Nov. 24, 1942. C. E. LANG 2,302,701

PICKLE PRICKER

Filed April 4, 1941 2 Sheets-Sheet 1

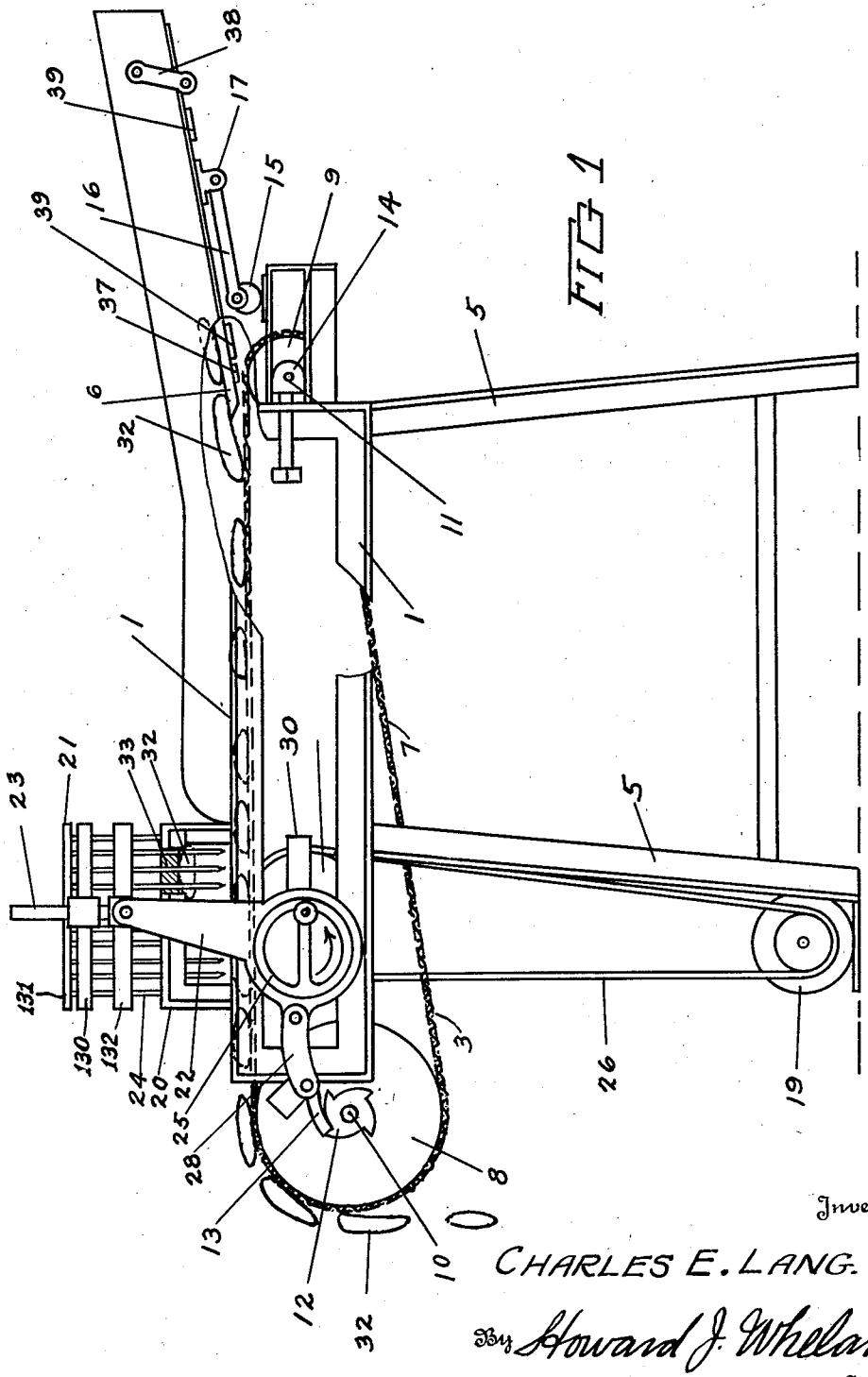


FIG 1

Inventor

CHARLES E. LANG.

By Howard J. Whelan.

Attorney

Nov. 24, 1942. C. E. LANG 2,302,701

PICKLE PRICKER

Filed April 4, 1941 2 Sheets-Sheet 2

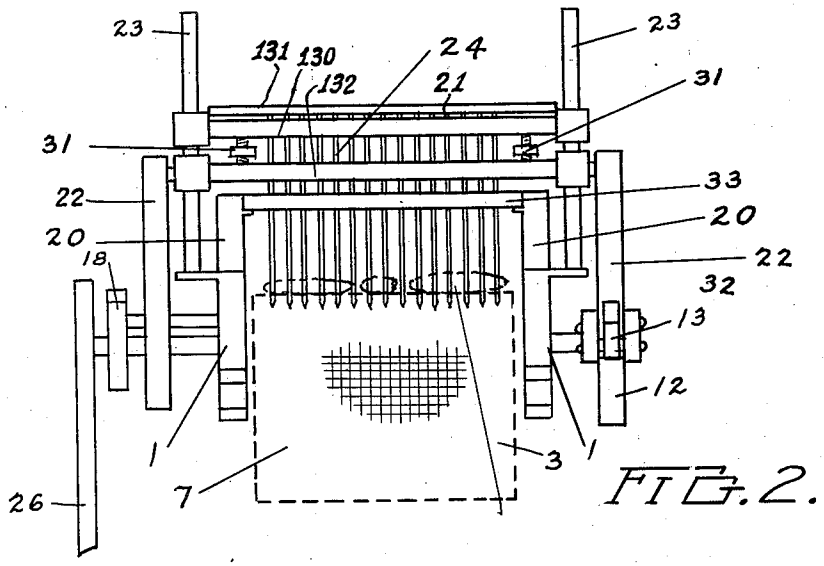


FIG. 2.

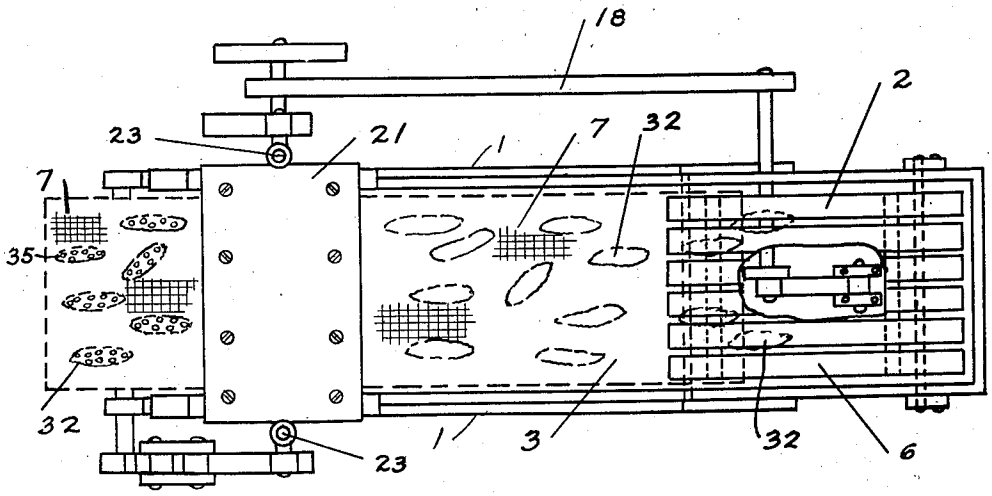


FIG. 3.

Inventor

CHARLES E. LANG.

By Howard J. Whelan.

Attorney

Patented Nov. 24, 1942 2,302,701

UNITED STATES PATENT OFFICE

2,302,701

PICKLE PRICKER

Charles E. Lang, Baltimore, Md., assignor to C. C. Lang & Son, Inc., Baltimore, Md.

Application April 4, 1941, Serial No. 386,815

2 Claims. (Cl. 146—56)

This invention refers to pickle machines and more particularly to the processing of cucumbers or pickles to obtain an effective internal circulation of the pickling fluids. It has among its objects to provide a machine that will perforate pickles or vegetables, remove the surplus material during perforation, and provide for use of the excess material. Another object is to make the machine adjustable as far as the perforation means is concerned. A further object is to provide the machine with various movements and actions that will facilitate the processing of the pickles or vegetables selected for the machine.

Other objects will become apparent as the invention is more fully set forth.

An effective method for rendering vegetables, such as cucumbers for brining or other pickling, consists in perforating same before placing them in the brine or other pickling liquid. The methods used heretofore have been relatively crude and by hand. Such methods are slow, unsanitary, ununiform and expensive. In this invention the work is done quickly, effectively and without manual handling. Also the material punched out is diverted for collection for further use. In perforating the pickles or vegetables, such is done at a slight angle to get a longer perforation, and make the cutting easier. The vegetables are induced to follow their paths of travel on a relatively large mesh wire belt carried from a feed plate having a rippling or shaking feeding action. The wire belt permits the perforations to be made in the vegetables in a harmless manner and at the same time allow the excess material perforated out to pass through it. The mesh also serves to cut off any such material that may not be severed and readily pass through it from the vegetables.

In the drawings which illustrate an example of this invention:

Figure 1 is a side elevation of a cucumber perforator with parts broken away to show the construction underneath;

Figure 2, is an end view of Figure 1 looking towards the punching or perforating mechanism used;

Figure 3, is a plan view of Figure 1.

Similar reference characters refer to similar parts throughout the drawings.

In the drawings 1 represents the framework of the machine that supports the feed plate 2, the carrier 3 and the perforating mechanism. The framework consists of a suitable number of legs 5 for supporting the trough portions of the frame and the conveyor or carrier mechanism. The feed plate 2 is extended from the framework and tilted at angle to permit the cucumbers to roll down its rails 6 onto the wire belt 7. This belt has a mesh of about four in a square inch and operates on a large front pulley 8 and a rear small pulley 9, mounted on the shafts 10 and 11 respectively. The front pulley has a ratchet wheel 12 adapted to be intermittently operated by a pawl 13. The shafts are supported on the framework, in a suitable manner and may be adjusted in position by a take-up 14 connected with the framework.

The feed plate 2 consisting of rails 6 and braces 39 is mounted on the framework as indicated and supported on brace 37 and pivotly connected by arm 38 to the framework. The feed plate is given a shaking movement through the use of a cam 15, link 16 and connections 17 and acts through the use of a transmission arrangement 18 operated by the motor 19 that also operates the other moving parts of the device in the manner indicated.

The perforating mechanism consists of a frame 20 attached to the framework 1, in which a series of perforator rigs 21 actuate under the action of manipulator arm 22 and the guide bars 23. Perforators 24 are attached to the rigs 21 and reciprocated up and down as the motor 19 rotates the eccentric mechanism 25 at the side of the framework through the transmission belt 26. A stripper plate 33, removes the cucumber from the punches when they remain on same after perforation. The trough 40 is provided with side boards to keep the cucumbers 32 on the belt until they have been perforated 35 and discharged off the discharge end of the carrier. This trough consists in general of a rectangular box mounted on the frame 1, with its sides 41 bordering the feed plate 2 and the conveyor belt. One end of the feed plate is pivotally connected by arms 38 and other end is supported by brace 37. The sides are formed as indicated in Figure 1, to follow the line of travel of the cucumbers and prevent their falling off the machine by guiding them within the area of the belt 7. The perforation of the cucumbers by the perforators 24 causes the pickles 32 to stay thereon frictionally. They are lifted as indicated in Figure 1, until they strike against the stripper plate 33. The further lifting of the perforators and the stationary position of the pickles against the plate 33, removes the pickles off the perforators and allows them to drop down on the moving belt, to be carried off. The perforators 24 are carried by the rig 21 and lifted up and down, which in turn is operated by the manipulator arm,

suitably guided by the guide bar 23. The perforators slide in holes in the plate 33 and are held rigidly in the rig or cross member 21. The perforator rig 21 consists of a plate 130 through which perforators 24 project and have their end portions made fast in locked arrangement, by plate 131 which is attachably mounted to plate 130 by screws. Another plate 132 similar in all respects to plate 130 is adjustably separated therefrom by adjustments 31 which allow for adjustments to suit the various lengths of perforators 24.

The operation of the device is relatively simple. The cucumbers are fed on to the feed plate 2, and shaken on the rails 6 until they roll on the wire belt 7. The belt carries them to the perforating device. There the belt stops intermittently as the pawl 13 retracts from the ratchet wheel 12 and takes the power off it. The turning of the eccentric 25 operates the perforating mechanism so its punches 24 pass through the cucumbers stationed underneath at the moment. The perforating mechanism is operated through the manipulator arms 22 and its eccentrics 25. After the punches have done their work in the cucumbers underneath them, the eccentric turns and moves the link 28 and forces the pawl 13 to move the ratchet around and the belt or carrier 3 with it. This continues practically step by step bringing in new rows of cucumbers to be perforated at regular intervals and spacings, as long as the machine is running. When the punches pass through the cucumbers they force the material perforated out through the meshes of the wire belt. This material is caught in the receiver pan 39 and removed periodically when necessary or required. The operation of the feed plate is believed to be evident. Its motion is up and down, forward and backward, and keeps on continuously, as there is no need for it to stop, under usual circumstances. The cucumbers pass on the conveyor belt which is at a slight angle, and is perforated on this angle. This enables the punches to go into the vegetable more readily and creates larger passages through them than if vertical. This also breaks up the grain in the cucumber more effectively, thereby assisting in the distribution of brine etc. during pickling. The rigs are provided with adjusting screws 31 that permit the holders with their punches on them to set to cut or perforate the cucumber the predetermined amount desired.

While but one form of the invention is indicated in the drawings, it is not desired to limit this application for patent in any way, otherwise than determined by the scope thereof, as it is appreciated that other constructions employing the same principles could be made that would come within the field of the appended claims.

Having thus described the invention, what is claimed is:

1. A machine for perforating cucumbers for pickling purposes, comprising in combination, a framework, a feed plate with rails for carrying the cucumbers pivotly linked to the framework and adapted to oscillate thereon to shake the cucumbers travelling thereon, a wire mesh belt conveyor mounted on the frame and adapted to carry the cucumbers from the said feed plate, a series of perforators mounted on the framework over a predetermined portion of the said conveyor and adapted to reciprocate over same to pierce and pass through the cucumbers and wire mesh and punch material out of the cucumber and raise said cucumber off the conveyor, a stripper plate coordinated with the perforators so as to remove the cucumbers off the perforators at a predetermined portion of its raised travel and allow same to fall back on the conveyor for removal from the machine, means for operating the moving parts aforementioned, said framework having a trough with sides for guiding the cucumbers along the plate and conveyor, and a receiver pan mounted on the frame under the wire mesh belt conveyor and the said perforators for receiving the material punched out of the cucumbers through the wire mesh for its removal therefrom and to keep it off predetermined portions of the machine.

2. A machine for perforating cucumbers for pickling purposes, comprising in combination, a framework, a feed plate with rails for carrying the cucumbers pivotly linked to the framework and adapted to oscillate thereon to shake the cucumbers travelling thereon, a wire mesh belt conveyor mounted on the frame and adapted to carry the cucumbers from the said feed plate, a series of perforators mounted on the framework over a predetermined portion of the said conveyor and adapted to reciprocate over same to pierce the cucumbers and raise same off the conveyor a stripper plate coordinated with the perforators so as to remove the cucumbers off the perforators at a predetermined portion of its raised travel and allow same to fall back on the conveyor for removal from the machine and means for operating the moving parts aforementioned, said framework having a trough with sides for guiding the cucumbers along the plate and conveyor, and a receiver pan mounted on the frame under the wire mesh belt conveyor and the said perforators for receiving the material punched out of the cucumbers through the wire mash for its removal therefrom and to keep it off predetermined portions of the machine, and means for adjusting the amount of travel of the perforators into cucumbers and wire mesh.

CHARLES E. LANG.