

H. JONES.

APPARATUS FOR CLEANING GRAIN OR OTHER MATERIALS.

No. 522,421.

Patented July 3, 1894.

FIG. 1.

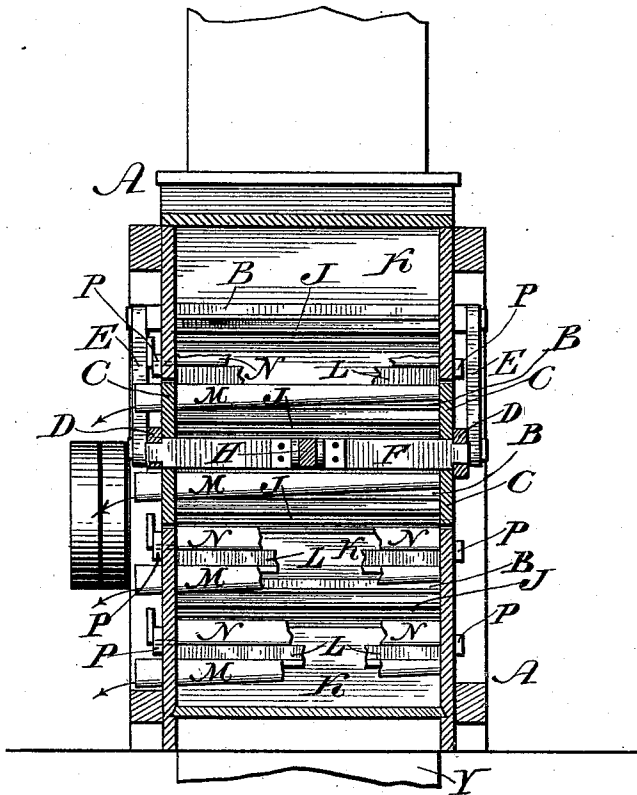
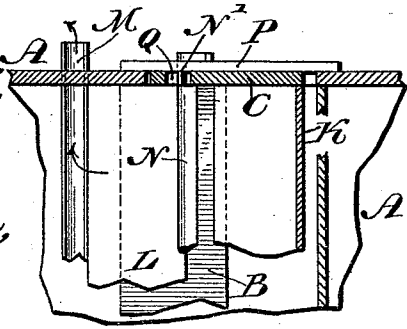


FIG. 2.



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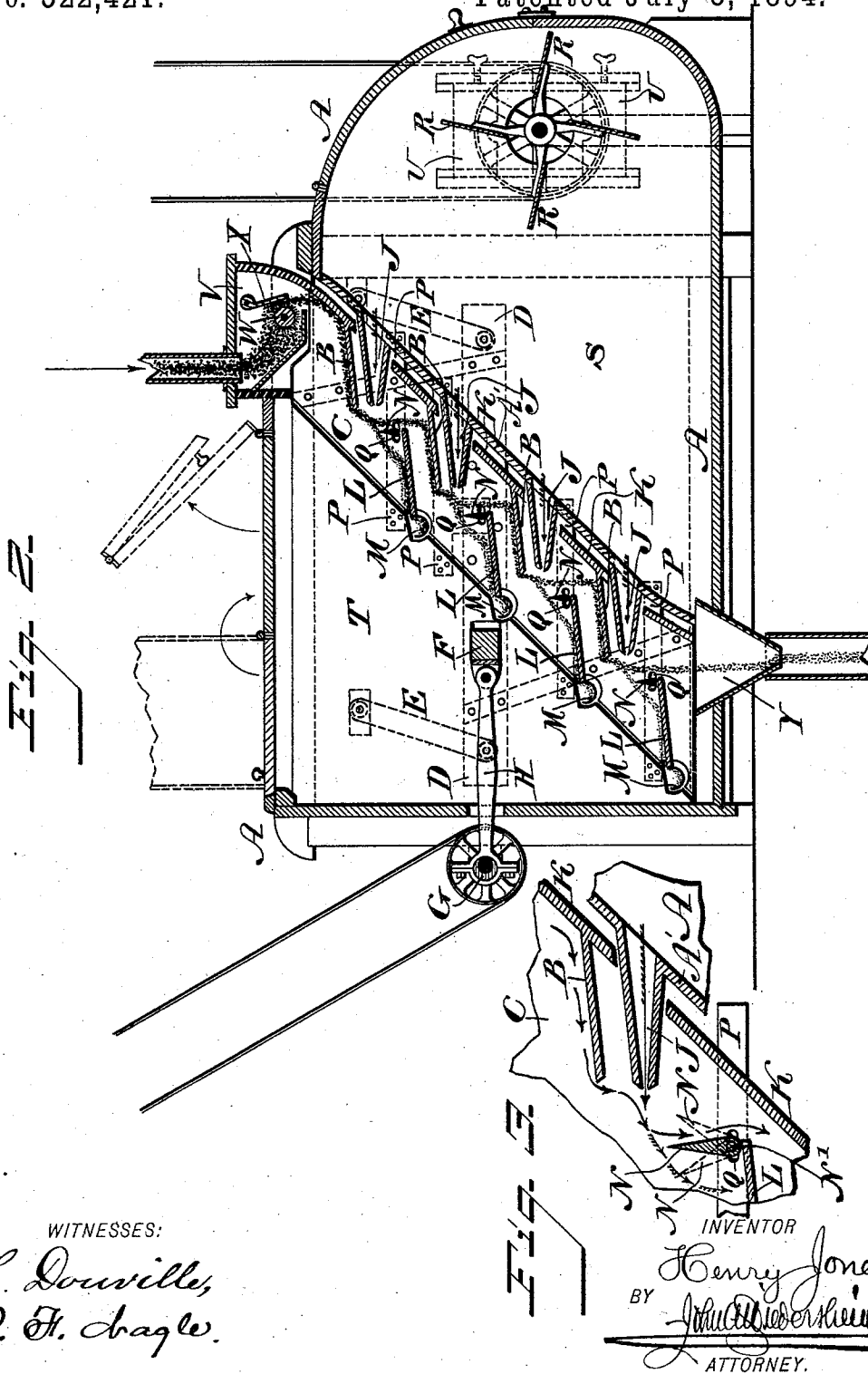


Fig. 2.

Fig. 3.

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# UNITED STATES PATENT OFFICE.

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## APPARATUS FOR CLEANING GRAIN OR OTHER MATERIALS.

SPECIFICATION forming part of Letters Patent No. 522,421, dated July 3, 1894.

Application filed July 10, 1893. Serial No. 480,041. (No model.)

### *To all whom it may concern:*

Be it known that I, HENRY JONES, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Cleaning Grain or other Materials, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to apparatus for cleaning grain and other materials, and consists of a novel construction and arrangement of parts, as hereinafter set forth.

Figure 1 represents a transverse vertical section of an apparatus for cleaning grain and other materials, embodying my invention. Fig. 2 represents a longitudinal vertical section thereof. Fig. 3 represents a view of a portion of Fig. 2, on an enlarged scale. Fig. 4 represents a horizontal section of a portion of the apparatus on the scale Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings: A designates a chest or casing within which are shelves B, which are connected with movable side pieces C, the latter being attached to horizontally-arranged bars D, which are suspended by arms E from the casing A.

F designates a cross head which is attached to the bars D, to which reciprocating motion is imparted by means of the eccentric G and pitman H. Passing through openings between the shelves B are throats or nozzles J, which are secured to a cross piece A' of the casing A, and communicate with said casing for directing air into the space occupied by said shelves. K designates an inclined backing for the shelves B, and is secured at its ends to the side pieces C and is provided with openings through which the nozzles J project. Opposite to the shelves B are shelves L which alternate with the same and with the throats J, said shelves L being secured to the side pieces C, and having troughs or gutters M for discharging the material directed to said shelves L, it being noticed that the several shelves are inclined, and that they project toward each other, leaving a zig-zag passage between them from top to bottom.

N designates vertical deflectors which are secured to the side pieces C, near or at the

inner edge of the shelves L and having on their ends the gudgeons N', which pass freely through slots Q in the pieces C, and are secured to the strips P connected with the sides of the casing A said pieces C thus being permitted to move without interfering with said deflectors, it being also noticed that the angle of the deflectors may be readily adjusted according to requirements.

Within the portion S of the casing is a fan or blower R, and in the wall of the casing adjacent to said blower are valves U for regulating the amount of air admitted into the casing, and consequently to the material to be cleansed, in its passage from shelf to shelf.

V designates a hopper which contains a rotary brush or roller W, and a swinging gate X for agitating the material and regulating the amount of the same fed to the shelf.

The operation is as follows: Power is applied to the eccentric G, whereby the side pieces C and the shelves connected therewith are carried backward and forward, and shaking motion is imparted to the material that is directed from the hopper into the space occupied by the shelves, it being noticed that the material is subjected to blasts of air through the throats J, said material first dropping upon the upper shelf B, and then falling therefrom to the shelf B below it, the stream of material being subjected to a blast of air between the two shelves, whereby the dirt, chaff, lighter substance, or other foreign matters are blown to the opposite upper shelf L, and directed into the gutters M, by which they are discharged. The cleaned material continues its descent from one shelf to another, and is subjected as it falls through the zig-zag passage, to the action of the blast of air throughout its course, and the foreign matters are blown to the other shelves L, the material in cleansed condition finally dropping into a spout Y at the bottom of the casing or elsewhere, so that it may be directed where desired.

The method of cleaning grain and other materials, embodied in the present application, which consists in subjecting the grain or material to an air blast and utilizing the force of gravity both above and below said blast, to assist in effecting a division of the stream of said material, is not claimed herein,

and forms the subject matter of a separate application for patent, now on file, Serial No. 512,959, filed May 31, 1894.

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

1. An apparatus for cleaning grain consisting of a casing, the inclined shelves B connected with the movable side pieces C, the sliding horizontal bars D attached to said side pieces, the arms E connected with said casing and bars, the shelves L secured to the said side pieces and alternating substantially as described with the said shelves B, the nozzles J, each projecting into an opening between the said shelves B and above a shelf L in said opening, a blower, and mechanism for reciprocating said bars, said parts being combined substantially as described.
2. An apparatus for cleaning grain consisting of a casing, two alternating sets of shelves B and L, secured on a reciprocating frame in said casing, said sets of shelves B having openings between them into which the shelves of

the set L project, nozzles projecting into said openings and above the shelves L, a blower in said casing, a hopper with a rotary brush, and a swinging gate, and mechanism for reciprocating the shelf-carrying frame, said parts being combined substantially as described.

3. An apparatus for cleaning grain consisting of a casing, a hopper with an agitating device, a reciprocating swinging frame with the inclined set of shelves B and L, the shelves of the two sets alternating as described, and each of the shelves L having a trough connected therewith, nozzles leading into openings between the shelves, a blower within the casing, mechanism for reciprocating said frame, and the vertical deflectors N secured to the frame at the inner ends of the shelves L, said parts being combined substantially as described.

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