

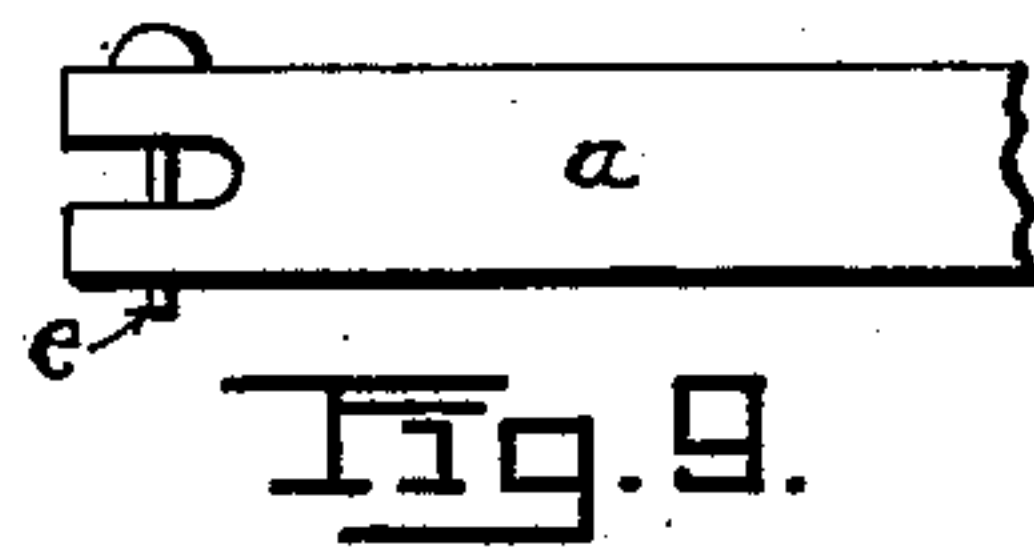
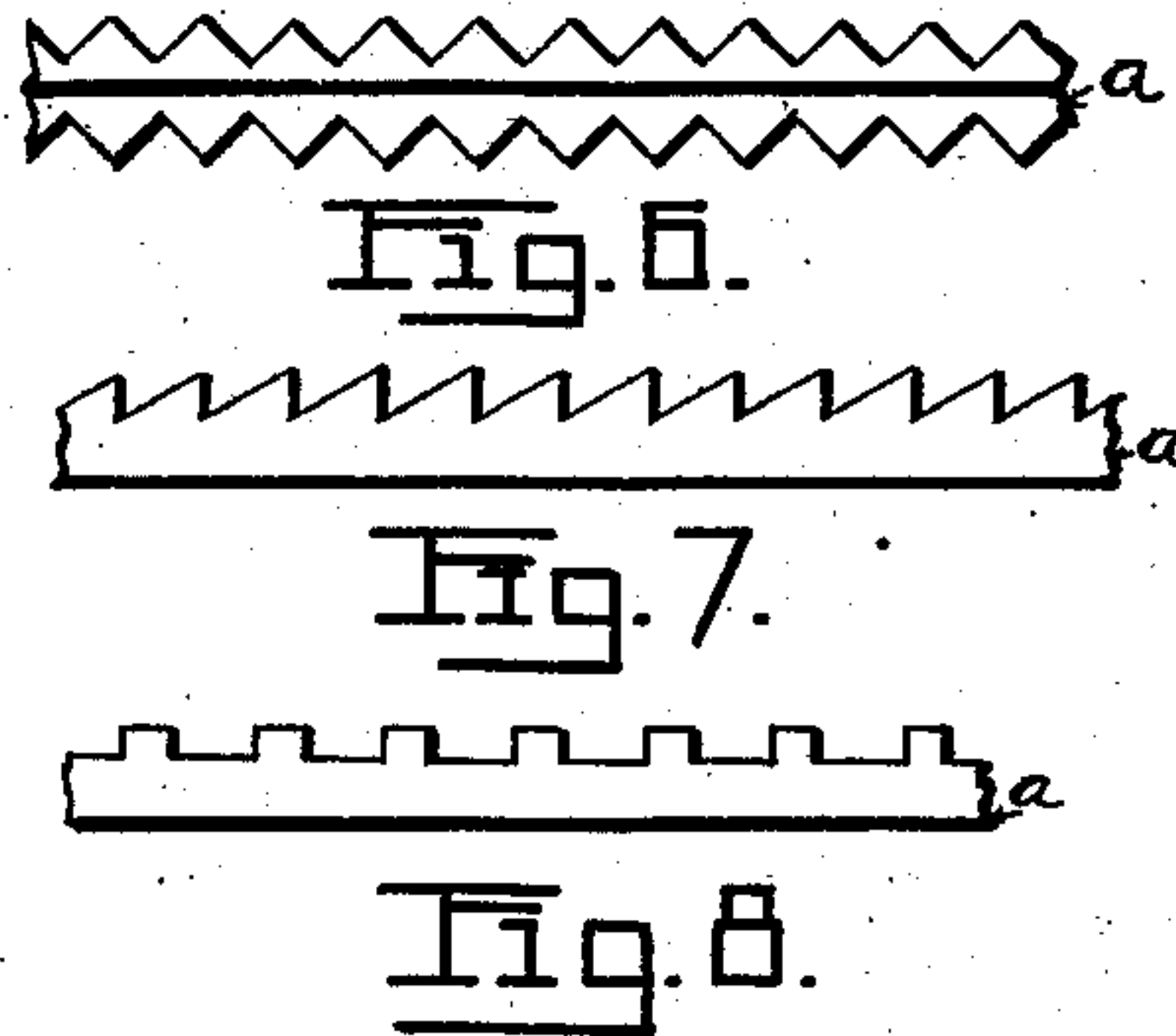
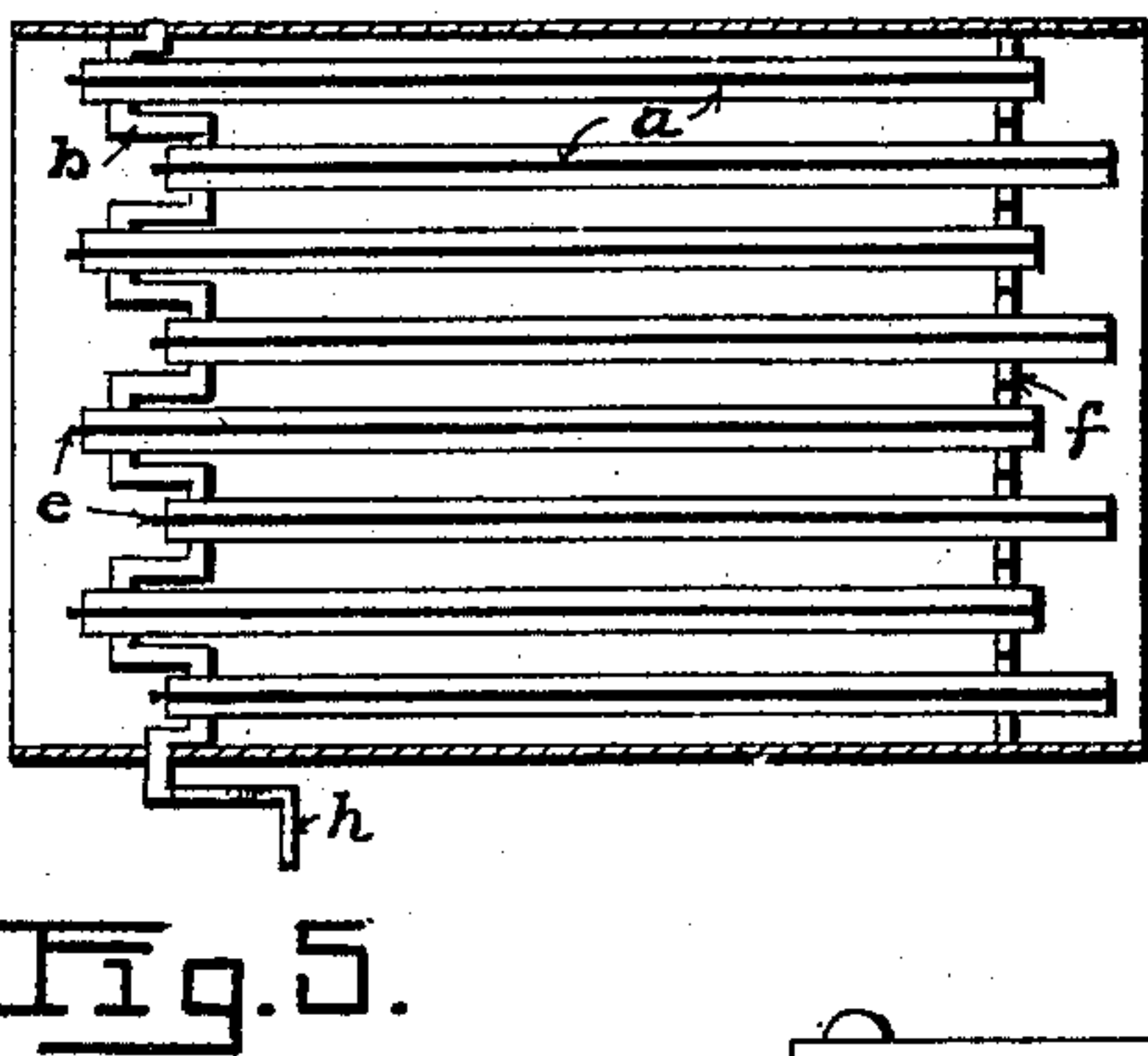
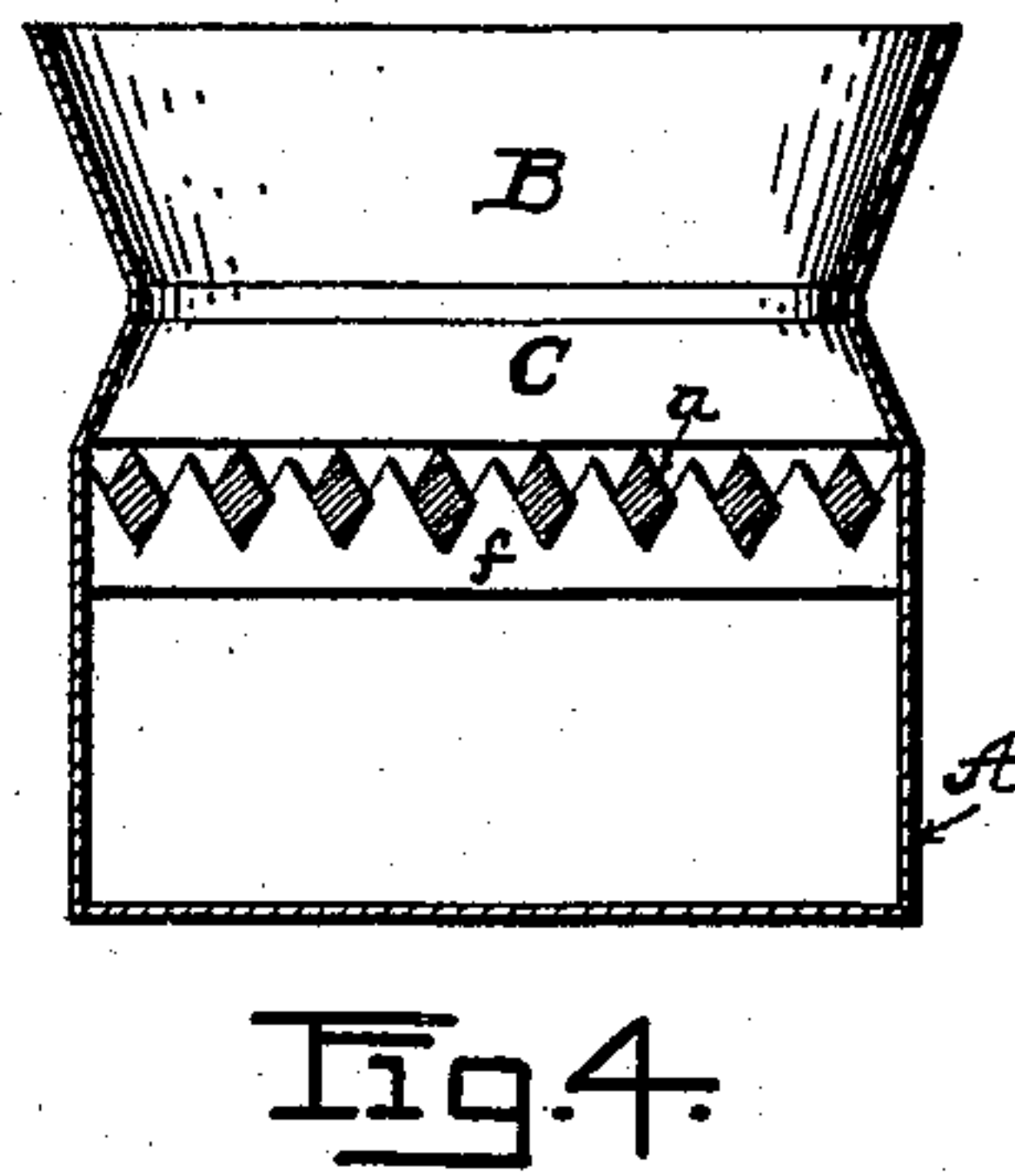
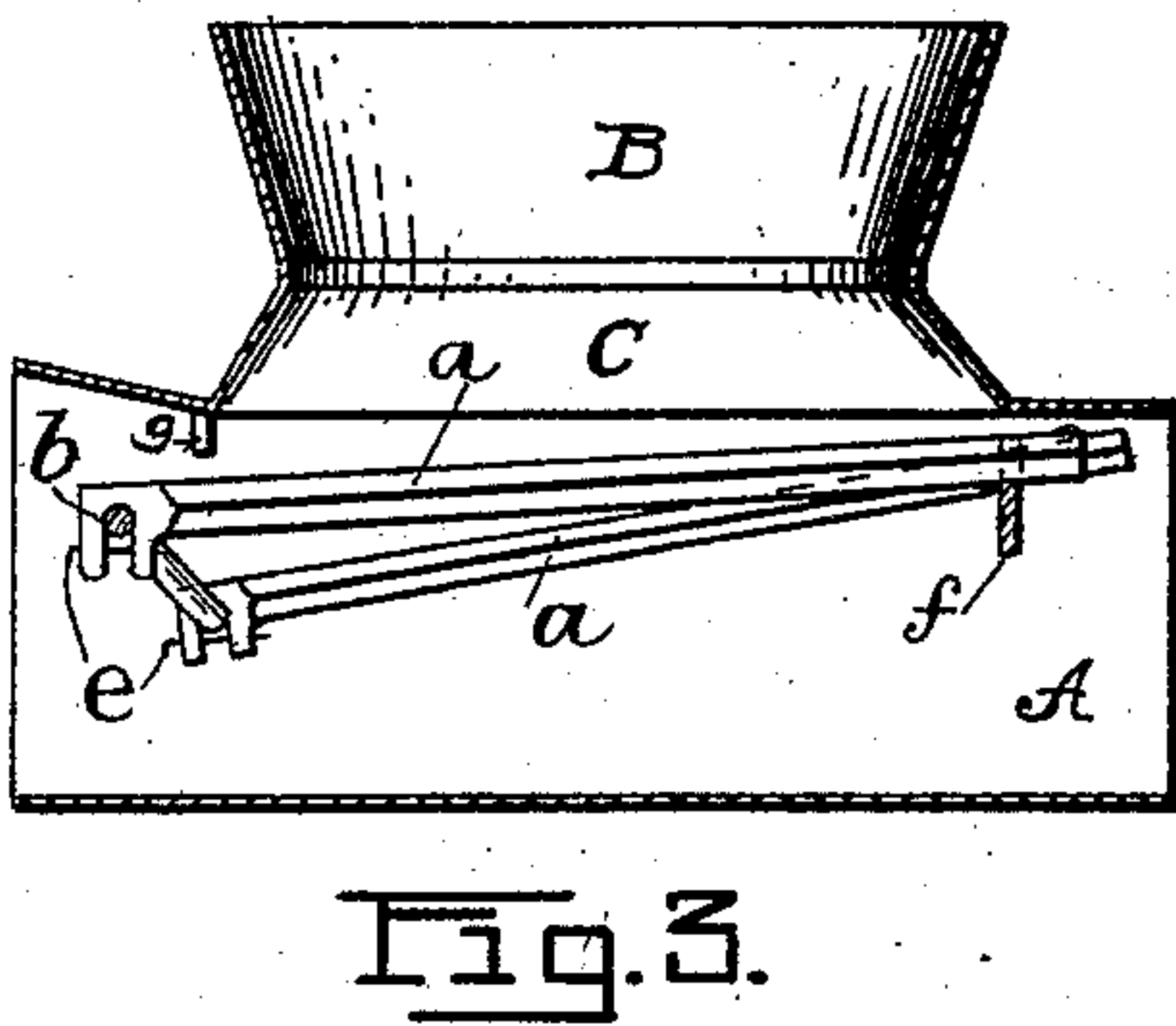
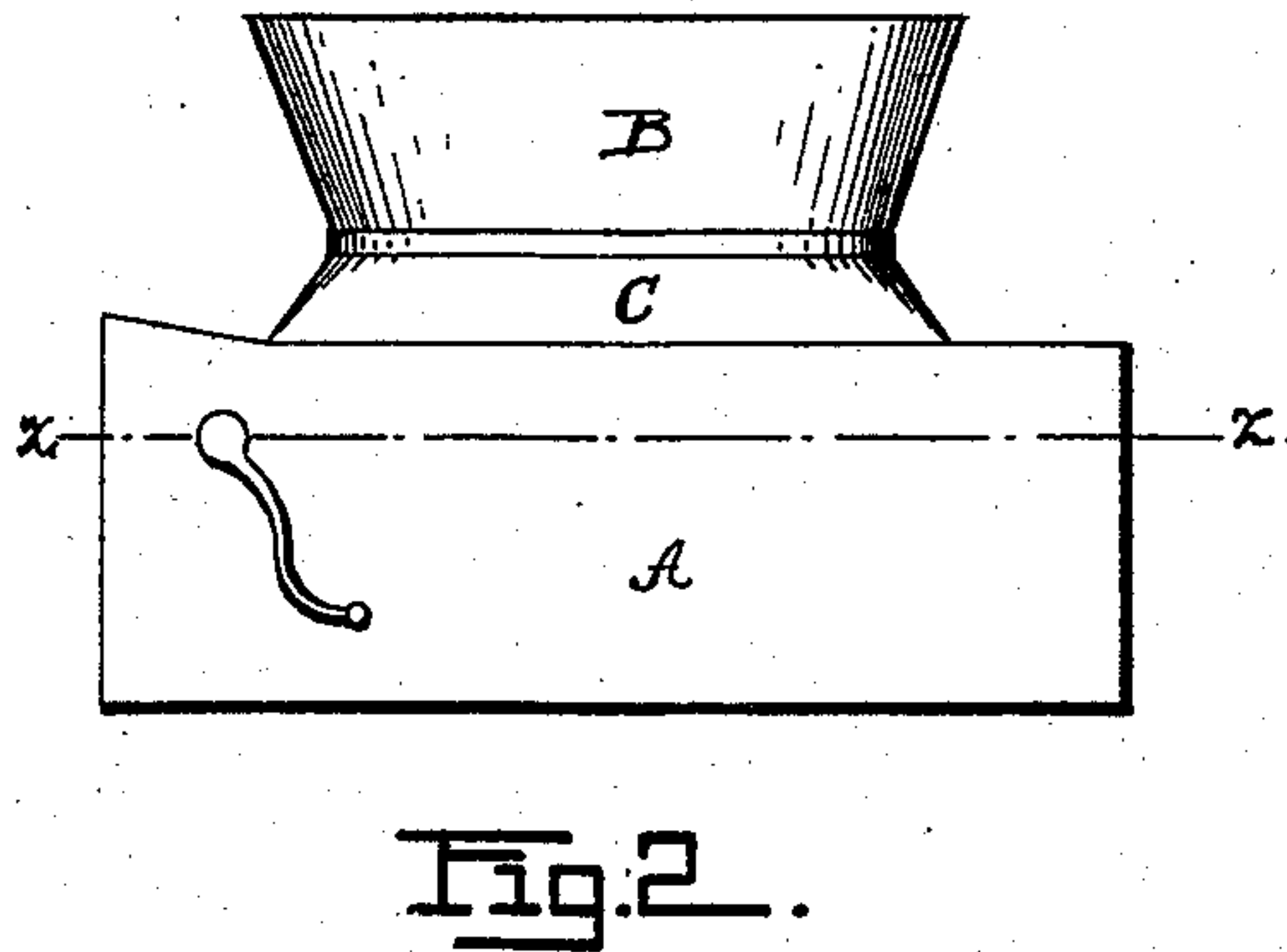
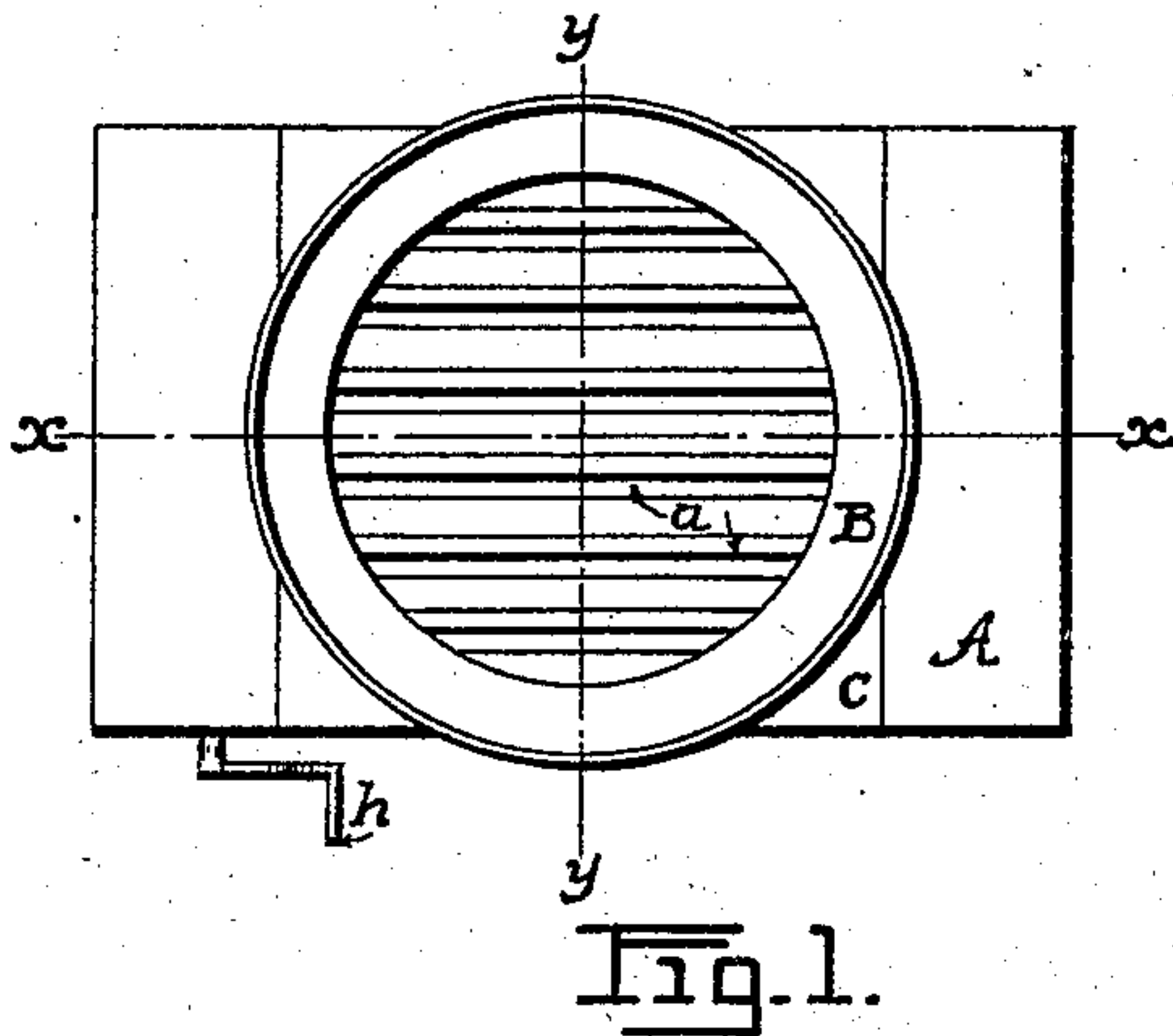
No. 692,661.

Patented Feb. 4, 1902.

G. HERSH.
STOVE GRATE.

(Application filed May 25, 1901.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE HERSH, OF QUARRYVILLE, PENNSYLVANIA.

STOVE-GRATE.

SPECIFICATION forming part of Letters Patent No. 692,661, dated February 4, 1902.

Application filed May 25, 1901. Serial No. 61,968. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HERSH, a citizen of the United States, residing at Quarryville, in the county of Lancaster and State of Pennsylvania, have invented new and useful Improvements in Stove-Grates, of which the following is a specification.

My invention relates to improvements in grates for stoves and furnaces, and pertains more particularly to the class of sliding grates.

The object of my invention is to have a larger grate-surface than the lower part of the cylinder or fire-pot by having a square grate therefor.

Another object of my invention is to provide a grate on which the fire can be readily shifted from one end thereof to the other when desired.

A still further object of my invention is to provide a grate in which each and every bar comprising the grate is readily detached for the purpose of inserting a new one when one becomes broken.

A still further object of my invention is to provide a simple, cheap, and durable device to accomplish the above result.

In the accompanying drawings, Figure 1 is a top plan view of my invention. Fig. 2 is a side view. Fig. 3 is a vertical longitudinal sectional view taken on line *xx*, Fig. 1. Fig. 4 is a transverse vertical sectional view taken on line *yy*, Fig. 1. Fig. 5 is a horizontal sectional view taken on line *zz*, Fig. 2. Figs. 6, 7, 8, and 9 are different forms of grate-bars used in my invention.

Referring now to the drawings, A represents the ordinary lower part or ash-pit of a furnace or stove; but I make it square, as shown in the drawings, for the purpose hereinafter described. The top of said ash-pit has a square opening therein, extending across from side to side, but having a transverse portion or web at each end of said opening for the purpose of bracing the sides of the ash-pit. Above said ash-pit is a conical-shaped fire-pot B, having a square flared lower portion C, adapted to fit within the opening in the top of the ash-pit, thus closing the entire upper portion thereof. The grate being located within the ash-pit and the pot having the flared portion, I obtain a greater grate-

surface than has heretofore been obtained in stoves with a small fire-pot.

Rigidly secured near the rear end of the ash-pit and close to the top thereof is a transverse bar *f*, having its upper edge notched for the purpose of receiving and supporting the rear end of the longitudinally-extending grate-bars *a*, which rest loosely therein and are thereby adapted to slide and rock at the same time. The said notches are V-shaped, and the lower portion of the grate-bars being correspondingly shaped the said bars are prevented from turning and are held the desired distance apart.

The forward end of the ash-pit is provided with a transverse rotatable shaft *b*, which has in its entire length within the pit alternately-arranged cranks, and secured to said cranks are the forward ends of the grate-bars *a*. Each grate-bar is separate and independent of each other and has at its forward end a downwardly-extending portion *d*, which is provided with a recess or notch which is adapted to straddle one of the cranks of the shaft, whereby each and every bar has an independent movement. Extending transversely through the two members formed by the notch or recess is an opening through which the pin *e* passes after it has been placed on the crank, and by means of which the bar is secured to the crank. By this construction it will be clearly seen that each and every grate-bar can be independently removed and replaced by a new one by simply removing the pin *e* and raising the notch out of the crank and drawing it forward. On the outside of the ash-pit is a crank-handle *h*, by means of which the shaft is rotated and the bars given an oscillating movement.

Secured to the top of the ash-pit, just above the shaft *b*, are downwardly-extending bars or lugs *g*, which are adapted to prevent the coal from sliding off of the grate-bars as they are being oscillated. The grate-bars may be of any desired form, as shown in Figs. 6, 7, and 8, as these do not affect the scope of my invention.

The operation of my device is as follows. The crank-handle is rotated and the shaft is also rotated, and in so doing each alternate grate-bar is raised and lowered and at the

same time given a forward and backward movement, whereby the grate is shaken. When it is desired to shift the fire from the rear end to the forward end, the crank *h* is brought in the position shown in Fig. 3, which inclines the grate-bars toward the front end of the stove, and the crank-handle is then oscillated, which causes the fire thereon to travel forwardly. When it is desired to shift the fire from the front end to the rear, the crank is carried down in a vertical position, thus raising every alternate bar and inclining the grate rearwardly, and if the crank is then slightly oscillated the fire will travel rearwardly.

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

1. In a grate, the combination with a fire-pot, an ash-pit supporting said pot, a transverse bar carried by the said pit, intermediate its top and bottom and having its upper face notched, a shaft rotatably mounted in the forward end of said pit and having alternate cranks carried thereby, and grate-bars having their forward ends secured to the said cranks and their rear ends of a shape to correspond with the notches in the upper face of the transverse bar, substantially as described.
2. In a grate, the combination with a fire-pot, an ash-pit supporting said pot, a transverse bar carried by the rear end of said pit

intermediate its top and bottom and having its upper face provided with notches, a shaft rotatably mounted in the forward end of said pit and having alternately-arranged cranks carried thereby, grate-bars having their rear ends of a shape to correspond with said notches in the transverse bars, and their forward ends provided with downwardly extending forked portions adapted to receive said cranks, and a pin passing through the forked ends of said bars, whereby the bars are fastened to the cranks, substantially as described.

3. In a grate, the combination with a fire-pot, an ash-pit supporting said pot, a transverse bar carried by the said pit intermediate its top and bottom, and having V-shaped notches in its upper face, a shaft rotatably mounted in the forward end of said pit and having alternately-arranged cranks and grate-bars having their forward ends secured to said cranks and the rear lower faces being shaped to correspond with the notches in the transverse bars and adapted to rest therein, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

GEO. HERSH.

Witnesses:

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