No. 692,362. Patented Feb. 4, 1902.

H. B. RUGGLES.

FRUIT BRUSHER.

(Application filed Oct. 20, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

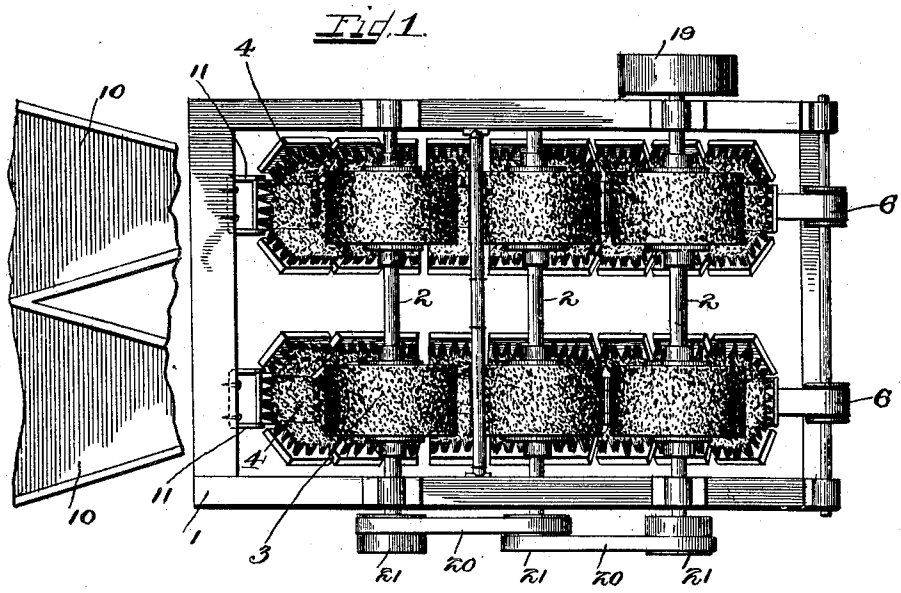
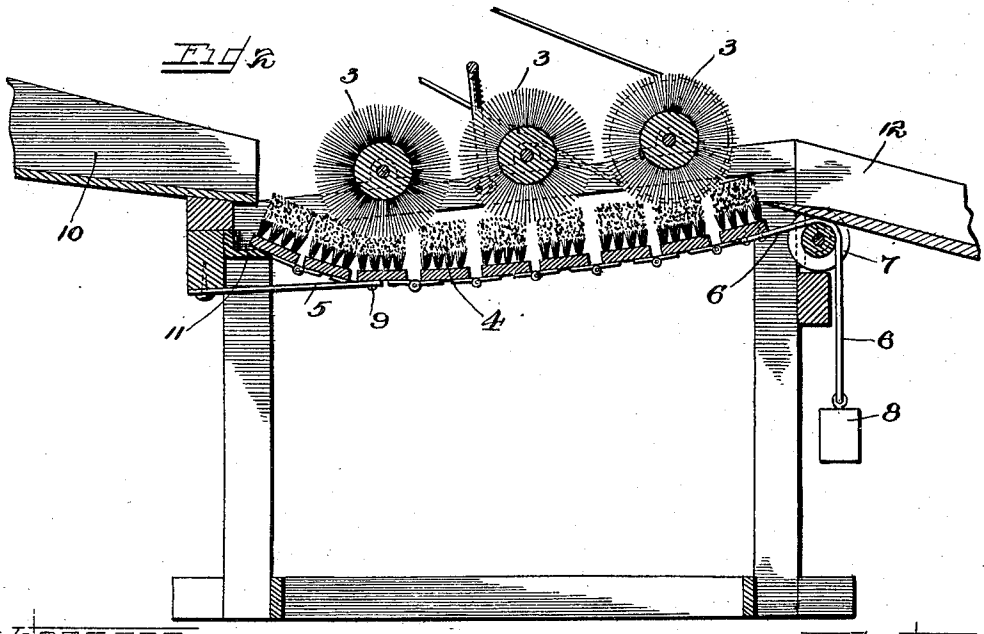


Fig. 2.



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Fig 3

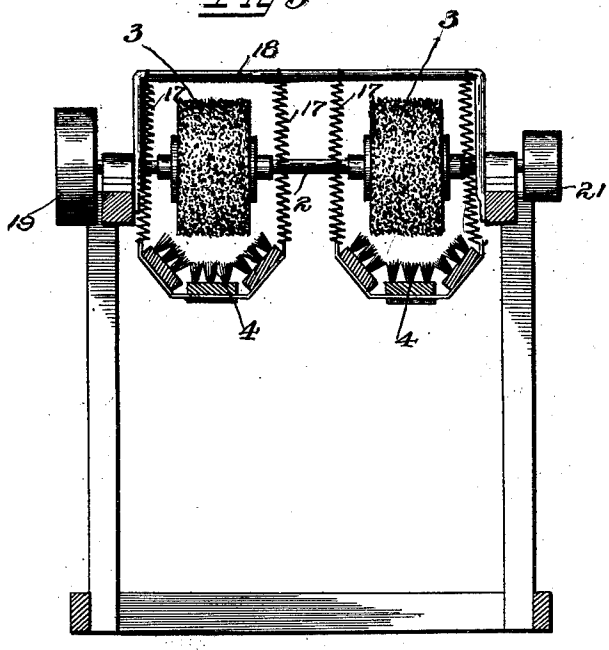


Fig 4.

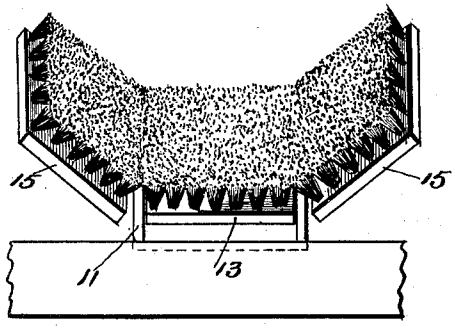
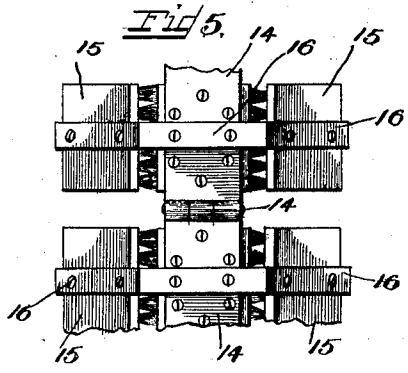


Fig 5.



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UNITED STATES PATENT OFFICE.

HENRY B. RUGGLES, OF REDLANDS, CALIFORNIA, ASSIGNOR TO FRED STEBLER, OF RIVERSIDE, CALIFORNIA.

FRUIT-BRUSHER.

SPECIFICATION forming part of Letters Patent No. 692,362, dated February 4, 1902.

Application filed October 20, 1900. Serial No. 33,740. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. RUGGLES, a citizen of the United States, residing at Redlands, in the county of San Bernardino and State of California, have invented certain new and useful Improvements in Fruit-Brushers, of which the following is a specification.

This invention relates to improvements in fruit-brushers for brushing and cleaning fruit or the like, and particularly oranges and lemons, and has for its object to provide a simple, economical, and efficient construction in devices of this character.

The invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims, and will be fully understood from the following detailed description of the construction illustrated in the following drawings, in which—

Figure 1 is a top plan view of a fruit-brusher embodying my invention in one form. Fig. 2 is a sectional side elevation thereof. Fig. 3 is a sectional end elevation thereof. Fig. 4 is a top plan detail showing the initial end of the brush-lined runway, and Fig. 5 is a bottom plan detail showing the linked construction of said runway.

In said drawings, 1 designates the machine-frame and a plurality—in this instance three—of transverse shafts revolubly mounted in bearings upon the frame and having cylindric brushes 3 secured thereon. The particular brusher illustrated is a double machine and is provided with two sets of the cylindric brushes 3; but it will be evident that the same principles of construction might equally well be embodied in a single machine or that, on the other hand, still other sets of the brushes 3 might be provided on the shafts and the capacity of the machine increased accordingly without altering any of its essentials.

Beneath each set of rotary brushes is a trough-shaped brush-lined runway 4, which is of flexible or linked construction and is suspended by its ends so as to hang yieldingly in proximity to the under sides of said rotary brushes, one end of the runway being herein shown as made fast to the machine-frame by a strap 5, while its other end is secured to a strap 6, that extends over a pulley 7 and carries an attached weight 8, large enough to hold the runway up to its work. The strap 5 is furthermore shown as connected to the runway at a point 9 some little distance from the initial end of the latter, which end is then extended upwardly toward the inlet-chute 10 and rests loosely within a supporting-bracket 11 on the machine-frame. This gives an easy entrance for the fruit as it passes from the chute 10 into the runway and beneath the first rotary brush 3 and at the same time insures a sufficient opening between said first brush and the runway to permit the easy passage of the fruit. As soon as the fruit enters beneath the first brush the latter impels it along the runway beneath the second brush, which continues the impulse and forces the fruit along beneath the third brush, which then ejects it from the runway into the discharge-chute 12, and the action of the several rotary brushes and of the brush-surfaces in the runway as the fruit passes through accomplishes the removal of the scale and dirt accumulation thereon.

As herein shown, the runway itself consists of a set of bottom brushes 13, which are secured together by hinges 14, and of two sets of upwardly and outwardly inclined side brushes 15, each pair of which is supported from one of the bottom brushes 13 by an angular metallic strap or plate 16. Moreover, to better sustain the middle portion of the runway side springs 17 are suspended from an overhead bar 18 at a point about midway of the length of the runway and are secured at their lower ends to the side edges of the latter, so as to resiliently support the same.

Any suitable hand or power driving mechanism may be provided for rotating the brushes 3, that herein shown consisting of a driving-pulley 19 on one end of one of the shafts 2 and of belts 20, which connect pulleys 21 on the ends of the three shafts 2 at the opposite side of the machine from the driving-pulley. It will, however, be understood that various changes may be made in these and other details of the construction shown without departing from the broad spirit of the invention claimed.

It will be observed that an essential fea-

ture lies in employing a non-traveling runway and in yieldingly supporting at least one (preferably the rear) end of it, so that the runway may not only yield freely to accommodate fruit varying from the maximum to the minimum size and in quantities varying from one to the maximum capacity of the apparatus, but also in order that the runway need not be longitudinally yieldable or elastic in itself, but may be constructed of rigid transverse sections pivotally but not elastically connected together, and it will be observed, further, that thus constructing the runway of rigid sections contributes materially to the durability of the machine, as it would be difficult and perhaps impracticable entirely to secure the brush-bristles to a back or plate sufficiently elastic for a fruit or analogous cleaner in such a manner that they would not loosen and fall out in a very short time. Again, it will be noted that the suspending-springs 17 must yield both vertically and laterally to accommodate the movements of the runway, and it will be also seen that a feature of importance lies in the fact that the rear or delivery end of the runway is substantially straight or horizontal in order not only that the fruit may be delivered with ease, but also that the action of the weight will not raise the delivery end high enough to engage the rear brush.

I claim as my invention—

1. A fruit-brusher, comprising a frame, one or more rotary brushes, a non-traveling longitudinally-flexible runway suspended beneath said brushes and extending transversely thereto, and means for yieldingly supporting said runway at one end, substantially as described.

2. A fruit-brusher, comprising a frame, one or more rotary brushes, and a non-traveling runway consisting of flexibly-connected rigid brush-sections and suspended by its ends beneath the brushes and transversely thereto, substantially as described.

3. A fruit-brusher, comprised of a frame, a rotary brush, a non-traveling runway consisting of rigid brush-sections flexibly connected together transversely of the runway, said runway extending transversely beneath said brush, and means for suspending it at its ends, the means at one end being yieldable.

4. The combination with the rotary brushes 3, of the stationary flexible runway 4, the suspending-strap 5 secured to the runway at a distance from the initial end thereof, and a weighted strap 6 yieldingly suspending the other end of the runway, substantially as described.

5. A fruit-brusher comprising one or more rotary brushes, and a stationary trough-shaped runway suspended beneath the brushes and consisting of flexibly-connected middle brush-sections and upwardly-inclined lateral brush-sections connected to the sides of the middle brush-sections, substantially as described.

6. A fruit-brusher, comprising a frame, one or more rotary brushes, a non-traveling flexible runway suspended by its ends beneath said brushes and transversely thereto, and means for yieldingly supporting the runway at a point between its ends, said means being yieldable vertically and laterally, substantially as described.

7. In a fruit-brusher, the combination of a frame, a rotary brush, a non-traveling transversely-flexible runway extending longitudinally beneath said brush, the delivery end of said runway extending rearward in a substantially straight manner, means for yieldingly supporting said delivery end of the runway, whereby the runway will be held yieldingly up to its work.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two subscribing witnesses, this 17th day of April, A. D. 1900.

HENRY B. RUGGLES.

Witnesses:
GEO. H. DOLE,
ELEANOR OWEN.