(No Model.) 2 Sheets—Sheet 1.

# B. D. CROCKER.

## APPARATUS FOR CLEANING GRAIN.

No. 343,891. Patented June 15, 1886.

Fig. 1

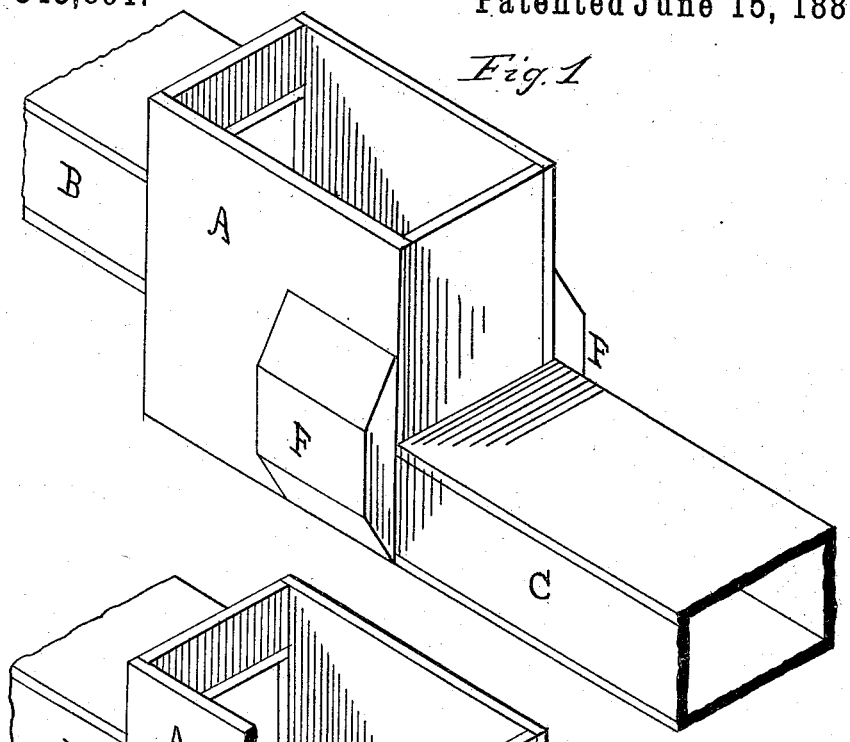
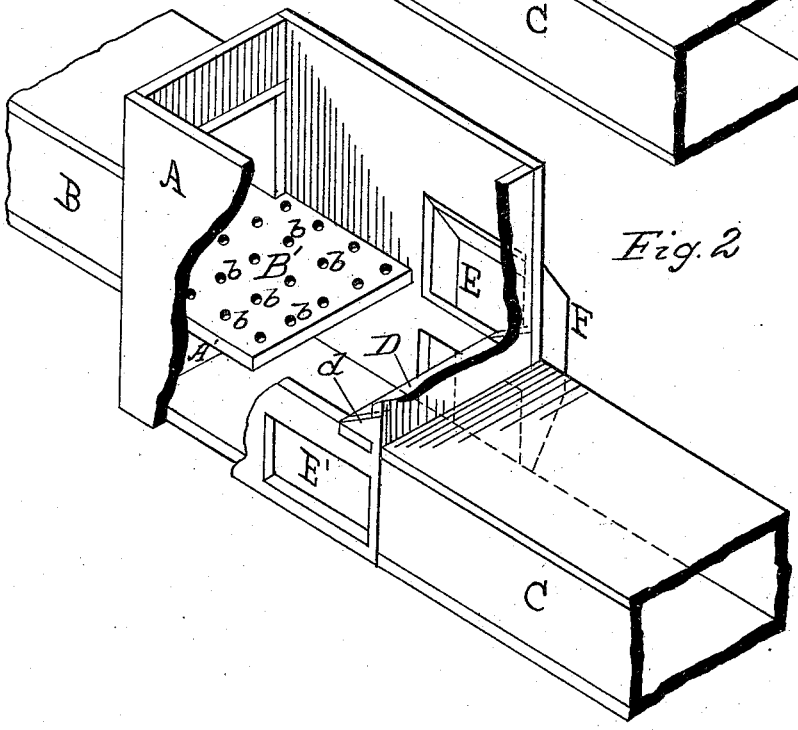



Fig. 2




Witnesses
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Inventor
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(No Model.) 2 Sheets—Sheet 2.

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## APPARATUS FOR CLEANING GRAIN.

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Fig. 3

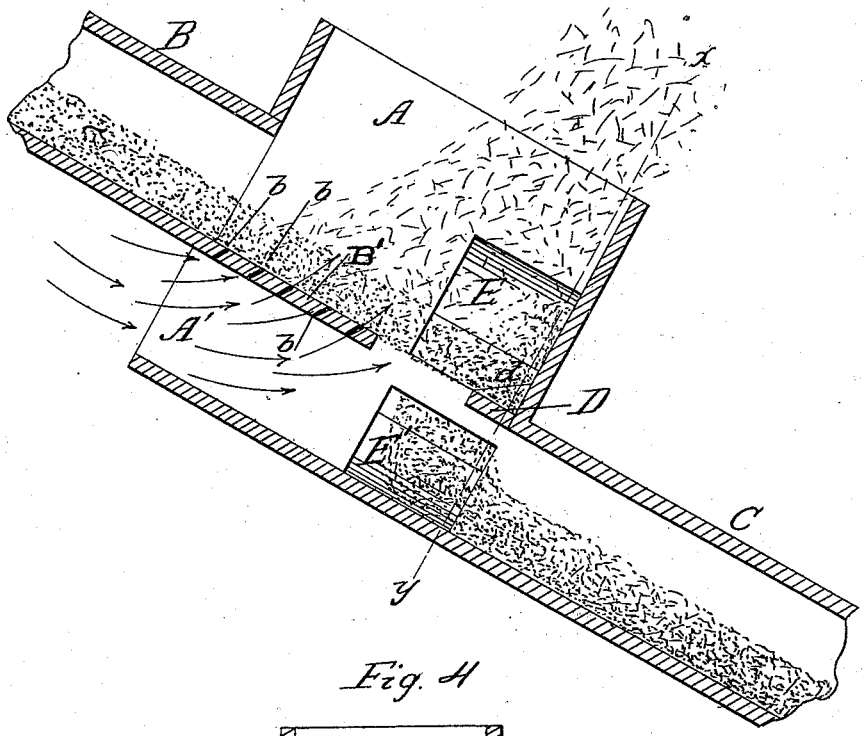
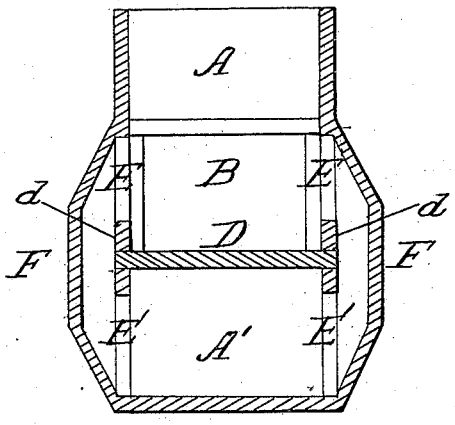



Fig. 4

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# UNITED STATES PATENT OFFICE.

BENJAMIN D. CROCKER, OF WALLA WALLA, WASHINGTON TERRITORY.

## APPARATUS FOR CLEANING GRAIN.

SPECIFICATION forming part of Letters Patent No. 343,891, dated June 15, 1886.

Application filed January 29, 1886. Serial No. 190,209. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN D. CROCKER, a citizen of the United States, residing at Walla Walla, in the county of Walla Walla, Washington Territory, have invented certain new and useful Improvements in Apparatus for Cleaning Grain; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention consists in the combinations and arrangements of parts hereinafter described, and particularly pointed out in the claims; and its main object is to enable a moving stream of grain passing down through a chute or other conduit to be utilized for producing a suction, and thereby set in motion a current of air through the grain, to remove dust, chaff, and other impurities.

In the drawings similar letters refer to similar parts in all the figures.

Figure 1 is a perspective view of my apparatus. Fig. 2 is a similar view, certain parts being broken away to show the interior. Fig. 3 is a longitudinal section. Fig. 4 is a cross-section on line *x y*, Fig. 3.

A is a box, partially or wholly open at the top. At about the middle of one end enters a chute, B, the bottom of which, B′, extends into the box A, and is perforated with a number of holes or inlets, *b b*, which are preferably inclined, as shown. These inlets communicate with the outer air, since below the chute B is an opening, A′. It may be found desirable to protect this opening A′, and also the top of the box A, with wire-gauze or the like, to prevent the entrance of dirt, rats, and other objectionable things. Connected with the other end of the box A is another chute, C, the bottom of which is in the same plane as the bottom of box A. Projecting from the inside of this end of the box is a shelf, D, which has low side pieces, *d d*, and is located in about the same plane as the perforated bottom B′ of chute B.

In each side of the box A and adjacent to the ends of shelf D are openings E E′. If desired, that part of the side of the box which is shown in the drawings as left between these two openings may be cut away, throwing both openings into one.

On the outside of box A are two smaller boxes, F F, which preferably have inclined tops and bottoms and cover the openings E E′.

The chutes are of course more or less inclined, as shown, in order to cause the grain to descend through them, chute B being the higher.

The operation of my apparatus is as follows: The stream of grain enters the box A from chute B with considerable velocity, and in passing over the holes or inlets *b b* acts like the air-jet of an atomizer to produce a partial vacuum and suck the air in through said holes or inlets, and also through the open space between the end of bottom B′ and shaft D. The currents of air thus generated enter the mass of grain at an angle to the line of its movement, and blow out of it all dust, chaff, and other light impurities. These pass out through the open top of box A, which is high enough, however, to keep the grain from escaping. Meanwhile the grain shoots across the open space at the end of B′, heaps up on shelf D, overflows at each end, and passes through openings E, boxes F, and openings E′ to the lower chute, C.

The shelf D retains a small heap of grain, which acts as a cushion to receive the descending stream, and prevents the kernels from being bruised or broken, as they would be did they strike upon a hard and rigid substance. By using a series of these chutes and boxes to form a continuous conduit from the upper part of an elevator to the discharge-spout the grain will be effectually cleaned. The boxes also act to check the velocity of the grain and enable it to be more readily handled.

I do not herein claim the method of producing the air-currents which I have described, that being the subject of a separate application of even date herewith, Serial No. 190,210.

What I claim as of my invention, and desire to secure by Letters Patent, is—

1. A grain-chute having near its lower end air-inlets, whereby the stream of moving grain passing rapidly across the inner end of said inlets will cause the air to be sucked in through them and blow through the mass of moving

grain, for the purpose of removing chaff and other light impurities, substantially as shown and described.

2. The combination, with a grain-chute having near its lower end inlets for the purpose of admitting currents of air to pass through the mass of moving grain, of an open box receiving the end of said chute, substantially as and for the purpose set forth.

3. The combination, with box A, having overflow-openings, of shelf D and chute B, substantially as and for the purpose set forth.

4. The combination, with open box A, having overflow-openings, of shelf D and chute B, having air-inlets *b b* in its bottom, substantially as and for the purpose set forth.

5. The combination of chute B, having perforated bottom B′, box A, having open top and openings A′ E E′, shelf D, boxes F F, and chute C, substantially as and for the purpose set forth.

6. The combination, with chute B and box A, having shelf D, of a cushion for receiving the stream of grain, consisting of a heap of grain supported upon shelf D, whereby the grain entering the box is prevented from striking upon any hard and rigid substance, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

BENJAMIN D. CROCKER.

Witnesses:

GEO. F. THOMPSON,

C. M. STEARNS.