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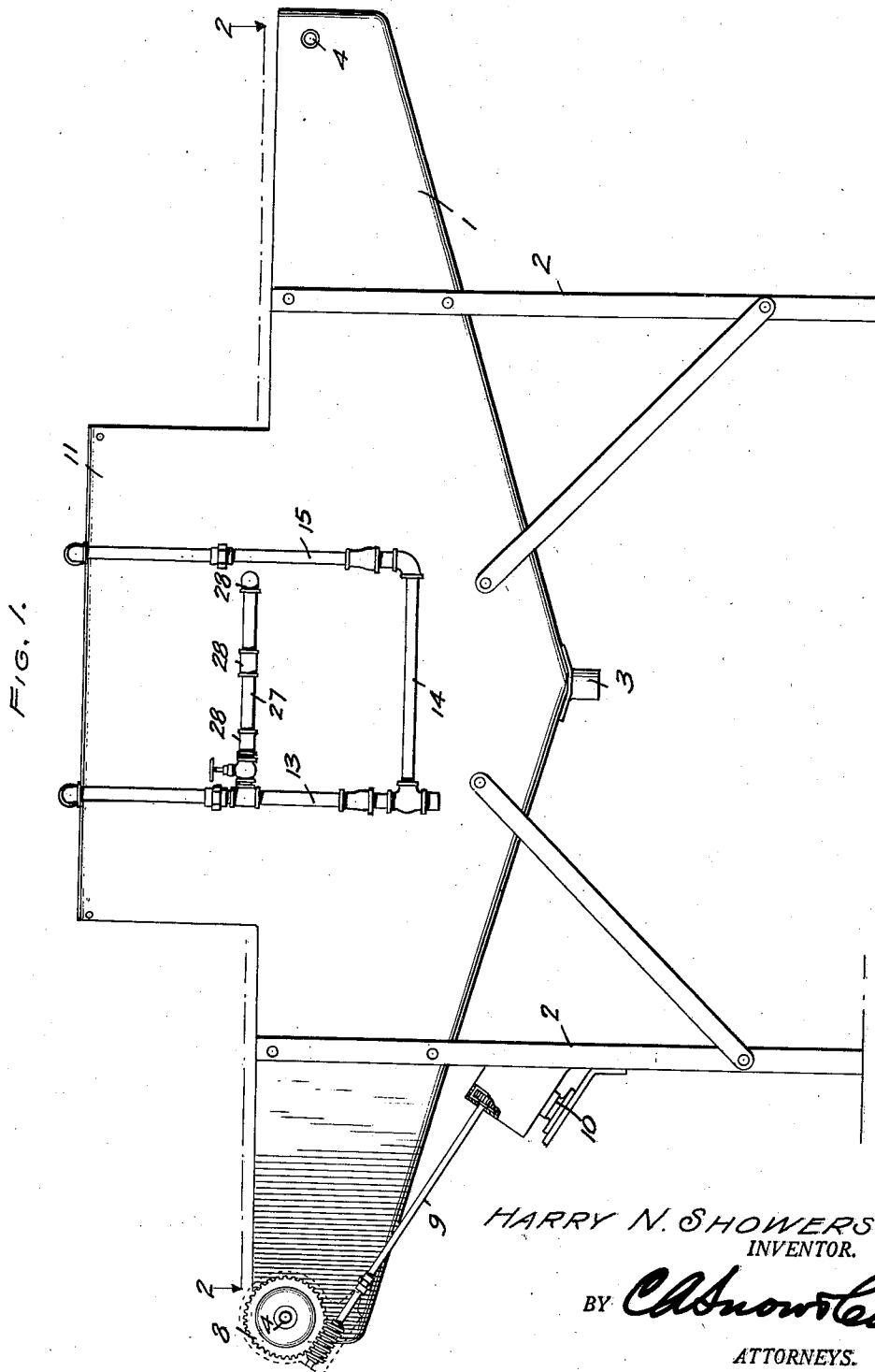
H. N. SHOWERS

2,218,686

VEGETABLE WASHER

Filed Dec. 20, 1938

3 Sheets-Sheet 1



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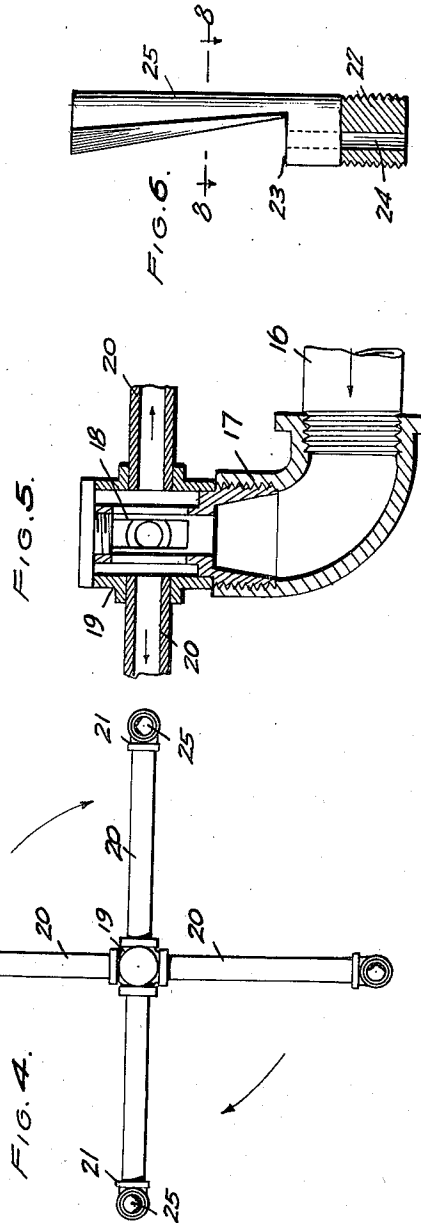
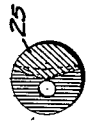
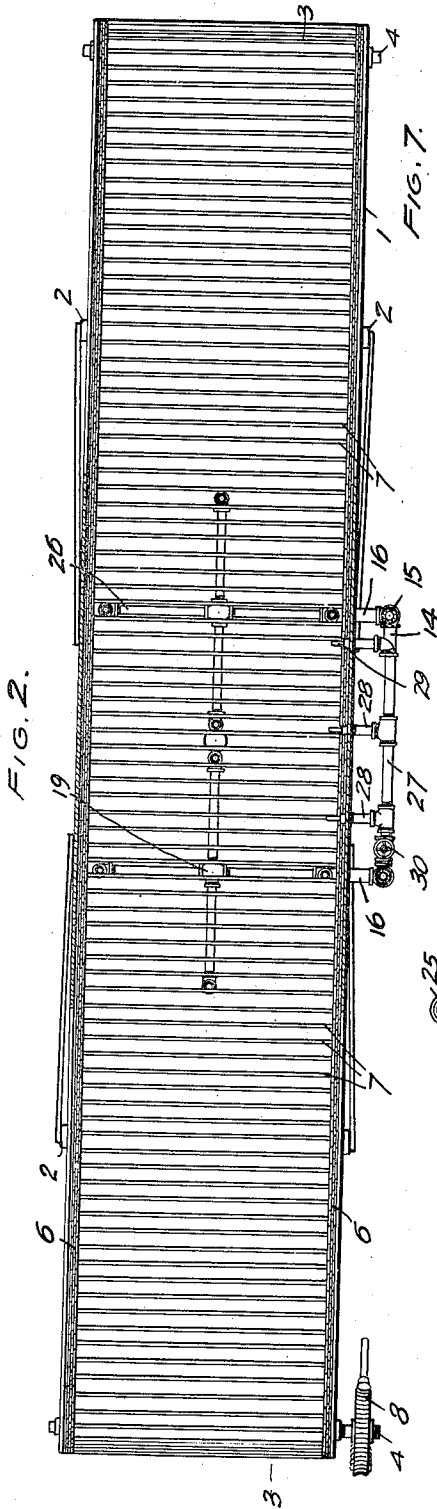
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3 Sheets-Sheet 2



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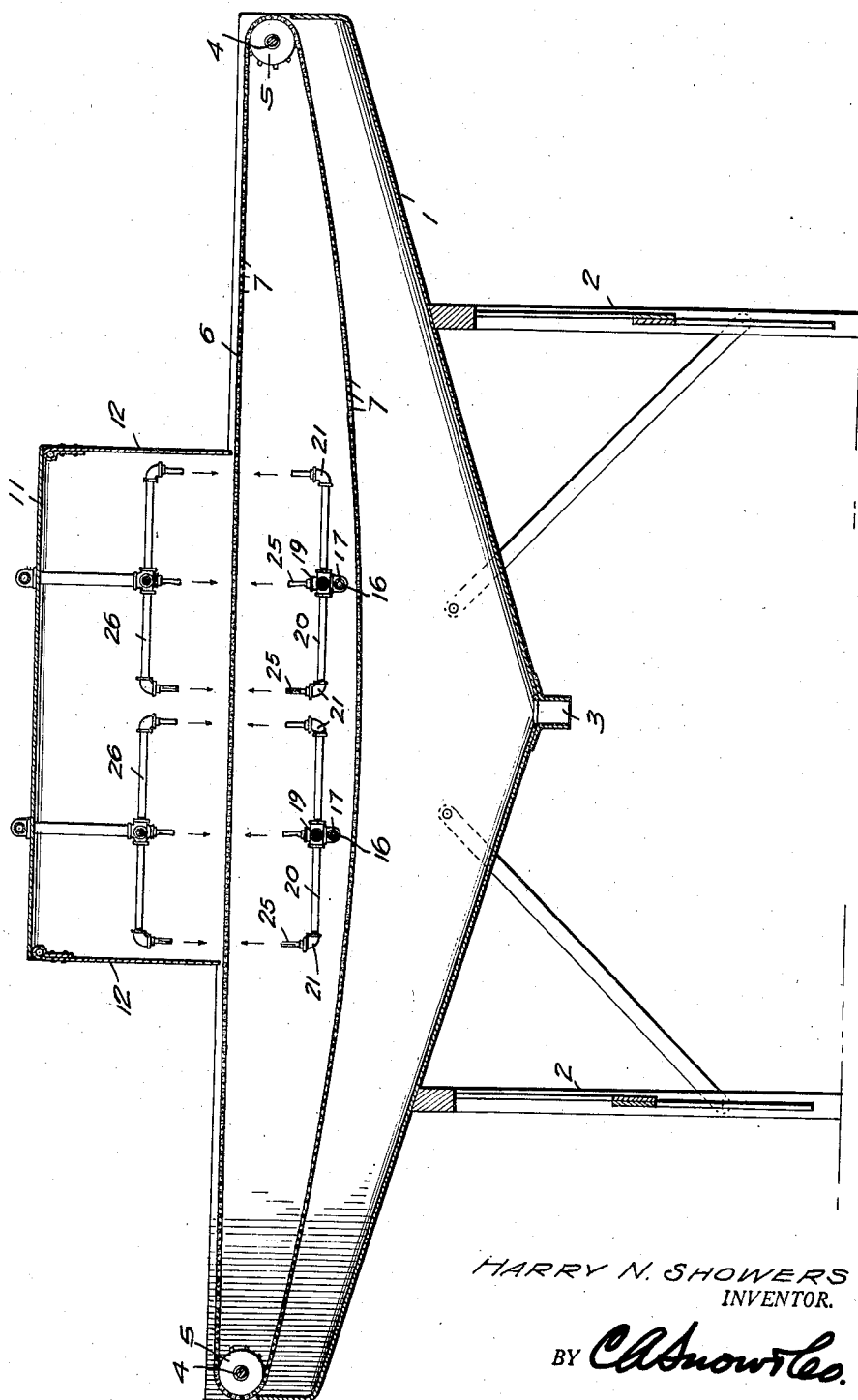
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FIG. 3.



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UNITED STATES PATENT OFFICE

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VEGETABLE WASHER

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Application December 20, 1938, Serial No. 246,876

1 Claim. (Cl. 299-69)

This invention relates to apparatus designed primarily for use in washing vegetables and the like.

5 An object of the invention is to provide a structure in which vegetables can be thoroughly scoured so as to leave the machine in a clean condition ready for shipment after they have been properly dried.

10 A further object is to provide a means for subjecting the vegetables or the like to the action of opposed moving sprayers so that all portions of the material under treatment will be reached, the spraying means being housed so that the spray will be confined and it is thus possible to use the apparatus without danger of wetting persons handling the same.

15 A still further object is to provide washing apparatus which is simple in construction and easy to operate.

20 With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts herein-after more fully described and pointed out in the claim, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

25 In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:

Figure 1 is a front elevation of the apparatus, a portion of the drive mechanism being broken away.

35 Figure 2 is a section on line 2-2, Figure 1.

Figure 3 is a section on line 3-3, Figure 2.

Figure 4 is a plan view of one of the sprayers.

Figure 5 is a vertical section through the hub portion of a sprayer.

40 Figure 6 is a view partly in side elevation and partly in section of a spraying nozzle.

Figure 7 is an end view of the nozzle.

Figure 8 is a section on line 8-8, Figure 6.

Referring to the figures by characters of reference 1 designates the trough-like body of the apparatus which is supported on suitable uprights 2. The bottom of this body is inclined downwardly to an outlet 3. Transverse shafts 4 are located in the end portions of the body and are provided with sprockets 5 or the like for supporting and operating an endless belt. In the present instance this belt is made up of parallel endless chains 6 connected by spaced rods 7 on which the vegetables or other materials to be washed are placed. The belt is actuated by any

suitable mechanism. For example a worm gear 8 can be secured to one of the shafts 4 and actuated by a speed reduction mechanism indicated generally at 9, this mechanism being driven by a motor 10 pivotally located.

Overlying the middle portion of the top flight of the endless belt formed by chains 6 and rods 7 is an upper housing 11. Curtains 12 formed of any suitable material of a flexible nature are used to close the inlet and outlet ends of the upper housing.

A water supply pipe 13 is located outside of the body 1 and has a laterally extended branch 14 from which a pipe 15 is extended upwardly. Outlet pipes are extended from pipes 13 and 15 through one side of the body and into position between the upper and lower flights of the belt. Each of these pipes 16 is provided at its inner end with an elbow 17 adapted to deliver water under pressure through a slotted stem 18 into the rotating hub 19 of the sprayer, this hub being held against displacement by any suitable means, although being capable of rotating freely. Preferably four tubular arms 20 are carried by and radiate from the hub 19 and each of these arms is provided at its outer end with an elbow 21 in the upper end of which is seated a screw plug 22. This plug has a flat end 23 forming a shoulder through which opens a delivery passage 24 extending through the plug 22 and located away from the longitudinal center thereof. An elongated spraying finger 25 is extended outwardly from the shoulder 23 at one side thereof and overhangs the passage 24, that surface of the finger which overhangs the passage being V-shaped transversely so that a jet of water, when discharged from the passage, will be split by said V-shaped surface and dissipated laterally thereby.

The pipes 13 and 15 are extended upwardly at one side of the upper housing 11 and over the top thereof where they project downwardly into the housing and are connected to rotating sprayers 26 similar in construction and operation to the ones thus far described but these upper sprayers 26 are inverted so that the jets of water will be discharged downwardly instead of upwardly.

A header 27 is extended laterally from pipe 13 at a point slightly above the level of the top flight of the belt and this header has branch pipes 28 extending therefrom through the adjacent side wall of the upper housing 11 where it is provided with spraying nozzles 29 of any suitable construction adapted to project a spray transversely across the material resting on the

belt. Suitably arranged valves 30 can be provided for controlling the flow of water through the pipes.

It is intended to so position the spraying nozzles that, when the water is delivered therefrom, it will react against the atmosphere to set up a rotation of the sprayer about its point of connection with the pipe supporting it.

In practice the vegetables or other materials to be washed are placed on the upper flight of the belt above one end of the body 1. This belt moves quite slowly and serves to carry the supported material under the first or nearest curtain 12 and into the upper housing 11. Here the material passes between the upper and lower revolving sprinklers, the spraying heads operating to direct spray under pressure upwardly and downwardly onto the supported vegetables or the like as they travel through the upper housing 11. At the same time these vegetables are subjected to the action of the transverse jets delivered from the nozzles 29. Dirt washed from the vegetables, etc., will flow downwardly with the waste water into the trough-like body 1 to the drain 3. After the vegetables, etc., have been properly washed, they will slowly emerge past the far curtain 12 and appear on the belt between the upper housing 11 and the delivery end of the apparatus where they can be removed.

As before stated, the nozzles will deliver jets of water both upwardly and downwardly against the vegetables travelling therebetween and, dur-

ing this delivery, the sprinklers are rotating so that all parts of the vegetables, etc., will thus be subjected to the action of the water.

By providing the curtains 12 at the inlet and outlet ends of the upper housing, water is prevented from splashing upon persons operating the apparatus and is kept confined within the upper housing and the body thereunder.

What is claimed is:

A rotary spraying element including a rotary hub, means for directing liquid thereto under pressure, tubular arms radiating from the hub, and nozzles at the free ends of the arms, each nozzle including a plug seated in the outlet end of the arm, an outlet opening extending through the plug away from the longitudinal center thereof, an elongated spraying finger extending outwardly from and integral with the plug at one side of the opening, said finger being V-shaped in cross section and having an arcuate surface alined with the plug and a longitudinal ridge inclined relative to the end of the plug, said ridge being obliquely disposed relative to and extending across the axial center of the outlet opening, the finger being positioned to split a jet of liquid delivered from the opening and to exert a propelling force to rotate the hub and arms, said plug and finger being adjustable about the axis of the arm outlet thereby to change the direction and speed of rotation.

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