C. J. PETRIE.

ONION TOPPING MACHINE.

APPLICATION FILED JULY 13, 1908.

926,286. Patented June 29, 1909.

Fig. 1.

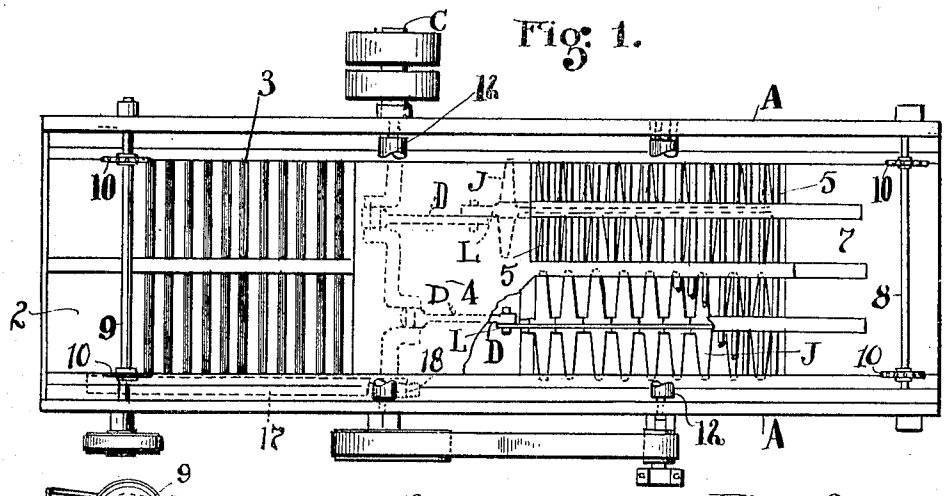


Fig. 2.

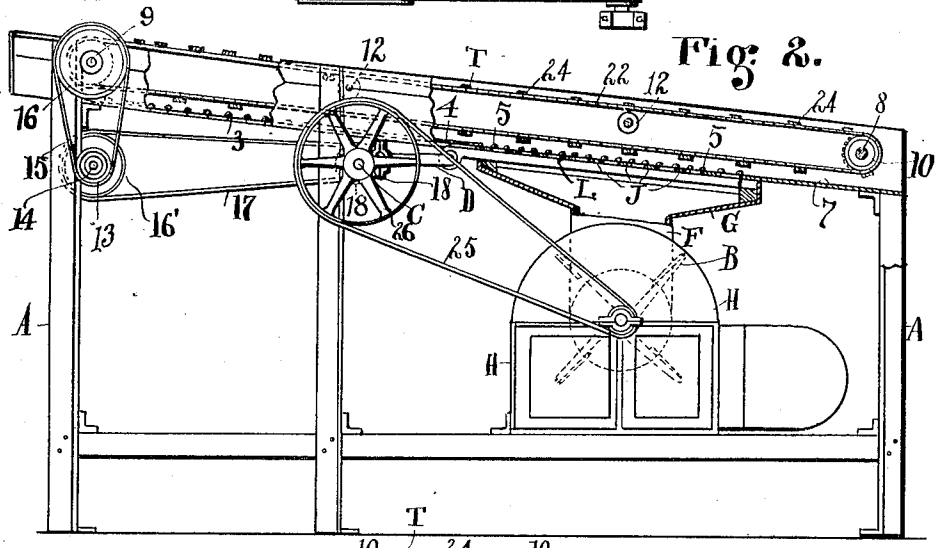
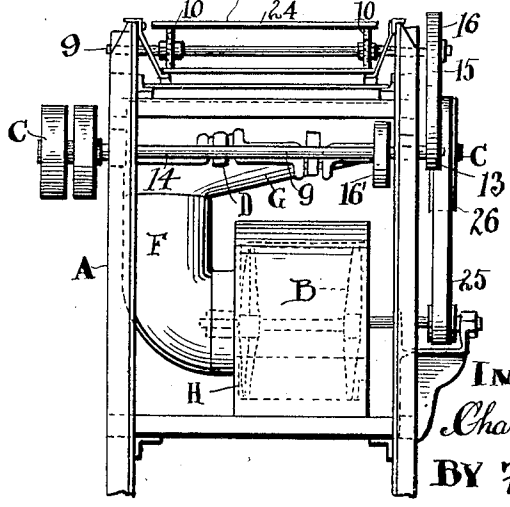


Fig. 3.



ATTEST
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UNITED STATES PATENT OFFICE.

CHARLES J. PETRIE, OF CLEVELAND, OHIO.

ONION-TOPPING MACHINE.

No. 926,286. Specification of Letters Patent. Patented June 29, 1909.

Application filed July 13, 1908. Serial No. 443,324.

To all whom it may concern:

Be it known that I, CHARLES J. PETRIE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Onion-Topping Machines, and do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to onion topping machines, and the invention consists in a machine adapted to sever the tops from onions as they are carried forward in an inclined passage-way over a slatted bottom and the tops are drawn through the screen by suction and severed by two separate series of reciprocating blades, all substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of the machine, and Fig. 2 is a side elevation thereof, partially sectioned. Fig. 3 is a front end elevation of the machine.

As thus disclosed the invention comprises a main frame A which is highest at its front or feeding end and lowest at its rear or discharging end for the onions, and said front end has a hopper, trough, or receiving space 2 immediately at the end thereof into which the onions are fed or delivered as they come from the field, tops and all. From this point there is a passage having side walls of the requisite depth extending the full length of the machine and a bottom of somewhat varied construction suited to the work to be done. Thus, next to said initial hopper or trough 2 there is an openwork bottom portion constructed of a series of transversely disposed slats or half round rods 3, secured at their ends in midway and side supports in said passage and spaced apart far enough to allow the smallest sizes of onions to sift through as well as particles of dirt and trash that may come in with the onions.

The use of transversely arranged slats, rods or rounds is emphasized because I design to have the onions roll over and over as they traverse this slatted space, rather than merely sliding along, thus effecting the desired sifting and separating operation at the start and for which the machine is designed, among other things. By arranging the said rods or rounds cross-wise with a space between them relatively as great as shown the onions are caused to roll instead of slide as they are pushed along by the peculiar devices employed for this purpose, and this also mixes them and causes those at the top to work to the bottom and those at the bottom to work to the top, and so all alike will become exposed to the sifting and separating operation before said slatted space has been passed. Next beyond or below said transversely barred grating 3 in the line of travel I provide a flat flush surface 4, which covers and protects crank drive shaft C and certain other operating parts and which surface is flush with the rounds or rods 3. From said plain closed surface or floor 4 for a distance rearward I provide another open grated or ribbed bottom portion resembling the bottom portion 3 above described except in that in this space the slats, rods or rounds 5 are nearer together than in the first instance, and said parts are arranged transversely as before with their flat sides down and properly supported at their ends. Beyond or outward from said grated space 5 to the end of the machine a plain closed surface or bottom portion 7 may be used.

Now having the foregoing construction of machine bed, box or passage through which the onions are carried for treatment, it is necessary to have means to mechanically move the onions along, and these consist of an endless traveler —T— which runs over suitable sprocket or like wheels 10 on shafts 8 and 9, and intermediate of these are idlers 12 for said carrier. Power may be conveyed to the carrier by any suitable means, but in this instance I employ a shaft 14 at the head of the machine on which is a pulley 13, and a belt 15 thereon runs over pulley 16 on shaft 9, and pulley 16′ on shaft 14 is driven by belt 17 running over a pulley 18 on driving shaft C.

The so-called endless traveler above referred to for moving the onions along over the inclined bottom of the machine passage or trough consists in a set of sprocket chains 22 upon which are affixed cross bars 24 at intervals and which are adapted to run in such approximate relation to the said inclined bottom as will cause the onions to roll over and over as they impinge upon rounds 3 and by which they are carried at the desired speed over said bottom and in keeping more or less with the movement of the endless traveler itself. In any event the said cross-bars are designed to prevent the onions from

lodging at any point on the bottom over which they move, and the effect of said cross bars is to produce both agitation and more or less turning of the onions as just described, and this makes said grated surface 3 especially effective for sifting and separating purposes.

When the onions reach the finer grated space 5 they are subjected to two distinct operations, suction from beneath to draw the adhering tops through between said slats, and the severing action of the cutters or blades to shear off said tops.

For suction purposes I provide a suitable fan or blower B in a housing H, in the lower portion of the machine, from which a flue F extends to a hopper G above and which is built into the shell or wall of the machine about the entire border of the grated or open barred space 5. Said hopper G has an inclined bottom open to flue F, and the suction or draft by blower B is such as to draw all the onion tops down between the slats 5 first or last as the onions are carried over said space. As this is done the tops are cut short off by knives or blades J, arranged to reciprocate back and forth directly beneath and in practical contact with the flat transverse undersides of the half-round slats or rounds 5. The said rounds or slats being comparatively close together a very slight reciprocation of blades J will suffice to traverse the space between them, and said blades are arranged in two separate sets covering half way across the body of the machine as to its sides, and each separate set of blades is supported on a bar L having said blades extending laterally therefrom oppositely on opposite sides thereof. Each particular blade is engaged with said bar at one end and is free at its other or outer end except as said end is slidably confined to hold it up in close working relation with said half rounds 5. The bars L are supported in guides at their ends, and are reciprocated from main shaft C by pitmen D. Power is conveyed to the blower by belt 25 from pulley or wheel 26 on shaft C.

The blades or cutters J are substantially parallel to or with transverse rounds 5, and are constructed and arranged to have a practically direct or straight across cut being reciprocated in the direction of travel or feed of the onions.

What I claim is:—

1. In onion topping machines, an inclined feed passage over which the onions are adapted to travel having a bottom constructed with transverse slats spaced apart and rounded in cross section over their top, and means to roll the onions over said slats.

2. An onion topping machine having a feed passage for the onions provided with a transversely slatted bottom, in combination with a device for rolling the onions forward over said passage consisting of an endless traveler having transverse bars at intervals arranged to pass immediately over said slatted bottom.

3. An onion topping machine having a passage for the onions with a transversely grated bottom formed of half round bars flat on their underside, and an endless device over said passage adapted to cause the onions to roll, in combination with blades to sever the tops of the onions arranged next beneath said transverse bars and extending transversely of the machine, and means to reciprocate said blades in the direction of the travel of the onions.

4. An onion topping machine having a passage for the onions provided with a transversely slatted bottom, in combination with a bar adapted to be reciprocated lengthwise of the machine and provided with transverse blades at each side, means to reciprocate said bars and carry said blades across the spaces between the slats and sever the onion tops, and a suction device to draw the onion tops down to severing position.

5. In an onion top clipping machine, an inclined passage way for the onions having a transversely barred bottom between its ends adapted to cause the onions to roll, in combination with transversely disposed clipping blades next beneath said bars, and means to draw the onion tops down between said bars and to carry the severed tops away comprising a hopper engaged at its top beneath a portion of said inclined passage, and a suction device at the bottom of said hopper.

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

CHARLES J. PETRIE.

Witnesses:

R. B. MOSER,

F. C. MUSSUN.