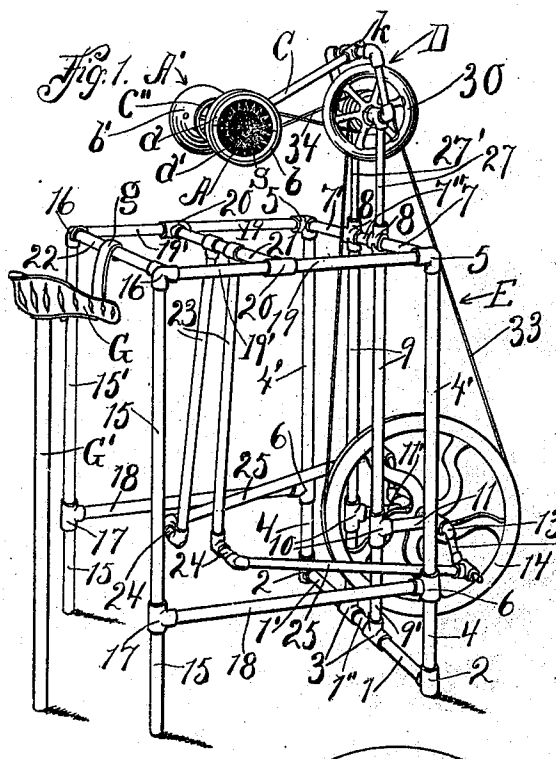
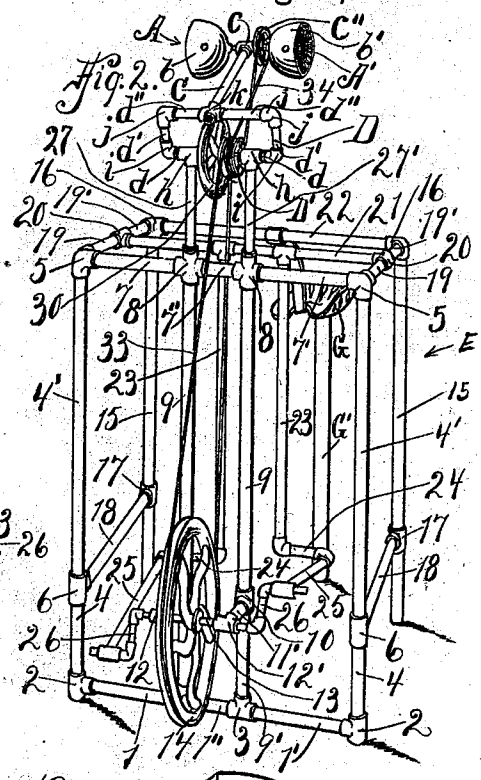
(No Model.)

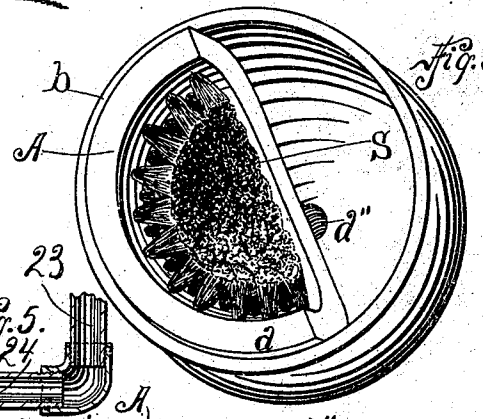
J. L. BLOCKBURGER.

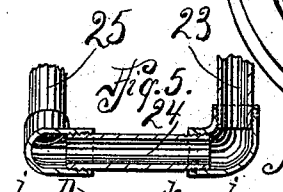
ORANGE OR FRUIT CLEANING MACHINE.

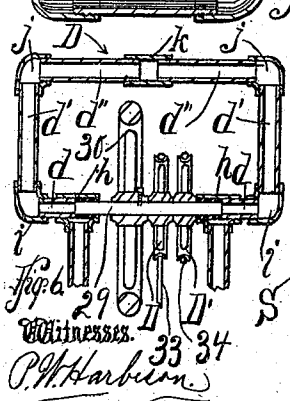
No. 502,651. Patented Aug. 1, 1893.

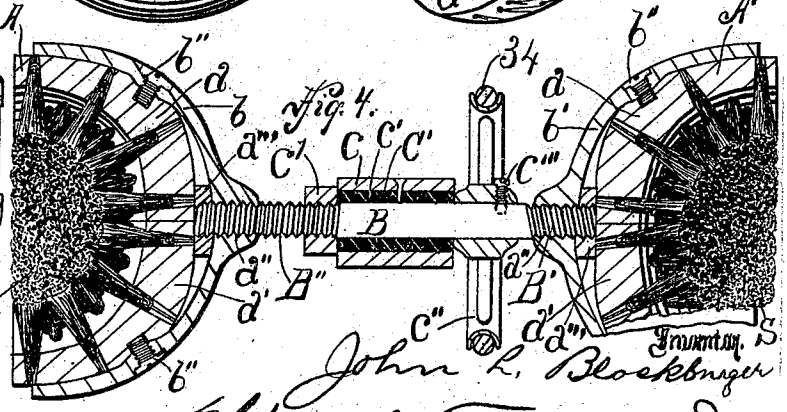












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UNITED STATES PATENT OFFICE.

JOHN L. BLOCKBURGER, OF PASADENA, CALIFORNIA.

ORANGE OR FRUIT CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 502,651, dated August 1, 1893.

Application filed November 11, 1892. Serial No. 451,594. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. BLOCKBURGER, a citizen of the United States, residing at Pasadena, in the county of Los Angeles and State of California, have invented a new and useful Orange or Fruit Cleaning Machine, of which the following is a specification.

The object of my invention is to provide a machine which will thoroughly cleanse and polish fruits, &c., and prepare them in excellent condition for the market at a minimum expense of time and labor.

My invention comprises a hemispherical brush having its bristles arranged pointing toward a common center to form a concave brushing surface.

My invention also comprises the special means employed for rotating such brush, and the construction of the frame for supporting the mechanism.

My invention also comprises the peculiar brush which I employ.

The accompanying drawings illustrate my invention.

Figure 1 is a perspective front view of the machine embodying my invention. Fig. 2 is a perspective rear view of the same. Fig. 3 is a perspective view of the brush and holder, one segment of the brush being shown in the holder, and the other segment being shown removed. Fig. 4 is a sectional detail illustrating the brushes and their shaft and its bearings. Fig. 5 is a sectional detail of a fragment of one of the treadles. Fig. 6 is a sectional detail of the brush arm supporting frame D, the band wheels and fly wheel being shown in section upon their shaft.

A A′ indicate in general a pair of brushes which are secured axially upon a brush carrying shaft B which is journaled on a suitable arm C, which is mounted upon a movable frame D, which is journaled co-axial with the driving pulley D′. Each of the brushes A A′ is formed of two segmental brushes *a a′* having concave brushing surfaces S, adapted and arranged to form conjointly a concave semi-spherical surface when the two segmental brushes are united.

b and *b′* represent respectively semi-spherical brush holders adapted and arranged to receive and retain the segmental portions of the brushes A and A′.

Each of the brushes proper may be made all in one piece if desired, though such construction is not shown for the reason that no invention would be required to make it of one piece in view of the drawings presented, but I prefer that they should be respectively made in two sections as shown, each section being approximately one-quarter of a spherical shell. The brush holders are semi-spherical, preferably, in order that they will present a smooth revolving surface that will not be liable to cut or otherwise hurt the hands of the operator. The brush receiving holders or caps *b b′* are provided with set screws *b″*, one arranged upon each side of such cap and adapted to screw into or against the brush to hold it in position.

The brush shaft B is provided at its ends with right and left hand screw threads B′ B″ which screw into suitable screw threaded openings *a″* in the ends of the shells where they are secured by set nuts *a‴*. The journal-bearing *c* in which the shaft B revolves comprises the combination of a T joint (of which bearing *c* is a part) having a Babbitt boxing *c′* cast therein to journal the shaft therein. This shaft is also provided with a driven band pulley *c″* rigidly fixed to such shaft by a set screw *c‴*.

c^1 is the thrust nut arranged upon the brush shaft to prevent axial movement thereof. The hub of the band wheel *c″* receives the thrust upon the opposite side of the journal bearing.

The movable arm C is fixed to the frame D which is journaled to the stand E, which is arranged to support the driving mechanism and also to support a tub, basket, or other receptacle adapted to contain the fruit to be cleansed. The arm C is screwed into one side of the cross connection *k*, which is fixed upon the frame D; and, if desired, a corresponding arm, not shown, may be screwed into the other side of the cross *k* and be provided with brushes connected by suitable means with the power wheel of the machine so that the same machine can be provided with brushes for two operarors and be driven by the same power. This would require no invention over the single form and is therefore not shown.

The arm supporting frame D is formed of gas pipe and consists in the combination of two journal members *d d* screwed into journal T's *h h*. The journal members are secured

to side members d' d' by elbows i and the side members are secured to the top members d'' d'' by elbows j. The top members d'' d'' are screwed into opposite sides of the T or cross k into which the arm is screwed. The T's h h are babbited to form journals in which is mounted the axle 29 of the driving pulley D' upon which is trained the band.

The several T journals h, c, and 12 are of substantially the same construction and the details shown in Figs. 4 and 6 illustrate the construction.

The main frame E is made of gas pipe and comprises the combination of the rear base member formed of three sections or members 1, 1' and 1'' and provided at each end with an elbow or T, 2—(2), and provided with two intermediate T joints 3—3 arranged to connect the outer members 1—1' with the intermediate section or member 1''; two rear corner uprights 4, 4' (4, 4') each screwed into the end elbows of the base member, and projecting upward to a suitable height and provided at the top with a three way connection 5 (5) each upright being formed of two sections provided with a T joint 6 (6) arranged intermediate the base member and the three way connection 5; the rear top cross member 7, 7', 7'' connecting the three way connections 5, 5, and provided with two intermediate four way connections 8 (8) arranged to connect the three sections 7, 7' and 7'' corresponding to the construction of the base member 1, 1', 1'' the power wheel supporting uprights 9, 9' (9, 9') connecting the T joints upon the base member and the four way joints upon the rear top cross member and provided with intermediate T joints 10 (10) arranged to connect the sections 9, 9' of such uprights; the power wheel supporting arms 11, (11') respectively screwed into such T joints and provided with a babbitted T joint 12, 12' arranged to journal the shaft 13 of the power wheel 14; two vertical front uprights 15, 15' (15, 15') each provided respectively at its top with a three way connection 16 and an intermediate T joint 17 (17) arranged to connect the sections 15 and 15' of the uprights to correspond with the T joint 6 (6) upon the rear uprights 4, 4'; the lower connecting brace beams 18 (18) connecting such T joints; three way connections (16) of the front uprights (15) with the three way connections (5) of the rear uprights (4); the intermediate T joints 20 (20) arranged upon such upper beams to connect the sections 19 and 19' which form such beams; the transverse swinging treadle lever supporting shaft 21 connecting such T's with each other; the front transverse beam 22 connecting the three way connections 16 (16) of the front uprights 15 (15); the swinging treadle levers 23 (23) journaled upon the treadle lever supporting shaft (21); the transverse foot rests 24 (24) each journaled to the lower end of its respective lever; the pitman rods 25 (25) each rigidly fixed to its respective foot rest at one end and journaled to its respective crank arm 26 (26) which arms are fixed to the shaft 13 of the power wheel 14.

Into the top of the four way connections 8—8 are screwed two brush frame supporting uprights 27, 27', each of which is provided at its upper end with a T joint h in which are journaled the ends of the shaft 29 upon which is secured the fly wheel 30 and the band wheel D', which transmit the power from the power wheel 14 to the band wheel c'' through the medium of belts 33 and 34. This construction of the frame is exceedingly cheap, simple, rigid and durable.

G represents a seat which is provided with a standard G' and a hook arm g adapted to hook upon the front transverse beam 22 of the frame E.

In practice a tub or other receptacle (not shown) may be placed upon the frame E underneath the brushes A A' and the fruit (or vegetables) to be cleansed may be placed therein. The operator places himself in position in the seat G and applies power to the treadles to cause the brushes to rotate; the fruit or other articles are then taken, one at a time one in each hand and held against the concave brush, which quickly removes every particle of dirt or other accretions from the skin; the article is turned by the operator to present the entire surface to the action of the brush. Both hands are used and the operation is rapid and effective. Water may be placed in the tub and when the brushes become foul, the arm C is swung downward until the revolving brushes are submerged in the water in the receptacle, and they are quickly and thoroughly cleansed thereby. By reason of the concave faced brushes, the action of the brush is distributed over a large portion of the surface of the fruit. The reason for arranging the bristles all pointing toward a common center, is that the action of each bristle upon the surface of the fruit is thus directed toward the center and is therefore effective in causing the ends of the bristles to enter the inequalities of the fruit, and, without injury to the skin of the fruit, to remove the fungus, &c., which is in the small depressions and cavities. If the bristles are not arranged in this manner the fruit will not be cleaned effectively since if the bristle is brought into contact with the skin of the fruit lengthwise of the bristle instead of endwise, the bristle will be prevented from entering the depressions of the skin, and the fruit will therefore be only partially cleaned. This is especially valuable in cleaning oranges, for the reason that the orange has a large number of oil cells located near the surface of the skin, and if any of these cells are broken the orange will quickly decay. In cleaning oranges it is desirable that the orange be cleansed without the use of water, and when so used the brushes polish the skin of the fruit, making it highly attractive to the eye of the purchaser.

Now, having described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. A fruit cleaning machine having a rotary brush provided with a semispherical concave brushing surface and having its bristles arranged pointing toward a common center, and means adapted and arranged to rotate such brush.

2. A rotary fruit cleaning brush having a semispherical concave brushing surface, and having its bristles arranged pointing toward a common center.

3. The combination of a brush holder and two segmental brushes having concave brushing surfaces adapted and arranged to form conjointly a concave semi-spherical brushing surface, and means for securing such segmental brushes in the brush holder.

4. The combination of the semi-spherical brush holder; the segmental brushes having the concave brushing surfaces, and means for securing such segmental brushes in the brush holder.

5. The fruit cleaning brush having a hemispherical concave brushing surface and having its bristles pointing toward a common center.

6. The combination of the driving shaft; the brush carrying arm journaled co-axial with such shaft; the brush carrying shaft journaled on such arm; the brushes mounted upon such brush carrying shaft and provided with the concave brushing surfaces; the driven pulley fixed upon the brush carrying shaft; the driving pulley upon the driving shaft; the band connecting the band pulley and driving pulley, and means for rotating the driving pulley.

7. In a fruit cleaning machine substantially such as set forth having the brush supporting arm and the driving mechanism and having its driving shaft journaled in the T's *h*, *h;* the arm supporting frame comprising the combination set forth of the two journal members *d d* screwed into the journal T's *h h;* side members *d' d'* secured to the journal members by elbows *i;* the top members *d'' d''* screwed to side members by elbows *j*.

JOHN L. BLOCKBURGER.

Witnesses:
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