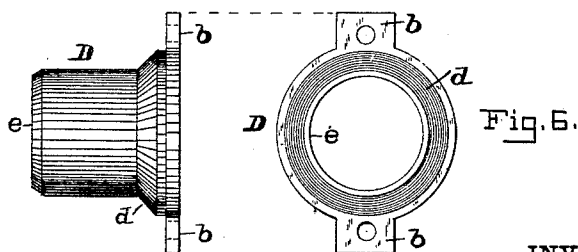
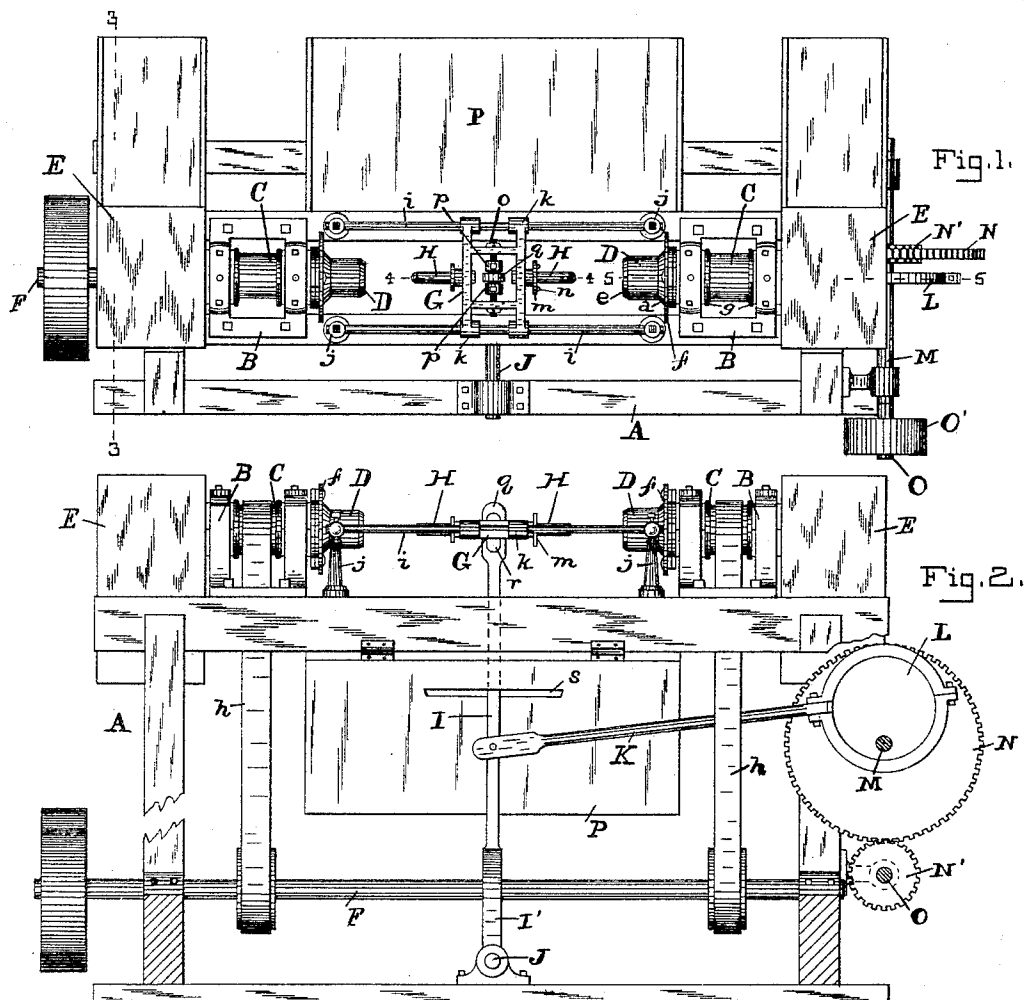


J. ADAMS.
MACHINE FOR SIZING FRUIT.

No. 458,963.

Patented Sept. 1, 1891.



WITNESSES:

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J. P. Davis.

INVENTOR:

John Adams.

BY

Chas B. Mann

ATTORNEY.

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Fig. 3.

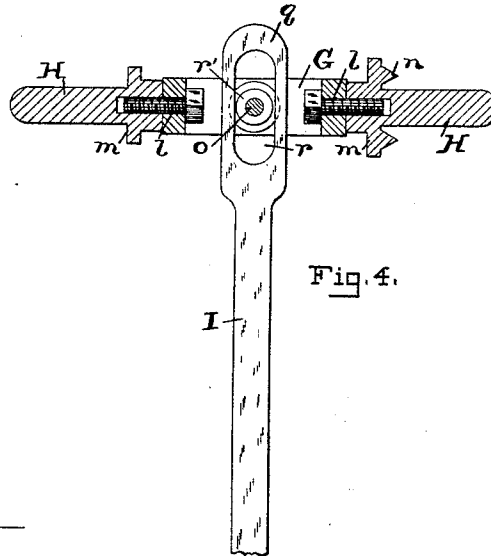
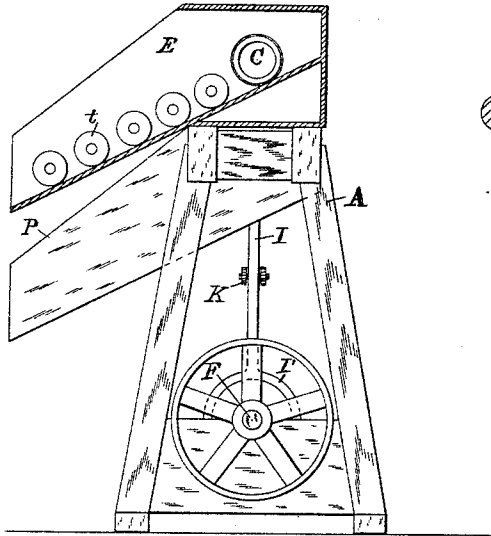


Fig. 4.

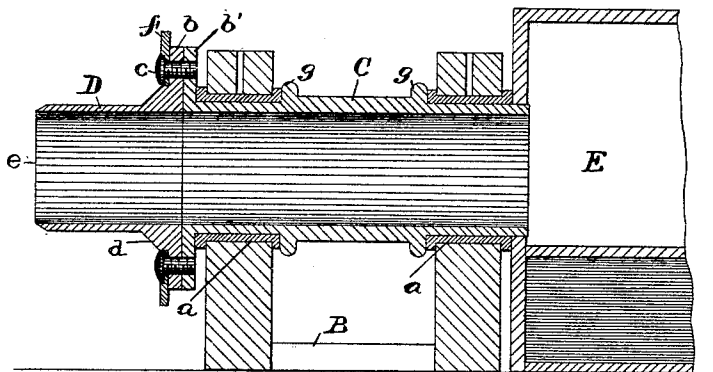


Fig. 5.

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UNITED STATES PATENT OFFICE.

JOHN ADAMS, OF BALTIMORE, MARYLAND, ASSIGNOR TO THE A. BOOTH
PACKING COMPANY, OF SAME PLACE.

MACHINE FOR SIZING FRUIT.

SPECIFICATION forming part of Letters Patent No. 458,963, dated September 1, 1891.

Application filed May 1, 1891. Serial No. 391,247. (No model.)

To all whom it may concern:

Be it known that I, JOHN ADAMS, a citizen of the United States, residing at Baltimore city, in the State of Maryland, have invented certain new and useful Improvements in Machines for Sizing Fruit, of which the following is a specification.

This invention relates to an improved machine for cutting fruit down to a uniform size to facilitate canning the same, and is particularly designed for thus "sizing" pine-apples.

The object of the invention is to provide a comparatively simple construction which will operate automatically and effectively to accomplish the desired result.

With this end in view the invention consists in the novel features of construction and combinations of parts, which will be described and claimed hereinafter.

In the accompanying drawings, illustrating the invention, Figure 1 represents a top view of the machine; Fig. 2, a side elevation, the frame being shown partly in section; Fig. 3, an end view, the upper part of the machine being shown in section on line 3 3 of Fig. 1; Fig. 4, an enlarged longitudinal section through the center of the reciprocating carriage; Fig. 5, an enlarged section through one of the rotary cylindrical cutters, also showing the discharge-chute; and Fig. 6, details of the cutter-head.

The letter A designates a suitable frame which supports the machine. At each end of this frame is mounted a standard B, which supports a rotary cutter. This cutter comprises a cylindrical sleeve C, mounted between the uprights of the standard in bearings *a* therein, and a cylindrical cutter-head D, having flanges *b*, through which it is fixedly secured by bolts *c* to the end of the sleeve, the latter having corresponding flanges *b'*. The bore of this cutter-head is coincident with that of the sleeve C, and the latter opens into a discharge-chute E. The head D is beveled off at its outer end to present a circular cutting-edge *e* and at its inner end is made conical, as shown at *d*. At the base of this conical part is an outward-extending annular shoulder or flange *f*, which in the present instance is a disk or ring encircling the said conical part and secured by the bolts *c*, which

attach the head to the sleeve C. On the sleeve between the uprights of the standard B a pair of shoulders *g* is turned, and the sleeve between these shoulders is made heavier and constitutes a pulley for driving the cutter. Rotary motion is imparted to this pulley by a belt *h* from the drive-shaft F, which is at the base of the frame. There are two of these cutters, one at each end of the frame, and each is constructed and operated alike. Between them is a reciprocating carriage G, which travels on guide-rods *i* at opposite sides of the frame, which rods are supported by posts or pillars *j* and extend from one cutter to the other. The carriage G has suitable slide-heads *k*, which embrace the said guide-rods. Spindles H project from the opposite sides of the carriage toward the cutter-heads. These spindles are detachable, each being secured to the carriage by a screw *l*, extending through the side of the carriage from the inside and into the boss of the spindle, as shown in Fig. 4. Each spindle has a shoulder or flange *m* at its inner part, and this flange may be provided with projecting spurs or blades *n*.

The carriage is reciprocated by the following-described means: Across the carriage extends a rigid rod or shaft *o*, on which are two collars *p*. The upper end *q* of a vibrating arm or lever I embraces this shaft between the collars on the same and has a slot *r*, through which said shaft extends, the latter having mounted on it a friction-roller *r'* to bear against the sides of the slot. The vibrating arm I is pivoted at the base of the frame, having a forked lower end I', mounted on a rock-shaft J. To this arm is connected a rod K, which is attached to an eccentric L, mounted on a shaft M, which carries a large gear-wheel N, meshing with a smaller wheel N' on a shaft O, driven by a suitable pulley O' on its end. It will be seen that the arm I is actuated and the carriage thereby reciprocated through the eccentric L and rod K. The connection of the eccentric-rod to the arm I and the throw of the eccentric are so adjusted that the carriage travels from one cutter to the other, and the shoulders *m* of the spindles H just enter the cutter-heads at the limit of the movement of the carriage. These shoulders are made the same diameter as the

bore of the cutter. A chute P is located beneath the center of the machine and extends below both cutters. The arm I extends through a slot s in the bottom of the chute. When power is applied to the machine, the cutters are driven at a high rate of speed, while the carriage is reciprocated slowly between the cutters. The spindles H do not revolve.

The operation is as follows: The pine-apples are first "roughed off"—i. e., their outside cover is removed—and then they are cored by a suitable machine. A pine-apple in this shape is fitted on one of the spindles H against the shoulder m, the spindle engaging the cored-out center of the pine-apple. Now when the carriage approaches one of the revolving cutter-heads the pine-apple is carried against the cutting-edge e and pushed into the cutter-head, the latter revolving rapidly and cutting the pine-apple down to the size of the inside bore of the cutter-head. The shoulder m, which, as previously explained, enters the cutter-head, carries the pine-apple all the way into said cutter-head and causes it to be cut its entire length and left in the head. While one pine-apple is being thus cut another is fitted on the other spindle, and when the carriage returns this latter pine-apple is cut to the size of the cutter-head at the opposite end of the machine. When the spindle-shoulder m is provided with spurs or blades n, as shown in Figs. 1 and 4, these spurs enter the pine-apple and prevent it from turning. The tubular shell cut from the outside of the pine-apple is carried against the conical part d of the cutter-head and is broken. It then falls through the frame into the chute P and is carried off. The annular shoulder f prevents this matter from being carried behind the cutter-head. Each pine-apple is cut and carried into the cutter-head and left there. One pushes the other through the sleeve C, and the pine-apples are in this manner discharged into the chute E and are carried off thereby, as represented in Fig. 3, where the letter t indicates the pine-apples.

The pine-apples may be cut to any size desired by using different-sized cutter-heads. These cutter-heads are detachable by removing the bolts c. A cutter-head of one size may be used at one end of the machine and one of a different size at the opposite end, as shown in the drawings, and in this way two grades of pine-apples can be cut at the same time. After the pine-apples have been sized by this machine they are sliced and put up in cans.

It is obvious that one cutter may be used alone instead of two, as here shown; but the advantages of two and the mechanism employed to operate them are apparent.

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

1. In a machine for sizing cored fruit, the combination of a rotary cylindrical cutter

and a reciprocating carriage having a spindle on which the fruit is carried to the cutter, said spindle having a shoulder to enter the cutter and push the fruit into the same.

2. In a machine for sizing cored fruit, the combination of a rotary cylindrical cutter and a reciprocating carriage having a spindle on which the fruit is carried to the cutter, said spindle having a shoulder to enter the cutter and push the fruit into the same, and projections from said shoulder to prevent the fruit from turning.

3. In a machine for sizing fruit, the combination of a rotary cylindrical cutter opening into a discharge-chute and a reciprocating carriage to take the fruit to the cutter and carry it through the bore of the same into said discharge-chute.

4. In a machine for sizing fruit, the combination of a rotary cylindrical cutter comprising a sleeve and a cutter-head secured detachably on the end of said sleeve, the bore of said head coinciding with that of the sleeve, and a reciprocating carriage to take the fruit to the cutter and carry it through the bore of the same into a discharge-chute.

5. In a machine for sizing fruit, the combination of a rotary cylindrical cutter comprising a sleeve and a cutter-head secured detachably on the end of said sleeve, the bore of said head coinciding with that of the sleeve, and a reciprocating carriage having a detachable spindle on which the fruit is carried to the cutter, said spindle having a shoulder to enter the cutter and push the fruit into the same and through the sleeve.

6. In a machine for sizing fruit, the combination of a rotary cylindrical cutter having a conical part on its exterior and a reciprocating carriage to take the fruit to the cutter and carry it into the bore of the same and the outside shell cut from it upon said conical part, for the purpose described.

7. In a machine for sizing fruit, the combination of a rotary cylindrical cutter having a conical part on its exterior and a shoulder at the base of the same and a reciprocating carriage to take the fruit to the cutter and carry it into the bore of the same and the outside shell cut from it upon said conical part, for the purpose described.

8. In a machine for sizing fruit, the combination of two rotary cylindrical cutters located at opposite ends of the machine, a carriage between the two cutters, having two spindles projecting toward the cutters, respectively, and adapted to receive the cored fruit, and means to reciprocate the said carriage between the cutters.

9. In a machine for sizing fruit, the combination of two rotary cylindrical cutters located at opposite ends of the machine and opening into discharge-chutes, a carriage between the two cutters, having two spindles projecting toward the cutters, respectively, and adapted to receive the cored fruit, a vibrating arm connected to said carriage, and

suitable mechanism for actuating the arm and thereby reciprocating the carriage.

10. In a machine for sizing fruit, the combination of two rotary cylindrical cutters located at opposite ends of the machine and opening into discharge-chutes, guide-rods extending from one cutter to the other, a carriage mounted to reciprocate on said rods and having two spindles projecting toward the cutters, respectively, and adapted to receive the

cored fruit, a vibrating arm connected to said carriage, and suitable mechanism for actuating the arm and thereby reciprocating the carriage.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN ADAMS.

Witnesses:

F. P. DAVIS,
JNO. T. MADDOX.