

(No Model.)

2 Sheets—Sheet 1.

H. A. BACON.
BEAN PICKER.

No. 535,657.

Patented Mar. 12, 1895.

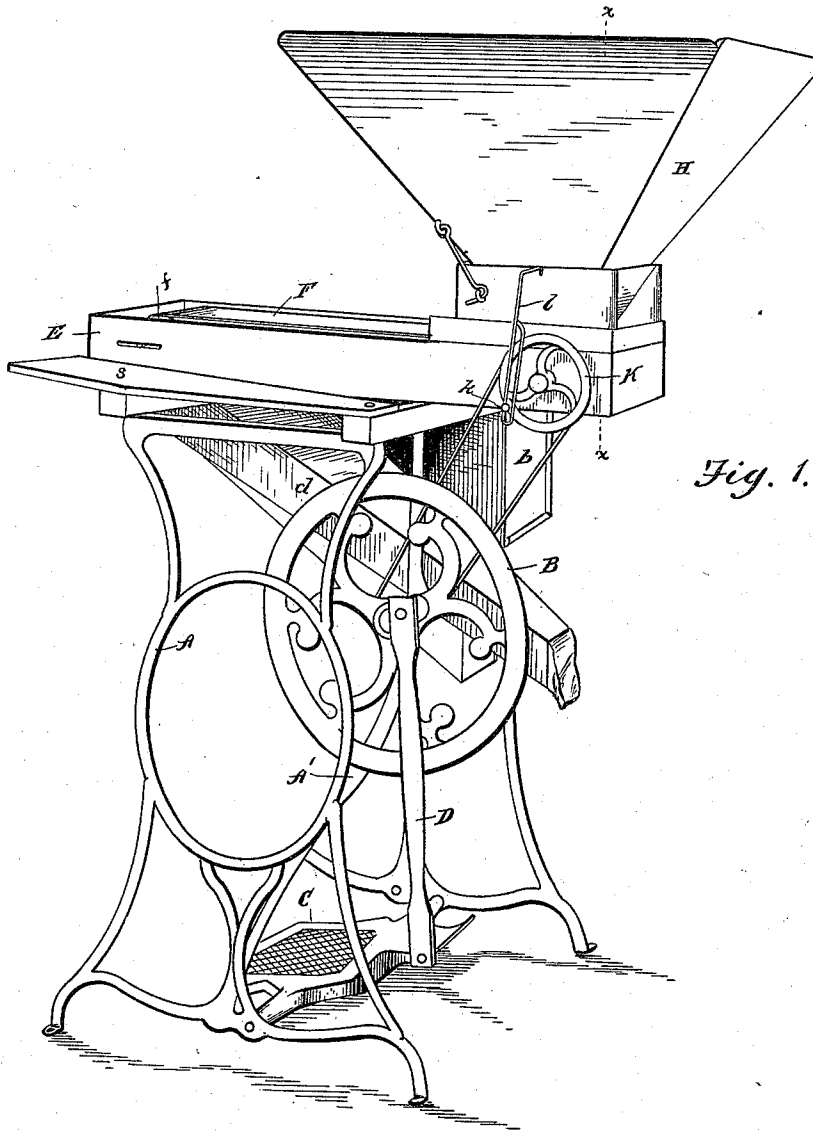


Fig. 1.

WITNESSES

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Fig. 2.

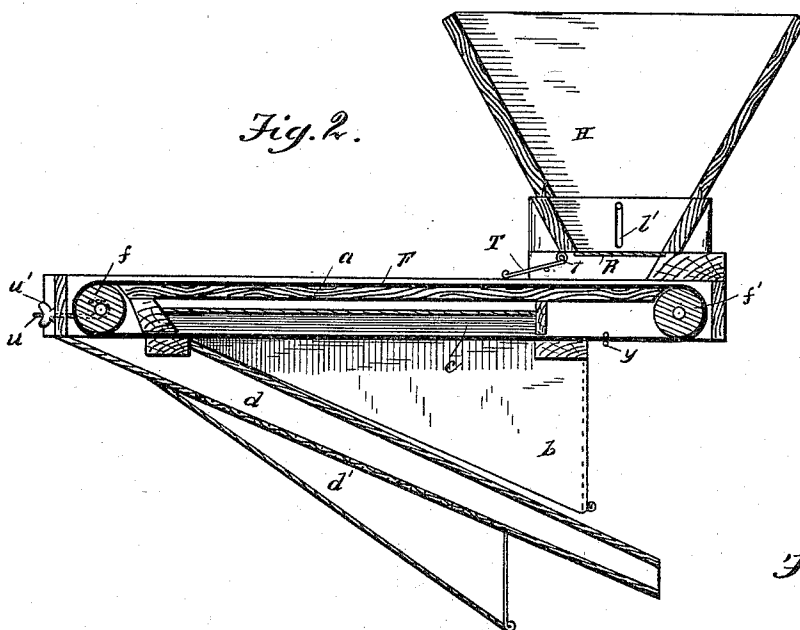


Fig. 3.

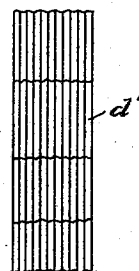
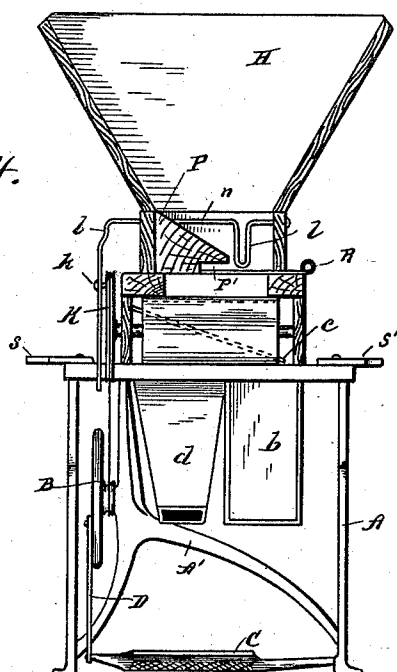


Fig. 4.



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UNITED STATES PATENT OFFICE.

HIRAM A. BACON, OF PONTIAC, MICHIGAN.

BEAN-PICKER.

SPECIFICATION forming part of Letters Patent No. 535,657, dated March 12, 1895.

Application filed June 3, 1893. Serial No. 476,457. (No model.)

To all whom it may concern:

Be it known that I, HIRAM A. BACON, a citizen of the United States, residing at Pontiac, county of Oakland, State of Michigan, have invented a certain new and useful Improvement in Bean-Pickers; and I 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 the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to bean pickers, and has for its object improvements in the mechanism for feeding, and controlling the feed of the beans passing from the hopper on to the moving apron, where they are separated or cleaned by the operator. Machines employed for this purpose are arranged, with a moving apron that generally passes from a hopper toward the operator; the hopper being located at what may be termed the back of the machine, while the operator sits in front of it, and the beans are received from the hopper on an endless belt, over which they are scattered by proper mechanism, so that they are no where piled up in heaps. As the belt with beans scattered upon it moves forward toward the operator the trash or material to be rejected and thrown away can be easily recognized and picked out by the operator, and thrown into proper receptacles, while the beans of quality proper for use are allowed to move forward over the roll that supports the front end of the belt or apron where they drop into receptacles, or chutes leading to the receptacles. The trash that is mixed with beans is of various material and of various sizes, consisting of small stones, short sticks, pieces of bean pods, and various material of this character and the aperture through which the beans are fed from the hopper on to the apron, must be of a character to permit all such trash to pass through it, without clogging it and at the same time, it must be of a character to prevent the beans from passing through it so fast that the operator cannot take care of them; and as some times there is much more trash in the beans to be cleaned than there is at other times, the passage way must be adjustable, because if there is a greater amount of trash, the operator cannot so quickly re-

move it, and the feed must be slower, while with other materials where the amount of trash is less, the rate of feed may be faster.

Other features of improvement relating to the general construction of the machine will be pointed out.

In the drawings, Figure 1, is a perspective of the complete machine. Fig. 2, is a sectional elevation, the stand being omitted. Fig. 3, shows a screen with long narrow meshes used to separate split beans from whole ones. Fig. 4, is a cross section at *xx* of Fig. 1, and shows the agitator, in the passageway between the hopper and the apron, which causes a constant feed.

A, indicates the main framework; A', a central brace; B, a main driving wheel supported on this brace; and C, a treadle supported by the frame A, and connected with the driving wheel B, by a pitman D.

The frame A, supports a rectangular framework E, across which are mounted two rollers *f, f'*, and on these rollers is an endless belt or apron F. Between the rollers *f, f'*, secured to one side of the frame E, and reaching across from that side under the upper half of the belt F, and under a supporting table *a*, which is immediately under the belt F, is an oblique floor forming a chute or passageway *c*, upon which the trash is thrown. Immediately under the belt F, is a flat table *a*, occupying a width equal to that of the belt, but not fully equal to the space between the sides of the frame E, there being on each side of the table *a*, and between it and the side of the frame, a slit or passageway leading to the chute *c*, through either of which passageways the operator throws the trash into the chute *c*, whence it drops into a storage receptacle *b*. Under the roller *f*, is the mouth of a second oblique chute *d*, into which are dropped beans carried by the traveling apron or belt F, and by which they are conveyed across the screen *d'*, to their proper receptacle. In passing across the screen *d'*, the broken beans and half beans drop through the screen into a receptacle located just below the screen. On the end of the roller *f'*, is a small wheel K, which is belted to the main driving wheel D. On the face of the wheel K, is a crank-pin *k*, that engages with a slotted hanger, *l*. The slotted hanger *l*, turns a rock-shaft, *n*, that

reaches across the mouth of the hopper H, and is provided with a finger, *l'*, that vibrates in front of a block P. The block P, fills about one-half of the mouth of the hopper H, and under it separated therefrom, by a short space P', is a sliding valve R, arranged to slide across the mouth of the hopper H, and to be closed entirely, or to be partially opened or fully opened as may be desired.

10 The rapidity of the feed does not depend entirely on the position of the sliding valve, but is affected considerably by the size of the passage way P', under the block P. This passage way is made so narrow or shallow
15 that the weight of the beans in the hopper will not force a constant stream through the passage way, but is large enough to permit any of the trash commonly found in beans, to pass under the block P, and around the
20 end of the slide R, when forced forward by the combined action of the weight of the beans in the hopper and the agitating finger *l'*. The finger *l'*, vibrates with each revolution of the wheel K, and keeps constantly
25 crowding forward the beans in the mouth of the hopper and prevents any clogging. I prefer to make the hanger *l*, and the finger or agitator *l'*, of spring metal so that it will yield slightly if its motion is resisted by any
30 unusually large article.

In the bottom of the chute *d*, is a screen *d'*, of which the openings are long and narrow, adapted to permit the passage through them, of split or broken beans, but over which whole
35 beans, pass to the end of the chute.

At each side of the frame E, and supported on the top of the main frame work A, is a movable table, *s*, *s'*, pivoted to the frame work at its rear end, and movable at its front
40 end so that it can be readily adjusted to accommodate the operator. The object of these movable tables is to form a support upon which the arm of the operator rests, while the operator is at work.

45 Between the mouth of the hopper and the carrying belt is a spreader T. This is a valve hinged to the hopper at *t*, and the free end of which drops by gravity toward the belt, but is prevented from dropping entirely to the
50 belt by a stop which holds the free end of the spreader above the belt, a distance equal to the distance of one bean. The weight of the valve is not sufficient to prevent its lifting to allow the passage of large objects, but is sufficient
55 to prevent the beans from passing through under it in masses more than a single bean thick. At the hopper end the belt

runs through a guide *y*, which keeps it from moving sidewise along the roll over which it turns, and at the front end, the roll, *f*, is journaled in a sliding bearing *u*, which is regulated by a nut, *u'*, thus enabling the operator to give to the traveling apron the proper amount of tension.

In connection with the frame, I employ a peculiar brace A', which is in the form of an inverted Y, and I employ the stem of the Y-shaped brace as a central support to carry the weight of the beans in the hopper, and also support on this standard the arbor of the main driving wheel, thus bringing the driving wheel and the driven wheel into their proper position in relation to the main frame work, without the use of a long shafting.

It will be noticed that a peculiar feature of the feeding mechanism, consists in what may be termed, a winding passage way, or crooked passage way, of a shape such that beans will not pass through it without employing the agitator which acts to force them forward gently a few at a time, and at the same time acts to force through any trash which may be mixed with them.

What I claim is—

1. In a bean picker, the combination of a supporting frame, a carrying belt, a hopper provided with a block P, having a passage way at one side and underneath the same, a regulating valve, and an agitator adapted to vibrate in the passage way at the side of the block P, substantially as and for the purpose described.

2. In a bean picker, the combination of a frame-work, a carrying belt, a screen, a hopper having a valve closed exit passage-way with a shallow horizontal exit passage-way, a vibrating spring agitator, and a valve adapted to regulate the length of the horizontal part of said passage-way, substantially as specified.

3. In a bean picker, the combination of a supporting frame, a hopper provided with a block P having a passage-way at one side and underneath the same, a carrying belt, a regulating valve, and a vibrating spring agitator in the passage-way at the side of the said block P, substantially as and for the purpose described.

In testimony whereof I sign this specification in the presence of two witnesses.

HIRAM A. BACON.

Witnesses:

CHARLES F. BURTON,
MARION A. REEVE.