

No. 627,735.

Patented June 27, 1899.

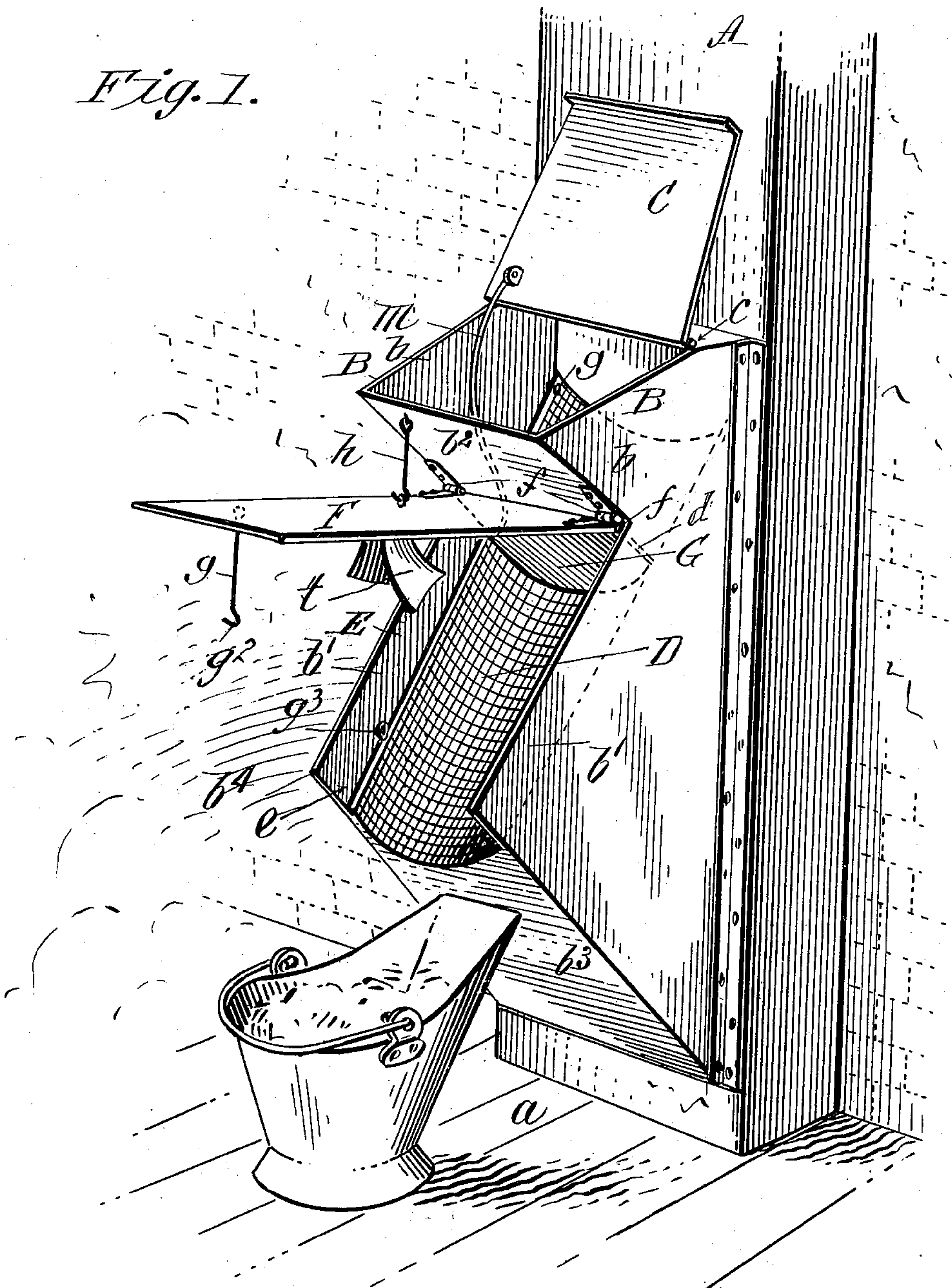
P. J. HYNES.
ASH SIFTING CHUTE.

(Application filed June 1, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



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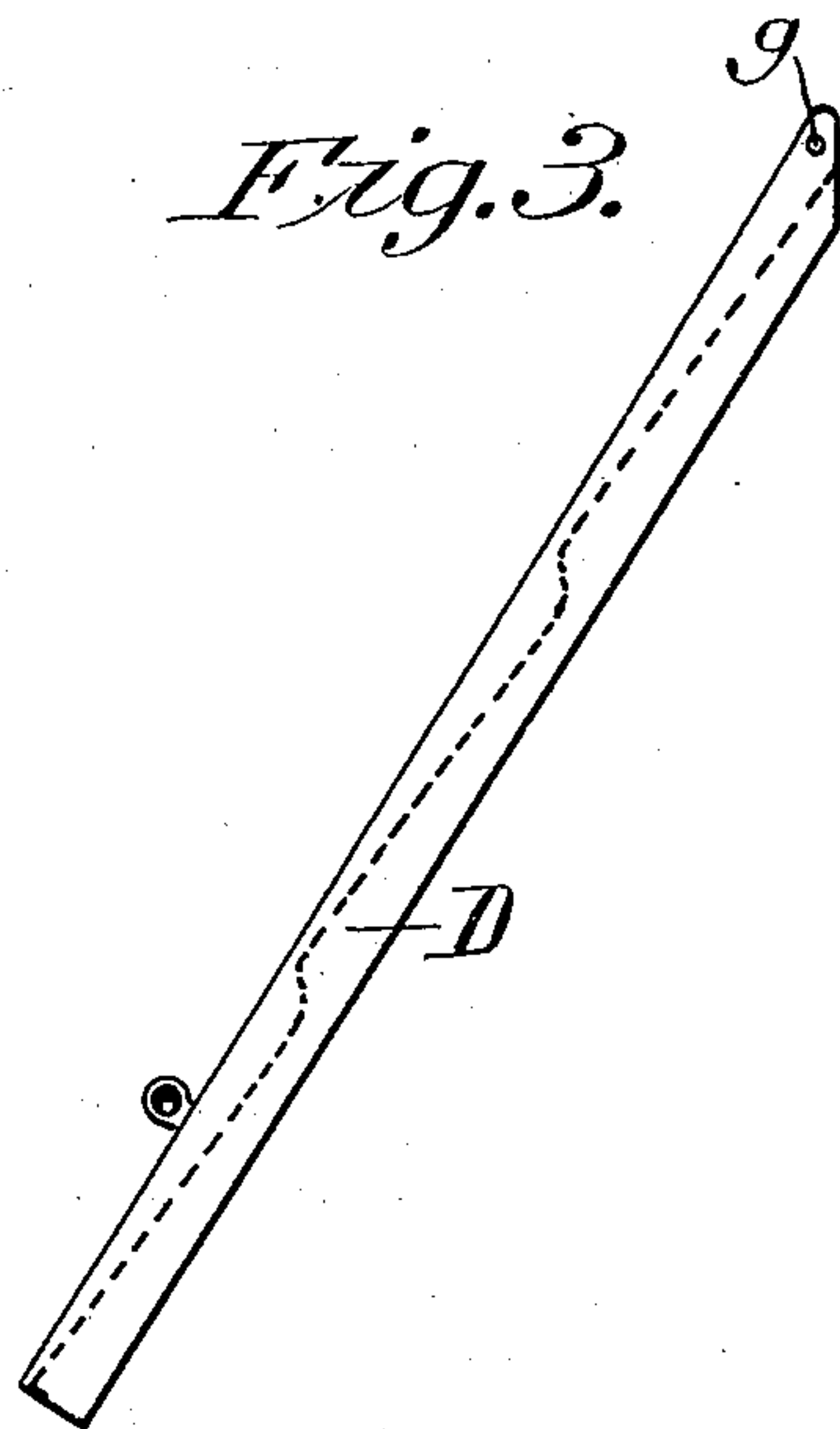
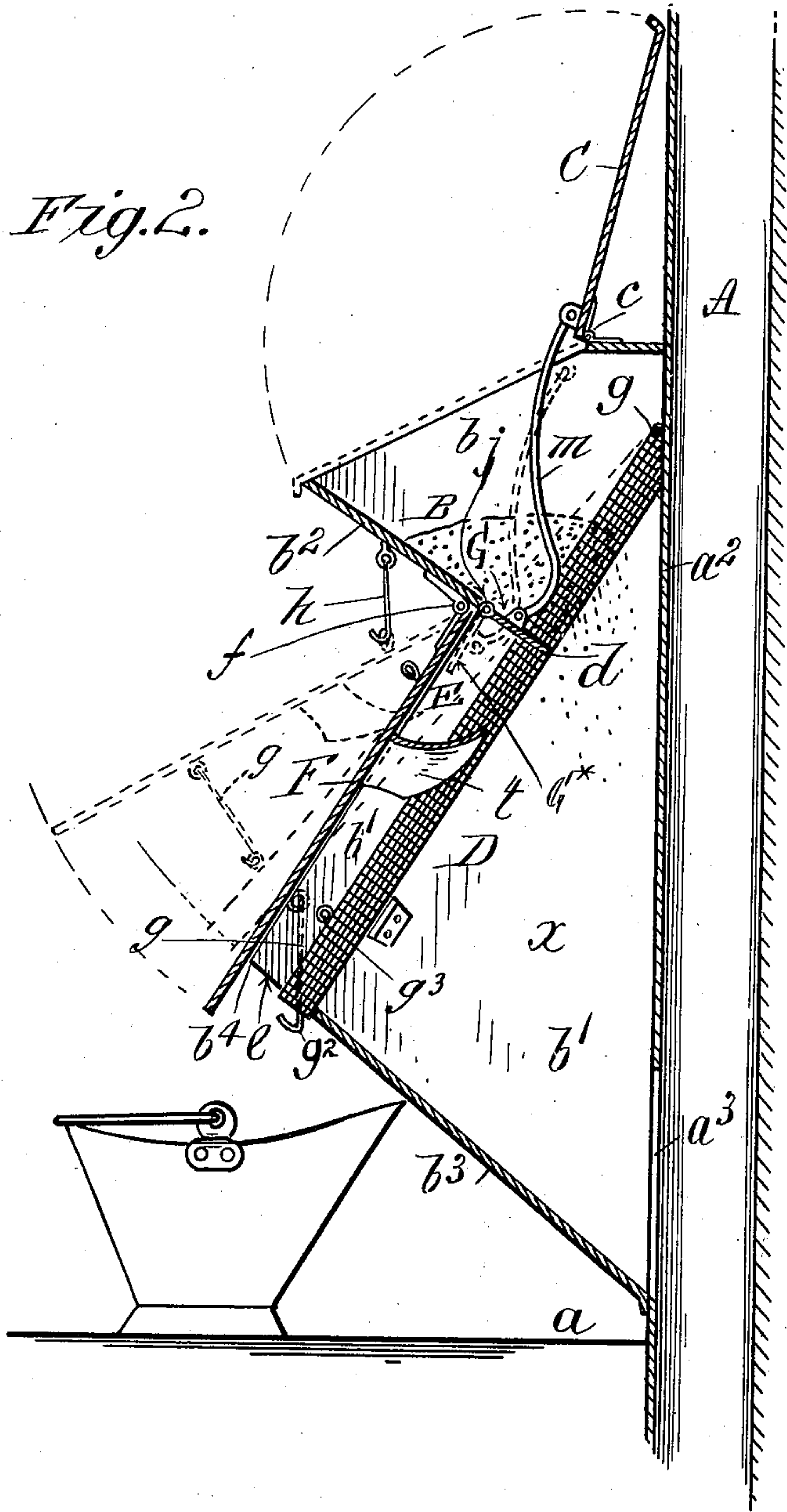
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ASH SIFTING CHUTE.

(Application filed June 1, 1898.)

(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

PATRICK J. HYNES, OF SPRINGFIELD, MASSACHUSETTS.

ASH-SIFTING CHUTE.

SPECIFICATION forming part of Letters Patent No. 627,735, dated June 27, 1899.

Application filed June 1, 1898. Serial No. 682,290. (No model.)

To all whom it may concern:

Be it known that I, PATRICK J. HYNES, a citizen of the United States of America, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Ash-Sifting Chutes, of which the following is a full, clear, and exact description.

This invention relates to improvements in ash-sifters having combined therewith an underlying chamber into which the ashes pass, and, furthermore, to the combination and arrangement of the ash-sifting appliances of an ash-flue for conveying the ashes down to the basement or to such other place at which the flue may terminate, while the remnants of the coal, separated from the ashes, are directly delivered through the outer opening of the sifting-chute; and the invention consists in certain novel constructions and combinations or arrangement of parts, all substantially as will hereinafter fully appear and be set forth in the claims.

Reference is to be had to the accompanying drawings, in which the present improvements are illustrated, wherein—

Figure 1 is a perspective view of the ash-sifting chute. Fig. 2 is a central vertical section through the ash-flue and ash receiving and sifting chute. Fig. 3 is a central longitudinal sectional view through the screen, showing a further feature of construction desirable to have embodied in the sifting-screen.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, A represents a vertical flue, continuations of the same being understood as usually extending from top to bottom of a building. At the front of the flue, at a suitable height above the floor *a* as convenient, is provided the ash receiver or hopper B, the same comprising opposing side walls *b b* and the front wall *b²*, which is downwardly and rearwardly inclined toward the front wall *a²* of the chute, and the open top of this hopper, which is downwardly and forwardly inclined, is provided with the cover C, which is hinged at *c*. The aforesaid inclined front of the hopper has the opening *d*.

Below the hopper is the forwardly-protruding portion of the chute, in which are comprised the sifting-screen D and the coal-de-

livering passage or spout E. These portions of the apparatus are constituted by opposing parallel side walls *b' b'*, which advantageously may be continuations of and integrally formed with the sides *b b* of the hopper and of substantially triangular form with the apex outward, the base being next to the ash-flue A and the front wall *b³* downwardly and rearwardly extending from a line somewhat below the apex *b⁴*, as shown in the drawings. The screen is located and downwardly and forwardly extended both in the portion of the chute below the hopper and in part in the hopper, forming, with the wall *b²*, the angular and convergent hopper-base, preferably hinge-supported or pivoted at its upper end, as indicated at *g*, and said screen D constitutes the bottom of the coal-delivering passage E, the delivery-opening for said passage (indicated at *e*) being provided for by suitably shortening the forwardly and upwardly arranged wall *b³* of the chute, as shown.

F represents a cover of the delivery-passage E, the same being downwardly and forwardly inclined about parallel with the screen D, its lateral edge portions resting on the upper edges of the side walls *b' b'*, and this cover F is preferably hinged, as indicated at *f*, to the front of the hopper. It is or may be also connected by the latch-rod *g* to the screen, so that when raised the screen also will be raised or so that by disconnecting the hooked end *g²* of the latch-rod from the eye or staple *g³*, provided for the engagement thereof, the cover F may be upwardly swung independently of the screen.

h represents a supporting catch device for holding the cover F or both the cover and the screen in upwardly-swung positions, the same, as shown, consisting of a hook-rod and an engaging eye therefor, the one being provided on the cover and the other on the front of the hopper.

The ash-flue A has the opening *a³*, leading from the ash-receiving chamber *x* of the chute into the ash-flue.

The aforementioned opening *d* at the base of the hopper B, which is in communication, except when closed, with the delivery-passage E, of which the screen is the base, as aforesaid, has the throat or damper plate G of a size to completely fill said opening, the same

being hinged, as seen at *j* and so as to be downwardly swung to assume a position within the passage E adjacent the cover or top wall F of said passage, as indicated by the dotted-line representation G* of the changed or opened position of the cover in Fig. 2, and the throat or damper plate is absolutely and positively controlled by the hopper-cover C by being joined (by the connecting-rod *m*, which is pivotally connected to suitable earpieces on both the said cover and throat-plate, located preferably closely at one side of the hopper) to move in unison with the hopper-cover, the throat-plate opening when the cover closes, and vice versa.

Upon the under side of cover F is an angular or plow-shaped spreader *t*, divergent downwardly and forwardly, whereby to cause the ashes and cinders to be more evenly and thoroughly distributed over the screen as they descend.

The provision and combination and arrangement of the throat-plate closing the entrance from the hopper into the passage E, together with the hopper-cover joined by the connecting-rod to the throat-plate, constitute desirable features in the apparatus, as dependent thereon principally are the capabilities and advantages which render this ash-sifting chute very convenient and useful, and this is especially for the reasons as follows: It insures that of the ashes and cinders to be sifted which are entered into the hopper while the hopper-cover is opened the cinders will remain in the hopper and be prevented from passing down over the screen until the cover is lowered. It permits that the coal hod or receptacle which contained the ashes dumped into the hopper may be placed under the delivery end of the chute for the reception of the sifted or screened coal remnants before the latter are, as controlled by the cover C, permitted to be delivered. It provides that the ashes may be, according as the cover is quickly or slowly lowered to its closing position, correspondingly quickly or slowly permitted to descend over the screen.

It will be apparent that where coal is not worth sifting by elevating both the cover F and screen D, united as described, the ashes or other matter may be introduced into the chute-chamber *x* without being brought upon and having to pass through the screen.

I prefer to construct the screen of suitably coarse screen-wire provided with a marginal supporting-frame of metal and to have the same trough-like or concave between its edges. The efficiency of the screen is furthermore augmented by having it stepped, as indicated in Fig. 3 of the drawings, and yet while the concaved screen and the concave stepped screen is preferably to be employed the invention is not necessarily limited to such, and I regard the employment of any form of an apertured sifting-surface to be the equivalent of a screen, and hence the device

is not necessarily dependent upon the employment therein of a screen having a mesh.

The inclosing portions, covers, and the throat-plate of the herein-described ash-sifting chute may be advantageously, economically, practicably, and durably made of sheet metal, and headed rivets may be employed to constitute the hinges or pivots comprised as features therein.

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

1. In an ash-sifting apparatus, the combination with a casing inclosing a chamber, of the hopper thereabove having the base-opening, the throat-plate therein, the screen D having the downwardly and forwardly inclined position in said chamber, being at its upper end pivotally mounted, the cover F also pivotally connected on, and adapted to swing relatively to, the top of said casing and detachably connected with the screen, and means for operating the throat-plate.

2. In a sifting ash-chute, the combination with the ash-flue, the hopper at front thereof, having the base-opening, and throat-plate therein, and the inclosed forwardly-extended chamber under the hopper, rearwardly opening into the ash-flue, and comprising the delivery-passage E, of the screen D having a downwardly and forwardly inclined position in said chamber, being at its upper end pivotally mounted and the cover F also pivotally connected on the chute and detachably connected with the screen, and means for operating the throat-plate, substantially as described.

3. In an ash-sifting apparatus, the combination with a casing inclosing a chamber, of the hopper thereabove having the base-opening, the screen having the downwardly and forwardly inclined position in an upper part of said chamber, a cover F over and separated from the screen and the plow-shaped spreader *t* supported in the space between the cover and screen, for the purposes set forth.

4. The combination with the ash-flue A having in its front the opening *a*³ and a forwardly-opening inclosed chamber in front thereof, provided with a forward wall *b*³ downwardly and rearwardly inclined toward the portion of the flue having the said opening *a*³, of the screen D pivotally mounted and forwardly and downwardly inclined, located within said inclosed chamber, the hinged cover F above and separated from the screen, said chamber being provided with the discharge-opening at its front portion above the screen, the hopper B in front of the flue above the screen-inclosing chamber having the downwardly and rearwardly inclined front *b*² provided with the opening *d*, a throat-plate hinged in said opening, a cover for the hopper, and a connecting-rod secured to both the cover and the throat-plate whereby, when the cover is opened, the throat-plate will be closed, and whereby the

5 action of closing the cover will open the throat-plate, precipitating the contents of the hopper upon the screen, and means, as the eye and engaging hook on the hopper and screen-cover for temporarily supporting the cover opened from the screen, and means of detachable connection whereby the raising or lowering of the screen-cover correspondingly

raises and lowers the screen, substantially as described.

Signed by me, at Springfield, Massachusetts, this 26th day of April, 1898.

PATRICK J. HYNES.

Witnesses:

WM. S. BELLOWS,
M. A. CAMPBELL.

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