

(No Model.)

W. BUTCHER & C. G. BAILEY.

COAL SIFTER.

No. 379,267.

Patented Mar. 13, 1888.

Fig 1

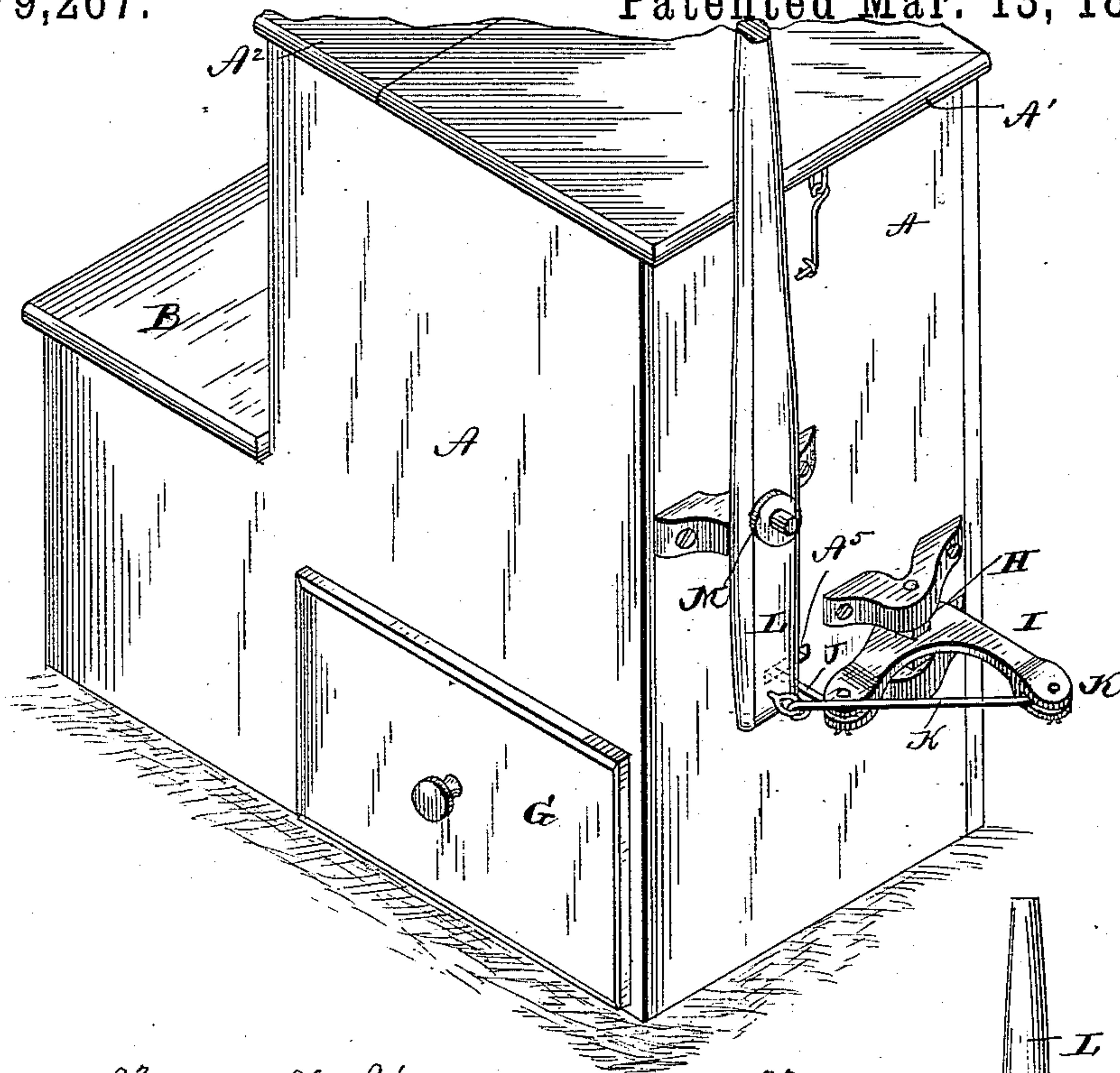


Fig 2

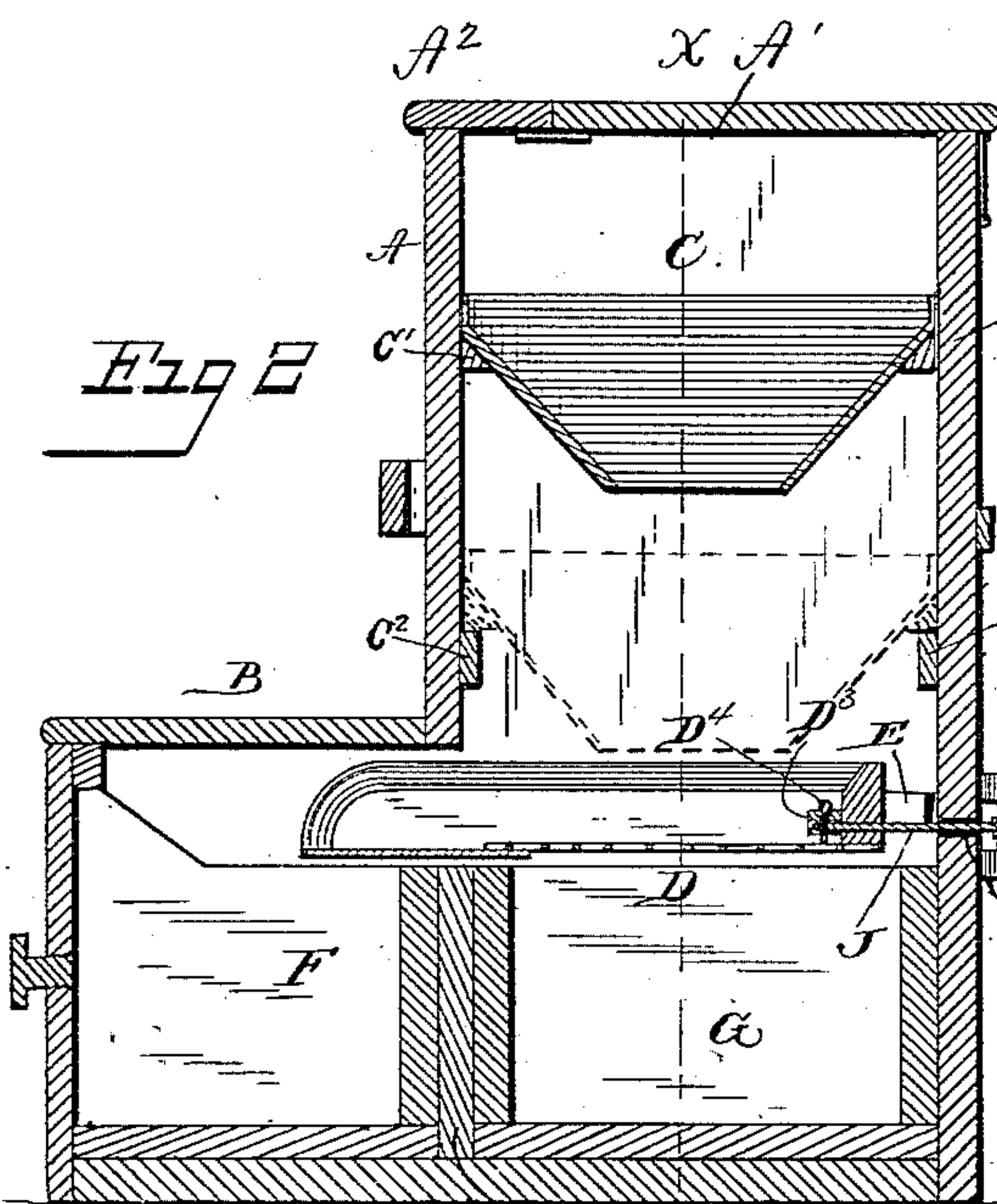
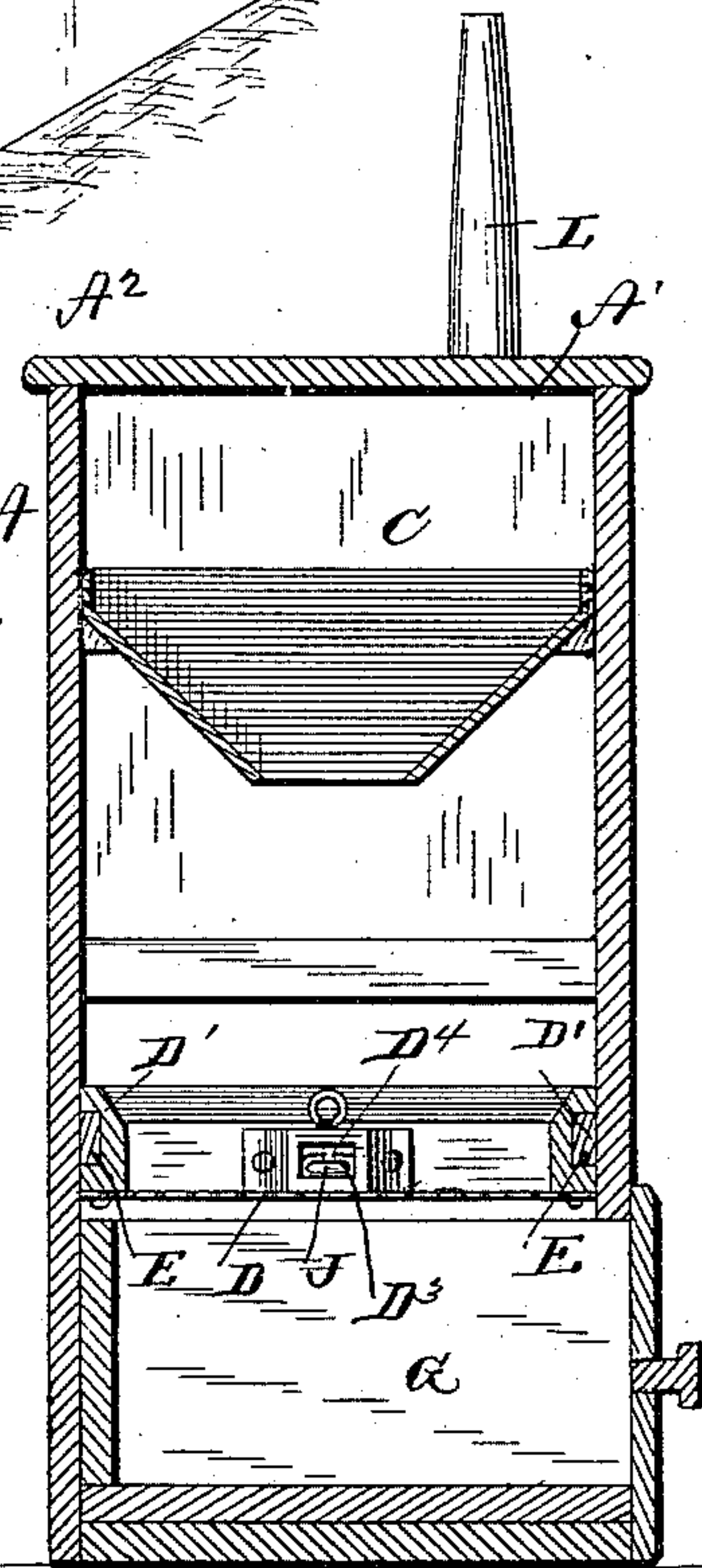


Fig 3



Witnesses  
F. L. Ouraud  
Benj. G. Cowf.

Inventor  
William Butcher & Charles G. Bailey.  
By their Attorneys  
Louis Dugger & Co.



# UNITED STATES PATENT OFFICE.

WILLIAM BUTCHER AND CHARLES G. BAILEY, OF YORK, PENNSYLVANIA.

## COAL-SIFTER.

SPECIFICATION forming part of Letters Patent No. 379,267, dated March 13, 1888.

Application filed March 19, 1887. Serial No. 231,488. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM BUTCHER and CHARLES G. BAILEY, both residents of York, in the county of York and State of Pennsylvania, have invented certain new and useful Improvements in Coal-Sifters; and we do hereby declare that the following is a full, clear, and exact description of the invention; which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of our improved coal-sifter. Fig. 2 is a central longitudinal vertical sectional view of the same; and Fig. 3 is a transverse vertical sectional view taken on the plane indicated by line *x x*, Fig. 2.

The same letters of reference indicate corresponding parts in all the figures.

Our invention consists in a new and improved coal sifter which is exceedingly efficient in action in separating the particles of coal from the ashes, and which can be used in the house without any dust escaping into the room. Our invention will be hereinafter fully described and claimed.

Referring to the several parts by letter, A indicates the outer casing of our improved coal-sifter, and B indicates the forward lower extension of the said casing. The upper or upright part of the casing A forms a receptacle or hopper, into which the cinders and ashes are poured through the top opening, A', thereof, this top opening having a cover, A<sup>2</sup>, which may be opened and closed when desired. Within the straight interior space or funnel in the upper part of the casing A is a hopper, C, which is provided with cleats C' upon two of its sides near its upper edge. These cleats rest upon other cleats or cross-pieces, C<sup>2</sup>, upon the interior of the casing, so that the lower edge or bottom of the hopper is so near the screen that it will not permit small coal to pass out so freely as to pass over the screen without being cleaned, but will cause it to pass out in a thin layer or stream, and thus permit all of the ashes being sifted out of it. To adapt the device for large coal, the hopper is raised to the required height to per-

mit the coal to pass out from under the bottom of the hopper and secured in that position by placing loose cleats between the cleats on the hopper and those within the casing; or the ordinary thumb-screws can be used by passing them through the sides of the casing. By having the hopper loose it can easily be removed for the purpose of putting in or taking out the loose cleats, removing dirt, &c., or for gaining access to the top of the screen.

D indicates the reciprocating screen, the parallel longitudinal side pieces of which are formed with longitudinal guide-grooves D' D', which fit and slide on guide-strips E E, secured, as shown, to the inside of the casing A B below the hopper-screen D. The space below the screen D in the casing A B is divided by a vertical transverse partition, B<sup>3</sup>, into two separate spaces, in which slide the drawers F and G, the drawer G, which slides and fits below the hopper A<sup>3</sup>, being designed for the reception of the dust and ashes from the coal, while the drawer F, which fits and slides in the front end of the casing B, is designed to receive the coal which falls over the front end of the screen D.

On the rear outer side of the casing A is centrally pivoted in a bearing, H, a curved or U-shaped bell-crank, I, one end of which is pivotally connected by a pitman, J, with the rear end of the screen D, the inner end of the said pitman being pivoted in a small bearing, D<sup>3</sup>, on the rear of the screen by means of a removable pivot-pin, D<sup>4</sup>, the said pitman passing and working through a slot, A<sup>5</sup>, in the rear of the casing A, and the other or outer end of this U-shaped crank I is pivotally connected by an auxiliary pitman, K, with the lower end of the operating handle or lever L, which is centrally pivoted on a bearing, M, in a vertical position, on the outer side of the rear of the casing A, as shown.

In operation the coal to be sifted is placed in the hopper C. The cover of the hopper and the two drawers F and G having been tightly closed to prevent the escape of dust into the room, the handle L is reciprocated on its central pivot and the screen D thus reciprocated back and forth in the casing. The dust and ashes will thus be effectively separated or sifted from the particles of coal and will pass



through the openings of the screen down into the drawer G, where they are received, and by drawing out this drawer the ashes can be readily removed and thrown outdoors, while the particles of unburned or partly unburned coal which are too large to pass through the small openings of the screen will be shaken over the front end of the same and are received in the front drawer, F. The transverse partition between the drawers effectually prevents any ashes from getting into the coal-drawer F.

From the foregoing description, taken in connection with the accompanying drawings, the construction, operation, and advantages of our invention will be readily understood. It will be seen that our invention is simple and strong in construction and exceedingly efficient in its operation, and can be used within the house without any of the dust escaping into the room. The hopper can be raised as desired to suit the size of the coal being operated upon, and by removing the pin D<sup>4</sup> the screen may be at any time removed to clear or repair it.

Having thus described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

1. The combination, with the outer casing having the cover and transverse vertical partition, of the movable hopper, the reciprocating screen, and the two drawers, substantially as and for the purpose set forth.

2. The combination, with the outer casing having the transverse vertical partition, of cleats upon the interior of the casing, a movable hopper having cleats upon its sides, the drawers, and the reciprocating screen, substantially as and for the purpose herein set forth.

In testimony that we claim the foregoing as our own we have hereunto affixed our signatures in presence of two witnesses.

WILLIAM BUTCHER.  
CHARLES G. BAILEY.

Witnesses:

ARTHUR M. SPANGLER,  
H. SAMUEL SPANGLER.