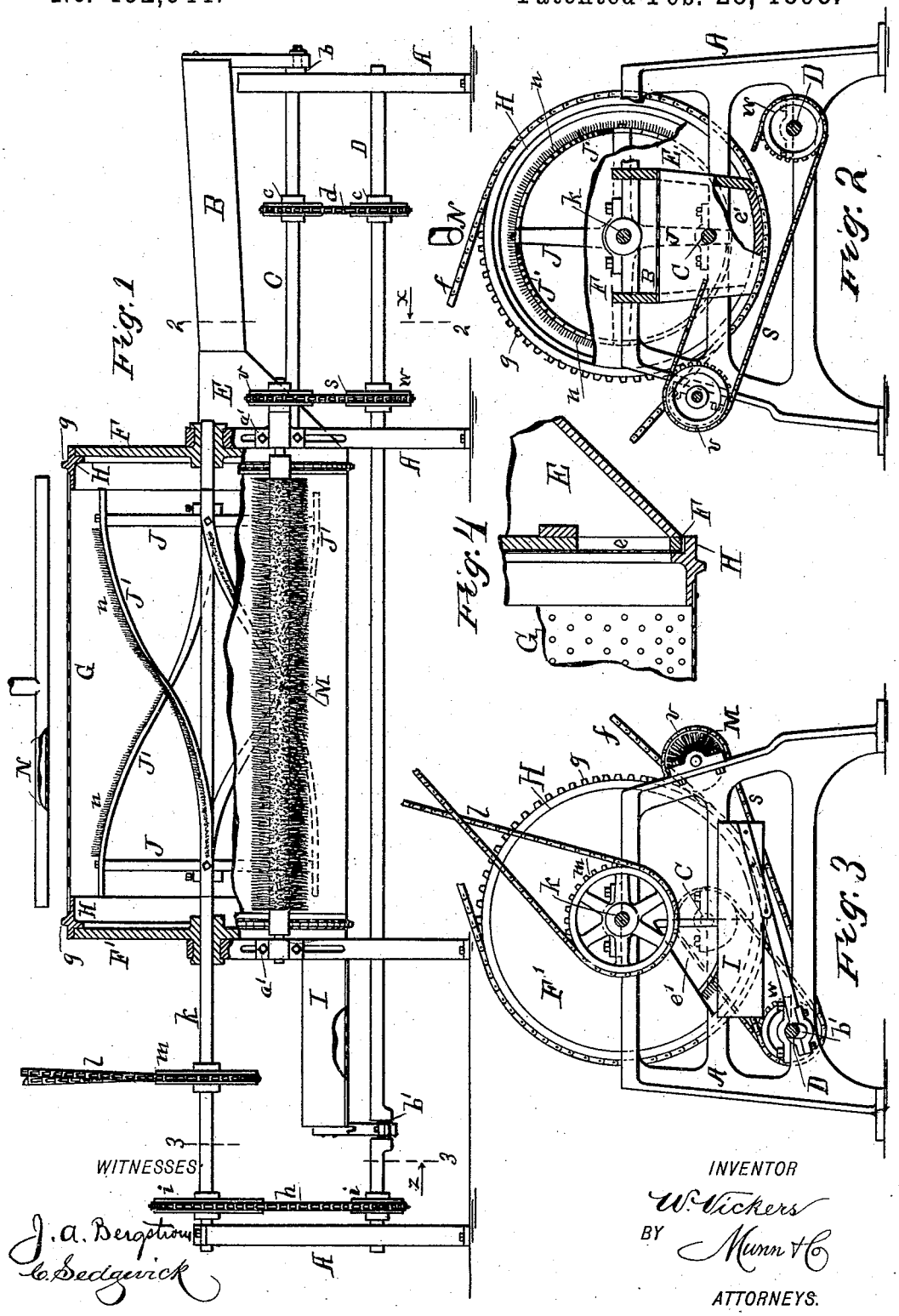
(No Model.)

W. VICKERS.

MACHINE FOR CLEANING CURRANTS, &c.

No. 492,644. Patented Feb. 28, 1893.



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MACHINE FOR CLEANING CURRANTS, &c.

SPECIFICATION forming part of Letters Patent No. 492,644, dated February 28, 1893.

Application filed October 31, 1892. Serial No. 450,488. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM VICKERS, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Machines for Cleaning Currants and other Small Fruits, of which the following is a full, clear, and exact description.

This invention, while applicable to cleaning other small fruits in their dried state, is more especially designed to be used for cleaning currants, and it consists in a machine applicable to such and like purposes, embracing the features of construction and novel combinations of parts hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1, represents a partly broken and sectional longitudinal elevation of a machine embodying my invention; Fig. 2, a transverse vertical section upon the line 2—2 in Fig. 1, looking in direction of the arrow *x;* Fig. 3, a rear end section of the machine on the line 3—3 in Fig. 1, looking in direction of the arrow *z;* and Fig. 4, a longitudinal sectional elevation, in part, of the front or receiving end portion of the machine or its cylinder and parts pertaining thereto.

A, indicates the frame of the machine of any suitable construction and which serves either directly or indirectly to carry the different working parts.

At the one or receiving end of the machine is a slightly inclined sieve B, having a shaking motion produced by a shaker at its upper or outer end actuated by an eccentric *b* on a horizontal shaft C, which is driven or receives its rotary motion from a lower horizontal shaft D, through chain wheels *c c* and connecting endless chain *d*. The currants to be cleaned are first passed on to this shaking sieve B to remove some of the dirt with which they are usually heavily laden before being cleaned, and to partly loosen them from one another, they usually being more or less matted or sticking together when taken from the packages in which they are received. From this sieve B, the partly cleaned and loosened currants pass into a hopper E having a sloping bottom and open on its delivery side or end next to an opening *e* in the lower portion of a fixed or stationary cylinder head F on and around which and a corresponding opposite fixed head F′, a screen cylinder G rotates and has its bearings by means of flanged rings or bands H H to which the screen portion of the cylinder is secured at its opposite ends. Thus the screen cylinder G in which the principal cleaning of the currants is done is open at both ends and is made up of a continuous circular screen without break or supporting rib so as to give a free or uninterrupted cleaning surface, its supports being the flanged rings or bands H H which serve as carriers for it and are capable of easy rotation on or around the fixed cylinder heads F F′ as bearings. Said screen cylinder may be of any desired diameter and length and is rotated or driven by endless chains *f*, from any suitable driving shaft and adapted to mesh or engage with teeth *g* on and around the flanged rings or bands H H. In this way a steady and free running action is secured for the rotating screen cylinder G.

The fixed head F′ at the rear end of the screen cylinder has a delivery opening *e′* preferably arranged a little to one side of the center of the cylinder at its bottom for passage of the currants into a shaking sieve I actuated by an eccentric or crank *b′* and shaker, or otherwise from the shaft D, which latter receives its motion by a belt or endless chain *h* and pulleys *i i* from a shaft *k* concentric with the screen cylinder and running through it. This shaft *k* is rotated by an endless belt or chain *l* and pulley *m* from any suitable driving shaft, and said chain *l* is a crossed one so as to rotate the shaft *k* in a reverse direction to the rotating screen cylinder G, for a purpose that will now be described. The shaft *k* carries, within the screen cylinder G a revolving agitator, cleaner and separator made up of arms J near opposite ends of the cylinder and spirally arranged bars J′ connecting said arms and armed with wire bristles or strips or splints *n*. By means of this spirally constructed agitator or brush, made to simultaneously rotate in a reverse direction to the screen cylinder G, the partly cleaned and loosened currants entering the screen cylinder from the sieve

B have their matting together further broken up in an easy and effective manner and the main dust in them passed off through the meshes or perforations in the screen cylinder, and the now nearly cleaned currants are passed off through the opening *e'* in the rear fixed cylinder head F' into the finishing sieve I which removes any further remaining dirt and from the tail end of which or otherwise, the cleaned currants may be delivered or removed into any suitable receiver.

The several operations to which the currants are subjected in the shaking sieve B, screen cylinder G with its contained reversely revolving spiral agitator or brush, and the finishing shaking sieve I, will effectually clean and break up the currants as required.

It is also designed to have a revolving brush M, driven for instance by chain *s* and pulley *v* from a pulley *w* on the shaft D, placed outside of the screen cylinder to keep said cylinder or its meshes clean and clear, said brush revolving in a reverse direction to the screen cylinder and being so hung by sliding boxes *a'*, *a'*, or other adjustable means, that said brush M may be thrown out of contact with the screen cylinder when not required to be used. There may also be a perforated hot water or steam pipe N arranged over or along the outside of the screen cylinder G, to pass steam or hot water at intervals as required into the currants in the cylinder, should they be extra gummy and require to be so loosened in order to effect more perfect cleaning.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with the screening cylinder of a vibrating screen B, a chute leading from the said screen B and delivering into said cylinder, a vibrating screen I at the outlet end of the cylinder, a shaft D extending longitudinally of said screens and cylinder, a crank and pitman connecting said shaft near one end with the screen I and a counter shaft geared to the shaft D and having an eccentric or crank connected with the screen B, substantially as shown and described.

2. A fruit cleaning apparatus consisting in the frame or support A, the circular stationary heads F F' secured thereto, the shaft K journaled in said heads and in said frame, the cylinder G having toothed end bands H rotating on the said heads, the spirally arranged brushes or agitators on the shaft K within the cylinder and means for rotating said shaft in a direction opposite to that of the cylinder, of the oscillating screen B, chute E leading therefrom and discharging into the cylinder, the oscillating screen I at the discharge end of the cylinder, the longitudinally extending shaft D geared to the shaft K, and having a crank connected with screen I and the counter shaft C geared to shaft D and provided with a crank or eccentric connected with screen B, substantially as shown and described.

3. In a machine for cleaning currants and other small fruits, the combination, with the revolving screen cylinder and its reversely revolving interior spiral agitator or brush, of a shaking, preparatory cleaning sieve at the feed end of said cylinder, and a finishing shaking and cleaning sieve at the rear or delivery end thereof, substantially as specified.

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