

No. 680,869.

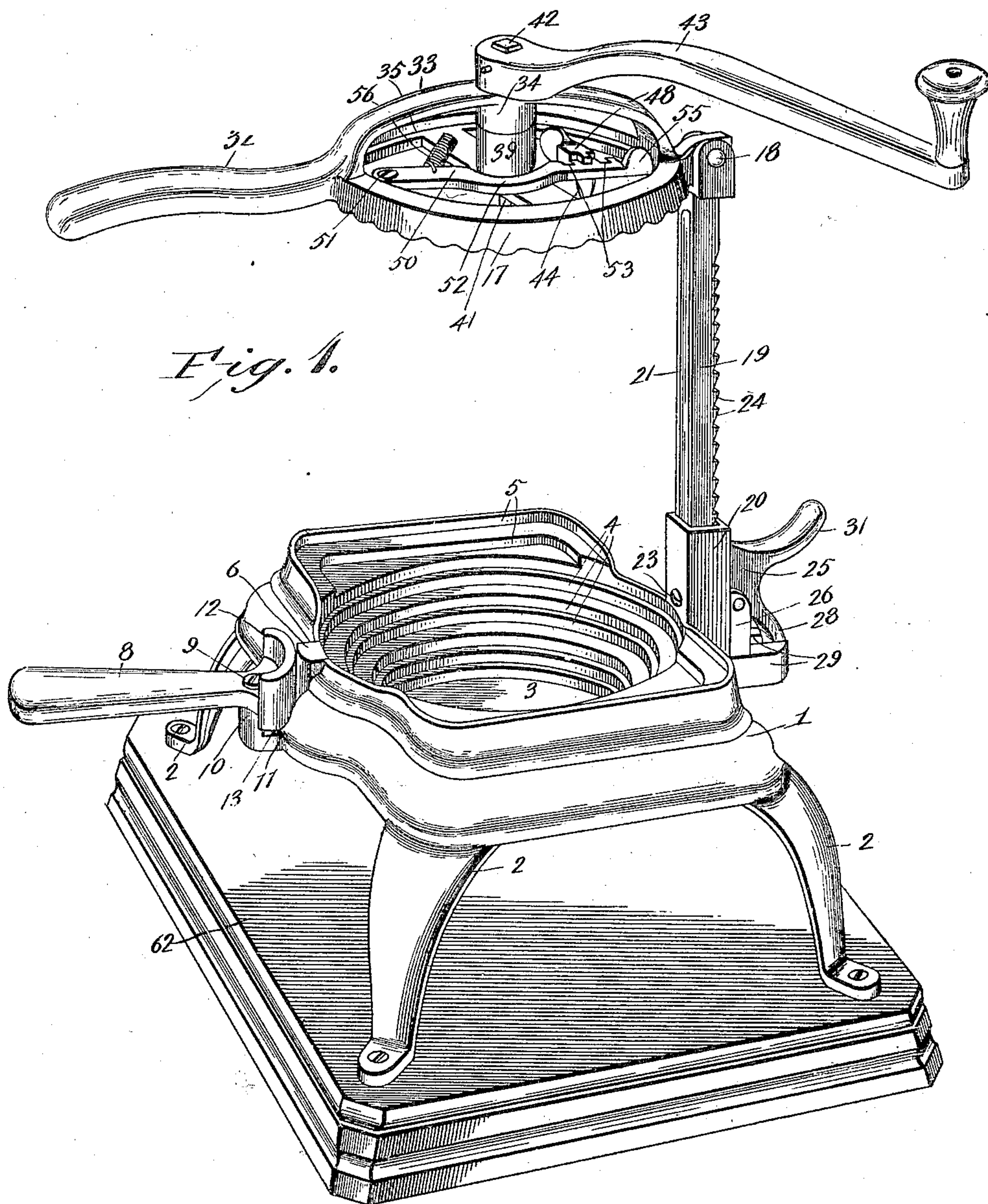
Patented Aug. 20, 1901.

E. S. LEFLER.
CAN OPENER.

(Application filed Dec. 14, 1900.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses

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H. J. Shepard.

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2 Sheets—Sheet 2.

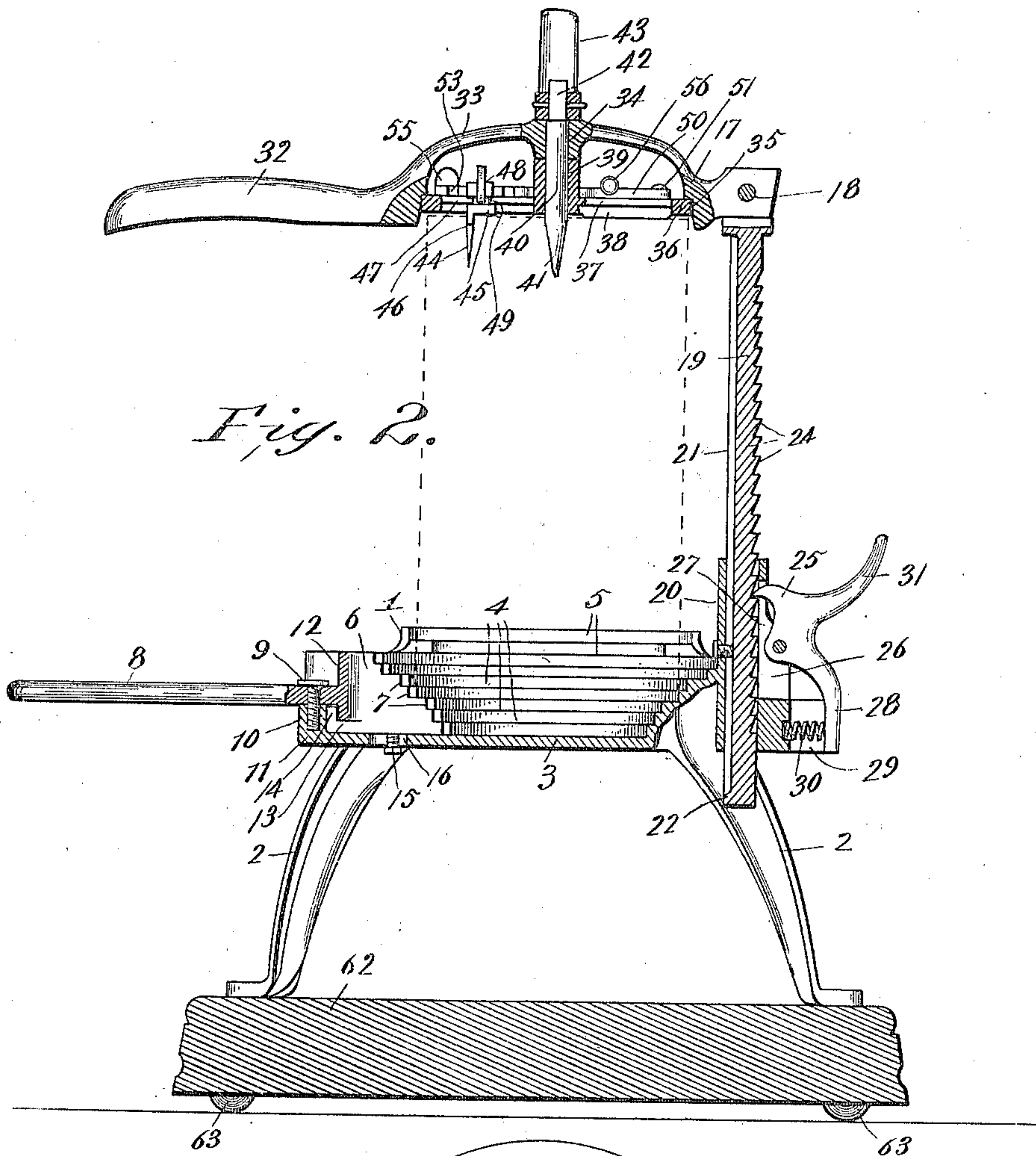


Fig. 2.

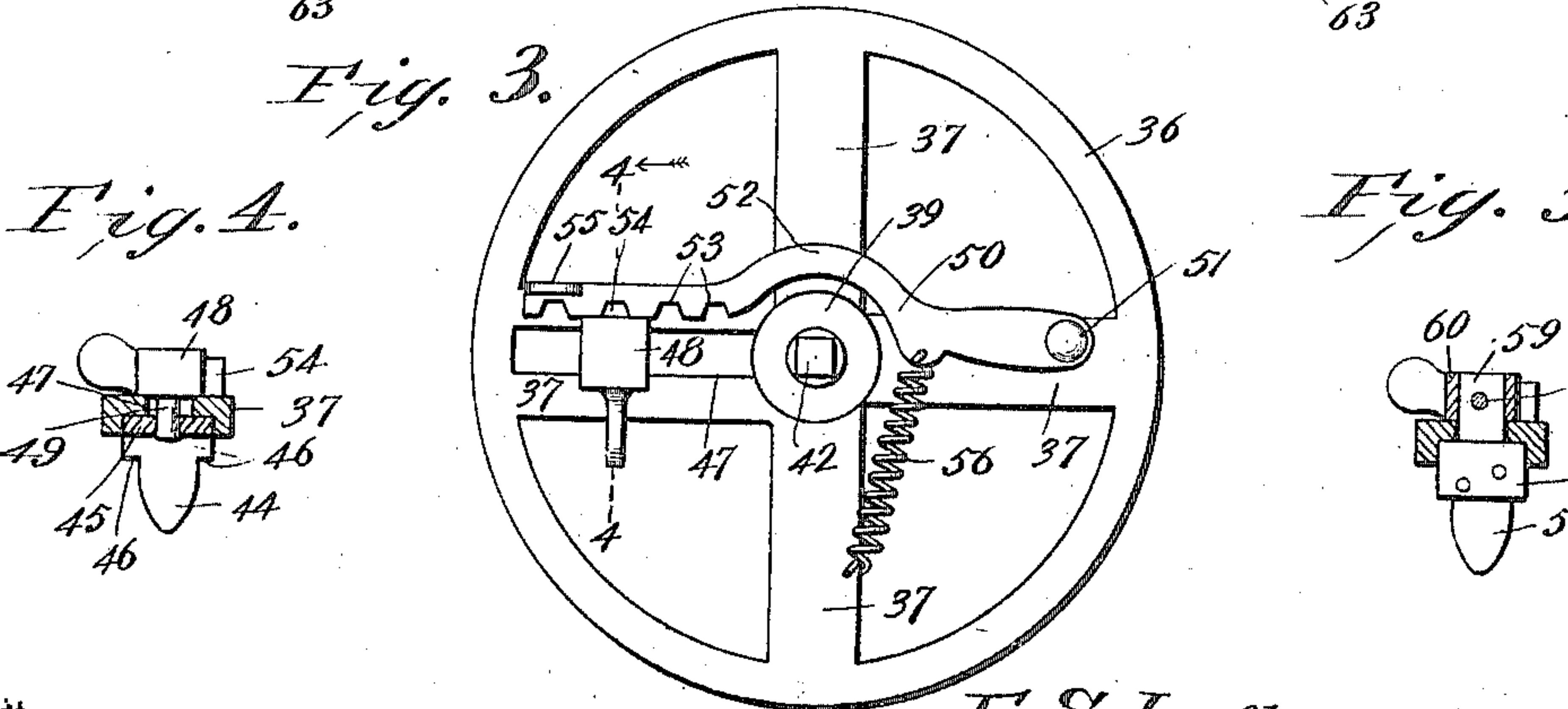


Fig. 3.

Fig. 4.

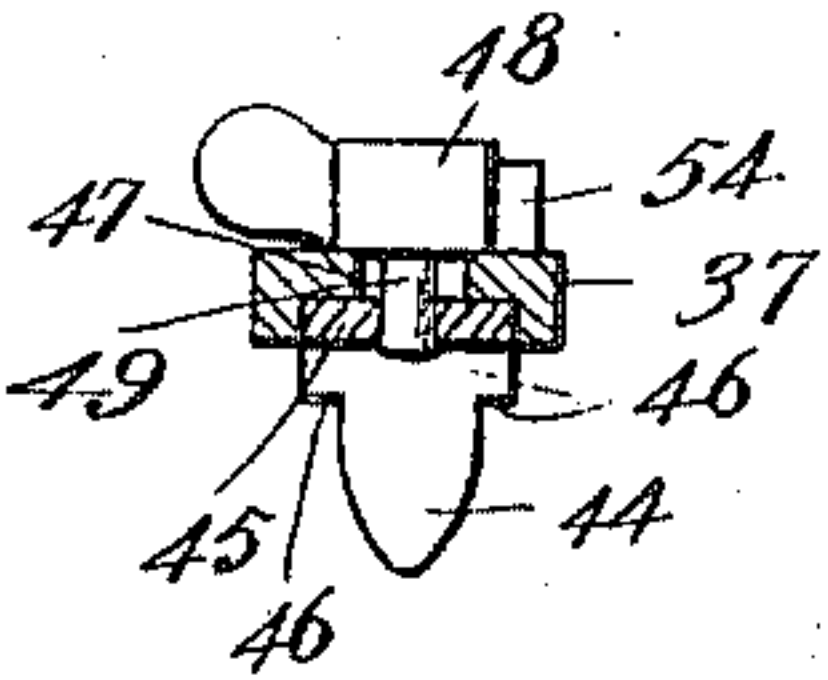
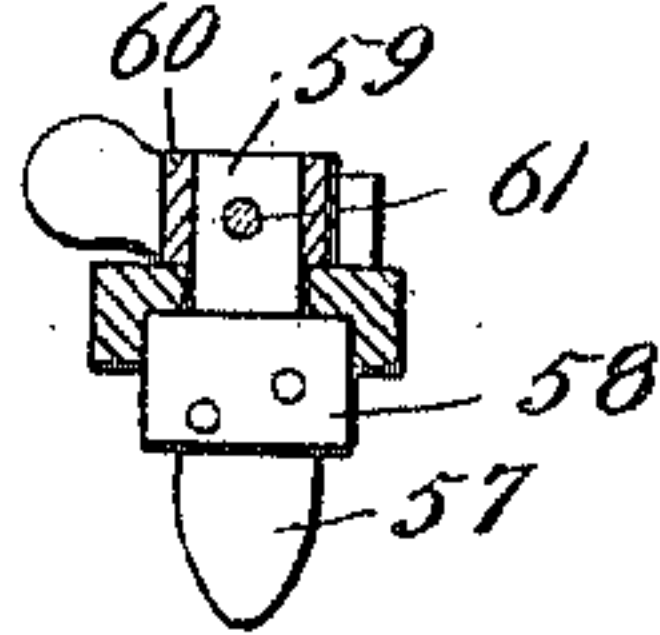


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

EDMUND S. LEFLER, OF JONESBORO, ILLINOIS.

CAN-OPENER.

SPECIFICATION forming part of Letters Patent No. 680,869, dated August 20, 1901.

Application filed December 14, 1900. Serial No. 39,858. (No model.)

To all whom it may concern:

Be it known that I, EDMUND S. LEFLER, a citizen of the United States, residing at Jonesboro, in the county of Union and State of Illinois, have invented certain new and useful Improvements in Can-Openers, of which the following is a specification.

This invention relates to can-openers, and is particularly designed to improve the construction shown in my former patent, No. 597,724, dated January 25, 1898. It is furthermore designed to provide for firmly clamping the bases of cans of different sizes and shapes as well as for clamping the heads or tops thereof, so as to maintain each can rigid during the cutting operation and to prevent spilling of the contents of the can; also, to facilitate the adjustment of the cutting-knife, so as to accommodate the same to cans of different heights and to vary the path of the knife for cutting different sizes of holes in the tops of the cans.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made, within the scope of the claims, without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a can-opener constructed and arranged in accordance with the present invention. Fig. 2 is a central longitudinal sectional view thereof. Fig. 3 is a detail top plan view of the rotary cutting-head, which carries the knife. Fig. 4 is a detail transverse sectional view taken on the line 4 4 of Fig. 3 to show the mounting of the knife. Fig. 5 is a similar view showing the mounting of a modified form of knife-blade.

Like characters of reference designate corresponding parts in all of the figures of the drawings.

In carrying out the present invention I employ a metallic body or frame 1, which is substantially rectangular in shape and is provided at its four corners with the short legs 2 for the support of the device. In the cen-

ter of the top of this horizontal frame or body there is provided a circular depression 3, which is designed to form a socket or seat for the reception of the base of a can which is to have its top opened. The inner marginal wall of this socket inclines outwardly and upwardly and is provided with a stepped series of marginal flanges or shoulders 4, increasing in diameter upwardly, thereby forming a plurality of can-seats, which are graduated in size, so as to accommodate more than one size of can. The difference in diameter between adjacent seats may be regular or irregular, as may be desired; but in any event there should be seats to accommodate the cans now in common use for containing vegetables, fruit, and the like. All of the seats are arranged concentrically, the lowermost and intermediate seats being circular in form, while the uppermost seats are substantially rectangular in shape, as indicated at 5, so as to accommodate sardine-cans, corned-beef cans, and similar rectangular packages. The rectangular seats are formed above the circular seats and upon the flat top of the frame or body and are made by a stepped series of raised ribs or shoulders formed integral with the body.

As each seat is slightly larger than the corresponding can, so that the latter may be readily fitted in place, there has been provided means for tightly clamping the cans in the respective seats by means of a slidable can-engaging clamp 6, which is mounted to move horizontally in a direction front and rear of the device in a slot or opening formed in the front side of the frame or body and intersecting the several can-seats. The inner end of this clamp is provided with a stepped series of shoulders or notches 7, which correspond to the can-seats, so as to form continuations thereof, and by moving the clamp into the central depression of the body it may be firmly pressed against a can for the purpose of holding the same rigidly in the seat. The bottom of the body remains intact in order that the slidable clamp may be supported thereon.

From the foregoing description it will be apparent that the present device has a sectional can-seat, the movable clamp portion forming the adjustable section and the re-

maining part forming the fixed section, said sections being of any preferred size, as one half of the seat may be fixed and the other half adjustable, instead of having the adjustable section form only a small part of the seat.

For manipulating the clamp there is provided a hand-lever 8, which is fulcrumed adjacent to its inner end upon a lateral extension of the base and at the entrance to the slot or opening in the front of the body by means of a screw or pin 9, passing downwardly into a stud or shoulder 10, rising from the outer end of the base extension 11, whereby the lever is spaced slightly above the base. At the inner end of the lever there is provided a transversely-disposed cam-flange 12, which projects above and below the lever or handle and forms a cam-head for frictional engagement with the transversely-rounded outer end of the slidable clamp 6; also, the outer end of the base of the clamp is extended, as at 13, and is provided with an upstanding stud or pin 14, which frictionally engages the outer concave side of the cam-head, whereby the slidable clamp may be moved inwardly and outwardly by opposite movements of the lever or handle 8 for the purpose of clamping and releasing the cans which are supported in the can-seats. It is preferable to have the clamp guided by means of a pendent pin or stud 15, traveling in a slot 16, formed in the bottom of the body.

For holding the top of the cans there is provided a substantially circular frame or member 17, which is hinged, as at 18, to a supporting-standard 19, which rises from the back or rear side of the body of the device. The lower portion of this standard is received within a tubular socket or member 20, which is formed integral with the back of the body and is located diametrically opposite the can-clamp. The standard is angular in cross-section, so as to correspond to the similarly angular shape of the interior of the socket, through the opposite open ends of which the standard is designed to slide or telescope and is prevented from turning therein by reason of its angular shape. A longitudinal groove 21 is formed in the front side of the standard and terminates in a shoulder 22, adjacent to the bottom of the standard. A pin or stud 23 projects into the interior of the socket 20 from the front side thereof and takes into the groove in the standard, so as to form a stop for engagement with the shoulder 22, and thereby prevent the standard from being accidentally drawn upwardly out of the socket. This pin is preferably in the form of a screw passed through the front of the socket, so as to be removable, and thereby permit of the insertion and removal of the standard. To provide for a longitudinal adjustment of the standard the rear side thereof is provided with a series of ratchet-teeth 24 for coöperation with a ratchet pawl or dog 25, pivoted between ears 26, projected rearwardly from the socket, there be-

ing a slot or opening 27 formed in the back of the socket, through which the inner end of the pawl is designed to engage with the teeth of the standard. This dog is extended downwardly and rearwardly into a tail portion 28, which plays between the opposite guide ears or projections 29 at the bottom of the socket, and a coiled spring 30 is interposed between the tailpiece and the back of the socket, so as to yieldingly hold the opposite active end of the dog in engagement with the rack or teeth of the standard. The spring is housed between the ears 29. A suitable finger-piece 31 is formed upon the upper portion of the dog for convenience in releasing the same from the standard. It will be observed that the dog bears downwardly upon the upper side of the teeth of the standard, so as to prevent any upward movement of the standard and the can-holding frame or member 17, whereby the cans are firmly held down upon the corresponding seat during the operation of the device. The standard may be readily depressed, but the weight of the parts supported thereby is not sufficient to force the standard downwardly against the locking action of the dog.

The frame 17 is provided with a handle 32 radiating therefrom diametrically opposite the hinged connection with the standard, so as to facilitate the upward swing of the frame. A bridge or yoke 33 arches diametrically across the frame from the inner end of the handle to the hinge, so as to brace the frame, and is provided at its middle with an opening which is continued through a pendent boss 34. The inner side of the circular frame is provided with a marginal groove or rabbet 35 for the reception of the outer marginal edge of a circular rotatable head 36, that has the radial arms 37, all but one of which is provided with a pendent longitudinal rib or flange 38, designed to bear upon the upper edge of the can being operated upon, so as to limit the downward movement of the frame and the consequent downward thrust of the cutting-knife. It is preferable to have these ribs arranged edgewise to the can, so as to present the minimum friction-surface for contact with the can. At the center of the head there is provided an upstanding tubular boss 39, through which is passed a pin 40, which projects at opposite ends beyond the plane of the rotatable head and is fixed against independent rotation—as, for instance, by being frictionally driven into the tubular boss thereon. The lower end of the pin is pointed, as at 41, so as to pierce the center of the top of a can for the purpose of bracing the head against lateral strain upon the hinged connection thereof with the standard, while the upper end of the pin passes loosely upward through the opening in the bridge 33, and above the latter it is made angular, as at 42, for the detachable reception of a crank-handle 43, whereby the head is designed to be rotated upon the frame.

The knife-blade is preferably formed from a blank of metal, which is bent intermediate of its ends into substantially L shape, as best indicated in Fig. 2 of the drawings, so as to form the blade 44 and the head 45, which latter is slidably received within a longitudinal groove formed in the under side of the radial arm of the rotatable head, which is not provided with a rib. The opposite pendent end of the blank is reduced to form a pointed blade having opposite longitudinal cutting edges, the reduction of the blade forming the opposite lateral shoulders 46 at the inner ends of the respective cutting edges and designed to rest upon the top of the can and steady the knife. The grooved arm is also provided with a longitudinal slot 47, and upon the top of this arm there is provided a slidable finger-piece 48, which has a pendent pin or stud 49, which passes downwardly through the slot and a corresponding opening in the head of the knife-blade, to which the stud is connected by being upset. By this arrangement the knife-blade may be conveniently slid radially inward and outward to vary the size of the opening to be cut by the knife.

In order that the knife may be fixedly held at different adjustments, there is provided a swinging latch or locking device 50, which has one end pivoted to the upper side of the arm, which is diametrically opposite the knife-blade, as indicated at 51, while the free end of the latch is formed for adjustable engagement with the finger-piece. The intermediate portion of the latch is bowed outwardly, as at 52, so as to pass around the central support of the rotatable head and permit of the free end of the latch engaging with the finger-piece of the knife. The inner edge of the free end of the latch is provided with a plurality of notches 53 for the adjustable reception of a stud or projection 54 upon the adjacent side of the finger-piece, whereby the latter may be held at several different adjustments. A suitable upstanding finger-piece 55 is provided at the free end of the latch, and a coiled spring 56 has its opposite ends connected to the latch and one of the radial arms of the rotatable head, so as to yieldingly hold the latch in engagement with the finger-piece of the knife, whereby accidental displacement or disengagement of the latch is prevented, although said latch may be conveniently adjusted.

A modified arrangement of knife has been shown in Fig. 5 of the drawings, in which the knife-blade 57 is set into a solid block or head 58, that is of substantially rectangular shape, so as to slide in the grooved arm of the rotatable head, and also provided with an upstanding angular stud or pin 59, which fits snugly in a suitable socket or perforation in the finger-piece 60, which is substantially like the former finger-piece. The finger-piece and the stud are detachably connected in any suitable manner, preferably by means of a transverse pin 61.

It is preferable to mount the entire device upon a base or block of wood 62, to which the feet 2 are connected by suitable fastenings. Upon the bottom of this wooden base there are provided rubber or similar feet 63, to prevent scratching of the table upon which the device is used.

In the operation of the device the top clamping frame or member is swung upwardly, so as to permit of the placing of a can in its corresponding seat upon the base of the device, as indicated in Fig. 2 of the drawings, the bottom of the can being firmly gripped by means of the clamp hereinbefore described. The top clamp is then swung downwardly upon the top of the can and pressed firmly against the same by means of the handle 32, the spur or pointed pin 41 being thrust through the center of the top of the can, so as to form an additional support therefor and to relieve lateral strain from the hinged support of the clamp. When the clamp is swung downwardly, the knife-blade is thrust through the top of the can, and by rotating the head through the manipulation of the crank-handle 43 the knife is moved in the arc of a circle, so as to cut the top of the can. The length of the cut may be governed by the manipulation of the crank-handle, either to cut the entire top out of the can or merely to partly cut the same, so that the central portion of the can may be folded upwardly to produce an opening in the top and again bent into its original position, so as to close the opening. By means of the different sizes and shapes of the can-seats any of the ordinary cans may be effectively operated upon by the present device, and through the radial adjustment of the cutting-knife several different sizes of openings may be cut in the tops of the cans.

What is claimed is—

1. A can-opener, comprising a base or body, having a plurality of concentric superposed can-seats increasing in diameter upwardly, and provided with a slot or opening formed through one side of the combined seats, a slidable clamp mounted in the slot or opening and having its inner side constructed to form continuations of the respective seats, means for forcing the clamp inwardly, and a cutting device supported above the seats.

2. A can-opener, comprising a base or body, having a plurality of concentric can-seats increasing in diameter upwardly, and provided with a slot or opening in one side of the combined seats, a slidable clamp mounted in the slot or opening and having its inner side constructed to form continuations of the respective seats, and a handled cam mounted upon the body or base outwardly from the slidable clamp and having its convex face frictionally engaging the outer side of the clamp to force the latter inwardly, and a cutting device supported above the seats.

3. A can-opener, comprising a base or body, having a central depression the walls of

which diverge upwardly, and are provided with a plurality of superposed ledges forming can-seats which increase in diameter upwardly, one side of the body having a slot or opening formed through the combined seats, a slidable clamp mounted in the slot or opening, and having its inner side provided with notches or shoulders forming continuations of the respective seats, the base of the clamp being extended outwardly and provided with an upstanding stud or pin, a clamping-lever fulcrumed upon the base outwardly from the clamp, and having a cam-head at its inner end and projecting above and below the lever, the convex side of the cam-head frictionally engaging the outer side of the slidable clamp, and the concave side of the head frictionally engaging the stud or pin at its inner side, and a cutting device supported above the can-seats.

4. In a can-opener, the combination with a base, having a can-seat, of a tubular casing carried at one side of the base, and having a detachable stud or pin projected into the interior thereof, a longitudinally-adjustable standard slidably mounted in the casing and projected through the top thereof, and having one side provided with a longitudinal groove receiving the inner end of the detachable stud and terminating adjacent to the lower end of the standard in a stop-shoulder, a standard-adjusting device mounted upon the casing, and a cutting device carried by the upper end portion of the standard.

5. In a can-opener, the combination with a base or body, having a can-seat, of a vertical tubular casing carried by the base, an adjustable standard slidably mounted in the casing and projected above the same, one side of the standard having ratchet-teeth, a ratchet-dog mounted upon the casing and cooperating with the teeth of the standard, said dog having an upper finger-piece, and a lower tailpiece, a spring interposed between the tailpiece and the casing, and a cutting device carried by the upper portion of the standard.

6. In a can-opener, the combination with a base or body forming a can-seat, of a vertically-adjustable frame supported above the base, and having a vertically-disposed pin rotatably mounted thereon and projected in opposite directions above and below the frame, the lower end of the pin being pointed, a cutting device carried by the pin, and an operating crank-handle fitted to the upper end of the pin.

7. In a can-opener, the combination with a base or body forming a can-support, of a standard rising from the base, a skeleton or open frame hinged to the standard and swinging vertically, an upwardly-arched brace or bridge

spanning the upper side of the frame and provided with a central opening, a circular rotatable head mounted within the frame, a pin rotatable in the opening in the brace, projecting above and below the latter, having its lower end pointed, and its intermediate portion fixedly carrying the rotatable head, a crank-arm connected to the upper projecting end of the pin, and a cutting-knife carried by the head.

8. In a can-opener, a rotatable cutter-head, having a knife-blade, which is adjustable radially upon the head, and a spring-actuated latch pivoted upon the head, and having an adjustable engagement with the knife-blade to fixedly hold the latter.

9. In a can-opener, the combination with a rotatable head, of a cutting-knife, which is radially adjustable upon the head, and is provided with a lateral stud or projection, and a spring-actuated swinging latch mounted upon the head, and having a plurality of notches for the adjustable reception of the stud of the knife.

10. In a can-opener, a rotatable cutter-head, having a radial slot, a cutting-knife which is adjustably slidable longitudinally of the under side of the slot, a finger-piece which is connected through the slot to the knife-blade, and a spring-actuated swinging latch which is mounted upon the head and has an adjustable engagement with the finger-piece.

11. In a can-opener, the combination with a base, having a plurality of concentric can-seats, of a vertically-adjustable standard rising from the base, an open frame hinged to the upper portion of the standard and swinging vertically, a handle at the outer free side of the frame, a bowed brace spanning the upper side of the frame and having a central opening, a rotatable head mounted within the frame, and provided with a radial slot, a pin rotatable in the opening in the brace and projected above and below the latter, the lower end of the pin being pointed, and its intermediate portion fixedly carrying the head, an operating crank-handle fitted to the upper projected end of the pin, a knife-blade adjustably slidable longitudinally of the under side of the radial slot, a finger-piece upon the upper side of the head and connected through the slot to the knife-blade, and a swingingspring-actuated latch mounted upon the head and having an adjustable engagement with the finger-piece.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

EDMUND S. LEFLER.

Witnesses:

WILL L. LINGLE,
CORNELIA LINGLE.