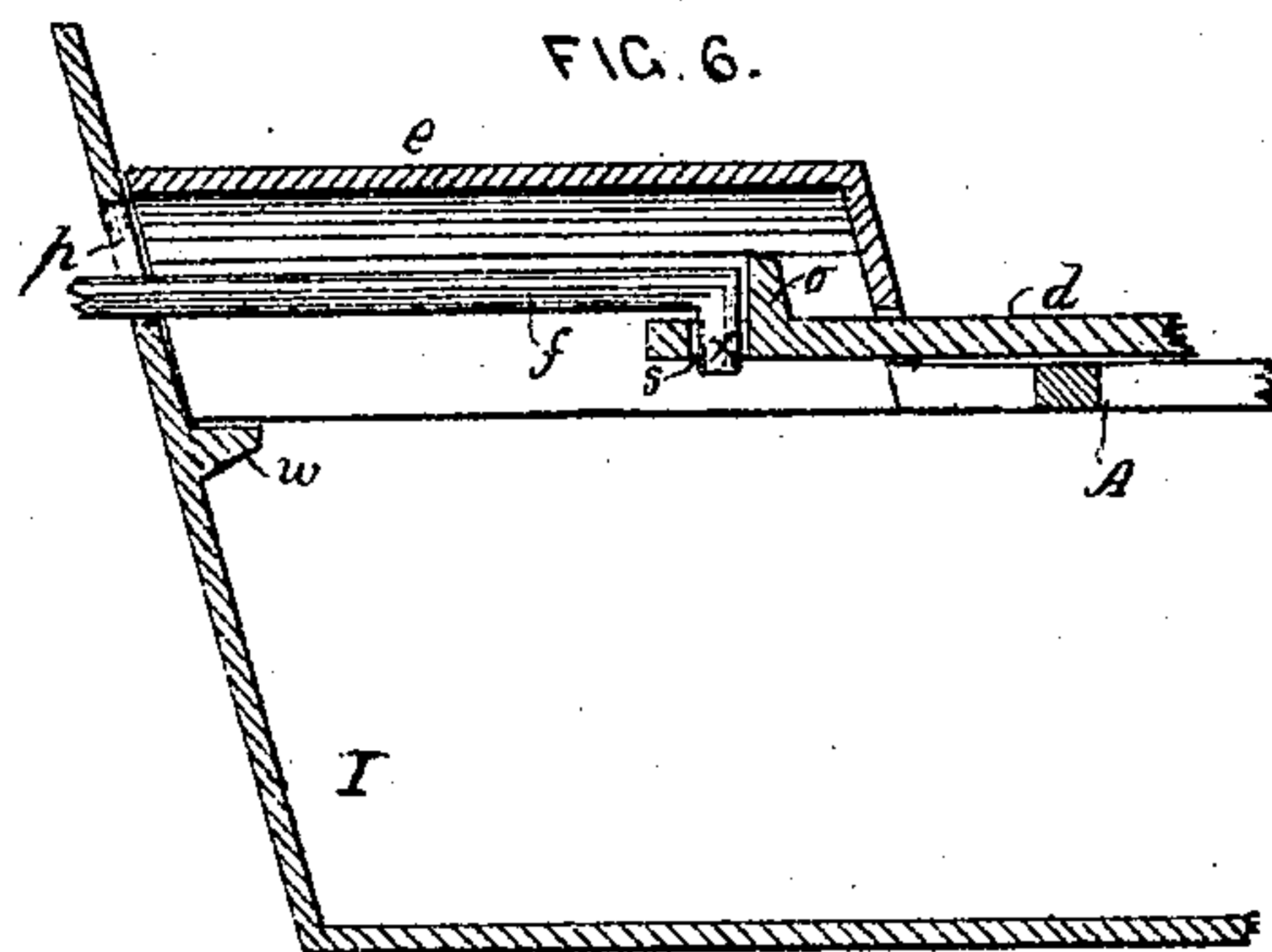
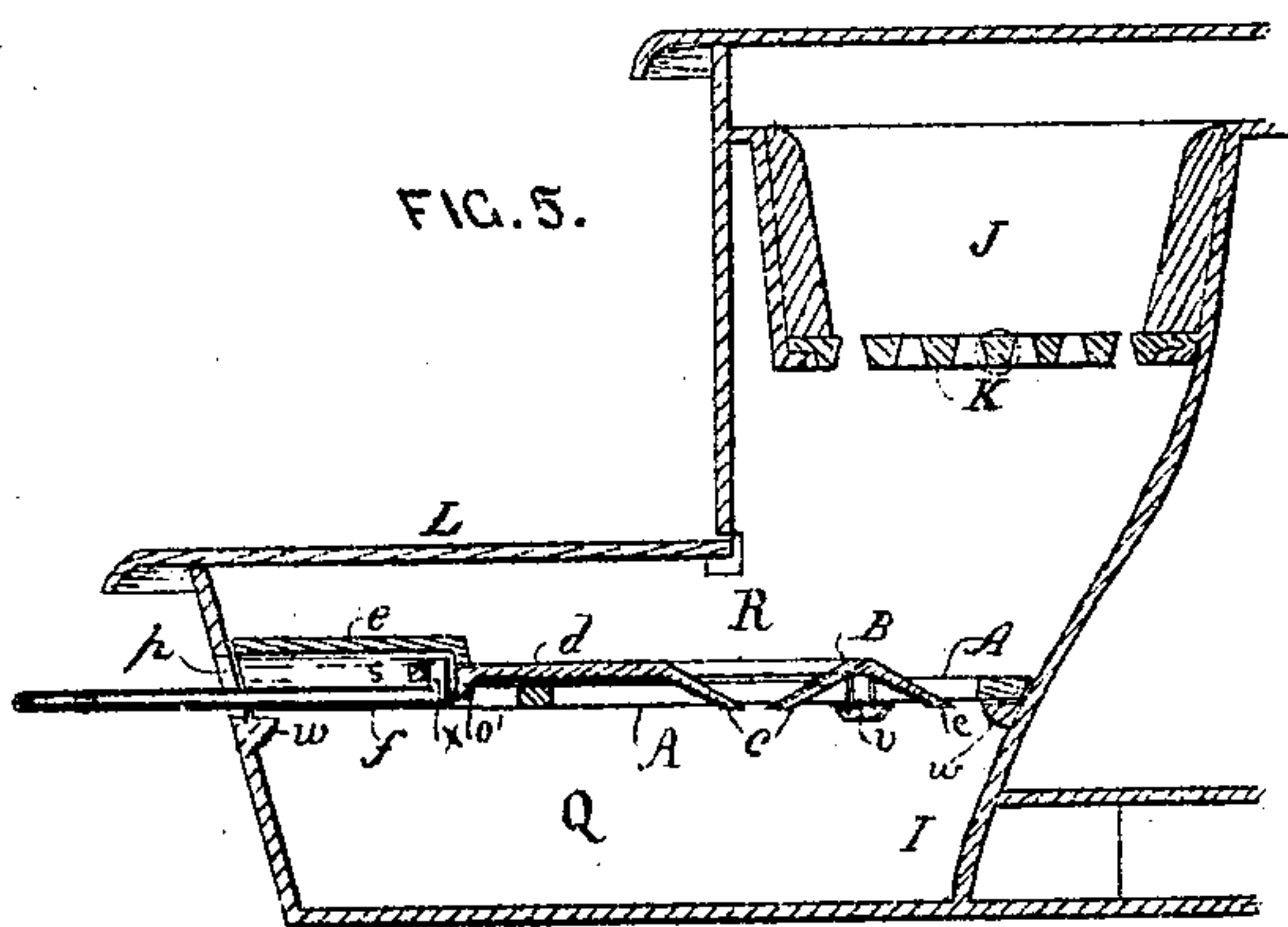
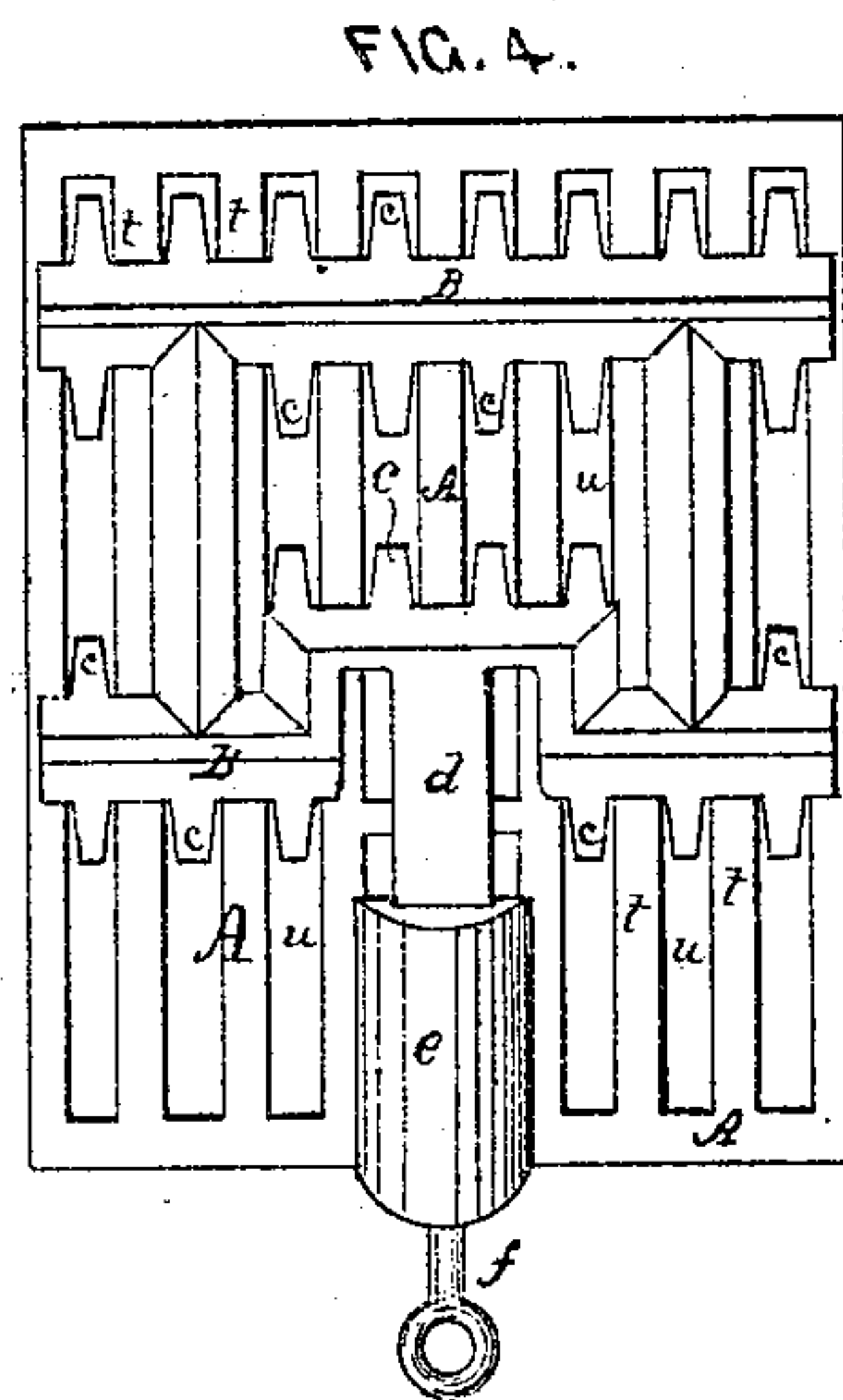
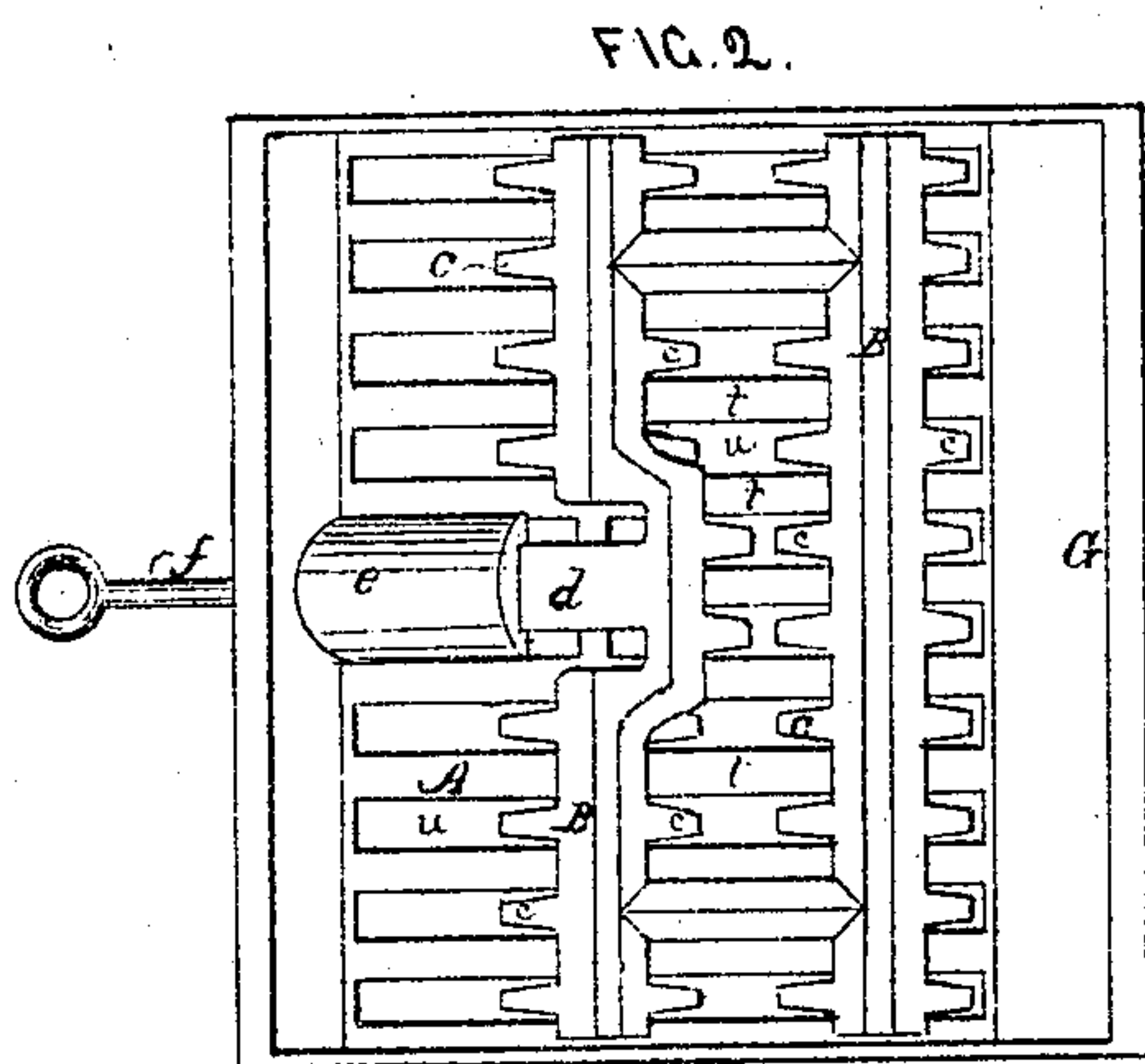
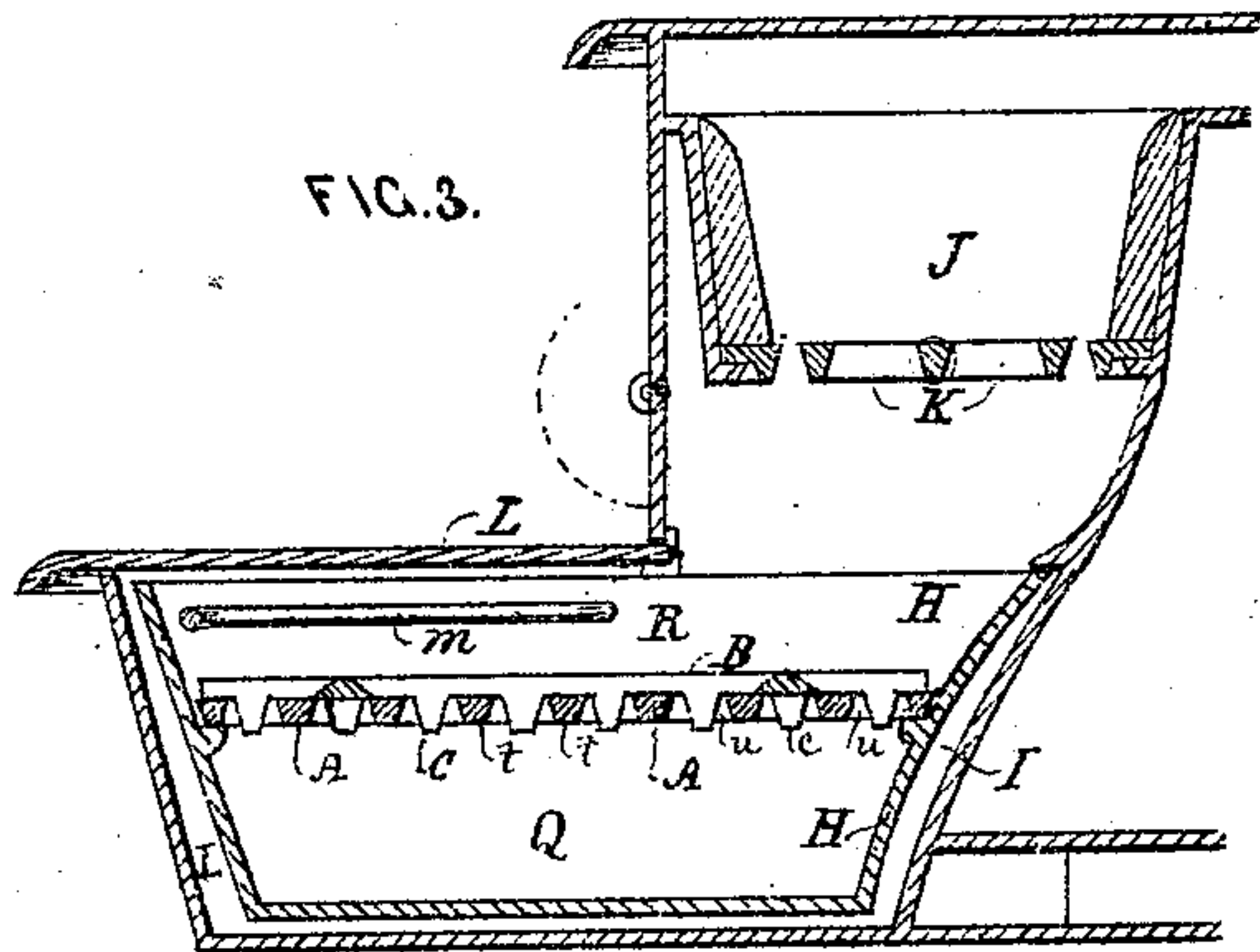
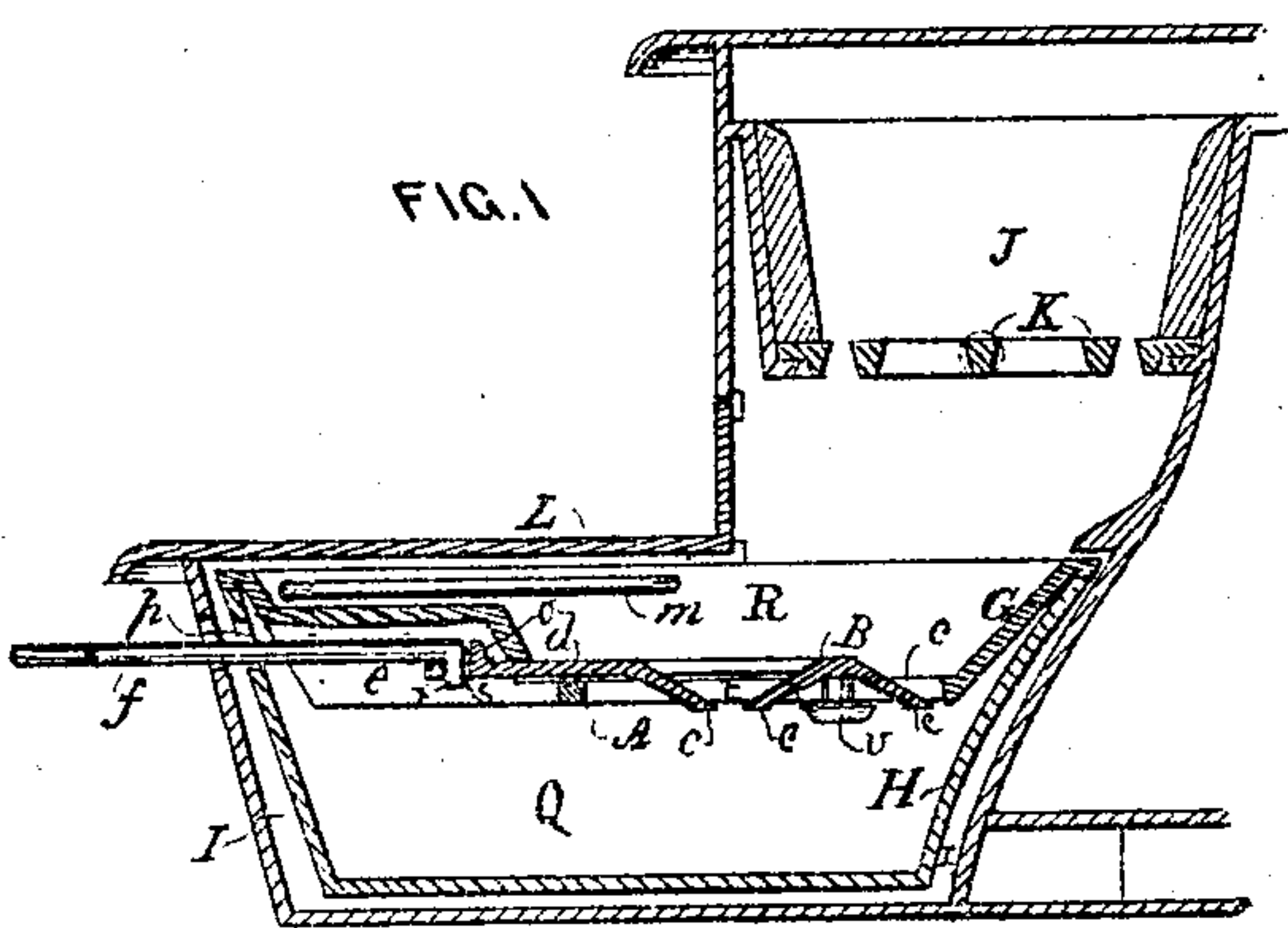


JOHN H. GOODFELLOW. Improvement in Cooking Stoves.

No. 119,514.

Patented Oct. 3, 1871.



WITNESSES:-

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JOHN H. GOODFELLOW, OF TROY, NEW YORK, ASSIGNOR TO SWETT, QUIMBY & PERRY, OF SAME PLACE.

IMPROVEMENT IN COOKING-STOVES.

Specification forming part of Letters Patent No. 119,514, dated October 3, 1871.

To all whom it may concern:

Be it known that I, JOHN H. GOODFELLOW, of the city of Troy, in the county of Rensselaer and State of New York, have invented certain Improvements in Ash and Coal-Sifters for Stoves, &c., of which the following is a specification, reference being had to the accompanying drawing, in which—

Figure 1 is a central vertical section from front to rear of the forward portion of a cooking-stove which embodies all the distinguishing features of my invention, and Fig. 2 is a plan of the ash-sifting device in the same stove. Fig. 3 is a central vertical section from front to rear of the forward portion of a stove in which most of the distinguishing features of my invention are embodied, and Fig. 4 is a top view of the ash-sifting device therein. Figs. 5 and 6 are sections of portions of stoves, showing some part or parts of my invention.

Like parts are marked by similar letters in the different figures.

In some cooking-stoves heretofore made the removable cinder-pan in the pit in the hearth has had its bottom consist of a grate, and the whole cinder-pan was vibrated horizontally in the hearth-pit to sift the ashes through the grate. In some other stoves the removable cinder-pan in the hearth-pit has had a sliding grate for its bottom, which grate was vibrated horizontally to sift the ashes through it. In those cases there could be only very short vibrations of the cinder-pan or of the grate in its bottom, and such vibrations of the pan or grate required considerable waste space in the inclosing hearth-pit, and shook down and packed the cinders close into the spaces between the bars of the grate, so as to soon fill or clog those spaces and almost entirely prevent the passage of the ashes, and, in the case of the sliding grate, small bits of coal and cinders would fall and work in between the top side of the grate and the bottom edges of the cinder-pan under which the grate slid, so as to soon prevent the sliding of the grate to and fro except with great difficulty.

It has been essayed to have a vibrating rake or toothed frame under a grate forming the bottom of a removable cinder-pan in a removable ash-pan, or in the space under the grate of the fire-chamber in a stove, and with the teeth of the sliding frame or rake projecting up between and

above the bars of the grate; but such vibrating teeth projecting up through the grate were rather inefficient in agitating the cinders thereon and in clearing off the ashes and fire-cinders from the broad upper surface of the grate-bars, and such vibrating set of teeth permitted the spaces between the grate-bars to get so packed with cinders that the ashes would not fall through freely, and that the rake or toothed frame could not be slid to and fro without much difficulty. If the same rake or toothed frame had been placed and slid to and fro on top of the grate there would have been nothing to prevent the cinders from getting crowded and wedged down tight into the spaces between the grate-bars, so as to interfere with or prevent the sliding movements of the toothed frame or rake and obstruct the passage of the ashes through the grate.

The principal object of my invention is to produce a cheap and durable ash and coal-sifter in stoves without any of the aforesaid defects. One part of my invention, which is represented in Figures 1, 2, 3, 4, and 5 of the drawing, consists in the combination, with a grate having a series of parallel bars, of an agitator consisting of a bar or bars or frame or frames of any suitable shape arranged across and on the upper side of the bars of the grate, and so as to be capable of being slid to and fro upon and in the lengthwise direction of the grate-bars, and having on the front and rear edges rows of inclined clearing-fingers projecting downward and outward into the spaces between the bars of the grate, so that whenever the said agitator shall be slid to and fro under a mass of mixed coal, cinders, and ashes on the grate, the agitator will slide close along on top of the grate-bars, and thereby clear off the ashes and fine cinders, and will thoroughly stir up the mass of coal, cinders, and ashes, and thereby shake the ashes down through the grate; and at the same time the inclined fingers on the front and rear edges of the agitator will pass under and raise up and clear out all cinders and pieces of coal from the spaces between the bars of the grate in advance of the agitator in its to-and-fro movements, whereby such movements of the agitator are rendered free and easy and the spaces between the grate-bars are kept clear for the ashes to fall through. The improved sifting device, which constitutes the aforesaid part of my invention, can be used in machines and ap-

paratus for sifting coal, gravel, cinders, and other coarse materials in general, as well as for sifting cinders and ashes in stoves. Other parts of my invention relate to certain combinations of my aforesaid improved sifting device with a stove having a fire-chamber over a pit furnished with a removable cover in the hearth, viz.: First, when, as shown in Figs. 1, 3, or 5, my said sifting device is arranged in the hearth-pit with an ash-chamber below and a cinder-chamber above, the said sifting-device and the latter is removable from the hearth-pit upon taking off its cover. Second, when, as shown in Figs. 1 or 3, the said sifting device is arranged in and removable from a removable pan in the hearth-pit, with a cinder-chamber above the sifter and an ash-chamber below it in the removable pan. Third, when, as shown in Fig. 1, my said improved sifter forms the bottom of a removable cinder-pan over an ash-chamber within the hearth-pit. Fourth, when, as shown in Fig. 1, my said improved sifter forms the bottom of a removable cinder-pan which is arranged over an ash-chamber in a removable pan in the hearth-pit. As regards the aforesaid parts of my invention the agitator of the sifting device may be slid to and fro upon the grate thereof by the use of any suitable means; but another part of my invention, which is illustrated by Figs. 1, 2, 4, 5, and 6, consists in the combination, with a grate having a horizontally-sliding agitator on its upper side, of a shank projecting laterally from the agitator and formed to engage with a detachable laterally-projecting shaker-rod at a point within the lateral limits of the grate, when a hood or shield is formed on the grate and over that portion of the shank of the agitator to which the said shaker-rod is to be attached, so that while the agitator can be slid to and fro on the grate by moving the shaker-rod endwise when attached to the shank of the agitator, the shield or hood on the grate over the shank shall prevent ashes and cinders from covering or obstructing that part of the shank of the agitator to which the shaker-rod is attached, and so that when the said shaker-rod is detached from the shank of the agitator the grate and agitator can then be placed in and removed from a pan or pit in which they may be used, as indicated in the drawing, without any interference from the shank of the agitator or from the shaker-rod, which is in such cases to be inserted, used, and removed through an opening in a side or end of the pan or pit. Another part of my invention consists in the combination, with a sliding ash-sifter having a lateral shank with a transverse hole therein to receive the transversely-bent end of a lateral shaker-rod, and covered by a hood or shield, substantially as shown in the drawing, of a lug fast on and projecting transversely from the said shank just back of the said hole therein, so that the said lug shall be a sure guide for inserting the bent end of the shaker-rod into the hole in the shank in whatever different positions the latter may be hid from view by and under the said shield or hood.

In the drawing, A is the grate of the sifter, with parallel bars *t*. B is the agitator, arranged

to slide to and fro on the upper side and in the lengthwise direction of the grate-bars; and *c c* are the rows of fingers fast on the front and rear edges of the agitator, and projecting downward and outward therefrom in inclined directions into the spaces *u* between the bars of the grate. The fingers *c c* serve to guide the agitator B in its reciprocating movements, and the agitator is secured on the grate by a headed stud, *v*. J is the fire-chamber, having a grate, K, in its bottom, and so arranged over the hearth-pit I that the ashes and cinders that fall or are dumped from the fire-chamber shall pass into the hearth-pit or a vessel therein. L is the removable cover of the hearth-pit I. R is the cinder-chamber above and Q is the ash-chamber below the grate A and agitator B in the hearth-pit. In Figs. 1, 3, and 5, the cinders and ashes that shall fall or be dumped from the fire-box J K will lodge on the sifter A B *c c* in the bottom of the chamber R, and by sliding the agitator B to and fro on the grate A the cinders and ashes will be stirred up and the latter will be shaken down through the grate into the chamber Q, while the inclined fingers *c c* of the agitator will keep the spaces between the grate-bars clear, and upon removing the cover L the sifted cinders can be shoveled up off from the sifter, and then the sifter can be taken out of the hearth-pit, and afterward the sifted ashes can be shoveled out of the chamber Q. That mode of removing the sifted cinders and ashes is necessary in Fig. 5, wherein the grate A of the sifter rests directly upon lugs *w* on the inner sides of the hearth-pit. In Figs. 1 and 3 the ash-chamber Q is in a removable pan, H, in the hearth-pit I, so that after shoveling the cinders off from the sifter and removing the latter the sifted ashes may be removed in the pan H and poured therefrom. In Fig. 1 the sifter forms the bottom of the removable pan G, which can be taken out with the sifted cinders therein. The pan G rests in or upon the upper part of the removable pan H, which can be removed with the sifted ashes therein. When the pan H is out of the hearth-pit I in Fig. 1 the sifter-pan G may then be set in the upper part of the hearth-pit, so that upon sifting mixed cinders and ashes in the pan G the ashes will fall directly into the lower part of the pit I, and will in such case require to be shoveled out after removing the pan G with the sifted cinders. In Figs. 1, 2, 4, 5, and 6, *d* is the shank, fast on the agitator B, and covered by the shield *e* formed on the grate A. In the outer part of the shank *d* is the hole *s*, into which the bent end *x* of the detachable shaker-rod *f*, by which the agitator is slid to and fro on the grate, is inserted through a hole, *p*, in the side or end of the pit I and pan H in Figs. 1 and 3. The lug or projection *o* or *o'* on the shank *d* serves to guide the bent end *x* of the rod *f* to the hole *s* in the shank *d*, in whatever position the latter may happen to be left under the shield *e*. In Figs. 1, 5, and 6, the removable rod *f* is inserted, used, and removed through the front side, and, in the parts represented in Fig. 3, through one end of the hearth-pit. The agitator B may have teeth or lugs projecting upward therefrom

if desired, but the form of agitator shown in the drawing has proved quite efficient in use.

What I claim as my invention is—

1. In combination with the grate A the sliding agitator B arranged on the upper side of the grate, and having on its front and rear edges inclined cinder-raising fingers *c c* in the spaces between the grate-bars, as described.

2. In combination with the fire-chamber J K and hearth-pit I having a removable cover, L, the detachable grate A and sliding-agitator B, with inclined clearing-fingers *c c* between the grate-bars and a cinder-chamber, R, above, and an ash-chamber, Q, below the removable grate, as herein set forth.

3. In combination with the fire-chamber and the hearth-pit having a removable cover, the removable grate A and sliding agitator B with inclined fingers *c c* arranged in the removable pan H, having an ash-chamber therein below the removable grate, as herein described.

4. In combination with the fire-chamber and the hearth-pit having a removable cover, the removable cinder-pan G arranged in the hearth-pit over an ash-chamber, and having its bottom

formed by the grate A and sliding agitator B with clearing-fingers *c c*, as herein set forth.

5. In combination with the fire-chamber and the hearth-pit having a removable cover, the removable pan H having an ash-chamber in its lower part, and the detachable cinder-pan G arranged over the ash-chamber and having its bottom formed by the grate A and sliding agitator B with inclined fingers *c c*, as herein described.

6. In combination with the sifting-grate and sliding agitator, the shank *d* formed on the agitator and engaged with a detachable shaker-rod within the limits of the grate, and the shield *e* formed on the grate and closed over the shank of the agitator, as set forth.

7. In combination with the sliding shank *d* covered by the shield *e* and having a hole, *s*, therein for the insertion of the bent end of a removable operating-rod, *f*, as described, the lug or projection *o* or *o'* arranged on the shank and in respect to the hole *s* therein, as set forth.

JOHN H. GOODFELLOW.

Witnesses:

HENRY A. MERRITT,
HENRY L. GREENE.

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