Aug. 19, 1924. 1,505,833

R. L. WELLS

CAN OPENER

Filed June 16, 1921 2 Sheets-Sheet 1

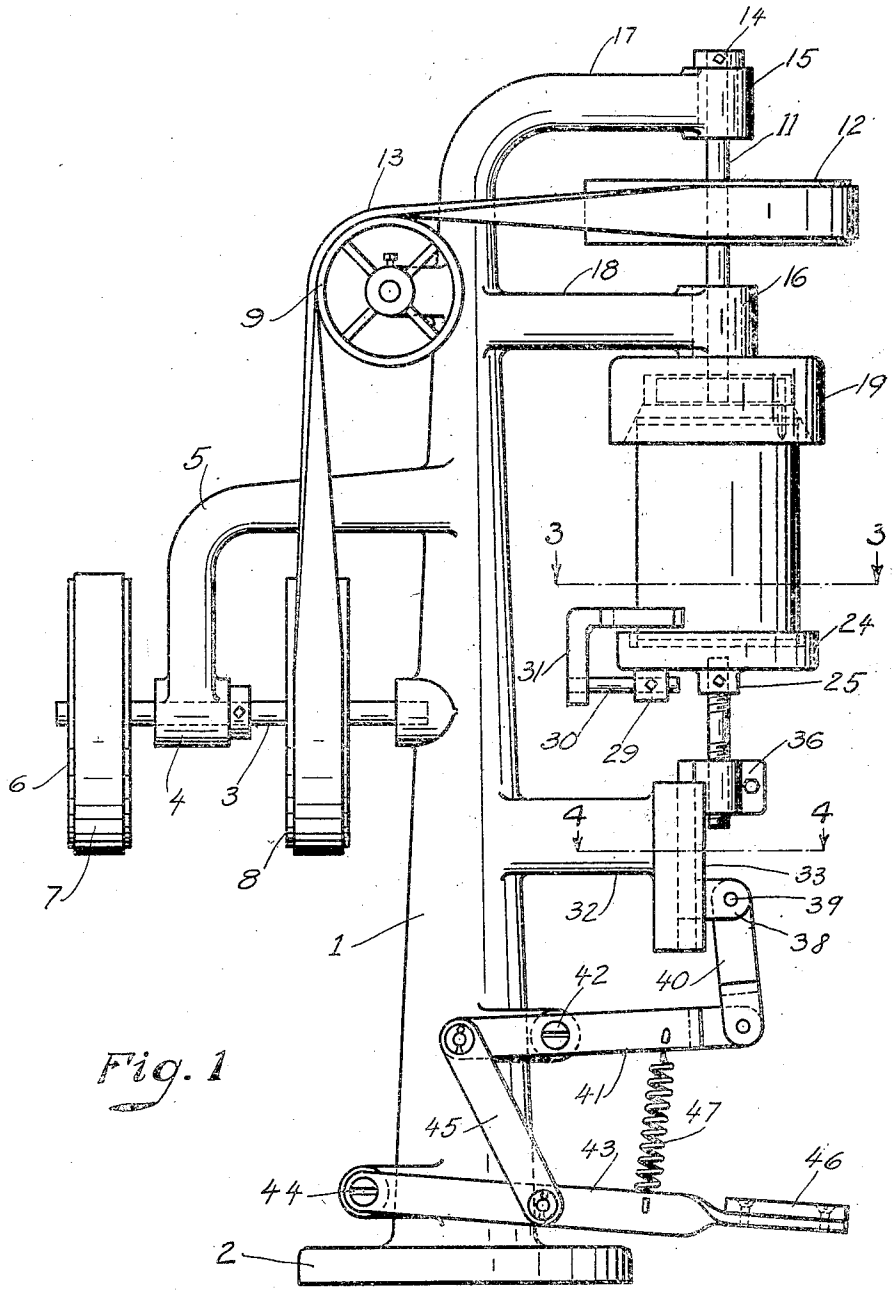

Fig. 1

Witnesses:
Wm. Schnellhardt
H. S. Reidmen

Inventor,
Robert L. Wells
By Joshua R. H. Scott
His Attorney

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Filed June 16, 1921 2 Sheets-Sheet 2

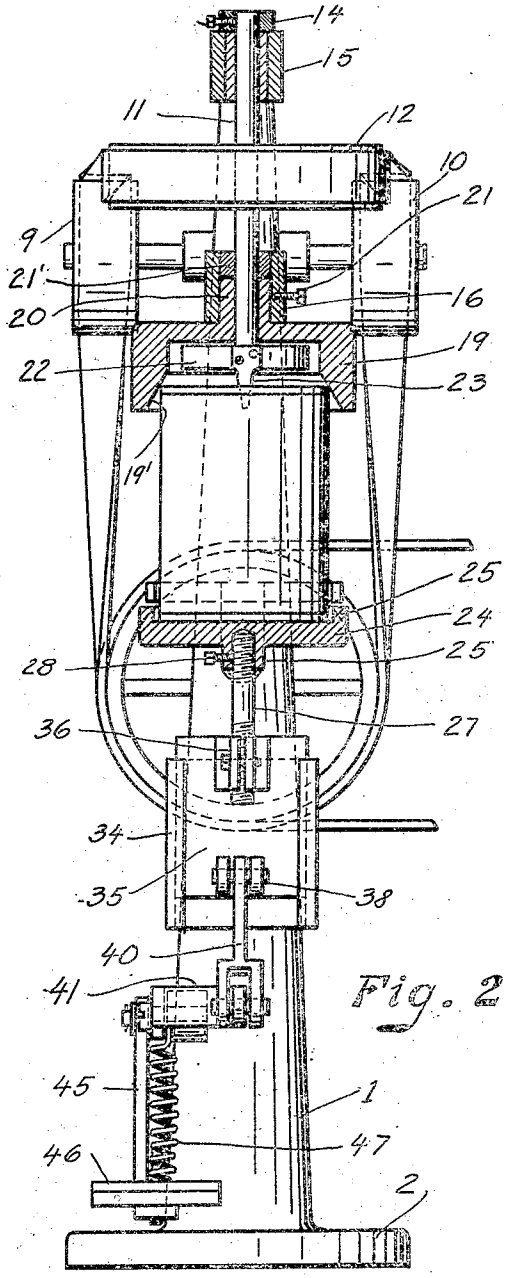

Fig. 2

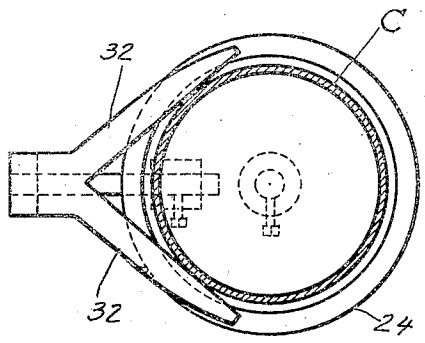

Fig. 3

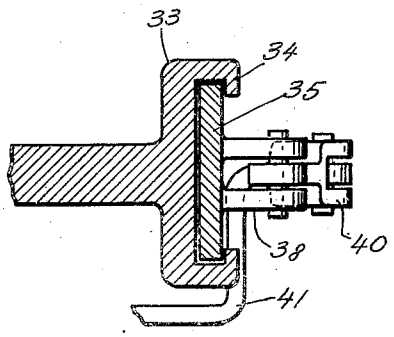

Fig. 4

Witnesses:
Wm. Schnellhardt
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Inventor,
Robert L. Wells
By Joshua R. H. Potts
His Attorney

Patented Aug. 19, 1924. 1,505,833

UNITED STATES PATENT OFFICE.

ROBERT L. WELLS, OF CHICAGO, ILLINOIS.

CAN OPENER.

Application filed June 16, 1921. Serial No. 477,947.

To all whom it may concern:

Be it known that I, ROBERT L. WELLS, a citizen of the United States, and a resident of the city of Chicago, county of Cook, 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 opening machines, and has for its object the provision of a simple machine which will cut out the ends of cans of various sizes in an expeditious manner.

It has been common practice heretofore to use various means for opening cans, none of which has been entirely satisfactory, as the small can openers are awkward and uncertain in use, and in opening larger cans it is common practice to use a hatchet or like instrument. By using my machine I can cut out the tops of cans of various sizes quickly and neatly.

Other objects will appear hereinafter.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Fig. 1 is a side elevation of a can opening machine embodying my invention,

Fig. 2 is a front elevation partly in section of such machine.

Fig. 3 is a detail view on line 3—3 of Fig. 1,

Fig. 4 is a detail view on line 4—4 of Fig. 1.

In the drawings, 1 represents a standard of any desired construction, having a suitable base 2 which may be secured in any desirable location, preferably conveniently near a power plant. A shaft 3 may have one end journalled in said standard 1 and its other end journalled in a bearing 4 at the end of arm 5 on said standard. At the end of the shaft 3 is keyed a pulley 6 which may be driven by a belt 7 connected to any suitable source of power. A pulley 8 is also keyed on said shaft 3, and transmits power to two smaller pulleys 9 and 10 mounted on said standard 1 above said pulley 8, and preferably disposed at right angles thereto.

The standard 1 is also preferably provided with arms 17 and 18 in the bearings 15 and 16 of which is journalled a shaft 11. The pulley 12 is preferably mounted on the shaft 11 as shown. The belt 13 engages the pulleys 8, 9, 10 and 12 to drive the shaft 11. The outer end of the shaft 11 may be provided with a suitable collar 14 to support same in position. If desired, the collar 14 may be provided with ball bearings; and any of the other bearings in the machine may be of this type if deemed desirable. As illustrated, the machine comprises as few parts as are consistent with smooth and positive operation, but I consider refinements of parts of my machine as within the scope of my invention.

I preferably provide a can centering detachable chuck 19 of any desirable size which is preferably provided with a sleeve 20 which engages a suitable bore in the bearing 16, and a set screw 21 may be tapped through said bearing to hold the chuck securely in position. Chuck 19 preferably has its lower inner edges outwardly bevelled as shown at 19′ for a purpose hereinafter described. Chucks similar to 19, but of different sizes, may be substituted one for the other when operating on cans of different sizes.

The lower end of shaft 11 is preferably journalled in a collar 21′ secured in bearing 16 as shown, and to the end of said shaft is detachably connected a disk 22 which is adapted to rotate with said shaft. The disk 22 may be connected to said shaft in any suitable manner, but is shown as having a threaded socket engaging the threaded end of said shaft, the direction of rotation of the disk of course being such as to engage the disk tightly on shaft 11. I preferably mount a tapered knife blade 23 on periphery of disk 22 which blade rotates with said disk. The disk 22 is detachable, and a similar disk, having a knife 23, may be substituted therefor when operating on cans of different sizes.

In order to bring a can into engagement with the cutting knife 23, I preferably provide a circular detachable interchangeable platform 24, which may be provided with an annular flange 25 extending therearound to retain a rubber pad or the like in position. The platform 24 is preferably provided with a boss 25′ on its underside, which has a socket into which is inserted the end of a rod 27. A set screw 28 may be tapped through said boss 25 to engage

said rod 27 and secure same to the platform. The platform 24 also is preferably provided with a bracket 29 on its underside into which is inserted a rod 30 carrying an angular bar 31, having forked fingers 32, the inner sides of said fingers being adjustable to engage a can to position same on the platform 24.

I also preferably provide suitable means for raising and lowering said can and platform into engagement with the knife 23, and out of engagement therewith after the top of the can has been cut. As shown, an arm 32' carrying a guide 33 having retaining flanges 34 is provided. A slide 35 is adapted to move up and down in the guide 33. The outer face of slide 35 has provided at one end upstanding ears 36 which engage the end of rod 27 as shown, and are clamped thereon by a set screw, the other end of said slide also having ears 38 which engage a link 40 which link is pivotally secured thereto by a pin 39 transfixing said ears. The lower end of link 40 is bifurcated and pivotally secured to a lever 41, which is pivoted to the standard 1 at 42, as shown, the other end of said lever 41 being connected by link 45 to a lever 43, and pivoted to the standard 1 at 44. The lever 43 carries at its outer end a foot-piece 46. A spring 47 is provided for normally retaining the lever 43 in raised position.

As above stated the machine is capable of operating on cans of different diameters. This is accomplished by providing a number of chucks 19 and disks 22 of various sizes. When it is desired to operate on cans of a larger size than shown, for instance, the disk 22 carrying knife 23, is unscrewed and removed from the end of shaft 11. The said screw 21 is then loosened and the chuck 19 removed. A chuck similar to 19 in all respects save that it has a larger can receiving recess is then inserted over the end of the shaft 11, the sleeve 20 thereof engaging the bearing 16 adjacent the lower end of collar 21', and the set screw 21 tightened to hold said chuck in position. A disk similar to 22 but of a larger size, carrying a knife like 23 is then screwed onto the end of shaft 11. The machine is then ready for operation on cans of larger size. Any size of disk and chuck may be placed on the machine in a similar manner so that the machine is capable of operating on cans varying greatly in size. The platform 24 is also detachable and a larger or smaller platform may be substituted if desired.

In operation a chuck 19, disk 22, and platform 24 of the desired size are placed in position, and the power turned on. The fingers 32 are adjusted to position the cans on the platform 24. The lever 43 is then pressed (as shown in Fig. 1) thereby raising the can into engagement with the bevelled edges 19' of the chuck 19 to center the can and hold same in position, the rotating knife at the same time piercing the can top and making a cut entirely around same near the edge thereof. Pressure is then removed from the end of lever 43 and spring 47 draws the lever 43 upwardly and the platform 24 to inoperative position. The opened can is then removed, and another can substituted and the operation repeated.

The machine is positive and rapid in operation and is small and cheap to manufacture and has great utility.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of the construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

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

1. In a can opening machine, in combination, a stationary chuck with bevelled means for centering and holding a can in position; means carrying a knife support and knife mounted in said chuck for continuous rotation; and means for supporting and moving a can into holding engagement with said chuck and into cutting engagement with said knife.

2. In a can opening machine of the character described comprising a rotatable knife; a movable can platform; a guide mounted adjacent said platform; a slide mounted in said guide and operatively connected to said platform; link and lever connections for actuating said slide; and resilient means for normally holding said levers and said platform in inoperative position.

3. In a can opening machine of the character described comprising a standard having a bracket thereon; a chuck having a sleeve mounted in said bracket; a rotatable shaft journalled in said sleeve and extending into said chuck; and a knife carrying member detachably secured to the inner end of said shaft, substantially as described.

4. In a can opening machine of the character described; comprising a standard; arms on said standard; a rotatable shaft journalled in said arms; a supporting collar on one end of said shaft engaging one of said arms; a disk detachably mounted on the opposite end of said shaft; a knife mounted on said disk and adapted to rotate therewith; a centering chuck having a sleeve mounted on one of said arms and forming a bearing for said shaft; said chuck surrounding said disk and knife; bevelled edges on said chuck; a movable can platform and means for moving

said platform and can into engagement with said chuck and said knife.

5. In a can opening machine of the character described, comprising a standard; arms on said standard; a rotatable shaft journalled in said arms; a supporting collar on one end of said shaft; a disk on the opposite end of said shaft; a knife mounted on said disk; a centering chuck surrounding said disk and knife; a movable can platform; adjusting fingers on said platform; and means for moving said platform and can into engagement with said chuck and said rotating knife.

6. In a can opening machine of the character described, comprising a standard having arms; a centering chuck adapted to engage one of said arms and having a frustoconical recess therein; means for securing said chuck in position; a rotatable shaft journalled in said arms having one end extending into said chuck; a rotatable disk on said shaft; a knife secured to the periphery of said disk; a movable can platform and means for moving said platform and can into engagement with said chuck and said knife, substantially as described.

7. In a can opening machine of the character described, comprising a standard; a rotatable knife mounted on said standard; a chuck having a recess with outwardly tapered sides; a movable can platform having a recess therein; adjusting fingers on said platform; and means for moving said platform and said can into engagement with said chuck and said knife, substantially as described.

8. In a can opening machine of the character described, comprising a standard; arms on said standard; a rotatable shaft journalled in said arms; supporting means for said shaft; a disk on the opposite end of said shaft; a knife mounted on said disk; a centering chuck mounted on one of said arms and surrounding said disk; a movable can platform; adjusting fingers on said platform; a guide on said standard; a slide connected to said platform and movable in said guide; and means for moving said slide and said can carrying platform into engagement with said chuck and said knife, substantially as described.

9. In a can opening machine of the character described; comprising a standard; arms on said standard and a rotatable shaft journalled in said arms; a supporting collar on one end of said shaft engaging one of said arms; a disk detachably mounted on the opposite end of said shaft; a knife mounted on said disk and adapted to rotate therewith; a centering chuck having a sleeve mounted on one of said arms and forming a bearing for said shaft, said chuck surrounding said disk and bearing; bevelled edges on said chuck; a movable can platform; a guide on said standard; a slide connected to said platform and movable in said guide; and means for moving said slide and said can carrying platform into engagement with said chuck and said knife, substantially as described.

10. In a can opening machine of the character described, comprising a standard; arms on said standard; a rotatable shaft journalled in said arms; a supporting collar on one end of said shaft; a disk on the opposite end of said shaft; a knife mounted on said disk; a centering chuck surrounding said disk and knife; a movable can platform; a flange on said platform; adjusting fingers on said platform; a guide on said standard; a slide connected to said platform and movable in said guide; and means for moving said slide and said can carrying platform into engagement with said chuck and said knife, substantially as described.

11. In a can opening machine of the character described, comprising a standard having arms; a centering chuck adapted to engage one of said arms and having a frustoconical recess therein; means for securing said chuck in position; a rotatable shaft journalled in said arms having one end extending into said chuck; a rotatable disk on said shaft; a knife secured to the periphery of said disk; a movable can platform; a guide on said standard; a slide connected to said platform and movable in said guide; and means for moving said slide and said can carrying platform into engagement with said chuck and said knife, substantially as described.

12. In a can opening machine of the character described, comprising a standard; a rotatable knife mounted on said standard; a chuck having a sleeve engaging an arm on said standard and secured thereto and having therein a recess; a recess outwardly tapered sides; a movable can platform having a recess therein; adjusting fingers on said platform; a guide on said standard; a slide connected to said platform and movable in said guide; and means for moving said slide and said can carrying platform into engagement with said chuck and said knife, substantially as described.

13. In a can opening machine of the character described, comprising a standard; arms on said standard; a rotatable shaft journalled in said arms; supporting means for said shaft; a disk on the opposite end of said shaft; a knife mounted on said disk; a centering chuck mounted on one of said arms and surrounding said disk; a movable can platform; a guide on said standard; a slide connected to said platform and movable in said guide; a link connected to said slide; a lever connected to said link and to said standard; a link connected to said lever; and a lever connected to said link and to said standard for moving said slide and said can carrying platform into engagement with

said chuck and said knife, substantially as described.

14. In a can opening machine of the character described; comprising a standard; arms on said standard and rotatable shaft journalled in said arms; a supporting collar on one end of said shaft engaging one of said arms; a disk detachably mounted on the opposite end of said shaft; a knife mounted on said disk and adapted to rotate therewith; a centering chuck having a sleeve mounted on one of said arms and forming a bearing for said shaft; said chuck surrounding said disk and knife; bevelled edges on said chuck; a movable can platform; a guide on said standard; a slide connected to said platform and movable in said guide; a link connected to said slide; a lever connected to said link and to said standard; a link connected to said lever; and a lever connected to said link and to said standard for moving said slide and said can carrying platform into engagement with said chuck and said knife, substantially as described.

15. In a can opening machine of the character described, comprising a standard; arms on said standard; a rotatable shaft journalled in said arms; a supporting collar on one end of said shaft; a disk on the opposite end of said shaft; a knife mounted on said disk; a centering chuck surrounding said disk and knife; a movable can platform; a flange on said platform; adjusting fingers on said platform; a guide on said standard; a slide connected to said platform and movable in said guide; a link connected to said slide; a lever connected to said link and to said standard; a link connected to said lever; and a lever connected to said link and to said standard for moving said slide and said can carrying platform into engagement with said chuck and said knife, substantially as described.

16. In a can opening machine of the character described, comprising a standard having arms; a centering chuck adapted to engage one of said arms having a frusto-conical recess therein; means for securing said chuck in position; a rotatable shaft journalled in said arms having one end extending into said chuck; a rotatable disk on said shaft; a knife secured to the periphery of said disk; a movable can platform; a guide on said standard; a slide connected to said platform and movable in said guide; a link connected to said slide; a lever connected to said link and to said standard; a link connected to said lever; and a lever connected to said link and to said standard for moving said slide and said can carrying platform into engagement with said chuck and said knife, substantially as described.

17. In a can opening machine of the character described, comprising a standard; a rotatable knife mounted on said standard; a chuck having a sleeve engaging an arm on said standard and secured thereto and having a recess therein with outwardly tapered sides; a movable can platform having a recess therein; adjusting fingers on said platform; a guide on said standard; a slide connected to said platform and movable in said guide; a link connected to said slide; a lever connected to said link and to said standard; a link connected to said lever; and a lever connected to said link and to said standard for moving said slide and said can carrying platform into engagement with said chuck and said knife, substantially as described.

18. In a can opening machine of the character described, comprising a standard; spaced arms on said standard each having a bearing at its end; a sleeve mounted in one of said bearings and having an annular chuck at its lower end; bevelled edges on said chuck; a set screw securing said sleeve in said bearing; a rotatable shaft journalled in said bearing and said sleeve and extending into said chuck and having a driving pulley mounted thereon; a disk mounted on the end of said shaft and rotatable therewith; a knife mounted on the periphery of said disk; an annular movable detachable can platform; a flange surrounding the upper face of said platform; adjustable holding fingers on said platform; a slide connected to said platform; a guide on said standard engaging said slide; and levers connected to said slide for moving said can into engagement with said knife, substantially as described.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT L. WELLS.

Witnesses:
R. H. BRADLEY,
ARTHUR H. EDGAR.