(No Model.) 2 Sheets—Sheet 1.

C. MORGAN.

CAN OPENER.

No. 508,332. Patented Nov. 7, 1893.

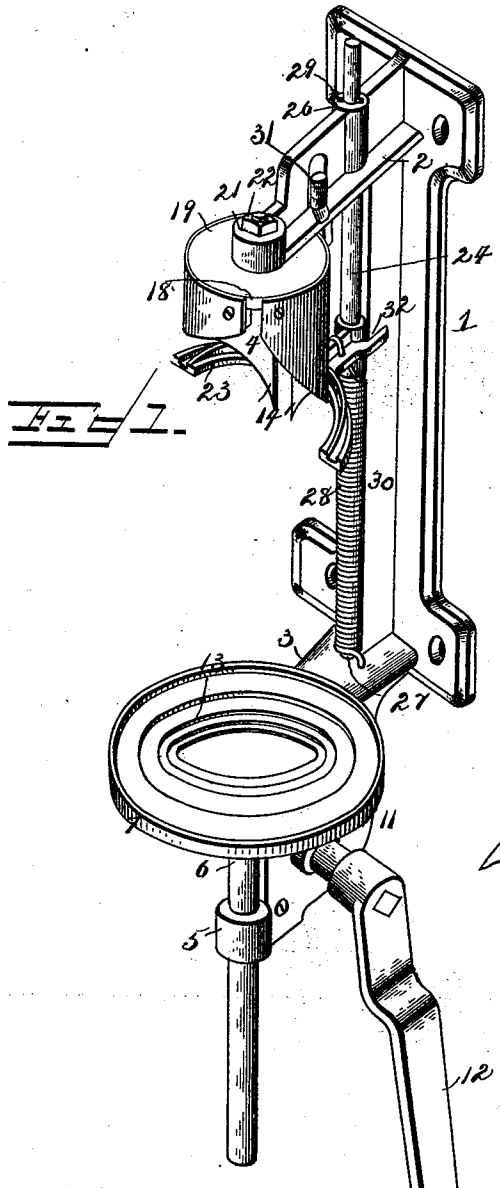
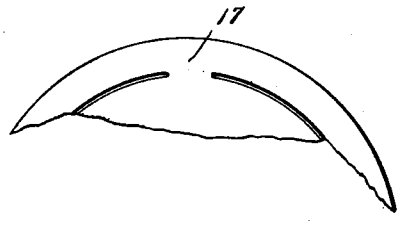


Fig. 1.

Fig. 5.



Witnesses
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(No Model.) 2 Sheets—Sheet 2.

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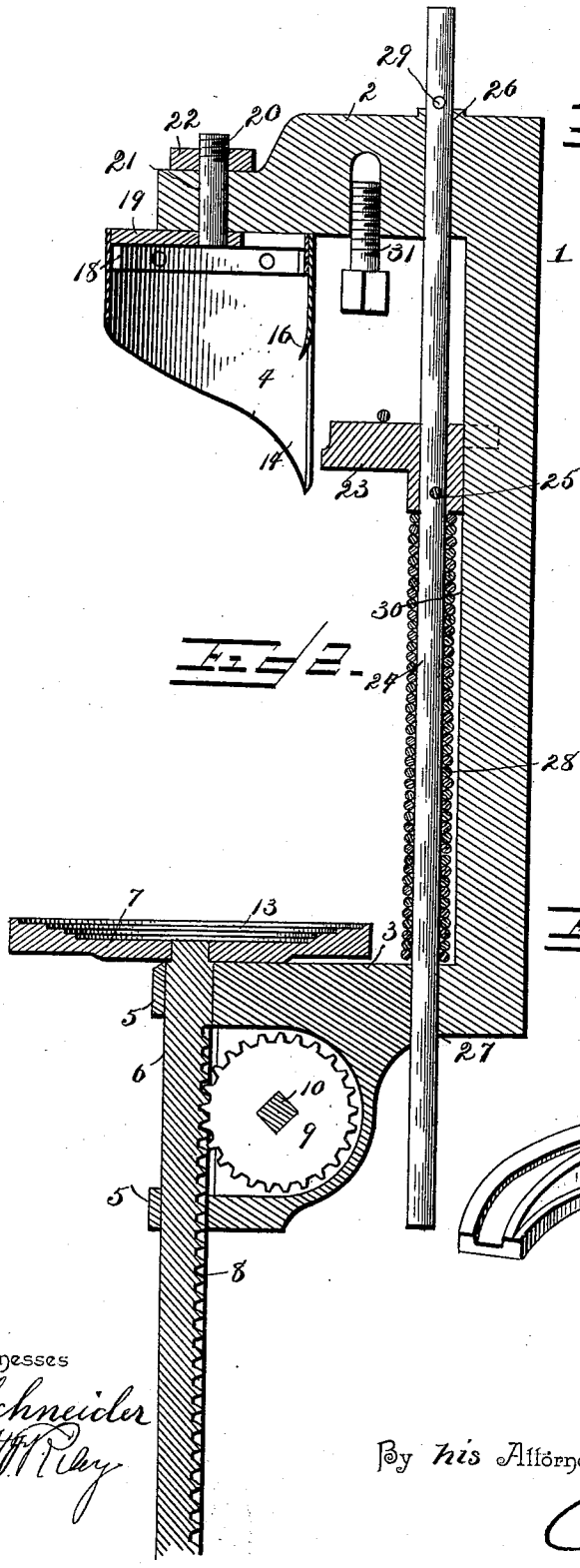


Fig. 3.

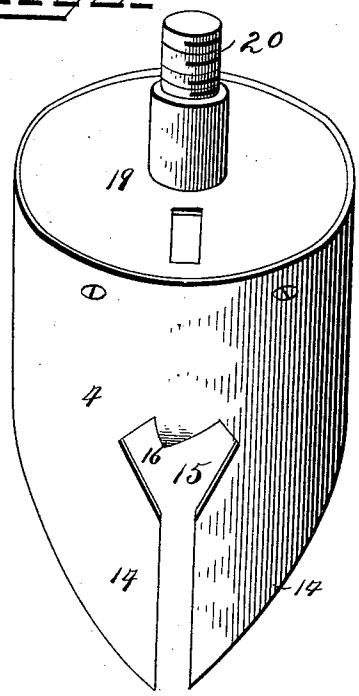
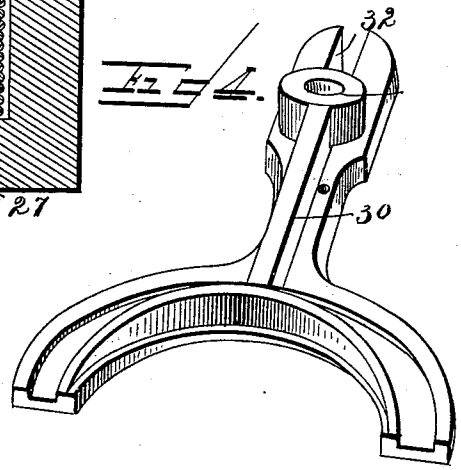


Fig. 2.

Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES MORGAN, OF LATAH, WASHINGTON, ASSIGNOR OF ONE-HALF TO BERNARD F. O'NEIL, LINUS H. THAYER, AND FRANCIS D. TOMLINSON, OF SAME PLACE.

CAN-OPENER.

SPECIFICATION forming part of Letters Patent No. 508,332, dated November 7, 1893.

Application filed February 28, 1893. Serial No. 464,095. (No model.)

To all whom it may concern:

Be it known that I, CHARLES MORGAN, a citizen of the United States, residing at Latah, in the county of Spokane and State of Washington, have invented a new and useful Can-Opener, of which the following is a specification.

The invention relates to improvements in can openers.

The object of the present invention is to simplify and improve the construction of can openers, to prevent the top of a can being forced inward during the operation of cutting, and to draw the can top outward after the operation of cutting has been completed.

A further object of the invention is to enable a can after being cut to be readily freed from the knife.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims hereto appended.

In the drawings—Figure 1 is a perspective view of a can opener constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a detail perspective view of the knife. Fig. 4 is a similar view of the clamp. Fig. 5 is a plan view of a portion of a can illustrating the form of the cut prior to the operation of the inner blade.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a frame, preferably constructed of metal and designed to be secured to a wall, table, or other suitable support, and consisting of a plate and integral arms 2 and 3 arranged at the ends of the plate. The upper arm 2 has secured to it a knife 4, and the lower arm 3 is provided at its outer end with bearings 5 in which is arranged a cylindrical plunger 6 carrying at its upper end a circular can support 7. The cylindrical plunger is provided with a longitudinal series of teeth 8, forming a rack and meshing with a cog-wheel 9, which is mounted on a short shaft 10 and arranged in a recess of the lower arm 3. The lower arm 3 is provided with a removable plate 11, which covers the recess and forms with the arm a casing or housing for the cog-wheel; and the arm and plate are provided with bearing openings to receive the shaft, which has one end squared to receive a rectangular socket of a crank handle 12. When the cog-wheel is rotated by means of a crank handle the plunger is raised and lowered to carry a can in contact with the knife for cutting and to remove the same after the operation of cutting has been completed. The upper face of the circular can support is provided with a series of concentric circular recesses 13, adapted to receive cans of different sizes to enable the same to be held against lateral movement on the can support during the operation of cutting.

The knife 4 is approximately cylindrical and is provided with opposite tapering knives 14, which are separated at their points by an approximately Y-shaped opening 15 forming an inner blade 16. The space between the blades of the knife causes during the operation of cutting, a narrow portion of the top of a can to be left uncut while the can is cut on each side of this narrow portion, as illustrated in Fig. 5 of the accompanying drawings. The narrow uncut portion 17 prevents the top of the can being forced inward during the operation of cutting, and after the blades 14 are at the end of their cuts, the narrow portion is severed by the inner blade 16 which curves inward, and when the can is withdrawn from the knife, lifts the cut portion of the top from the can, so that the top of the can may be readily turned back after it has been removed from the support. The cylindrical knife is secured by screws to an annular flange 18 formed integral with and arranged at the periphery of a disk 19, which is provided with a central threaded stem 20 secured in an eye 21 of the upper arm by a nut 22.

After the operation of cutting has been completed the can is freed from the knife by a spring actuated clamp 23, secured to a longitudinal rod 24 and consisting of a stem and a curved portion or arms for engaging the edge of a can at the top adjacent to the knife. The shank or stem of the clamp is provided

with a sleeve which is secured on the rod 24 by a pin 25. The rod which is preferably cylindrical is arranged in bearings 26 and 27 at the inner ends of the arms 2 and 3, and has disposed on it a spiral spring 28, which has one end secured to the lower arm and its upper end attached to the stem of the clamp. The downward movement of the longitudinal rod is limited by a stop pin 29, arranged at the upper end of the rod and adapted to engage the upper arm. As the can is forced upward on the blades of the knife, the clamp is also carried upward, whereby when the can support is lowered the spiral spring will return the clamp and free the can from the blades. The clamp is prevented turning on the rod by a longitudinal rib 30 of the plate of the frame which rib engages a recess 32 at the inner end of the stem of the clamp.

The upward movement of the can and the length of the cuts are limited by an adjustable screw 31, arranged in a threaded opening of the upper arm and extending downward therefrom in position to be engaged by the spring actuated clamp to form a stop for the same.

It will be seen that the can opener is simple and inexpensive in construction and effective in operation, that it prevents in an effective manner the top of the can being forced inward during the operation of cutting, that a can is readily freed from the knife after the cutting has been completed, and that the severed portion of the top of a can is lifted out of the latter when the cutting is finished.

Changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention. It will also be apparent that the space at the back of the blades of the knife will after the operation of cutting has been completed leave a small uncut portion, which may be readily bent to turn the severed portion back to empty the contents of the can.

What I claim is—

1. In a can opener, the combination of a frame, a stationary depending knife, a vertically movable plunger provided with a rack and having at its upper end a horizontal can support located beneath the knife, a cog-wheel mounted on the frame and meshing with the rack of the plunger, a shaft secured to the cog-wheel and means for turning the shaft to operate the plunger, substantially as described.

2. In a can opener, a knife provided with tapering blades and having an intervening space and provided at the inner end of the space with a blade, substantially as described.

3. In a can opener, a knife having tapering blades and provided with an intervening space and having at the inner end thereof a depending cutting blade curving inward and adapted to complete the cut and to lift the severed portion of a can, substantially as and for the purpose described.

4. In a can opener, a knife approximately cylindrical and provided with integral tapering blades and having an intervening Y-shaped opening forming an integral inner blade curving inward, substantially as and for the purpose described.

5. In a can opener, the combination of a frame having arms arranged opposite each other, a knife secured to one of the arms, a plunger mounted on the other and provided with a can support, means for operating the plunger, and a spring actuated clamp mounted on the frame and arranged adjacent to the knife and having a movement longitudinal of the knife to free a can, substantially as described.

6. In a can opener, the combination of a frame, a curved knife, a plunger carrying a can support arranged opposite the knife, means for operating the plunger, and a spring actuated clamp provided with curved arms fitting around the knife and adapted to engage the top of a can, substantially as and for the purpose described.

7. In a can opener, the combination of a frame, a knife, a plunger mounted on the frame and carrying a can support, means for operating the plunger, a longitudinally movable rod arranged in bearings of the frame and having a limited movement, a clamp secured to the rod and carried by the same and arranged to engage a can, and a spring for returning the clamp, substantially as described.

8. In a can opener, the combination of a frame, provided with a longitudinal rib, a knife secured to the frame, a plunger mounted on the frame and carrying a can support, means for operating the plunger, a rod arranged in bearings of the frame and having a limited movement and arranged parallel with the rib, a clamp secured to the rod and provided with a recess receiving the rib, and a spring for returning the clamp, substantially as described.

9. In a can opener, the combination of a frame, a fixed knife, a plunger carrying a can support disposed opposite the knife, means for operating the plunger, a spring actuated clamp having a movement on the frame, and an adjusting screw mounted on the frame and arranged to engage the clamp at one end of the movement of the latter to limit such movement, substantially as described.

10. In a can opener, the combination of a frame provided at its ends with arms and having bearings at the inner ends of the arms, said frame being provided with a longitudinal rib arranged between the arms, a knife fixed to one of the arms, a plunger mounted on the other and carrying a can support and having a rack, a shaft journaled on the frame and having a cog-wheel meshing with the

rack, a cylindrical rod mounted in said bearings, a clamp secured to the rod and having a recess receiving the rib, a stop pin arranged at one end of the rod, a spiral spring disposed on the rod and connected to the frame and to the clamp, and an adjustable screw mounted on the arm having said knife and arranged to engage the clamp, substantially as described.

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

CHARLES MORGAN.

Witnesses:
B. F. O'NEIL,
HENRY J. CLARK.