located at diametrically opposite points of the body k , provide for a circulation of air through the plug and around the smoke-pipe passing therethrough. These hollow plugs will be located wherever it is required to connect a smoke-pipe with the smoke-flue.

In Fig. 7 the flue-sections are shown jointed, so as to provide smooth interior and exterior walls to the flues, the meeting ends being halved instead of having overlapping flanges.

When it is required to subdivide the air-space b into independent passages, ribs or partitions M are provided to extend across the space between the two flues and form partitions or divisions. These ribs may be provided on either the inner or the outer flue-section and formed therewith or made detachable, the latter being preferred, as the ribs may be left off or placed in position, as required. In this latter form of construction a dovetail-shaped guideway m is provided in the section, and the rib M is of corresponding shape at one edge to make positive connection with the guideway by being slipped endwise therein.

The base-sections have corresponding openings for the passage of an ash-pan N into the smoke-flue to receive the soot and ashes, the latter falling into the ash-pan and being removed thereby at required times. It will be understood that the several sections will be secured together by cement or mortar joints and will be formed of earthenware, artificial stone, or other desired and suitable fireproof compositions.

Changes in the form, proportion, and the minor details of construction may be resorted

to without departing from the principle or sacrificing any of the advantages of this invention.

It will be understood that in the construction of a flue embodying my invention the ventilators F between the roof and the ceiling may be dispensed with, their provision being optional and dependent upon the space between the roof and ceiling and the accessibility thereto. It will be further understood that when the main portion of the flue and its upper end are not in vertical alignment an offset or crooked portion will be provided as a continuation of the flue to connect the said parts. This crooked portion, which is of well-known provision in house-building, will be located in the space between the roof and the ceiling in the usual manner.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

A combined smoke and ventilating flue composed of similar sections, the inner sections forming a smoke-passage, and the outer sections an air-space surrounding the inner sections, and a top section fitted upon the topmost inner section and extending over the space between the inner and outer sections, and having a lower flange encircling and forming a space with the top edge portion of the next lower section, and having corner-pieces notched in their lower ends to receive the corners of the said next lower section and hold the aforesaid top section in proper position, substantially in the manner set forth, for the purpose described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ROBERT G. MOON.

Witnesses:

JOHN ALLEN,
G. L. BROWN.