(No Model.) 4 Sheets—Sheet 1.

W. H. BENSON.

MACHINE FOR DRESSING FINE CUT TOBACCO.

No. 312,796. Patented Feb. 24, 1885.

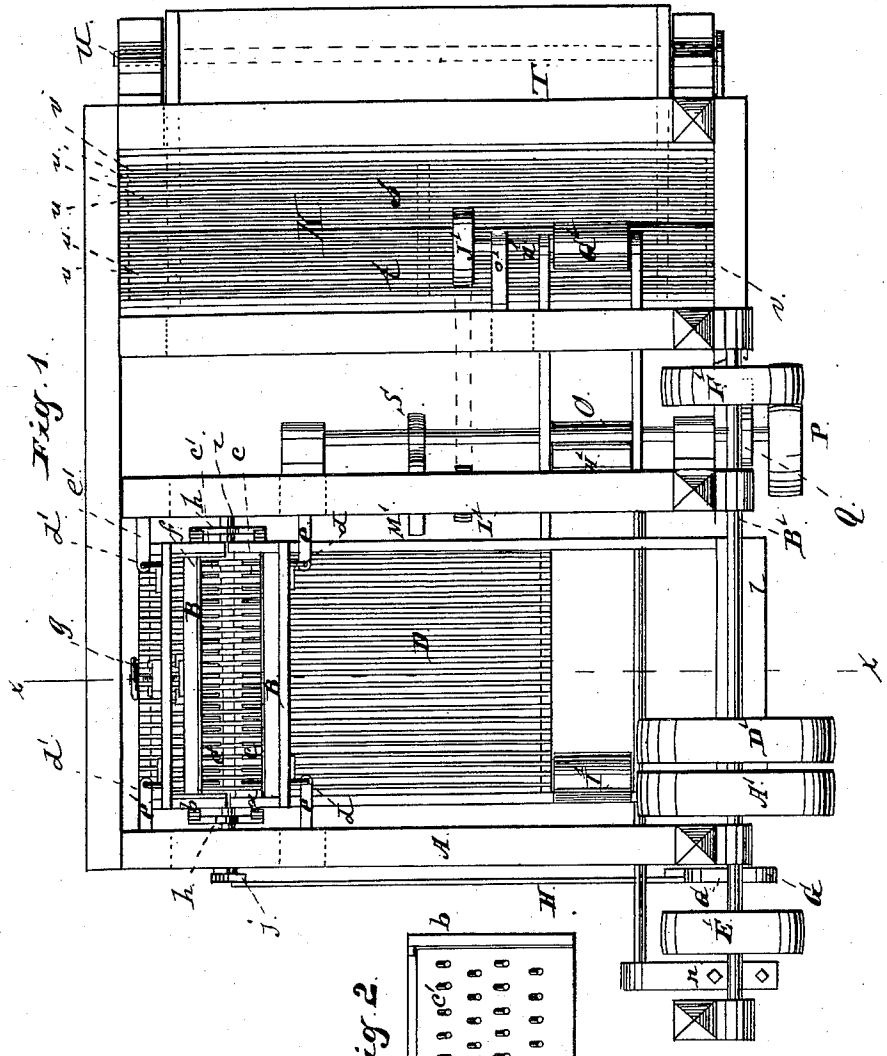


Fig. 1.

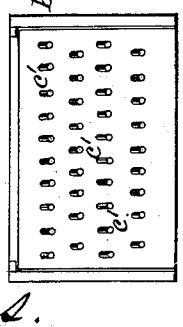


Fig. 2.

Witnesses:
Albert H. Adams.
C. W. Bond.

Inventor:
Wm. H. Benson

N. PETERS. Photo-Lithographer. Washington, D. C.

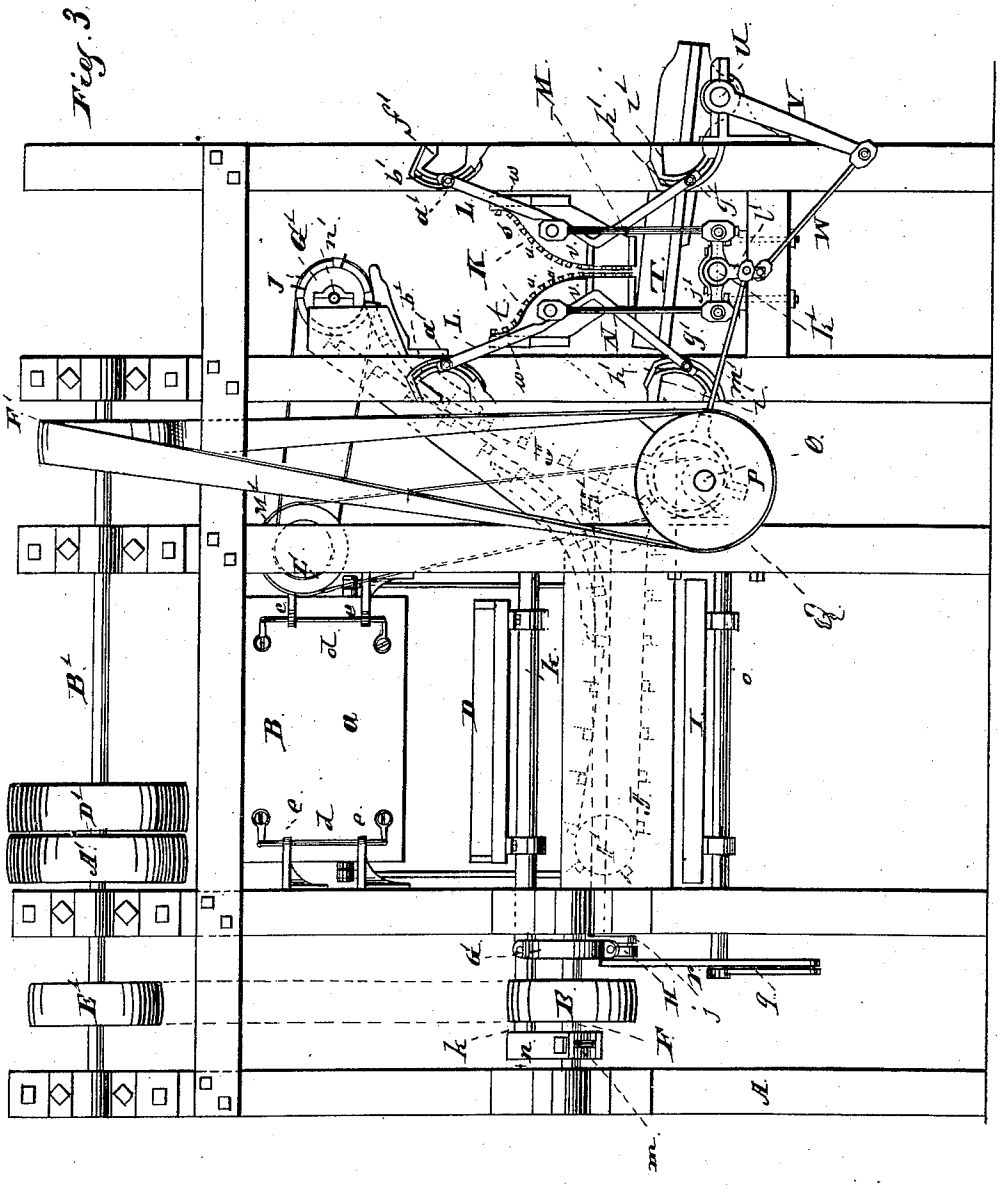
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Fig. 3.



Witnesses:
Albert H. Adams,
C. W. Bond.

Inventor:
Wm. H. Benson

N. PETERS. Photo-Lithographer. Washington, D. C.

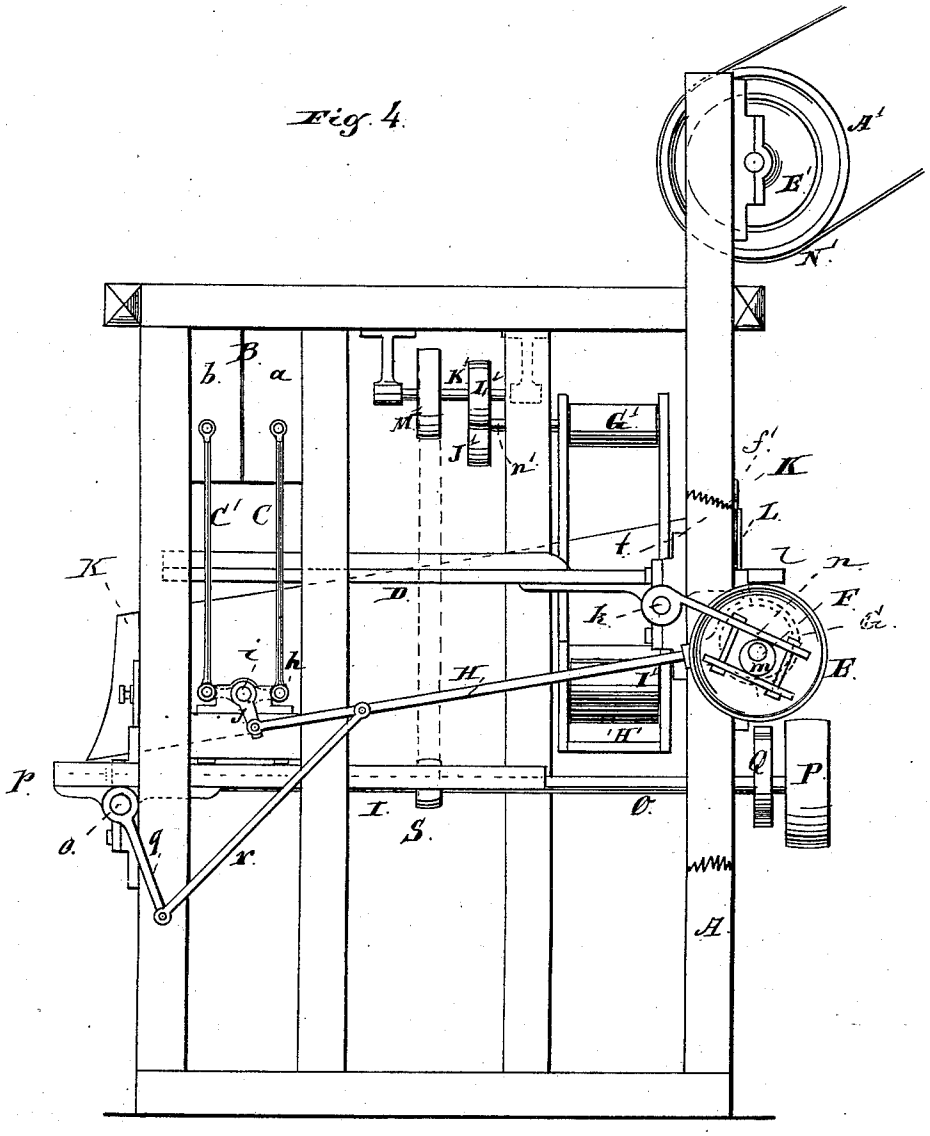
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Fig. 4.



Witnesses:
Albert N. Adams.
C. W. Bond.

Inventor:
Wm. H. Benson

N. PETERS, Photo-Lithographer, Washington, D. C.

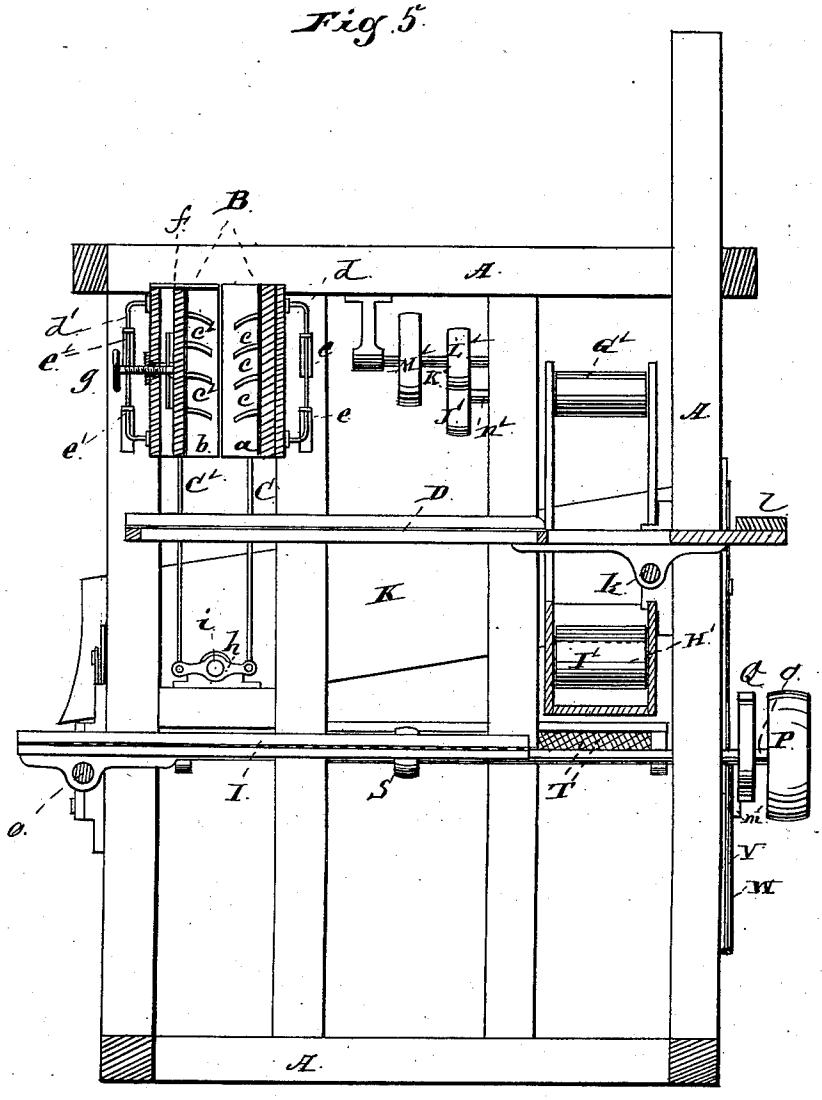
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Fig. 5.



Witnesses:
Albert N. Adams.
C. W. Bond.

Inventor:
Wm. H. Benson

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM H. BENSON, OF CHICAGO, ILLINOIS.

MACHINE FOR DRESSING FINE-CUT TOBACCO.

SPECIFICATION forming part of Letters Patent No. 312,796, dated February 24, 1885.

Application filed May 5, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BENSON, residing at Chicago, in the county of Cook and State of Illinois, and a citizen of the United States, have invented new and useful Improvements in Machines for Dressing Fine-Cut Tobacco, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a plan; Fig. 2, a detail; Fig. 3, a rear elevation; Fig. 4, a side elevation; Fig. 5, a vertical section at line *x* of Fig. 1.

The object of my invention is to provide a machine by means of which the fine portions which remain in the tobacco after it leaves the knives can be shaken out, and by which the flakes or fibers which become matted during the process of cutting can be loosened, and by which the tobacco can be brought to a fine merchantable condition without hand-labor, which has been chiefly used for this purpose, which I accomplish by the mechanism illustrated in the accompanying drawings, in which—

A represents the frame-work of my machine.

B is the hopper or receptacle, consisting, as shown, of two parts, *a b*. The part *a* is supported by two rods, C, one at each end. The inside of the part *a* is provided, as shown, with four rows of teeth or fingers, *c*, arranged as shown in Fig. 5, and as fingers *c'* are shown in Fig. 2, the fingers being curved downward a little. The part *a* is provided with two rods, *d*, located upon the outside and near the ends of *a*, which guide-rods pass through guides *e*, which are secured to the frame, as shown in Figs. 3 and 5. The other half, *b*, of the hopper or receptacle is supported by rods C', and provided with guide-rods *d'*, passing through guides *e'*, the same as before described. This part *b* is also provided with fingers *c'*, the same as the part *a*, except that the piece to which the fingers *c'* are secured is made adjustable within the part *b* by means of a screw, *g*, so that the distance between the points of the fingers *c c'* can be adjusted. The lower ends of the supporting-rods C C' at each end of the receptacle are pivoted to a cross-bar, *h*, which cross-bars are secured to a shaft, *i*, supported in bearings in the frame. One end of this shaft *i* is provided with a crank, *j*, operated as hereinafter described.

D is a sieve, which, as shown, is composed or made of a number of slats suitably supported by a frame which is rigidly secured to a shaft, *k*. The sieve and its frame is counterbalanced by a weight, *l*.

E is a pulley upon a short shaft, F, supported in suitable bearings.

m, Fig. 4, is an eccentric on the shaft F. *n* is a frame within which the eccentric *m* rotates. The upper arm or part of the frame is extended and rigidly secured to the shaft *k*.

G is an eccentric upon the shaft F.

H is a rod, one end of which is connected with the eccentric G and the other end with the crank *j*.

I is a second sieve, preferably made of wire, supported in a frame, which frame is rigidly secured upon the shaft *o*. This sieve is also counterpoised by a weight, *p*.

q is an arm secured to the shaft *o*.

r is a connecting-rod, one end of which is pivoted to the lower end of arm *q*, and the other end is pivoted to the rod H.

J is a carrier arranged to receive the tobacco from the sieve D.

K is a cradle or rocker consisting of two parts, *s t*, as shown. Each part *s t* consists of longitudinal slats *u*, secured to side pieces, *v*, any suitable number of which are to be used. This rocker or cradle is placed in an inclined position, the end at that part of the machine which I have designated as the rear being the highest, as shown in Fig. 3. Each part of this end of the cradle is secured at *w* to an iron bar, L, which is bent as shown in Fig. 3. There is a pin or bolt, *a'*, at the upper end of each bar L, arranged to move in a curved slot, *b'*, in an iron, *f'*, secured to the frame, and the lower end of each bar L is provided with a corresponding pin or bolt, *g'*, arranged to move in a circular slot, *h'*, in an iron, *i'*, secured to the frame. The end of the part *s* of the cradle shown in Fig. 3 is supported by a rod, M, pivoted to the cradle at its upper end, and at its lower end pivoted to a cross-bar, *j'*, and the other part, *t*, of the cradle is supported in like manner by a rod, N. The cross-bar *j'* is secured to a shaft, *k'*, which extends the whole length of the cradle, and is supported in suit-

able bearings. One end of this shaft k' is provided with a crank, l'. The end of the cradle opposite to that shown in Fig. 3 is supported in the same manner as the end shown in Fig. 3—that is to say, that the ends of each of the parts s t are secured to angle-irons corresponding to the irons L, the ends of which are provided with pins or bolts arranged to move in curved slots in irons secured to the frame, the same as shown in Fig. 3—and the two parts of the end of the cradle opposite to that shown in Fig. 3 are also supported by rods corresponding with the rods M N, which are pivoted at their upper ends to the cradle and at their lower ends to a cross-bar corresponding with the cross-bar j', which is secured to the shaft k'.

O is a shaft supported in suitable bearings, provided at one end with a driving-pulley, P, and also with an eccentric, Q, from which a connecting-rod, m', extends to the crank l' on the shaft k'. (See Fig. 3.)

S is a small driving-pulley on the shaft O.

T is a wire sieve located under the cradle K, rigidly supported on the shaft U, which shaft is supported in suitable bearings on the frame.

V is an arm rigidly secured to one end of the shaft U, and W is a connecting-rod one end of which is pivoted to the arm V and the other end is pivoted to the lower end of the crank l' upon the shaft k'.

A′ is a main driving-pulley on the shaft B.

D′ is a loose pulley.

E′ F′ are pulleys on the shaft B′.

G′ H′ I′ are the rollers over which the carrier passes, the carrier not being shown in Figs. 1, 4, and 5, to prevent confusion, but being shown or indicated in Fig. 3.

J′ is a pulley on the shaft n', on which the roller G′ is located, and o' is an arm in which is a bearing for the shaft n'.

K′ is a short shaft supported in bearings, on which shaft are two pulleys, L′ M′.

N′, Fig. 4, is a driving-belt.

The machinery, as shown, is driven by a belt upon the pulley A′. The shaft F is driven by a band from the pulley E′ to the pulley E, and the shaft O is driven by the belt from the pulley F′ to the pulley P, and the pulley M′ is driven by a belt from the pulley S on the shaft O, and the carrier is driven by a belt from the pulley L′ to J′.

The operation is as follows: The machinery being in motion, the tobacco which is to be dressed, having been cut as usual, is to be gradually fed into the hopper or receptacle consisting of the parts a b, which move up and down alternately through the action of the eccentric G, rod H, crank j, arms h, shaft i, and rods C C′, and the action of the fingers c c' upon the tobacco in the hopper will be similar to the action when manipulated by hand. Tobacco will pass down through the hopper, which is open at the bottom, and will fall upon the sieve D, which has a rocking motion given to it, the shaft k being rocked by the action of the eccentric m, rotating within the frame n, the upper arm of which is secured to the shaft k. The tobacco will be gradually carried to the delivery end of the sieve D, the fine portions falling through the sieve D onto the sieve I, which has a rocking movement given to it through the eccentric G, rod H, rod r, and arm q, which is secured to the shaft o, to which the sieve I is rigidly attached. The coarser portions of the tobacco upon this sieve I will be gradually carried up to the delivery end, and can be returned to the hopper or receptacle a b; but the finer parts will fall through the sieve I into a receptacle beneath. The main portion of the tobacco will be delivered from the sieve D onto the carrier J, and will be elevated and delivered over the top of the carrier and fall onto the rocker K at the upper end thereof. The two parts of this cradle or rocker do not move in vertical planes; but while moving up and down have also a little lateral movement in curved lines, due to the movement of the bars L in the curved slots b' h', which movement has a tendency to somewhat interlock the fibers one with another, substantially as has heretofore been done by hand manipulation. Tobacco will pass from the cradle or rocker to the sieve T, which has a motion similar to that given to the other sieves, due to the rocking of the shaft U, which rocking is produced by the action of the eccentric Q, rods m' and W, and arm V, and tobacco will be delivered from the sieve T ready for packing, any dust remaining therein passing through the sieve.

The cradle or rocker might be arranged to receive tobacco directly from the sieve D, the carrier being omitted. The sieve T may be counterpoised the same as the others.

I have said that the sieves have a rocking motion. Each sieve is rigidly secured to a shaft to which a rocking motion is given, whereby the opposite ends of each sieve rise and fall alternately.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. In a machine for dressing tobacco, a hopper or receiver made in two parts, each part movable vertically independently of the other part, and each part provided with teeth or fingers upon the inside, and mechanism for moving them, substantially as and for the purpose specified.

2. In a machine for dressing tobacco, a hopper or receptacle made in two parts, each movable vertically independently of the other, and provided with teeth or fingers upon the inside, in combination with supporting-rods C C′, cross-bars h, and rock-shaft i, substantially as and for the purposes specified.

3. In a machine for dressing tobacco, a cradle or rocker, K, composed of two movable parts, s t, substantially as and for the purpose specified.

4. In a machine for dressing tobacco, a cradle or rocker, K, composed of two parts, s t, in combination with bars L L, the ends of

which are supported and move in curved slots, supporting-rods M N, cross-bar j', and rock-shaft k', substantially as and for the purposes specified.

5. In a machine for dressing tobacco, the hopper or receptacle consisting of two movable parts, each provided with teeth or fingers upon the inside, in combination with a sieve, D, supported upon a rock-shaft, substantially as and for the purposes specified.

6. In a machine for dressing tobacco, the combination of a hopper or receptacle made in two parts, each movable independently of the other, and provided with teeth or fingers upon the inside, a sieve, D, beneath the hopper and supported upon a rock-shaft, and a cradle or rocker, K, consisting of two movable parts, and mechanism, substantially as described, for carrying the tobacco as it falls from the sieve to the cradle, substantially as and for the purposes specified.

7. In a machine for dressing tobacco, a sieve, D, supported upon a rock-shaft, in combination with an eccentric upon a driving-shaft, and a frame, n, having one arm or part thereof secured to such rock-shaft, substantially as and for the purposes specified.

8. In a machine for dressing tobacco, the combination of a hopper or receptacle made in two parts, each moving independently of the other, and provided with teeth or fingers upon the inside, a sieve, D, carrier J, and cradle or rocker K, substantially as and for the purposes specified.

9. In a machine for dressing tobacco, the combination of a hopper made in two parts, provided with teeth or fingers upon the inside, supporting-rods C C′, cross-bar h, shaft i, crank j, sieve D, supported on a rock-shaft, k, sieve I, supported upon a rock-shaft, o, driving-shaft F, eccentric G, connecting-rod H, arm q, connecting-rod r, cam m, and frame n, substantially as and for the purposes specified.

WILLIAM H. BENSON.

Witnesses:
ALBERT H. ADAMS,
B. A. PRICE.