

Jan. 21, 1936.

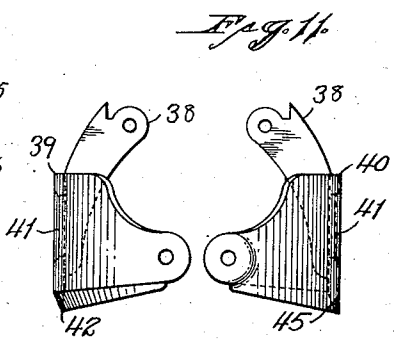
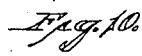
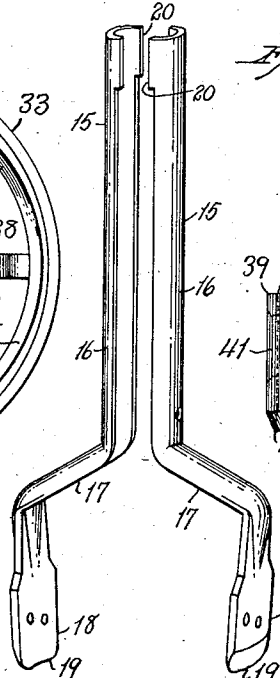
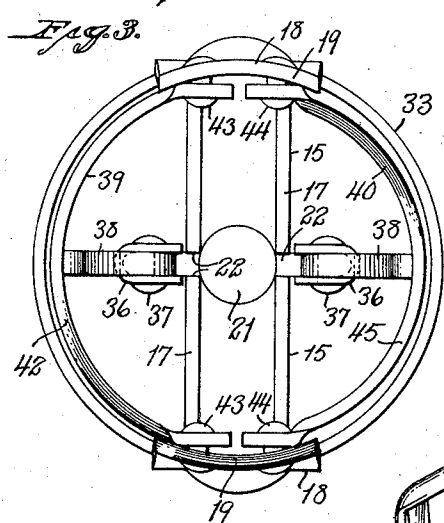
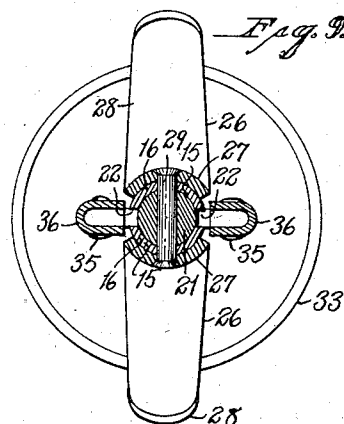
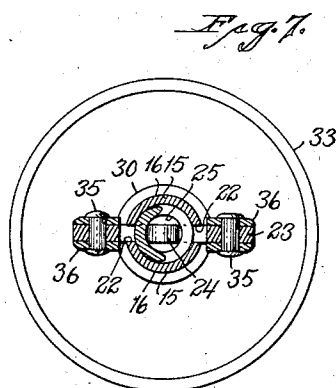
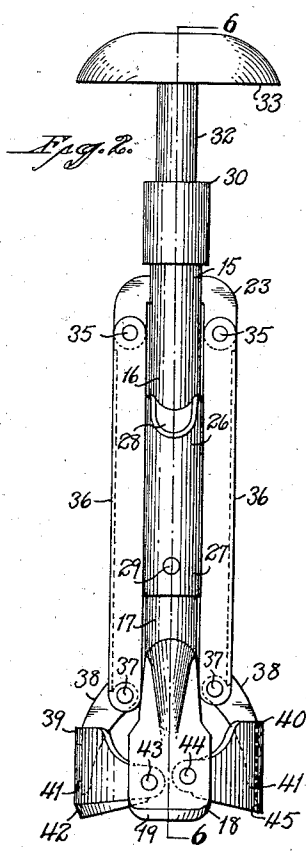
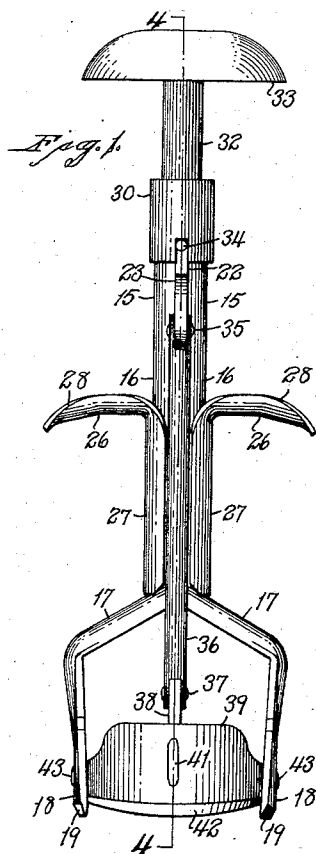
P. J. OTHS

2,028,239

CORER FOR GRAPEFRUIT, ETC

Filed Feb. 17, 1932

2 Sheets-Sheet 1



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Jan. 21, 1936.

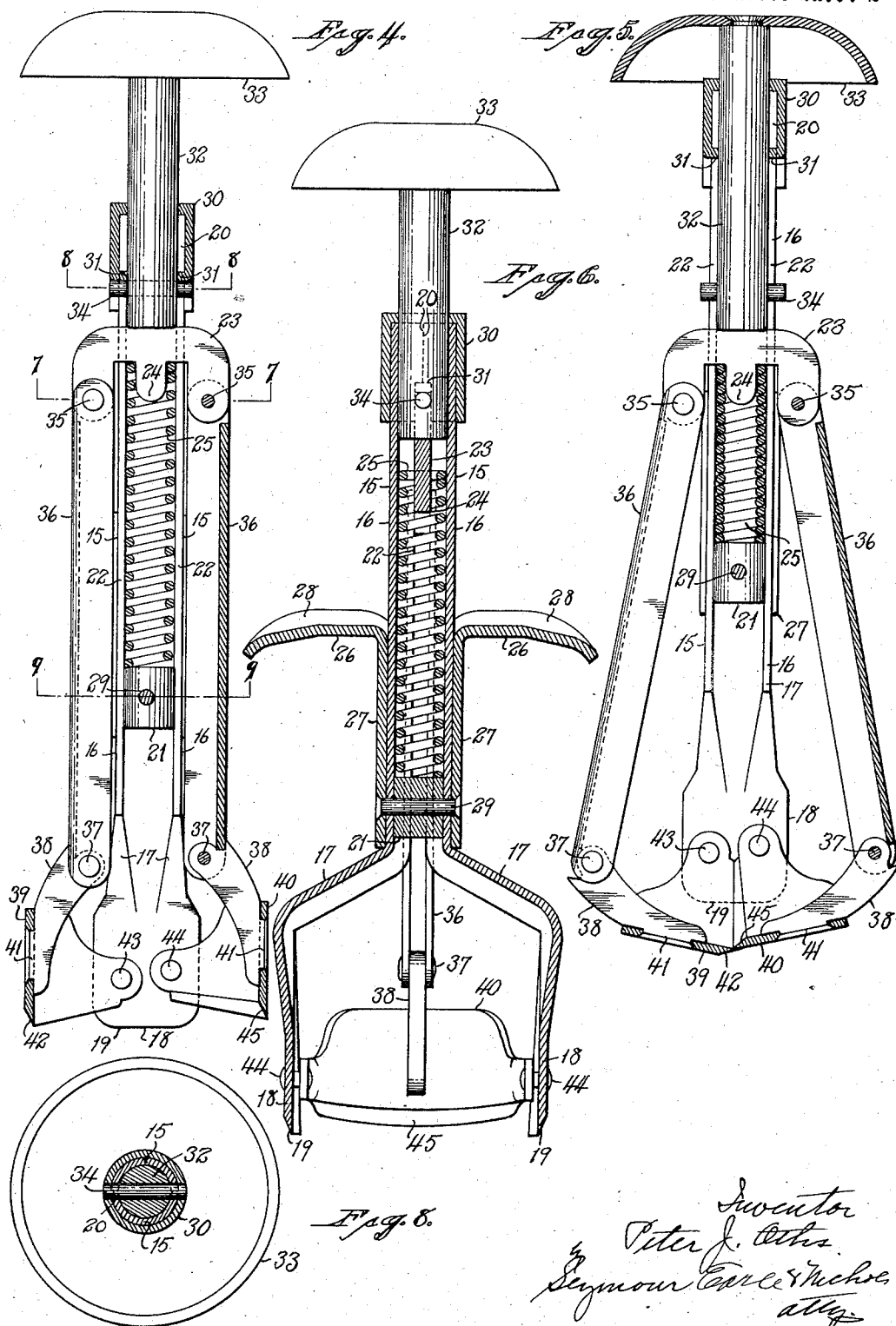
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CORER FOR GRAPEFRUIT, ETC

Filed Feb. 17, 1932

2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

2,028,239

CORER FOR GRAPEFRUIT, ETC.

Peter J. Oths, West Haven, Conn.

Application February 17, 1932, Serial No. 593,503

8 Claims. (Cl. 146—3)

This invention relates to an improvement in corers, and particularly to corers for grapefruit and other citrous fruit, though not so limited.

The main object of my present invention is to provide a durable, reliable and effective corer capable of transversely severing a fruit core with a minimum of effort and a minimum of manipulation on the part of the user.

With the above and other objects in view, as will appear from the following, my invention consists in a corer having certain features of construction and combinations and arrangements of parts as will be hereinafter described and particularly recited in the claims.

In the accompanying drawings:

Fig. 1 is a view in side elevation of one form which a grapefruit-corer embodying my invention may assume;

Fig. 2 is a similar view, but viewing the corer from a right angle to the position in which it is viewed in Fig. 1;

Fig. 3 is an under-side view thereof on a larger scale;

Fig. 4 is a view in central longitudinal section taken on the line 4—4 of Fig. 1 but on a larger scale;

Fig. 5 is a view corresponding to Fig. 4, but showing the parts in the positions which they assume when the plunger has been depressed to swing the pivotal cutters downward and inward toward each other for severing a core;

Fig. 6 is a view in central longitudinal section taken on the line 6—6 of Fig. 2 but on a scale similar to that of Figs. 4 and 5;

Fig. 7 is a transverse sectional view taken on the line 7—7 of Fig. 4;

Fig. 8 is a similar view taken on the line 8—8 of Fig. 4;

Fig. 9 is a corresponding view taken on the line 9—9 of Fig. 4;

Fig. 10 is a perspective view of the two complementary frame-members, detached; and

Fig. 11 is a view in side elevation of the two complementary pivotal cutters, detached.

The particular grapefruit-corer herein chosen for the illustration of my invention consists, as shown, of two corresponding oppositely-arranged sheet-metal frame-members 15—15, each consisting of a shank-portion 16 transversely struck up into semicircular cross-sectional form and an outwardly and downwardly sloping arm 17 terminating in a vertical transversely-curved cutting-finger 18 having its extreme lower edge sharpened as at 19. The upper end of each frame-member 15 is formed at the respective op-

posite ends of its transversely-curved form with lugs 20—20 adapted to abut against the corresponding lugs of the complementary frame-member to hold the upper end of both in proper spaced relationship when the members are assembled together in opposed juxtaposition, as shown.

Interposed between the two oppositely-faced frame-members 15—15 immediately above the respective arms 17 thereof is a short cylindrical spacing-plug 21 which, together with the lugs 20, serves to maintain the said frame-members in parallel spaced relationship, so as to provide on the respective opposite sides of the assembled frame-members a pair of longitudinal slots 22—22 in which slides an inverted U-shaped cross-head 23 formed of relatively-heavy sheet-metal. The said cross-head 23 is formed centrally with a depending guide-tongue 24 fitting into the upper end of a helical spring 25 housed between the semicircular shank-portions 16 of the frame-members 15—15 and bearing at its lower end against the spacing-plug 21 before referred to.

Applied to the outer faces of the shank-portions 16 of the respective frame-members 15—15 are inverted L-shaped sheet-metal finger-grip members 26—26, each having a vertical reach 27 transversely curved to fit the exterior surface of its complementary shank-portion 16 and an outwardly-projecting finger-portion 28. Extending through the lower ends of each of the finger-grip members 26—26 and through the shanks 16 and diametrically through the spacing-plug 21 is a rivet 29 serving to secure the said members together.

Sleeved over the upper ends of the shank-portions 16 of the assembled frame-members 15—15 is a ferrule 30, the respective opposite side-walls of which are inwardly-turned to form locking-fingers 31—31 which extend into the slots 22—22 and engage the under-face of the lugs 20 so as to firmly bind the upper ends of the two frame-members 15—15 together.

Mounted with capacity for reciprocation in the tubular space between the upper ends of the respective frame-members 15—15 is a plunger-rod 32 having riveted to its upper end a domical cap 33, and bearing at its lower end against the upper edge of the cross-head 23. Mounted in the plunger-rod 32, adjacent the lower end thereof, is a transverse stop-pin 34 adapted to ride in the longitudinal slots 22—22 between the respective frame-members 15—15 and normally resting against the under-face of the locking-fingers 31—31, as clearly shown in Fig. 4, in which position the said pin serves to limit the upward move-

ment of the cross-head 23 under the urge of the spring 25.

Pivotally attached by means of rivets 35—35 to the respective arms of the inverted U-shaped cross-head 23 are thrust-transmitting links 36—36 formed of sheet-metal folded into substantially U-shaped form in cross-section. The respective lower ends of the links 36—36 are pivotally connected by means of rivets 37—37 to the upper ends respectively of upwardly and inwardly curved arms 38—38. The arms 38—38 respectively upstand from within transversely-curved pivotal cutting-blades 39 and 40, against the inner face of which they are respectively secured by providing each arm with an integral shank 41 extending through the complementary blade and riveted over on the outer face thereof, as clearly shown in Figs. 4 and 5.

The pivotal cutting-blade 39 has the outer face of its lower edge chamfered as at 42 to provide a sharp cutting-edge and is pivotally mounted at its respective opposite ends by means of rivets 43—43 to the cutting-fingers 18 of the respective frame-members 15—15. The cutting-blade 40 is pivotally mounted by means of rivets 44—44 to the said cutting-fingers 18 at a point slightly above the rivets 43 and on the opposite side of the median line of the said fingers 18. The lower edge of the said cutting-blade 40 is chamfered as at 45 on its inner face to provide a cutting-edge adapted to slightly overlap the cutting-edge of the blade 39 when the said blades are swung inwardly toward each other, as shown in Fig. 5.

In using the improved corer herein chosen for illustration, the domical cap is placed in the palm of the hand and the fingers of the hand are extended downward beneath the finger-grip portions 28 of the members 26. The lower end of the corer is now placed over the core of a fruit and rotated or oscillated about its longitudinal axis until the blades 39 and 40, together with the cutting-fingers 18, have penetrated to the desired depth. The domical cap 33 is now depressed by squeezing the same toward the finger-grip members 26, with the effect of swinging the cutters 39 and 40 downwardly and inwardly toward each other into the positions shown in Fig. 5, so as to transversely sever the core. Without relaxing the grip, the corer is withdrawn from the fruit, bringing with it the severed core, and when the plunger 32 is again permitted to rise under the urge of the spring 25, the severed core will drop free of the cutting-blades.

By providing the two complementary pivotal blades capable of being swung toward each other by an operating-member acting concurrently on both, I have produced a corer which is capable of being used with the utmost facility and adapted to act without unduly mashing the fruit, as is the case when lever-action cutters are employed.

The effectiveness of the corer is markedly improved by the cutting-edges of the fingers 18, which serve to span the gaps between the blades 39 and 40 and thus create a substantially-continuous circular cutting-edge for the corer.

It will be understood by those skilled in the art that my invention may assume varied physical forms without departing from my inventive concept, and I, therefore, do not limit myself to the specific embodiment herein chosen for illustration, but only as indicated in the appended claims.

I claim:

1. In a corer, the combination with a frame having a tube-like upper portion, of a pair of transversely-curved cutters pivotally secured to

the lower end of the said frame and adapted to swing transversely with respect thereto toward each other; a reciprocating operating-member projecting from the tube-like upper portion of the said frame with capacity for reciprocating movement therein; a downwardly-yielding compression-spring housed in the tube-like portion of the said frame; and a pair of pivotal thrust-transmitting links connecting the said reciprocating operating-member to the said pivotal blades for concurrently swinging both of the same toward each other.

2. In a corer, the combination with a two-part frame, consisting of two complementary frame-members, each having a shank transversely bowed and secured together in position to form a chamber therebetween; a pair of transversely-curved cutters pivotally secured to the lower end of the said two-part frame and adapted to swing transversely with respect thereto toward each other; a reciprocating operating-member mounted for reciprocating movement between the two said frame-members and projecting from the upper end thereof and operatively connected to the said pivotal cutters by a pair of thrust-transmitting links for concurrently swinging the said cutters toward each other; and a spring located in the space between the two said complementary frame-members for normally holding the said pivotal cutters in their retired positions.

3. In a corer, the combination with a two-part frame, consisting of two complementary frame-members, each having a shank transversely bowed and secured together in position to form a chamber and two complementary longitudinal slots therebetween; a pair of transversely-curved cutters pivotally secured to the lower end of the said two-part frame and adapted to swing transversely with respect thereto toward each other; a cross-head extending diametrically through the said two-part frame and projecting outward on opposite sides thereof through the complementary slots formed therebetween; thrust-transmitting links connecting the projecting ends of the said cross-head to the said pivotal cutters; a spring located in the space between the two said complementary frame-members and engaged with the said cross-head for normally holding the said pivotal cutters in their retired positions; and means for reciprocating the said cross-head to effect the operation of the said pivotal cutters.

4. In a corer, the combination with a two-part frame, consisting of two complementary frame-members, each having a shank transversely bowed and secured together in position to form a chamber and two complementary longitudinal slots therebetween; a pair of transversely-curved cutters pivotally secured to the lower end of the said two-part frame and adapted to swing transversely with respect thereto toward each other; a cross-head extending diametrically through the said two-part frame and projecting outward on opposite sides thereof through the complementary slots formed therebetween; a thrust-transmitting link connecting each of the projecting ends of the said cross-head to one of the said pivotal cutters; a spring located in the space between the two said complementary frame-members and engaged with the said cross-head for normally holding the said pivotal cutters in their retired positions; and a reciprocating plunger adapted to reciprocate in the chamber formed between the two said frame-members and bear-

ing against the said cross-head to effect the operation of the said pivotal cutters.

5 5. In a corer, the combination with a two-part frame, consisting of two complementary frame-
members, each having a shank transversely
bowed and secured together in position to form
a chamber therebetween; a ferrule sleeved over
the exterior of the upper end of the said frame-
members for coupling the same together; a pair
10 of transversely-curved cutters pivotally secured
to the opposite end of the said two-part frame
and adapted to swing transversely with respect
thereto; a reciprocating operating-member
mounted for reciprocating movement between
15 the two said frame-members and projecting
outwardly through the said ferrule and
operatively connected to the said pivotal cutters
for concurrently swinging the same toward each
other; and a spring located in the space between
20 the two said complementary frame-members for
normally holding the said pivotal cutters in their
retired positions.

6. In a corer, the combination with a two-part
frame, consisting of two complementary frame-
25 members, each having a shank transversely
bowed and secured together in position to form
a chamber therebetween; a ferrule sleeved over
the exterior of the upper end of the said frame-
members for coupling the same together; a
30 spacing-plug mounted between the two said
frame-members in spaced relationship below the
said ferrule; a pair of transversely-curved pivotal
cutters secured to one end of the said two-part
frame and adapted to swing transversely with
35 respect thereto toward each other; a reciprocating

operating-member mounted for reciprocating
movement between the two said frame-members
and projecting outwardly through the said
ferrule and operatively connected to the said
pivotal cutters for concurrently swinging the
5 same toward each other; and a spring located
in the space between the said two complementary
frame-members and interposed between the said
spacing-plug and the said reciprocating operating-
member for normally holding the latter in
10 its retired position.

7. In a corer, the combination with a frame
having two oppositely-located spaced-apart fixed
cutting-fingers; of a pair of pivotal cutters re-
versely bowed with respect to each other and
15 respectively positioned on opposite sides of
and pivoted to, the said cutting-fingers, and
forming together therewith a substantially-
continuous tubular cutting edge at the lower end
of the said frame; and operating-means for
20 swinging the said pivotal cutters toward each
other.

8. A fruit core extractor, comprising a tubular
handle, spaced arms projected from one end
thereof, a pair of cutter jaws having pivots on
25 said arms, and forming a circular cutter for
separation of a core, a rod slidable in said handle,
and connections between said rod and cutter
jaws to give a scoop operation to said cutter
jaws at the end of their cutting operation, each
30 cutter-jaw having the general form of a portion
of the surface of a cylinder and the lower edges
of said arms forming spaced-apart fixed cutters.

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