2 Sheets—Sheet 1.

H. B. CHESS.

MACHINE FOR ASSORTING NAILS.

No. 185,894. Patented Jan. 2, 1877.

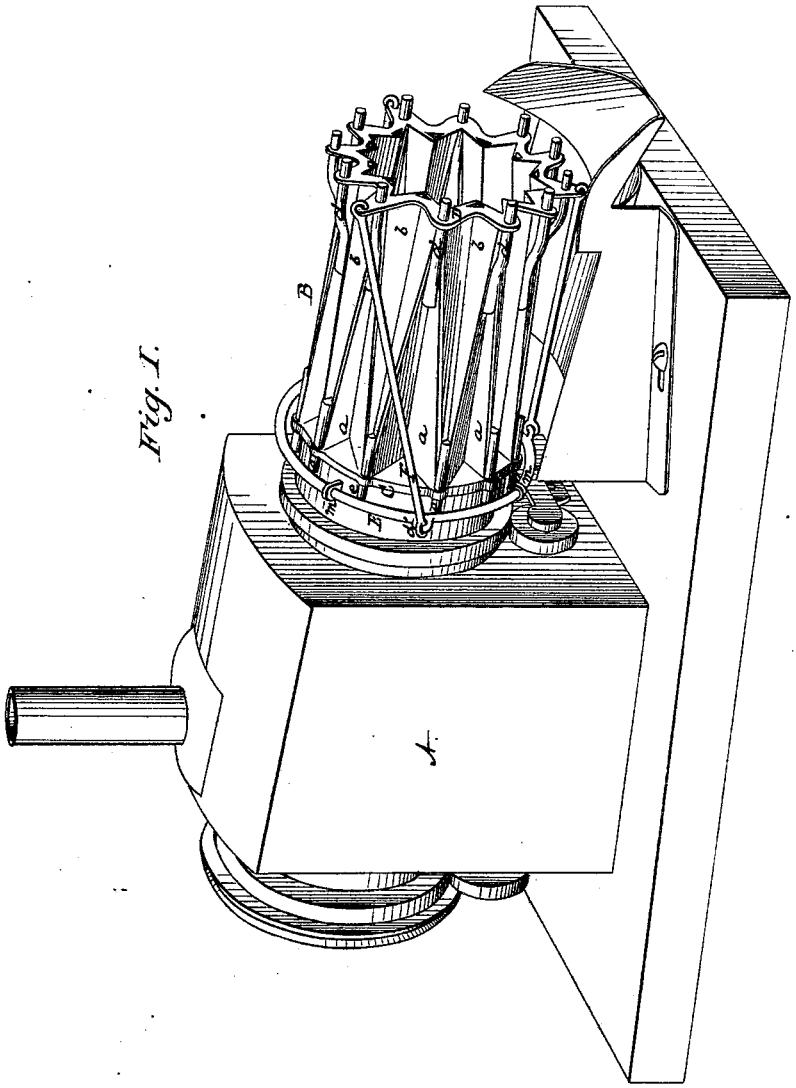

Fig. 1.

Witnesses:

C. Clarence Poole

Geo. H. Evans.

Inventor:

Harvey B. Chess.

per attys.

A. H. Evans & Co.

2 Sheets—Sheet 2.

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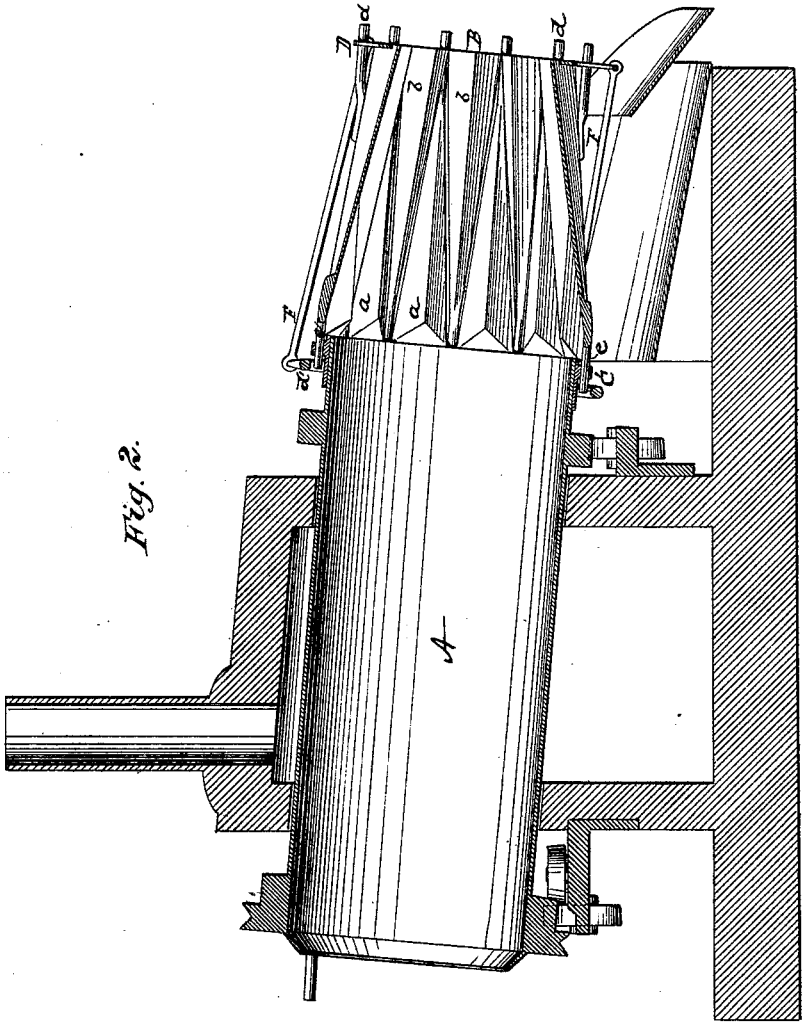

Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

HARVEY B. CHESS, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR ASSORTING NAILS.

Specification forming part of Letters Patent No. **185,894**, dated January 2, 1877; application filed December 8, 1876.

To all whom it may concern:

Be it known that I, HARVEY B. CHESS, of Pittsburg, Pennsylvania, have invented a new and useful machine or device for separating headless or imperfectly-headed nails, slivers, dust, &c., from the good and perfect nails, tacks, spikes, bolts, blanks, and analogous articles, of which the following is a clear, full, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of my invention attached to a bluer. Fig. 2 is a longitudinal section of the same.

My invention relates to continuously-acting revolving separating devices for nail-machines, but is intended to be used more particularly with a bluer, with which it is shown; and it consists in the combination of devices hereafter explained and claimed.

In order to enable others skilled in the art to make and use my invention I will proceed to describe the exact manner in which I have carried it out.

I am aware that sifting devices have been applied to and used in conjunction with bluing-cylinders. These, however, have been perforated sheet-metal cylinders, and constructed usually only as prolongations of the main shell. It is evident, however, that while dust and the finer refuse matter might be thus sifted out of the goods, the fixed size of the perforations limited very much the range of usefulness of these devices, so far as assorting the nails was concerned. On some sizes and classes of goods these devices would be of no practical value. A delicate and exact adjustment of the size of the openings to the work to be done must be had, and this, too, while the separator is in motion. This I accomplish without hinged plates or other construction which depends for its accuracy on smoothness of joints, but in such a manner that the plates whose edges form the slots are as rigid as though solidly secured in position.

In the drawings, A represents a bluing-cylinder, and B my separator attached thereto. To the annular base C I secure a number—say, about one dozen—of blades, *a*, angular or tapering as to their outlines, and angular or V-shaped in cross-section. These blades are secured firmly by their bases to the annular base, and with their apices of the angle-section inward. The apices of these blades are prolonged into stems *d d*, upon which stems another base-ring, D, is so mounted as to slide freely upon them. To this base-ring D are attached an equal number of blades, *b*, of corresponding size and shape to the blades *a*. These blades *b* are also prolonged into stems *e*, which enter suitable guides provided on the base-ring C when the two series of blades are placed in proper relation to each other, as shown in Fig. 1, and when thus placed these blades form two systems of troughs whose bottoms are slotted, as shown in Fig. 2. These slots are readily adjusted by a longitudinal movement of the outer ring with its series of blades either from or toward the inner or main ring C, thus widening or reducing the width of the slots simultaneously, as desired.

The annular traveler E, capable of making about one-fourth of a revolution, is secured by the ears *m* on the main ring C, and to this traveler are attached, by the eyes *d'*, the rods F, which connect at their outer ends with the ring D. When, therefore, the traveler E receives a rotary movement in one direction the outer ring D is thrust farther away from the ring C, and the slots are widened between the blades *a b;* but when the traveler E is revolved in the opposite direction the outer ring D is drawn toward the base-ring C, and, the blades being drawn closer together, the slots between the blades *a b* are lessened.

Of course, I do not limit myself to this particular method of opening or closing the slots, as this may be very easily changed without departing from the spirit of my invention.

In constructing the rings C and D I make the base or main ring C the larger, in order to give the apparatus somewhat the form of the frustum of a cone, for a purpose I will hereafter explain.

The machine is set slowly revolving, when the nails are placed on the highest part of the cylinder, and, by its inclination, as shown in Fig. 1, the nails are caused to move slowly to the lower end, there to be delivered to the assorting apparatus, which has been adjusted exactly to suit the work in hand. The imperfect or headless nails pass through the slots,

assisted by the trough form of the slots, in connection with the slots themselves. Those not permitted to pass through the slots find their way gradually to and are delivered at the end into a proper receptacle.

To retain the nails longer in the separator, and thereby secure a better sifting, is the object of the form given to the device, as before referred to, the mouth or outer end of the separator being contracted, and thereby retarding the passage of the goods for a more perfect sifting.

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

1. The two series of blades *a* and *b*, forming a series of troughs, and secured to the rings C and D, so as to admit of adjustment, substantially as and for the purpose set forth.

2. The angular sectioned sifting device constructed with a contracted mouth, substantially as and for the purpose set forth.

3. A nail separating and sifting device capable of being simultaneously adjusted in all its slots while the apparatus is in motion, substantially as and for the purpose set forth.

4. The traveler E and rods F, in combination with the rings C and D, provided with the blades *a b*, substantially as set forth.

HARVEY B. CHESS.

Witnesses:
W. C. CHARLTON,
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