

(No Model.)

2 Sheets—Sheet 1.

C. DUCKWORTH.
FRUIT CLEANING MACHINE.

No. 573,769.

Patented Dec. 22, 1896.

Fig. 2.

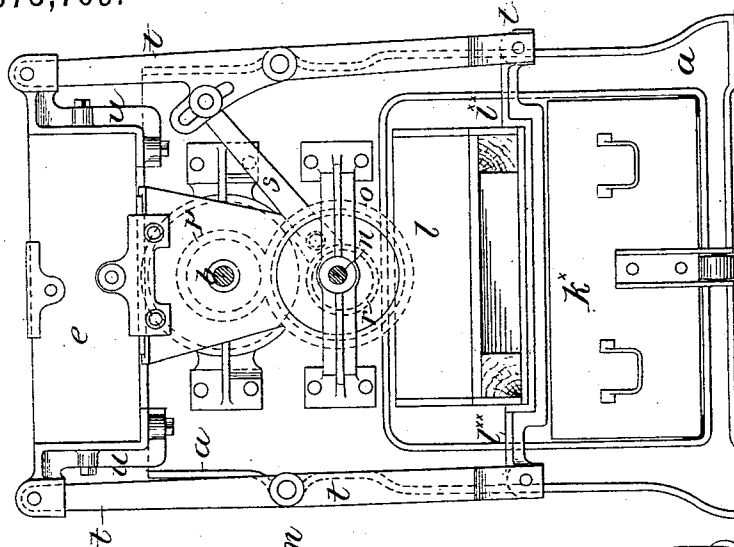
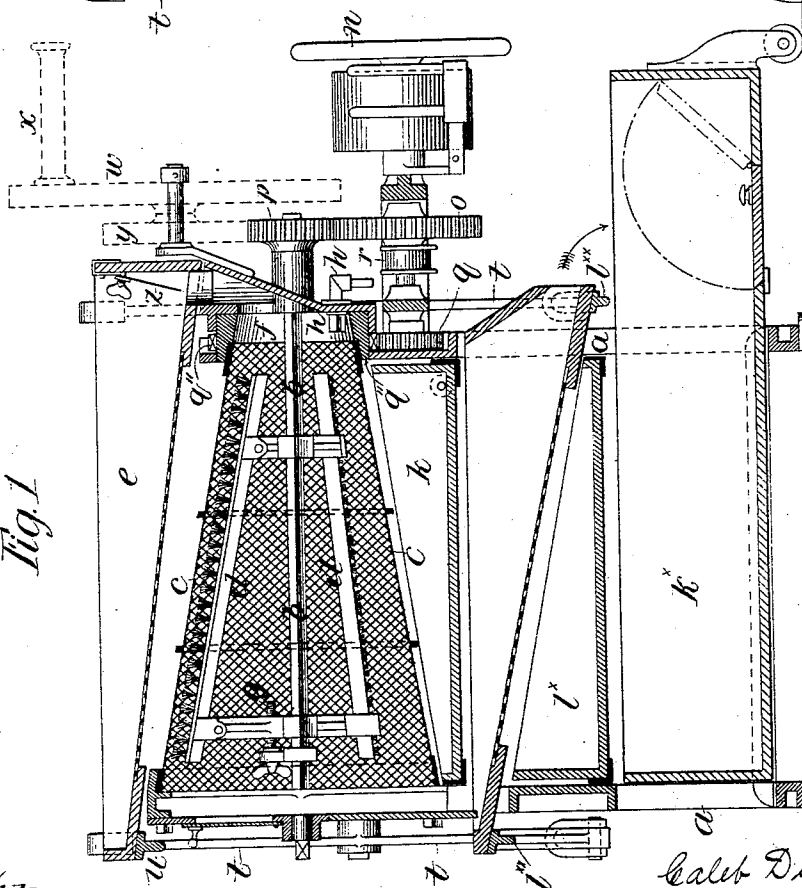


Fig. 1.



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his ATTORNEYS

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

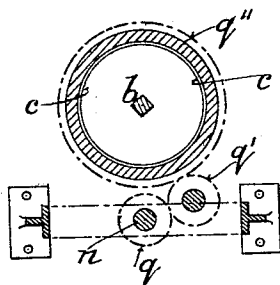
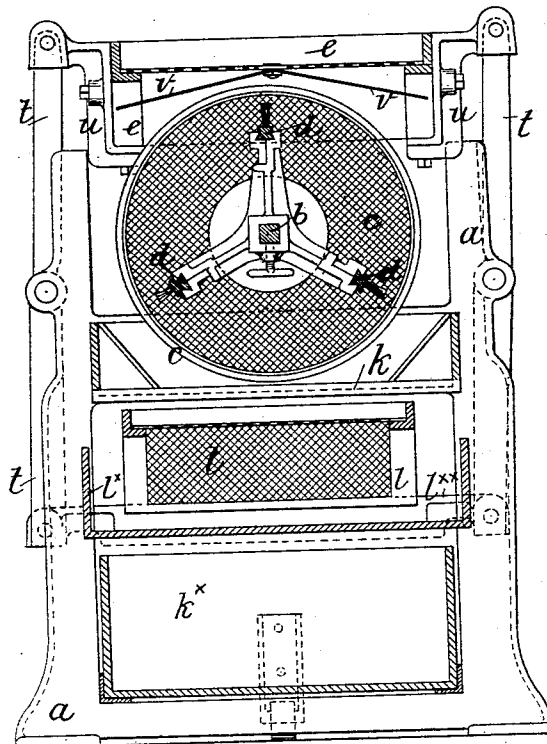


Fig. 4.



Witnesses:

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Inventor:

Charles Duckworth
By his attorneys
Howson and Howson

UNITED STATES PATENT OFFICE.

CALEB DUCKWORTH, OF COLNE, ENGLAND.

FRUIT-CLEANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 573,769, dated December 22, 1896.

Application filed July 20, 1895. Serial No. 556,638. (No model.) Patented in England January 30, 1894, No. 1,974.

To all whom it may concern:

Be it known that I, CALEB DUCKWORTH, a subject of the Queen of Great Britain and Ireland, residing at Colne, in the county of Lancaster, England, have invented Improvements in Fruit-Cleaning Machines, (patented in Great Britain January 30, 1894, No. 1,974,) of which the following is a specification.

The object of my invention is to construct a simple and efficient machine for cleaning currants and other fruit.

The nature of my said invention and the manner in which the same is to be performed or carried into practical effect will be readily understood on reference to the two sheets of drawings hereunto annexed and the following explanation thereof.

On Sheet 1 of the drawings, Figure 1 is a vertical longitudinal section of my improved fruit-cleaning machine, and Fig. 2 is an elevation of the driving end of the same. On Sheet 2 of the drawings, Fig. 3 is a diagram showing a part of the gearing detached, and Fig. 4 is a vertical transverse section of the machine.

a is the framing which supports in suitable bearings the horizontal axle or shaft b , upon which the conical wire-gauze or perforated cylinder c is mounted so as to be able to revolve independently thereof. Inside this cone c there is mounted on the square part of the axle b a conical brush d , the bars of which may be provided with bristles, as shown on the drawings, or with strips of india-rubber or other suitable material.

Above the conical wire-gauze or perforated cylinder c is mounted the self-feeding trough e , so arranged that it is capable of having a to-and-fro transverse sliding motion imparted to it. The bottom of this feeding-trough is inclined to suit the form of the cone, and its lower end communicates by means of a feeding-inlet f with the interior of the conical revolving cylinder c .

The brush d may be slid on the horizontal shaft b , so as to adjust it nearer to or farther from the interior of the conical cylinder c , so as to regulate the brushing power, (as may be required,) by means of the screw g or other similar device.

h is a water-jet in communication with any convenient water-supply to admit water

through the inlet f into the cylinder or sieve c to wash or sprinkle the fruit, and the surplus water runs out through the perforations in the cylinder.

k is a drawer or tray to receive the surplus water and the waste or dirt from the fruit, and l is a sloping delivery-trough with a sieve bottom into which the cleaned fruit falls from the conical cylinder c through the outlet m .

l^x is a drawer to catch any dirt which may fall through the sieve of the trough l , and k^x is a drawer to receive the cleaned fruit as it is discharged from the trough l .

The gearing which operates the several parts of the machine is as follows: n is the main driving-shaft, which may be driven either by hand or power. Upon this shaft n is keyed a spur-wheel o , which, by means of a pinion p , drives the horizontal axle or shaft b and thus gives a rapid revolving motion to the internal brush d . There is also keyed upon the same shaft n a spur-pinion q , driving, by means of a carrier-wheel q' , (see Fig. 3,) a spur-wheel q'' on the smaller end of the conical cylinder c , which it thus drives at a slower speed and in the reverse direction to the internal brush d .

The side shaking or transverse slide motion requisite for self-feeding is given to the feeding-trough e by means of an eccentric r , keyed on the axis n or cast to the spur-pinion o , which eccentric acts by means of an arm s (see Fig. 2) on one arm of a lever t , which is jointed to the cranked bar u , which carries the feeding-trough e . The bottom of the latter may either be plain or it may be made like a sieve, as shown at Fig. 1, in which case guard-plates v should be placed beneath the same, as shown at Fig. 4, in order to prevent dirt or waste from falling onto the wire-gauze or perforated cone cylinder c . The lower arm of the lever t also actuates the sloping delivery-trough l , supported by the cranked bars l^x . As shown in Figs. 1, 2, and 3, there are four of these levers t pivoted at their centers to the framework, at their upper ends to the feeding-sieve e , and at their lower ends to the delivery-sieve l . It is desirable to make this shaking motion as short as practicable and to drive the machine quickly.

The amount of feed may be regulated by means of the hinged plate z . (Shown at Fig. 1.)

When the machine is intended to be used as a hand-machine alone, the driving-pulleys may be dispensed with and the fly-wheel *w*, handle *x*, and spur-wheel *y* may be mounted
5 as shown by the dotted lines on Fig. 1.

I claim as my invention—

10 In fruit-cleaning machines, the combination with a conical revolving sieve inclosing a more rapidly revolving conical brush, of an upper reciprocating feeding-sieve, and a lower reciprocating delivery-sieve, an intermediate drawer, and a system of levers pivoted at their centers to the framework, and at their

upper and lower extremities respectively to the said reciprocating sieve-frames, and a pit- 15 man from the principal shaft connected with one of the said levers, to actuate the levers, substantially as hereinbefore described.

In testimony whereof I have signed my name to this specification in the presence of 20 two subscribing witnesses.

CALEB DUCKWORTH.

Witnesses:

CHARLES A. DAVIES,
JNO. HUGHES.