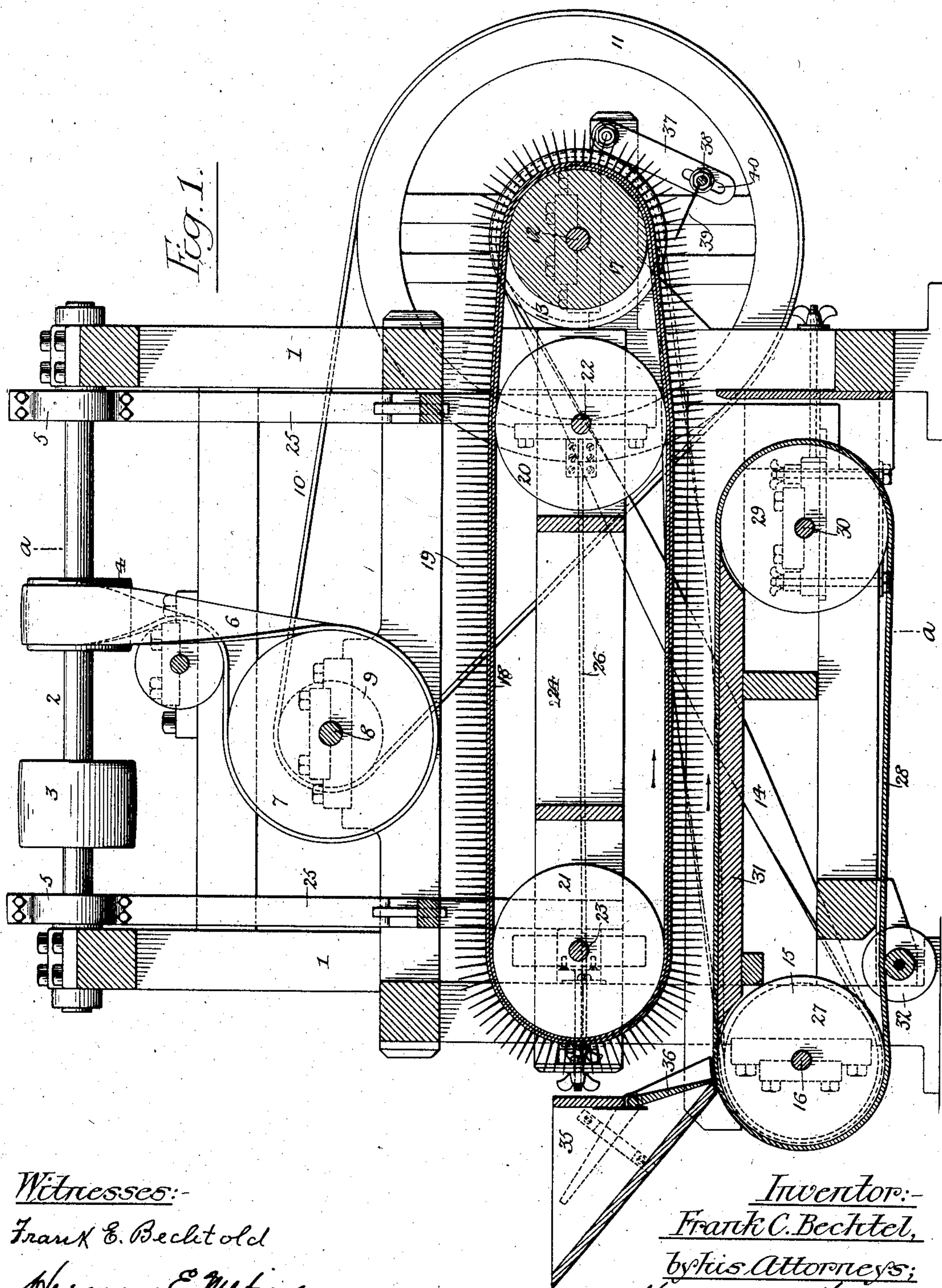


No. 790,171.

PATENTED MAY 16, 1905.

F. C. BECHTEL.
GARLIC SEPARATOR.
APPLICATION FILED JUNE 12, 1903.

3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

Fig. 4.

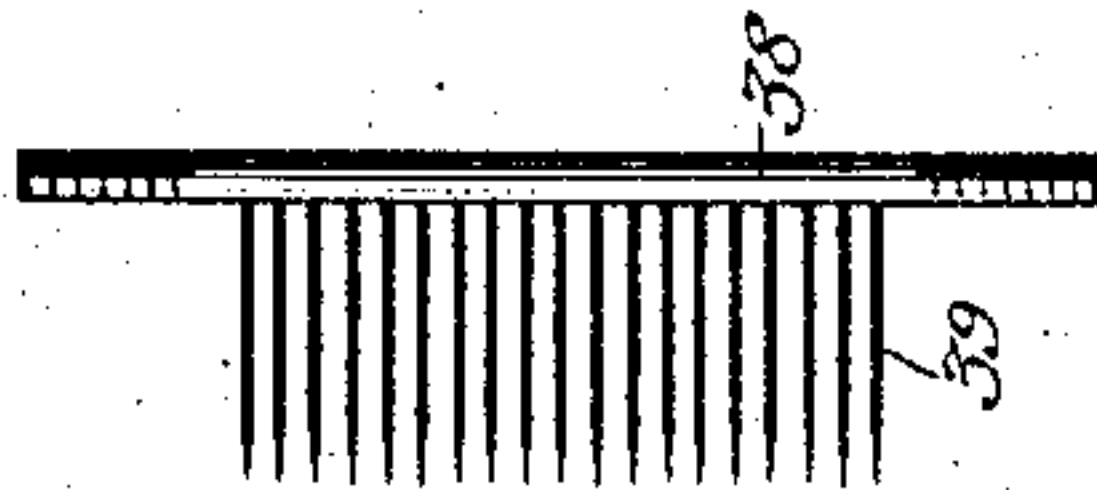
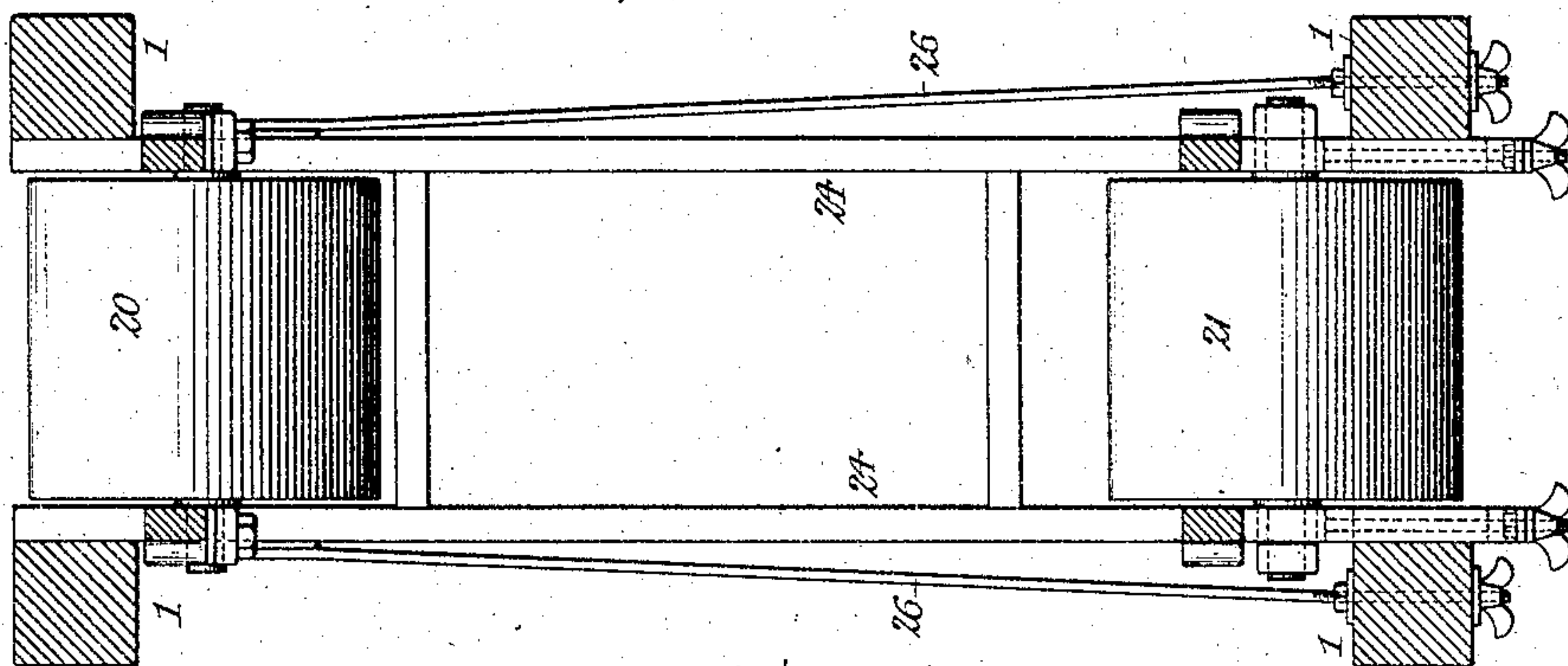
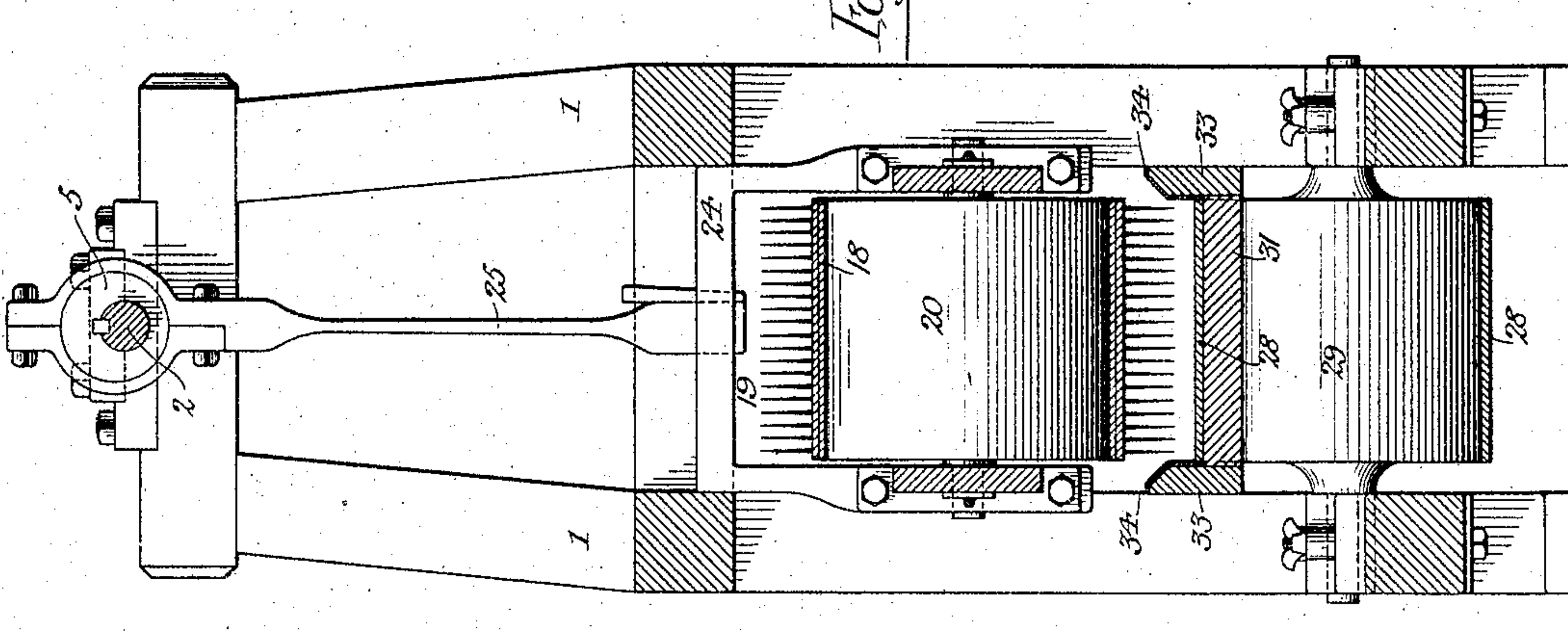


Fig. 2.



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Fig. 3.

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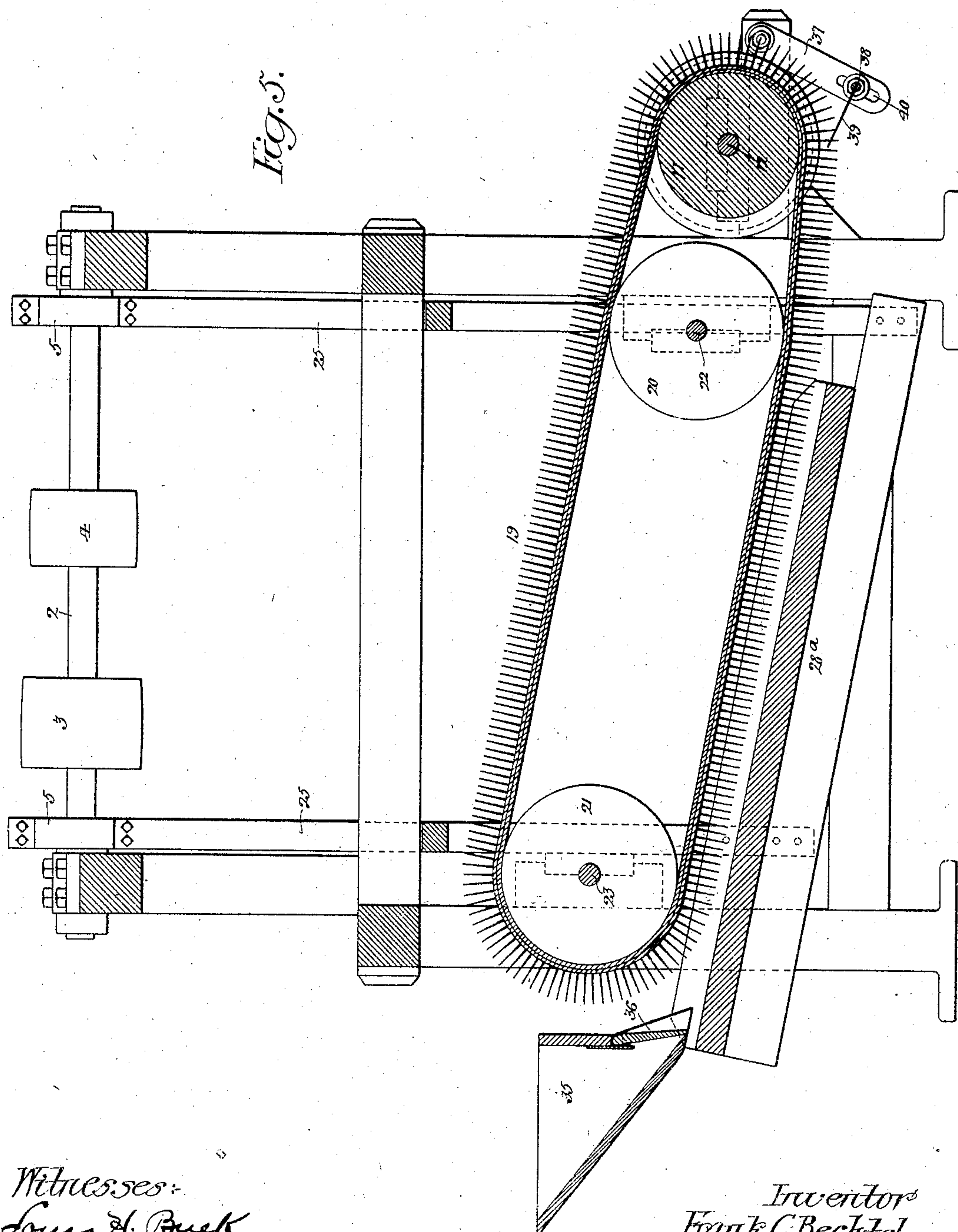
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3 SHEETS—SHEET 3.



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GARLIC-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 790,171, dated May 16, 1905.

Application filed June 12, 1903. Serial No. 161,218.

To all whom it may concern:

Be it known that I, FRANK C. BECHTEL, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
 5 Improvements in Garlic-Separators, of which the following is a specification.

The object of my invention is to construct a machine for the effective separation of garlic from wheat or other grain. This object I
 10 attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section of a garlic-separating machine constructed in accordance with my invention. Fig. 2 is a transverse section on the line *a a*, Fig. 1. Fig. 3
 15 is a sectional plan view of part of the framework of the machine. Fig. 4 is a detached view of one of the elements of the machine, and Fig. 5 is a longitudinal section illustrating certain modifications of the invention.

A fixed framework 1 has bearings at the top for a longitudinal shaft 2, provided with a pulley 3 for receiving the driving-belt, this
 25 shaft also having another pulley 4 and a pair of eccentrics 5. The pulley 4 receives a belt 6, which drives a pulley 7 on a transverse shaft 8, mounted in suitable bearings on the fixed frame of the machine, and said shaft 8
 30 has another pulley 9, (shown by dotted lines in Fig. 1,) which by means of a belt 10 drives a pulley 11 on a shaft 12, the latter shaft being mounted in bearings at one end of the fixed frame of the machine. The shaft 12 has
 35 a pulley 13, which receives a belt 14, the latter serving to drive a pulley 15, which is shown by dotted lines in Fig. 1, and is mounted on one end of a shaft 16, the latter being adapted to bearings at one end of the fixed
 40 frame of the machine near the bottom of the same. The shaft 12 is provided with a drum 17, which receives an endless belt 18, provided with projecting sharp-pointed pins, and said belt also passes over a pair of drums 20
 45 and 21, which are carried, respectively, by shafts 22 and 23, said shafts being adapted to bearings carried by a vertically-reciprocated frame 24, which is suspended from the eccen-
 50 trics 5 by means of straps 25, the latter possessing such elasticity that the sidewise vibra-

tion of their upper ends is permitted without interfering with the rigid vertical guidance of the frame 24. The bearing for the shaft 23 is adjustable longitudinally in the frame 24, so that the belt 18 can always be kept under
 55 proper tension, and longitudinal displacement of the frame 24 is prevented by side rods 26, extending from one end of each side bar of the frame 24 to the opposite portion of the fixed frame and each provided with suitable
 60 thumb-nuts applied to their threaded ends. The rods 26 are flexible, so as to permit of the vertical reciprocation of the frame 24, but can be subjected to such tension as to resist the
 65 pull of the belt 18 upon the drum 21, and thus prevent longitudinal displacement of the frame 24.

The shaft 16 has a drum 27, to which is adapted an endless belt 28, the latter also being adapted to a drum 29, which is carried by a
 70 shaft 30, the bearings for the latter shaft being longitudinally adjustable on the fixed frame, so as to maintain the belt 28 always under proper tension. The upper run of said
 75 belt 28 is supported by a table 31, and its lower run is maintained in proper lateral alinement with the drums 27 and 29 by means of a spool 32, mounted in bearings in the lower portion of the fixed frame. The table 31 has upwardly-
 80 projecting sides 33, which in connection with the table form a trough for the reception of the upper run of the belt 28, and the pins 19 of the belt 18 project down into this trough and reciprocate vertically therein. In order
 85 to prevent wear of the sides of the trough, the same are preferably armored by means of metal plates 34, as shown in Fig. 2.

At one end of the frame is a hopper 35, which is provided with an adjustable delivery valve or gate 36, and at the opposite end of the
 90 frame is a comb whose teeth 39 project between the pins 19 of the belt 18, said teeth projecting from a bar 38, which is mounted at each end upon a swinging arm 37, each end of the bar being adjustable from and toward
 95 the fulcrum of its arm 37 by means of a slot 40 in said arm. The grain and the garlic mixed therewith are deposited in the hopper 35 and permitted to flow therefrom onto the upper run of the belt 38, the latter and the
 100

belt 18 being caused to travel in the direction of the respective arrows shown in Fig. 1. As the grains of wheat and seeds of garlic are carried forwardly by the belt 28 they are sub-
 5 jected to the action of the vertically-reciprocating and forwardly-traveling pointed pins of the belt 18, the result being that while the hard-surfaced grains of wheat will deflect the points of the pins the softer garlic-seeds will
 10 be impaled by said pins. Consequently at the forward end of the belt 28, the wheat-grains will be permitted to drop downwardly from said belt, while the seeds of garlic will be car-
 15 ried forwardly by the pins 19 and will be removed therefrom by the comb 39, the angle of which in respect to the pins 19 can be varied as desired, either by swinging the arms 37 or by turning the rod 38 on its axis. The
 20 trough in which the upper run of the belt 28 runs prevents any escape of particles of grain sidewise, while the vertical reciprocating movement of the belt 18 insures the impaling of all of the seeds of garlic upon the pins of the
 25 belt during the travel of the same from one end of the upper run of the belt 28 to the other, the reciprocations of said belt 18 being rapid, so that many opportunities are afforded for the pointed pins 19 to impale the seeds of
 30 garlic during the forward travel of the same. While I prefer in all cases to use a traveling carrier for the mass of grain and garlic which is being subjected to the action of the pins of the belt 18, it will be evident that by slightly inclining the trough—as shown, for
 35 instance, at 28^a in Fig. 5—the feeding of the grains along the same by gravity may be effected, in which case the use of the traveling belt 28 will not be necessary.

While also my invention might be embodied
 40 in a machine in which the reciprocating movement was imparted to the grain-trough, as also shown in Fig. 5, instead of to the garlic-collecting belt, such agitation of the grain is inadvisable. Hence the adoption of the con-
 45 struction which I have shown in Fig. 1 and previously described.

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

1. The combination in a garlic-separator,
 50 of a support for a layer of grain and garlic, a garlic-collector presenting to said layer a number of pointed pins, means for causing said pins to impale the seeds of garlic by a reciprocating movement imparted to one of
 55 said elements, and means for moving said garlic-collector in a direction transverse to the direction of reciprocation, substantially as specified.

2. The combination in a garlic-separator,
 60 of a support for the mass of grain and garlic, a garlic-collector presenting to said mass a number of pointed pins, means for causing

said pins to impale the seeds of garlic by a reciprocating movement imparted to one of said elements, and means for moving both the
 65 garlic-collector and the mass of grain in a direction transverse to the direction of reciprocation, substantially as specified.

3. The combination in a garlic-separator, of a support for the mass of grain, an endless
 70 belt having sharp-pointed pins or teeth, and means for traversing said belt and for reciprocating the same above the mass of grain, substantially as specified.

4. The combination in a garlic-separator, 75 of a conveyer for the mass of grain, and a pin-belt traveling above said conveyer and reciprocated from and toward the same, substantially as specified.

5. The combination in a garlic-separator, 80 of a receptacle for the grain, a pin-belt traveling above said receptacle, means for causing the pins to impale the seeds of garlic by a reciprocating movement, and a comb for removing from the pins of the belt the seeds
 85 of garlic impaled thereupon, substantially as specified.

6. The combination in a garlic-separator, of the pin-belt, with a comb having a bar piv-
 90 otally mounted upon a carrier which is also pivoted so as to swing from and toward the belt, substantially as specified.

7. The combination in a garlic-separator, of a fixed frame, a pin-belt, a frame vertically
 95 reciprocated in said fixed frame and supports for said pin-belt carried by said reciprocated frame, substantially as specified.

8. The combination in a garlic-separator, of a fixed frame, a pin-belt, a driving-drum
 100 for said belt, mounted in bearings on the fixed frame, and a vertically-reciprocated frame carrying a supporting-drum for said pin-belt, substantially as specified.

9. The combination in a garlic-separator, of a fixed frame, a pin-belt, a driving-drum
 105 for said belt mounted in bearings on the fixed frame, and a vertically-reciprocated frame carrying a pair of supporting-drums for said pin-belt, substantially as specified.

10. The combination in a garlic-separator, 110 of a fixed frame, a reciprocating frame, a pin-belt, driving mechanism therefor having one of its elements mounted on the fixed frame, and another on the reciprocating frame, and flexible straining-rods for said reciprocating
 115 frame, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK C. BECHTEL.

Witnesses:

F. E. BECHTOLD,
 JOS. H. KLEIN.