W. H. CHAPMAN.

PROCESS FOR LOOSENING THE SKINS OF TOMATOES AND THE LIKE.

APPLICATION FILED APR. 25, 1917.

1,250,140. Patented Dec. 18, 1917.

Fig. 1.

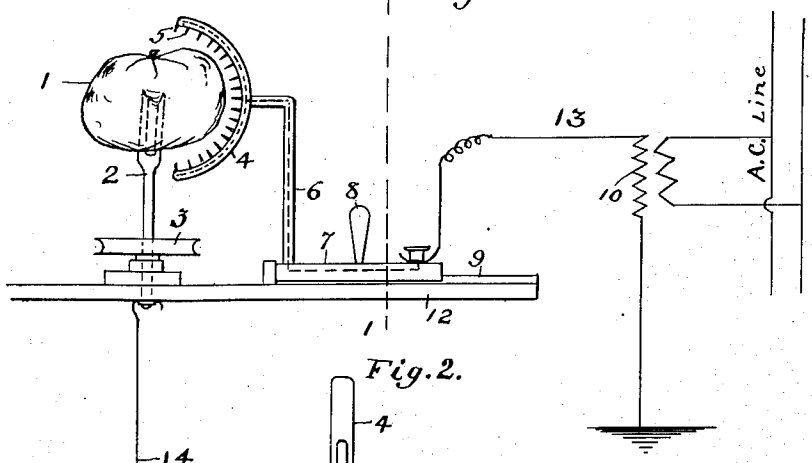
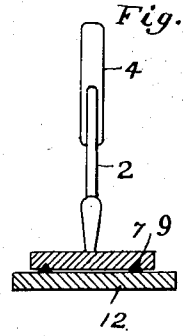


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM H. CHAPMAN, OF PORTLAND, MAINE.

PROCESS FOR LOOSENING THE SKINS OF TOMATOES AND THE LIKE.

1,250,140. Specification of Letters Patent. Patented Dec. 18, 1917.

Application filed April 25, 1917. Serial No. 164,540.

To all whom it may concern:

Be it known that I, WILLIAM H. CHAPMAN, a citizen of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Processes for Loosening the Skins of Tomatoes and the like, of which the following is a specification.

My invention relates to a process and apparatus for loosening the skins of tomatoes and other like vegetables or fruits having thin and closely adhering skins, so that the skins may be readily stripped off.

In the operation of canning tomatoes, it has hitherto been practically impossible to remove the skins without first heating or partially cooking.

I have found that if the skin of the tomato is punctured by electric sparks sufficiently near together, the effect will be to form small holes in the skin which loosen it from the pulp, so that it may be readily peeled or stripped off. The heat from the spark apparently has the effect besides puncturing holes in the skin to expand the air inside of the skin where the spark passes through and so detach the skin from the pulp. There are various forms of apparatus by which this process may be carried out but in the accompanying drawing, I have shown a simple form of mechanism which will illustrate a practicable way of carrying out the process.

In the drawing,

Figure 1 is a side elevation of the apparatus and

Fig. 2 is a section on the line 1—1 of Fig. 1.

A comb conductor charged with a high voltage alternating electricity is located adjacent to the tomato and the apparatus is so formed and manipulated that all portions of the skin are presented to the discharging points.

The skin is thus thoroughly punctured and is loosened from the pulp.

According to the apparatus which I have illustrated, for carrying out the process, 1 represents a tomato stuck on a forked support or spindle 2 journaled in the table 12 and slowly rotated by a suitable pulley 3, which is provided with a belt (not shown) for effecting the rotation.

The skin of the tomato is punctured by sparks from a comb point conductor. As here shown the conductor 4 is in the form of a semicircle inclosing half of the tomato, the comb points 5 being radially disposed and pointing inward. As the tomato is turned substantially all of its surface is exposed to the sparks which are given off from the points 5 and quickly puncture the skin.

The conductor 4 is mounted on the upper end of an arm 6 which is carried by a carriage 7 mounted on slides or ways 9. The carriage and the conductor may thus be easily moved from and toward the tomato, allowing the same to be removed from the forked spindle after treatment. The conductor is electrically connected with a source of high voltage electricity capable of emitting sparks. As here shown, it is connected with an alternating current line with a commercial current of 110 volts connected with the primary of a transformer 10. Through the transformer, the voltage is raised to about 12,000 volts capable of producing a spark of nearly one inch in length. The connection from the conductor 4 to the transformer is made through the carriage 7 by means of a wire 13. A handle 8 is provided for sliding the carriage 7 back and forth to the tomato being operated upon. The holder on which the tomato is held is formed of metal or other conductor and is connected to earth by a wire 14.

The number of alternations of the usual commercial circuit are 60 per second and the sparks will be emitted from each of the points substantially at this rate. The tomato may thus be rotated with considerable speed and the skin will be thoroughly perforated with holes. In applying this process to a canning factory, much more elaborate and rapid acting mechanism would be used but that illustrated is perfectly capable of carrying out the process.

While this process is primarily designed to be used for tomatoes, it is capable of being used with any fruits or vegetables with thin, non-conducting skins, as plums, apples, peaches, corn, etc.

The body of the tomato is not affected by the current used which is preferably of high voltage and low amperage. It is to be understood that the term "comb point con-

ductor" includes any means of emitting sparks.

I claim:—

1. The process of loosening the skins from tomatoes and the like, preparatory to peeling, which consists of puncturing the skin by electric sparks.

2. The process of loosening the skins from tomatoes and the like preparatory to peeling, which consists of puncturing the skin by a plurality of electric sparks discharged from a plurality of points.

In testimony whereof I hereby affix my signature.

WILLIAM H. CHAPMAN.