

No. 654,135.

Patented July 24, 1900.

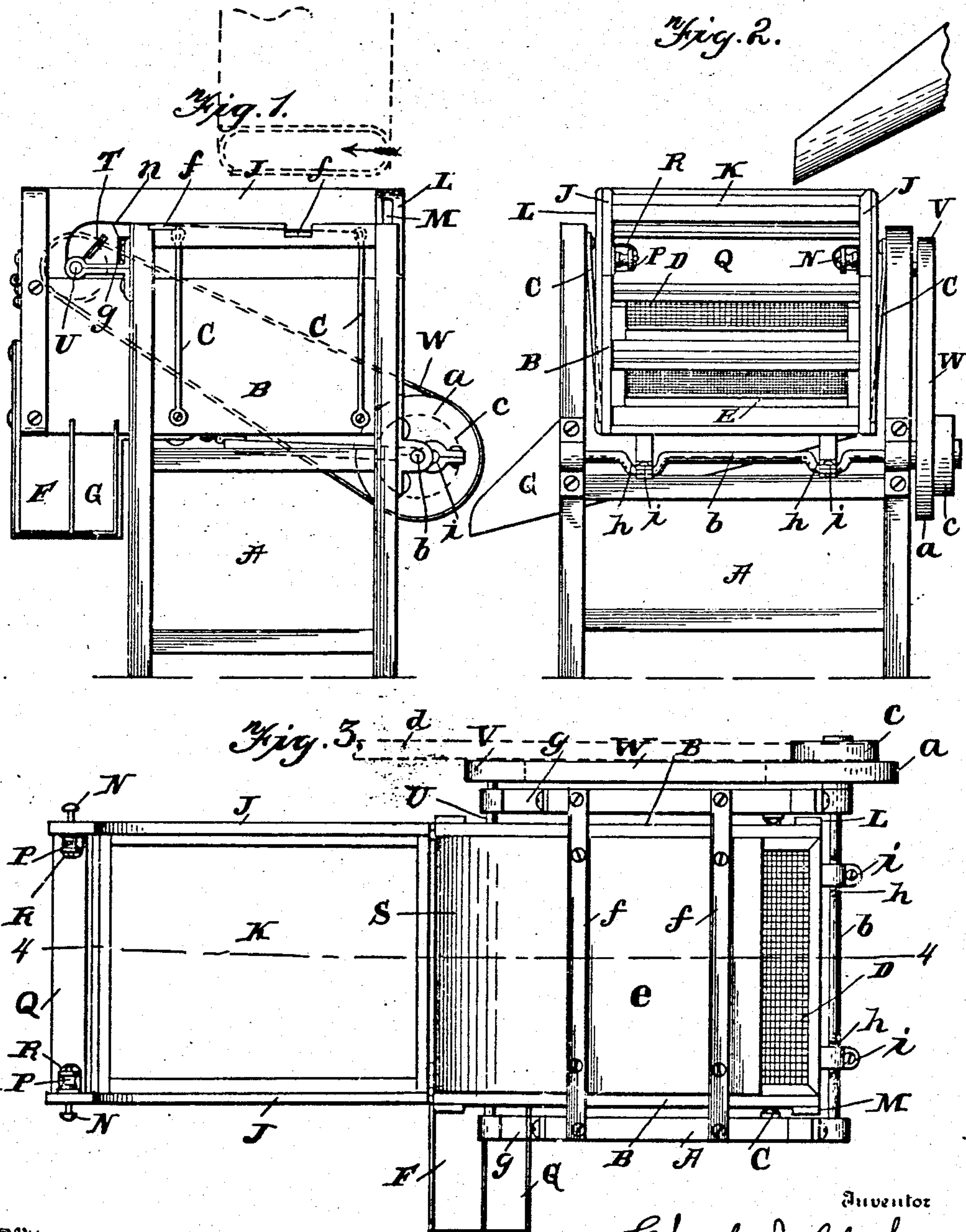
C. J. CLARKE.

COMBINED RAISIN CLEANER AND GRADER.

(Application filed Apr. 8, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses  
Geo. C. Prech.  
Chas. M. Wright.

Inventor  
Charles J. Clarke,  
by A. J. Patterson,  
Attorney

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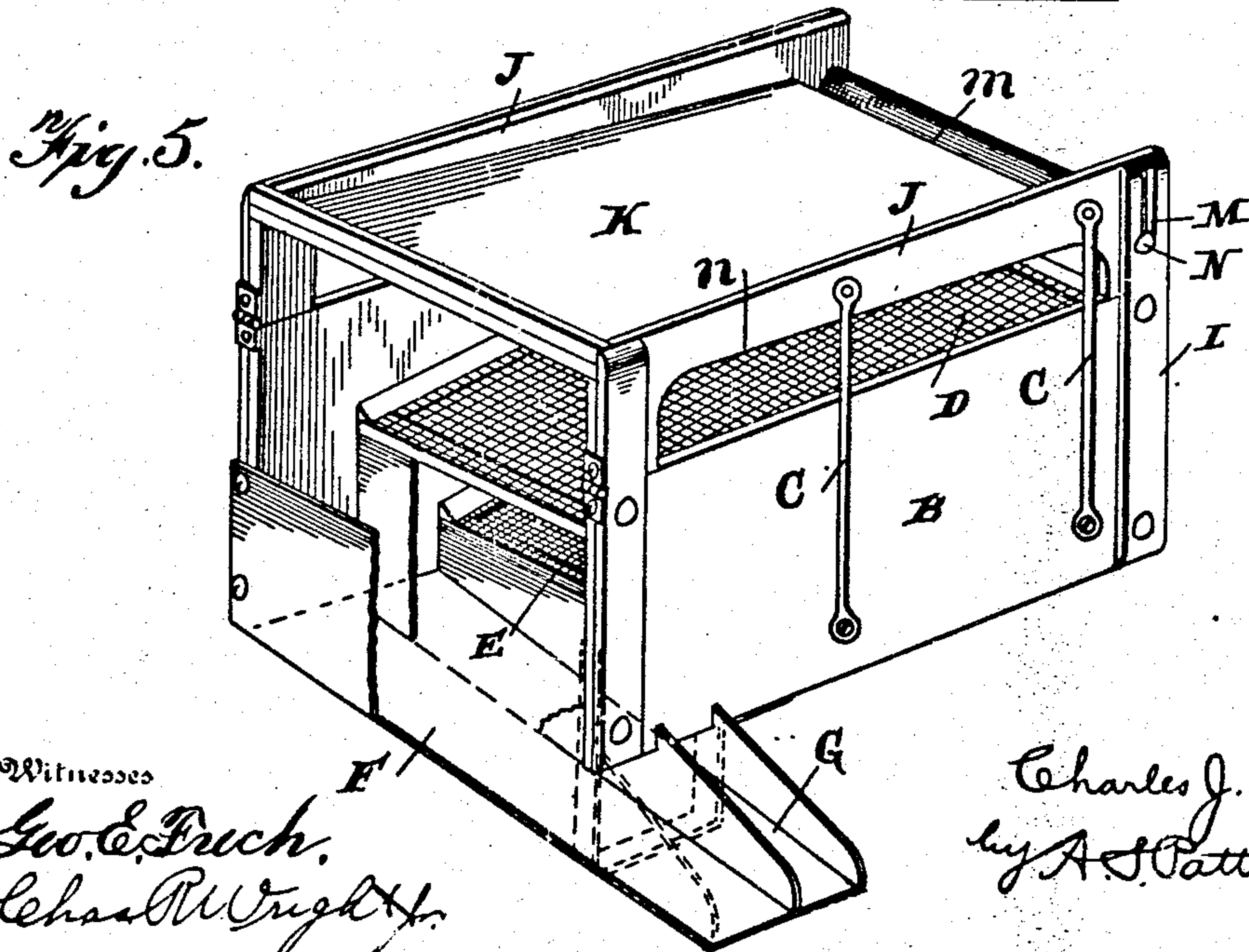
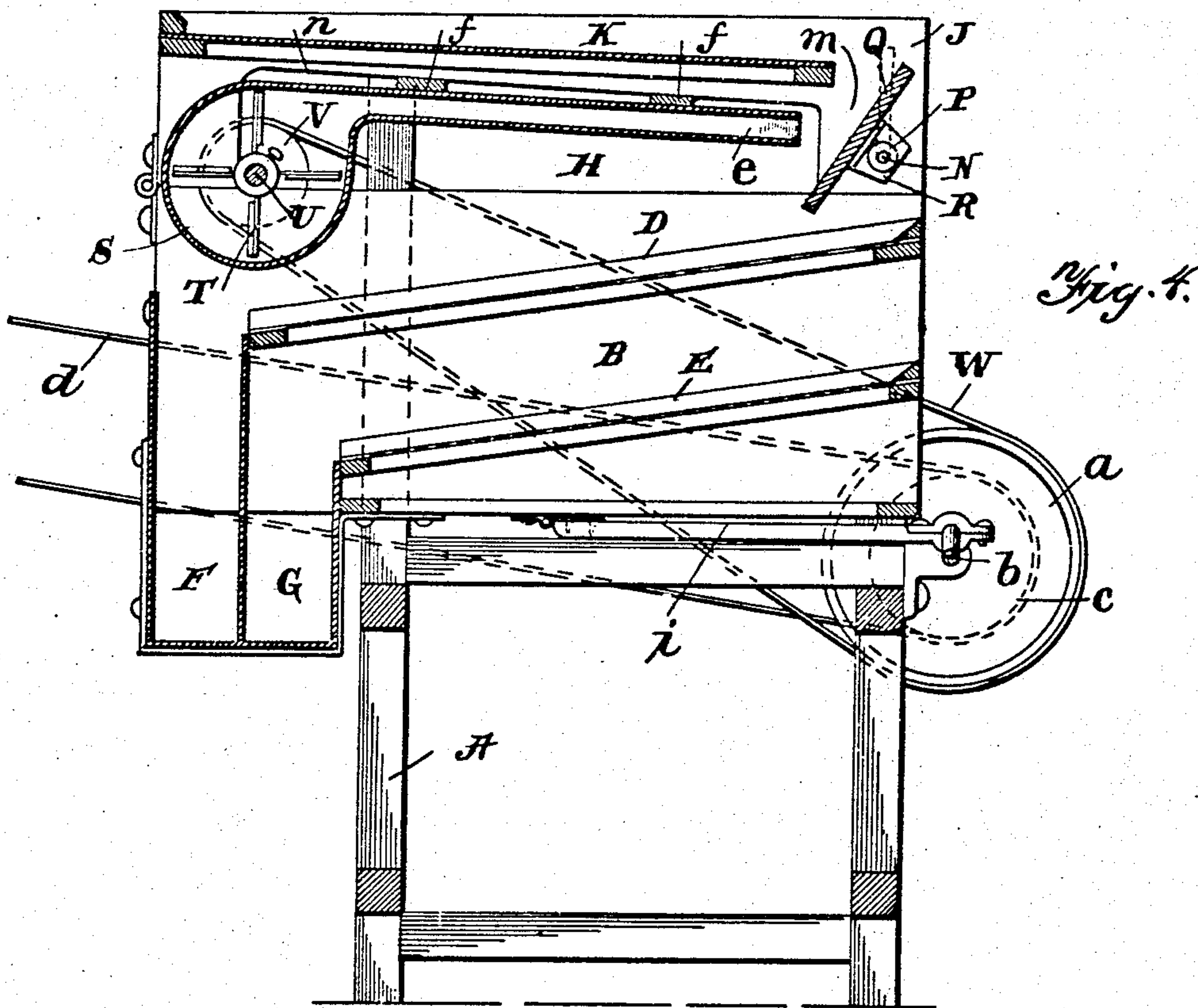
C. J. CLARKE.

COMBINED RAISIN CLEANER AND GRADER.

(Application filed Apr. 6, 1899.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses

Geo. E. Puch.  
Chas. W. Wright.

Inventor

Charles J. Clarke,  
by A. J. Pattison  
Attorney



# UNITED STATES PATENT OFFICE.

CHARLES J. CLARKE, OF KINGSBURG, CALIFORNIA.

## COMBINED RAISIN CLEANER AND GRADER.

SPECIFICATION forming part of Letters Patent No. 654,135, dated July 24, 1900.

Application filed April 6, 1899. Serial No. 711,979. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES J. CLARKE, a citizen of the United States, residing at Kingsburg, in the county of Fresno and State of California, have invented new and useful Improvements in a Combined Raisin Cleaner and Grader, of which the following is a specification.

My invention relates to improvements in a combined raisin cleaner and grader, and is especially intended for recleaning and regrading what are called "seedless muscatels," which is the lowest grade of common raisins.

In the cleaning of raisins they are passed through what is known as a "stemmer," which usually has a capacity of about forty tons per day of regular raisins and requires the labor of ten or twelve men. The lowest grade of raisins which is graded by this stemmer has usually a quantity of two-crown raisins and unripe and worthless matter in with them when they pass from the stemmer. It is common with raisin-packers to rerun this lowest grade of raisins through the big stemmer in order to more thoroughly clean them; but it is found that even this does not clean them thoroughly. Owing to the expense of running these large cleaners and stemmers and the fact that the low grade of raisins when being run through the stemmer must be run there-through separately from any other raisins, there is considerable expense in the further cleaning of these low grades of raisins.

It is the object of my invention to provide a cleaner and grader which will clean this low grade of raisins better than the large stemmer in common use with raisin-packers, to place my machine adjacent to the big stemmer and preferably under the spout of this big stemmer which delivers the lowest grade of raisins or seedless muscatels, and to operate my machine by means of a belt which is connected with the big stemmer.

The object of my invention also pertains to the construction and arrangement of parts, which will be fully described hereinafter and particularly pointed out in the claims.

Referring now to the drawings, Figure 1 is a side elevation of a machine embodying my invention and showing a portion of the spout of the big stemmer delivering the lowest grade

of raisins to the spreading-board of my machine. Fig. 2 is an end view of my machine looking in the direction indicated by the arrow in Fig. 1 and showing the spout. Fig. 3 is a top plan view thereof. Fig. 4 is a vertical central sectional view taken on the line 4 4 of Fig. 3. Fig. 5 is a detached view of the reciprocating shoe or sieve-box.

Referring now to the accompanying drawings, A indicates a frame having situated between its upper ends a vibrating sieve-box or shoe B. This box or shoe B is suspended at opposite sides from the upper end of the frame A by means of the links C. The upper ends of these links C are pivotally connected with the upper end of the frame A, and their lower ends are pivotally connected at opposite sides of the sieve-box or shoe, as illustrated. Situated within and spanning the sieve-box B is an upper sieve D, having large meshes, and below this sieve and extending practically parallel therewith is a second but shorter sieve E. This latter or lower sieve is of a finer mesh, as illustrated, and the smaller raisins will fall through the top sieve upon the lower one, as will be readily understood. These sieves are placed on an inclination, as illustrated, and removably attached to that end of the box B adjacent the lower ends of the sieves are the spouts F and G. The upper sieve is longer than the lower one, as shown, and has its lower end overhanging or communicating with the outer trough F, and the lower end of the lower sieve has its end correspondingly arranged in respect to the inner trough G. These troughs F and G are preferably connected and made practically one, so that they can be detached and reversed for delivering the graded and cleaned raisins to the opposite side of the machine, as may be found necessary or convenient, according to the arrangement of the big stemmer and its equipments.

The upper side of the sieve-box is provided with a spreading-board K, which is inclined in the reverse direction to the inclination of the sieves. This spreading-board K has one end pivotally connected or hinged to the outlet end of the sieve-box and is provided with the side boards J, the said side boards projecting beyond the ends of the spreading-board, as



illustrated, for a purpose to be presently described. The outlet end of the spreading-board is at a point inside of the receiving end of the upper sieve, so that the raisins falling therefrom will drop upon the said sieve.

Owing to the fact that the raisins being handled are of different degrees of dampness it is very advantageous to make the inclination of this spreading-board adjustable, and this is accomplished by providing the ends of the box B with projecting arms L, which are provided with vertically-elongated slots M, through which clamping-bolts N pass, these clamping-bolts passing in turn through the projecting ends of the side boards J and carrying the thumb-nuts P. By means of this construction I am enabled to regulate the inclination of the spreading-board according to the condition of the raisins being cleaned and graded.

Adjustably supported across the ends of the spreading-board, and in effect practically closing the space between the exit end of the board and the receiving end of the upper sieve D, is a deflecting-board Q. This deflecting-board is provided with outwardly-projecting L-shaped brackets R, through which also the clamping-bolts N pass, whereby the clamping-bolts serve the double function of clamping the spreading-board in the desired adjustment and also the deflecting-board in the desired adjustment.

Situated between the upper end of the spreading-board and the lower end of the upper sieve D is a casing or fan-housing S, containing a fan T upon a shaft U, the said shaft carrying a pulley V, which is driven by a belt W, passing around a pulley *a* upon a shaft *b*. This shaft *b* carries a smaller pulley *c*, which receives a belt *d*, extending from a pulley or driving-wheel of the big stemmer. The fan-housing S extends practically across the sieve-box B and is provided with a flat spout *e*, which extends toward the opposite end of the box B and adjacent the adjustable deflecting-board Q. The spout is supported by means of the transverse bars *f*, which have their ends connected to the upper ends of the frame A at a point above the sieve-box, and intermediate their ends it is connected to the spout. The spout and the fan-housing preferably are formed of a single sheet of metal, though this is not absolutely necessary, and the spout thus being connected with the fan-housing in turn supports the latter. The shaft U of the fan T is journaled in outwardly-projecting brackets *g*, which are attached to the edges of the frame A, as clearly illustrated.

From this description it will be noted that the fan, the housing, and its spout are supported by the frame A and entirely inclosed within the space between the spreading-board and the upper sieve of the sieve-box, and as the spreading-board forms in effect a part of the sieve-box the fan, the housing, and its

spout are inclosed within the sieve-box, but entirely separate and independent thereof, whereby the sieve-box is permitted to vibrate independent of the fan-housing and its spout.

The sieve-box is vibrated by means of the shaft *b*, which is provided with the cranks *h* and the pitmen *i*, each of the latter having one end journaled upon the crank and its opposite end hinged to the under side of the sieve-box. The shaft *b* being driven by the belt from the big stemmer reciprocates the sieve-box and in turn operates the fan, as will be clearly understood from the drawings.

In operation the raisins fall upon the spreading-board K from the spout of the stemmer, and by the reciprocating movement of the sieve-box, which carries the spreading-board, the raisins are spread out thereon and gradually moved toward the lower end thereof. When they reach the lower end and drop off into the space *m* between the spreading-board and the deflecting-board Q, the current of air from the fan-spout strikes the falling raisins and removes the unripe berries and worthless matter, which fall then upon the upper end of the upper sieve, the smaller ones falling through the upper sieve to the lower one, and as the sieves deliver their contents into separate spouts the lowest grade of raisins delivered from the big stemmer are again graded into the good raisins contained therein and those which are practically worthless.

I find that with my machine in practice I can take the lowest grade of raisins as they pass from the big stemmer and run them through my machine, obtaining twenty per cent. of the two crown raisins, which is next to the lowest grade, and blow out the worthless red berries that are unripe.

From Fig. 5 it will be seen that the side boards J, which support the spreading-surface K, are cut out to form the space *n*, this space forming an opening for the supporting-rod *f*, which extends across the upper end of the frame A and supports the fan-housing and its spout, and that it also forms an opening in communication with the end of the fan-housing, whereby air is permitted to pass freely into the end of the fan-housing for supplying air thereto.

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

1. An improved raisin cleaner and grader comprising a sieve-box, a spreader-frame hinged at one end to the top of the sieve-box, a deflector pivotally situated at the opposite end of the spreader-frame below the spreader-board, standards projecting from the sieve-box and having vertical slots near their upper ends, a clamping-bolt passing through the slots in the standards, the spreader-frame and the deflector and a nut for clamping the same together, substantially as described.

2. An improved raisin cleaner and grader comprising a sieve-box, a spreader-frame



hinged at one end to one end of the sieve-box, a deflector at the other end of the spreader-frame below the spreader-board and a member common to and adjustably securing both the deflector and the spreader-frame to the sieve-box, substantially as described.

3. An improved raisin grader and cleaner comprising a supporting-frame, a reciprocating sieve-box situated therein, and having one end projecting beyond one end of said supporting-frame, a spreader situated at and closing the upper side of said sieve-box, a deflector situated outside of but near one end of the spreader, inclined sieves carried by said box and situated below the spreader, a shaft journaled to the supporting-frame and passing through the projecting end of the sieve-box, a fan mounted on said shaft within the sieve-box beyond the supporting-frame between the sieves and the spreader, a housing surrounding the fan and having a spout extending to the end of the spreader and means

for rotating the fan and reciprocating the sieve-box, substantially as described.

4. An improved raisin grader and cleaner comprising a supporting-frame, a reciprocating sieve-box including a spreader-frame said sieve-box extending beyond the supporting-frame at one end, one of said frames having a horizontally-elongated cut-away portion, a fan-housing within the sieve-box beyond the supporting-frame and having a spout extending to the end of the spreader and supported by horizontal strips attached to the supporting-frame, a fan within the casing and means for rotating the fan and reciprocating the sieve-box, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CHARLES J. CLARKE.

Witnesses:

JOHN P. CLARK,  
L. B. HAYHURST.