G. GLASS.

FRUIT WASHER.

APPLICATION FILED JUNE 6, 1919.

1,402,490. **Patented Jan. 3, 1922.**

2 SHEETS—SHEET 1.

Fig. 1

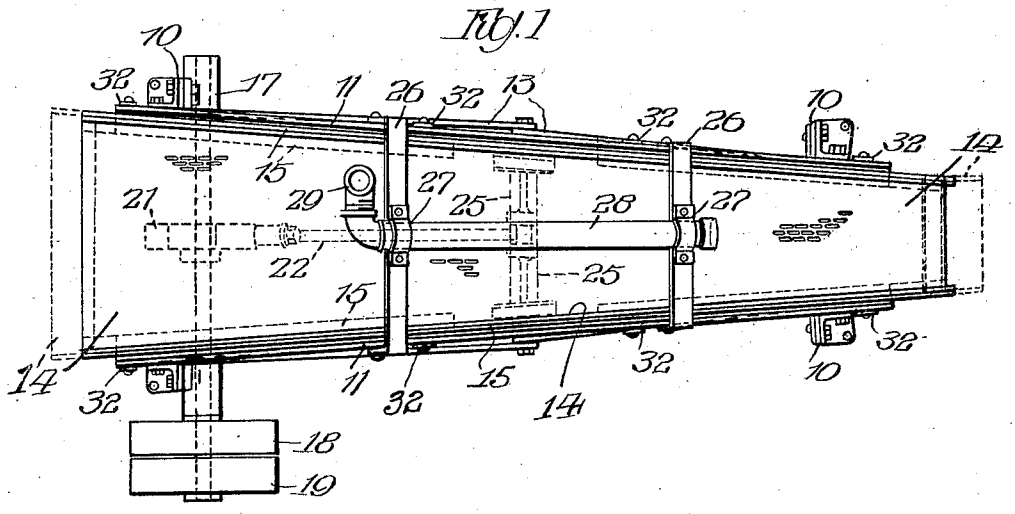
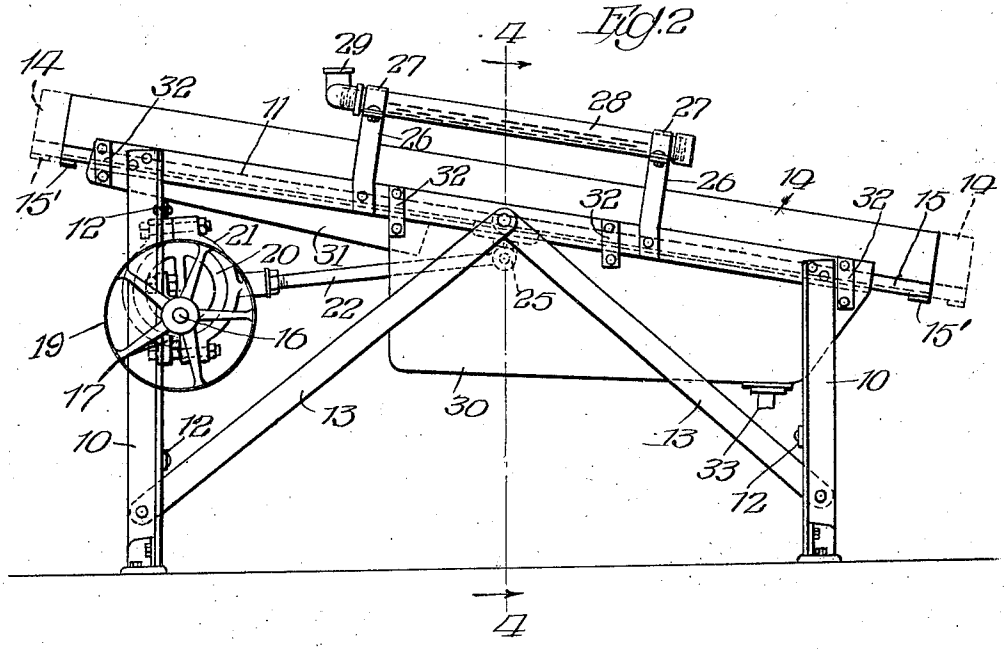


Fig. 2



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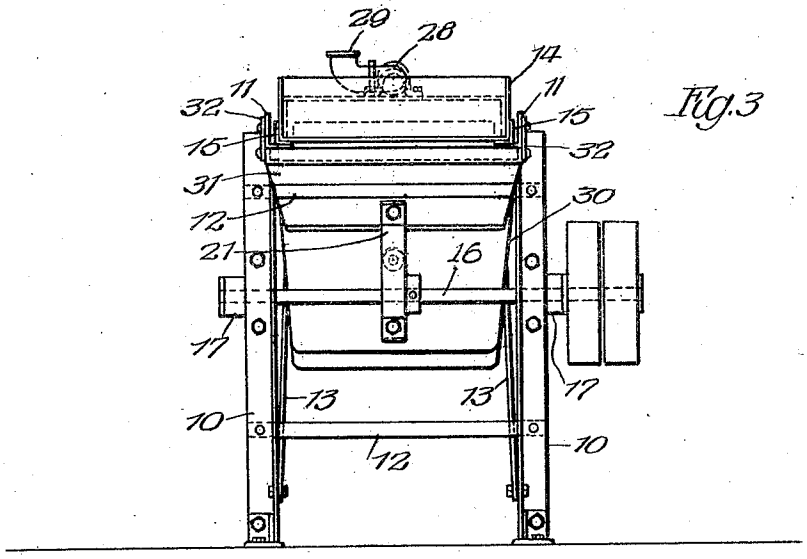


Fig. 3

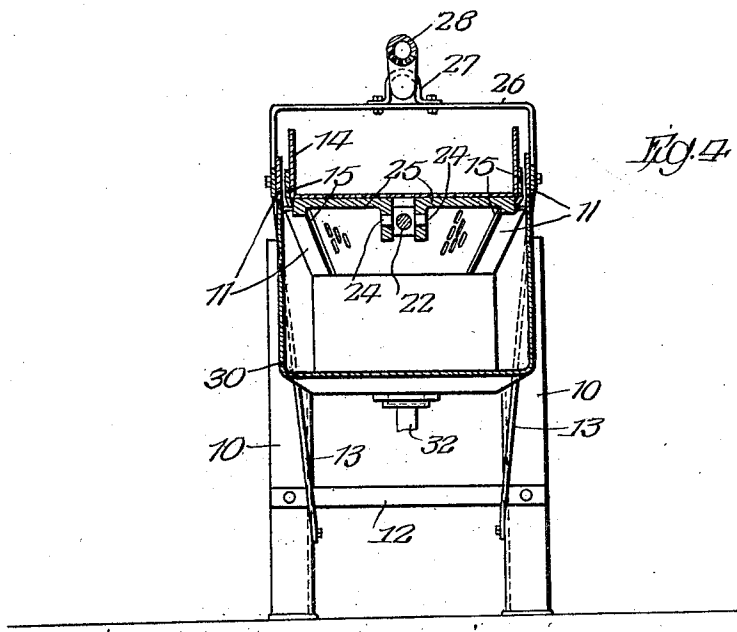


Fig. 4

Fig. 6

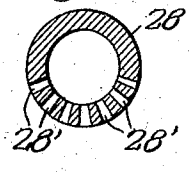
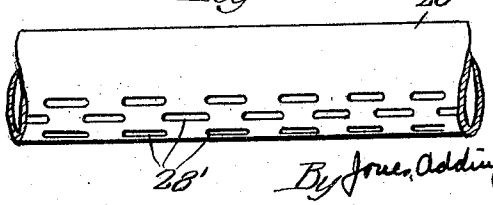


Fig. 5



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UNITED STATES PATENT OFFICE.

GEORGE GLASS, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO SPRAGUE CANNING MACHINERY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

FRUIT WASHER.

1,402,490. Specification of Letters Patent. Patented Jan. 3, 1922.

Application filed June 6, 1919. Serial No. 302,162.

To all whom it may concern:

Be it known that I, GEORGE GLASS, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Fruit Washers, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to fruit washers, that is, devices designed for use in connecnection with fruits and like granular material for cleansing the same preparatory to packing or canning thereof.

One of the objects of my invention is the production of a washer of the character mentioned which will be of durable and economical construction; one in which the possibility of injury to the material cleaned, during the cleansing operation, will be reduced to a minimum; and one which will be thorough and quick acting in operation. Other objects will appear hereinafter.

With these objects in view, the invention consists of the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which—

Fig. 1 is a top plan view of a washer embodying the invention;

Fig. 2 is a side elevation of the washer;

Fig. 3 is an end view thereof;

Fig. 4 is a section taken on substantially line 4—4 of Fig. 2;

Fig. 5 is a fragmentary side elevation of the liquid spraying element included in the construction; and

Fig. 6 is a transverse section of said spraying element.

The preferred form of construction as illustrated in the drawings comprises a base composed of legs or uprights 10 at the upper ends of which are supported angle irons 11 so arranged as to result in the production of a base having a channel-formed upper side. For reinforcement the legs 10 are connected by cross pieces 12 and angularly disposed longitudinally extending bars 13 which extend from the lower portions of said legs to the central portions of angle irons 11, as clearly seen in Fig. 2.

The angle irons 11 are longitudinally inclined and serve to support a trough 14 having a foraminated bottom, that is, a bottom provided with a plurality of closely arranged openings or slots so as to adapt said trough bottom to constitute a sort of sieve or strainer. The lower end of said trough is open and the sides of said trough converge toward said end forming a trough which tapers toward the lower or discharge end thereof. The supporting angle irons 11 are correspondingly arranged, that is, the same converge toward their lower ends as seen in Fig. 1. For reinforcement the lower longitudinal edges of the trough are provided with angle irons 15, and the extremities of the bottom of the trough are bent back as at 15′, thus producing a structure possessing exceptional strength and rigidity.

During the washing operation, the trough 14 is longitudinally reciprocated, and to effect such a reciprocation, a transversely extending shaft 16 is provided which is mounted in suitable bearings 17 provided upon the legs 10 at one end of the device. The shaft 16, at one end, is provided with conventional tight and loose pulleys 18 and 19 whereby power may be applied to said shaft.

Fixed to said shaft, substantially centrally thereof, is an eccentric 20, which is embraced by an eccentric band 21, said band being connected by a rod 22, with an end piece having trunnions 24 engaging in bearing members 25 applied to the under side of trough 14 substantially midway between the ends thereof. To accommodate the bearing members 25, the angle irons 11 and 15 are cut away, as clearly seen in Figs. 1 and 4. With this arrangement it will be seen that reciprocation of the trough will be effected through rotation of shaft 16, the rotary movement of said shaft being transformed through the eccentric into the desired rectilinear or reciprocating movement imparted to the trough. The amplitude of reciprocation of the trough is illustrated by dotted lines in Figs. 1 and 2.

Arising from the angle irons 11 of the base are substantially inserted U-shaped supporting members 26 upon which is secured by means of straps 27 a centrally positioned spraying element 28. The said spraying element is disposed longitudinally of the trough and centrally above the same, the under side thereof being provided with radially extending discharge openings 28′ whereby, in the operation of the washer,

cleansing liquid will be sprayed toward the trough and against any material contained therein, as will be readily understood. One end of the spraying element 28 is provided with a suitable coupling 29 whereby the same, during operation, may be connected with any suitable sort of cleansing liquid supply.

Arranged below the trough, the same being substantially coextensive therewith, is a sectional receptacle, there being two sections 30 and 31. Said sections are suspended from the angle irons 11 by straps 32 arranged at intervals along said angle irons as best seen in Fig. 2. The sectional formation of the receptacle is of special advantage in that it permits of ready connection of the actuating rod 22 with the trough 14, said rod, with the sectional receptacle construction, being passed through the joint between the overlapping adjacent ends of the sections 30 and 31.

In the operation of the washer, the fruit to be washed is deposited into the upper end of the trough, the same being adapted to find its way down the trough by reason of the reciprocatory movement of the latter and the inclined disposition thereof. In the agitation of the fruit thus effected, the broken or injured fruit, or fruit skins, will be removed from the good fruit, the former passing through the openings in the trough, whereas the good fruit will pass down the trough, the trough openings being of a size slightly smaller than the whole fruit so as to prevent the passage of the good fruit therethrough, the latter being discharged from the lower end of the trough where the same is cared for as may be desired. The liquid sprayer, of course, materially assists in the latter operation and in the removal of any other impurities with which the fruit may be laden. The cleansing process is such that injury to the fruit is reduced to a minimum while at the same time a maximum of efficiency is obtained.

Through the tapering or converging formation of the trough, a wide sifting surface is provided at the entrance or upper end thereof over which the fruit being treated may spread in a thin layer so as to insure each particle being subjected to the cleansing process afforded by the liquid discharged from the spraying device 28. At the same time this formation of the trough produces a narrow discharge end so that the fruit may be directed into a receptacle of comparatively small proportions or one with an inlet of limited size.

The cleansing liquid and other matter passing through the openings in the trough are collected in the receptacle 30—31 suspended therefrom, and are adapted to pass from said receptacle through a drain pipe 33 which leads from the bottom of said receptacle. To insure thorough draining of the receptacle, the bottoms of sections 30 and 31 are inclined toward the drain pipe as clearly seen in Fig. 2.

In this specification the word "fruit" has been used in its broad sense to cover both fruit and vegetables as ordinarily understood, inasmuch as the washer may be used in connection with a multitude of fruits and vegetables, it being understood that there is no limitation as to the use of the washer in this regard.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, it is capable of variation and modification without departing from the spirit of the invention. I therefore do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A washer of the class described, comprising an elongated reciprocatory foraminated body mounted for movement in the direction of the length thereof; actuating means connected with the underside of said body for reciprocating the same; and a sectional receptacle arranged below said body, said actuating means passing through the joint between adjacent sections of said receptacle.

2. A washer of the class described, comprising a foraminated trough; a base on which said trough is mounted for reciprocatory movement; a spraying element supported by said base and positioned above said trough; a sectional receptacle supported by said base and positioned below said trough; and means for imparting reciprocatory movement to said trough, said means passing through the joint between adjacent sections of said receptacle and being connected with the central portion of said trough, the ends of the sections at said joint being overlapped and spaced apart vertically to accommodate said means.

3. A washer of the class described comprising an elongated reciprocatory foraminated body mounted for movement in the direction of the length thereof; actuating means connected with the underside of said body for reciprocating the same; and a receptacle arranged below said body, said receptacle comprising two sections having adjacent ends overlapped and spaced apart vertically, said actuating means passing through the space between said overlapping ends of said sections.

In witness whereof, I have hereunto subscribed my name.

GEORGE GLASS.