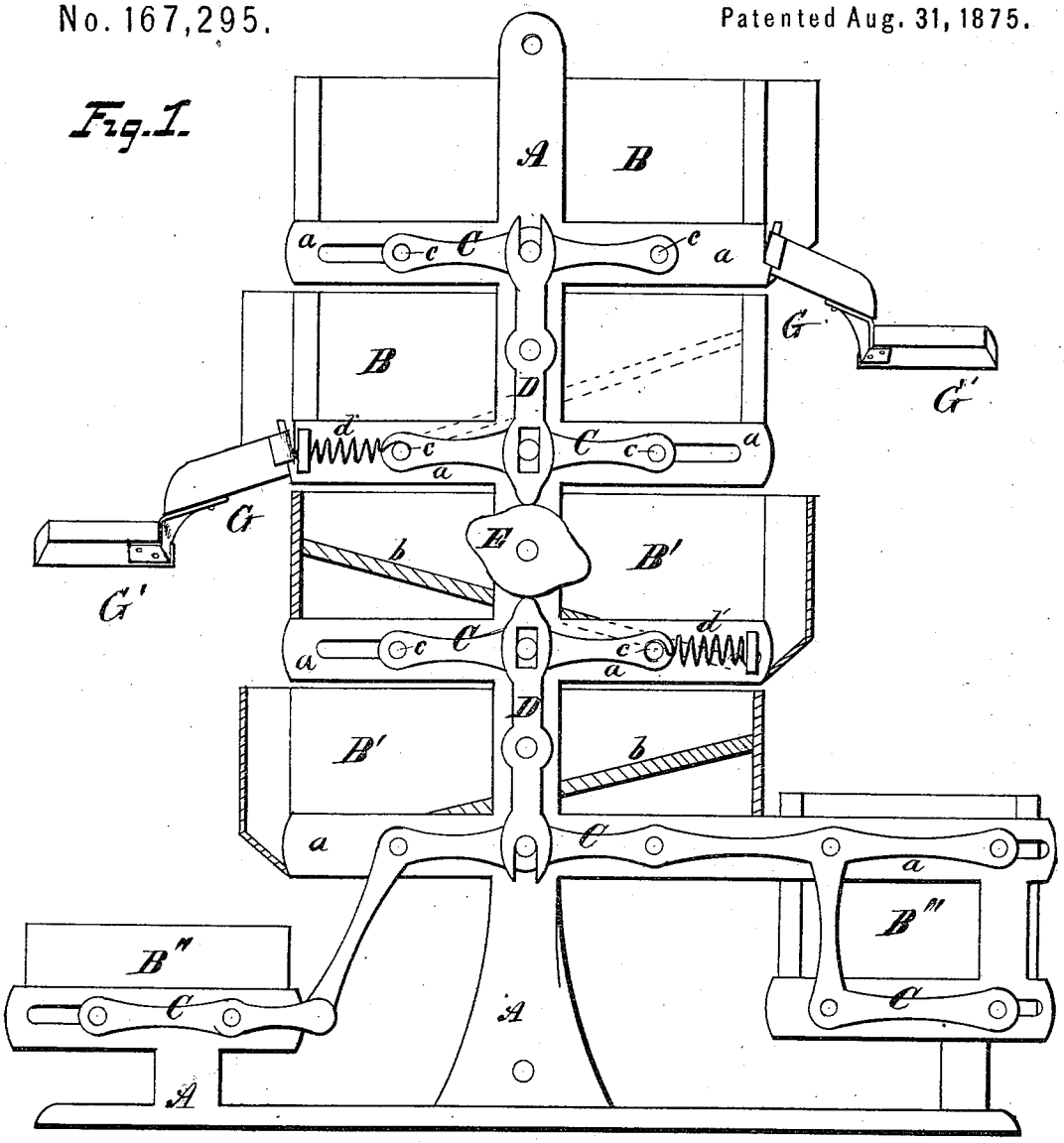
W. BAUMANN.

Ash-Sifter.

No. 167,295. Patented Aug. 31, 1875.

Fig. 1.



Witnesses

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WILLIAM BAUMANN, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN ASH-SIFTERS.

Specification forming part of Letters Patent No. **167,295**, dated August 31, 1875; application filed April 28, 1875.

To all whom it may concern:

Be it known that I, WILLIAM BAUMANN, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements on Ash and Cinder Sifter; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a side elevation, the two middle boxes being in vertical section to show the inclined grates.

This invention relates to a device for sifting cinders from the rakings of large furnaces. These rakings or waste contain slag, cinders, and ashes. My object is to separate these, and assort the cinders so obtained, so as to make a useful and saleable product from this great waste. For this purpose my invention consists in a vertical series of horizontal boxes with inclined sifting-bottoms, the latter being so graduated that at and near the top of the pile the slag is sent off through distributing-chutes, and at and near the bottom of the pile the clear cinders are obtained assorted, while the useless ashes pass down through all into a proper place under all. The sifting apparatus consists in an arrangement of slides and levers, all actuated by one cam or trip, centrally located, by whose direct constant motion, all the boxes are shifted horizontally in alternately-opposite directions.

My construction is as follows: The two side supports and guides consist each of a single metal piece having a ground beam, an upright standard, and as many cross-pieces as there are sifting-boxes. These two sides are fastened rigidly at the proper distance apart for the boxes to work. The boxes are made of metal filled in with wood, and have their grated bottoms of different-sized meshes, diminishing from top to bottom of the pile, and have their grates inclining in alternately-opposite directions, each box being provided at the bottom of the incline with an opening suitable for the delivery of the portions of slag or cinders too large to pass through. The two upper boxes will thus have their openings at opposite ends, and are provided with chutes for the delivery of the large and small slag separately. The slag is always in larger masses than the cinders, as it cakes in the furnace. From the frame-work of the boxes extend pins, which, passing through horizontal slots in the cross-bars of the side pieces, are fixed to agitating-bars, which are then worked or horizontally shaken by means of slotted simple levers thrown by the cam or trip. The return motion is effected by retractile spiral springs, whose ends are respectively attached to a bearing on the box and to the agitating-bars. For the sake of convenience the two lower boxes are placed out of the vertical line, and in such a position that the boxes immediately above them shall deliver directly into them. Though the cinders are delivered into these, they are are also grated, so as to completely and finally clear the cinders for use. They are also actuated by a continuation of the agitating-bars of the lowest box of the vertical series.

Reference being had to the drawings herewith, A represents the frame of the device, with cross-bars *a*. The sifting-boxes B B′ are open at alternately-opposite ends, and are provided with inclined grated bottoms *b*, also inclining in alternately-opposite directions, and in each box the incline runs toward the open end. The grated bottoms have their openings graduated properly, the larger openings being in the upper boxes, and the smaller openings in the lower. The boxes B B communicate, through the medium of said openings, with chutes G, leading, if desired, to suitable receptacles G′ G′, said chutes being attached to the frame-work of the apparatus. B″ B″ represent the receiving-boxes, into which the sifted particles of the cinders are finally delivered through the openings in the boxes B′ B′. From the frames of the boxes project pins *c*, through the slots in the cross-bars of the standards, and are fastened to the agitating-bars C. These bars C are provided with a central boss, which plays in the slotted ends of the simple levers D. The two adjacent ends of the levers D are driven in opposite directions by the cam or trip E, which is driven always in one direction by steam or other power. The two upper boxes regain their normal position by means of the spiral springs *d*,

and the next pair by springs *d'*. The inclination of the grates may be adjusted by means of set-screws or levers, as desired.

The apparatus, when made after my plan, may be put together by anybody, as I make no screw or bolt connections, except at top and bottom of frame. All the parts are cast ready, and need no finishing. The boxes are cast in one piece, with open sides and ends, into which wood slides are adjusted.

I claim—

1. The combination, with the vertical series of vibrating screens B B B′ B′, of the vibrating receptacles B″ B″, substantially as described.

2. The standards A, having the slotted arms *a*, supporting the boxes B B and the vibrating mechanism thereof, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of April, 1875.

WILLIAM BAUMANN.

Witnesses:

T. J. McTIGHE,

A. CORCORAN.