Nov. 29, 1932. J. H. BROCKSMITH 1,889,119

CAN OPENER

Filed Dec. 26, 1931 2 Sheets-Sheet 1

Fig. 1.

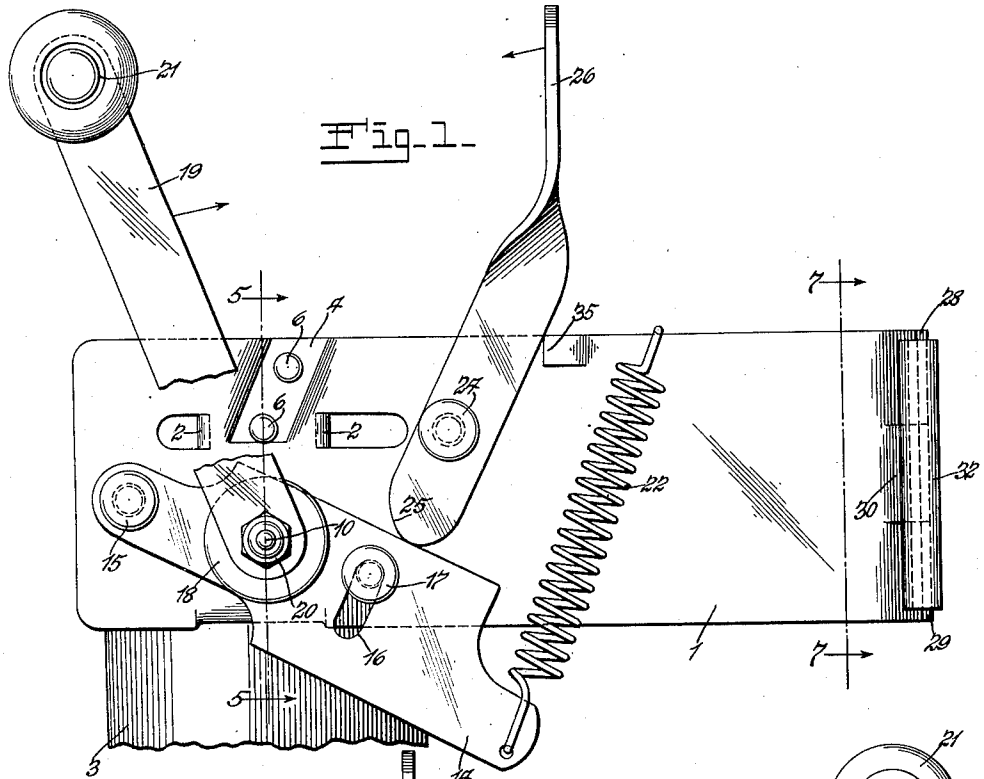
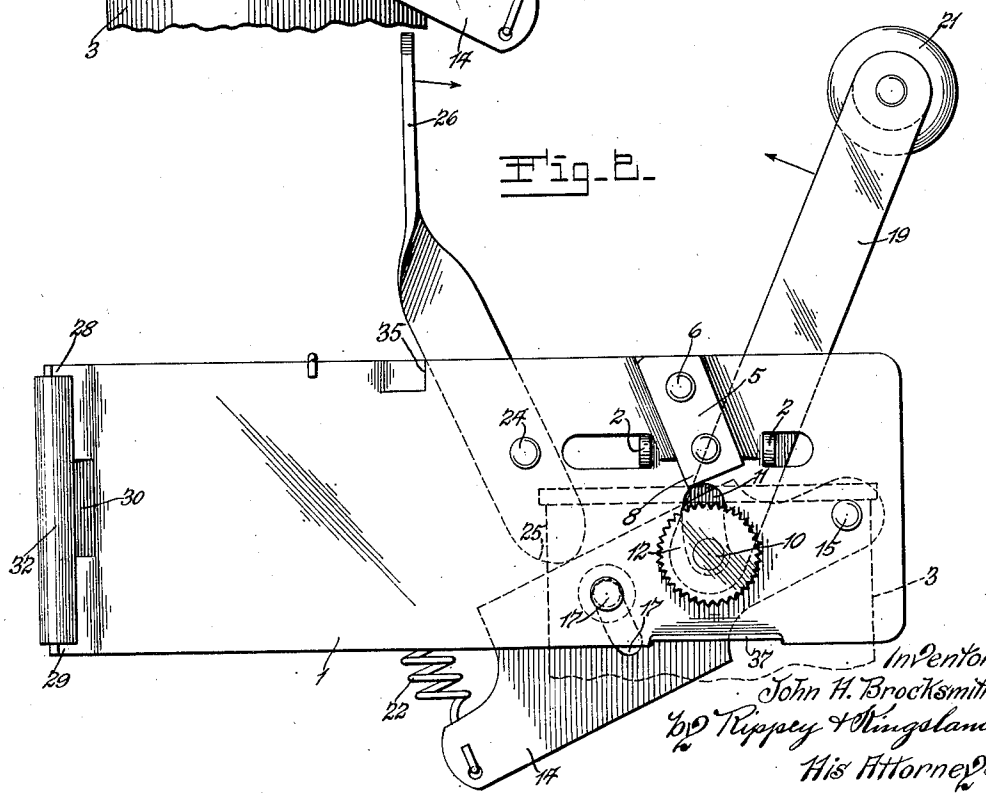


Fig. 2.



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Filed Dec. 26, 1931 2 Sheets-Sheet 2

Fig. 3.

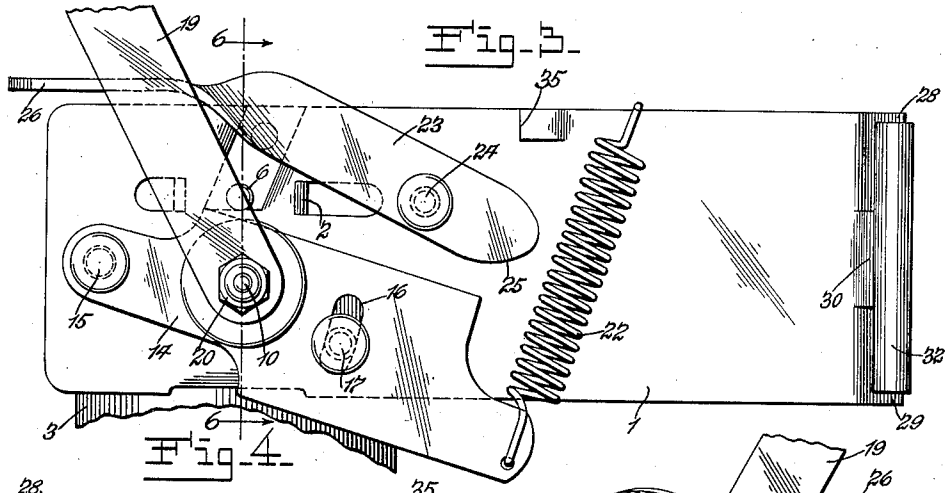


Fig. 4.

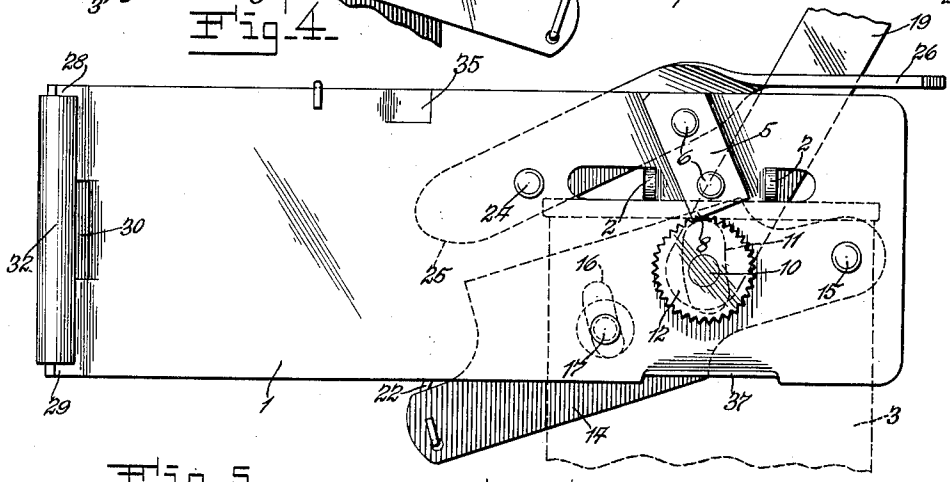


Fig. 5.

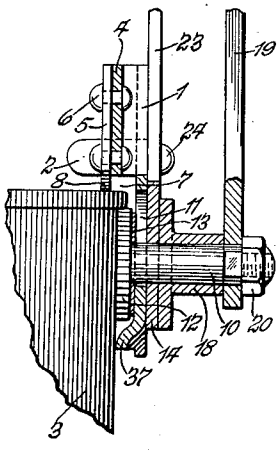


Fig. 6.

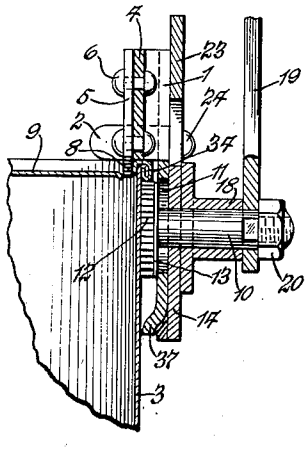
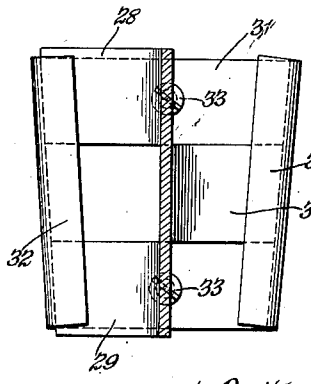


Fig. 7.



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1,889,119

UNITED STATES PATENT OFFICE

JOHN H. BROCKSMITH, OF MEHLVILLE, MISSOURI

CAN OPENER

Application filed December 26, 1931. Serial No. 583,275.

This invention relates to can openers.

Objects of the invention are to provide an improved can opener comprising a rigid support having a cutting member rigid thereon and designed and arranged to cut through the end wall of a can when the can is rotated in the proper manner, in combination with an arm pivotally supported by said member and carrying a feeding roller in position to engage the rim around the end wall of the can, a spring for actuating said arm constantly in a manner to cause the feeding roller to hold the can against and in engagement with said cutting member, and a crank in connection with the axis of said feeding roller and movable therewith for rotating said feeding roller to rotate the can; to provide improved means for operating said arm to permit application and removal of the can; and to provide devices for functioning as an abutment for the end of the can and against which the end of the can operates when the can is operated.

Other objects will appear from the following description, reference being made to the accompanying drawings, in which—

Fig. 1 is an outer side elevation of my improved can opener, a portion of the handle being broken away, and a release device being adjusted to hold the feeding roller in position to permit application and removal of a can.

Fig. 2 is an elevation showing the opposite side of the can opener from that shown in Fig. 1, the parts being in the same position.

Fig. 3 is a side elevation similar to Fig. 1 showing the parts in the positions they occupy when a can is engaged with the feeding roller and the cutting member.

Fig. 4 is a view showing the opposite side from that shown in Fig. 3, the parts being in the same position.

Fig. 5 is a vertical cross sectional view on the line 5—5 of Fig. 1 showing the parts in the position they occupy in Fig. 1.

Fig. 6 is a similar vertical cross sectional view on the line 6—6 of Fig. 3.

Fig. 7 is a vertical cross sectional view on the line 7—7 of Fig. 1.

My improved can opener comprises a bar or plate 1 preferably composed of metal and having near one end a pair of laterally extended ears 2. The lower edges of the ears 2 are in the same horizontal plane and function as abutments against which the margin of the upper end of the can 3 engages when the can is attached to the opener. The ears 2 are spaced apart. The bar or plate 1 is formed with a laterally extended portion 4 extending upwardly from between the ears 2. A cutting member, comprising a blade 5, is rigidly attached to the part 4 by fasteners 6. The lower end of the cutting member projects below the lower end of the part 4 and is spaced from the bar or plate 1, as indicated at 7 (Fig. 5). The lower end of the part 4 is in the same horizontal plane with or above the horizontal plane of the lower edges of the ears 2 in order not to interfere with the positioning and removal of the can 3. The lower corner 8 of the cutting member 5 constitutes a cutting edge that will cut through the upper end wall 9 of the can 3 close to the wall of said can 3 when the can is applied to the device and rotated.

An axle member 10 projects through a slot 11 in the bar or plate 1 and has a feeding roller 12 attached to one end thereof and is below the part 4. A washer 13 is loose on the axle member 10 and is located between the feeding roller 12 and the adjacent surface of the plate or bar 1, thus holding said feeding roller slightly spaced from said plate or bar 1.

An arm 14 has one end mounted on a pivot 15 carried by the outer end of the plate or bar 1. Said arm 14 is formed with a slot 16 through which extends a guide 17 in the form of a pin rigid with the plate or bar 1 and projecting therefrom through said slot 16 and having a head on its outer end preventing outward bending of the arm 14. A sleeve 18 is attached to the arm 14. The axle 10 projects through the arm 14 and through the sleeve 18 and has a crank arm 19 detachably secured to its outer end by a removable and replaceable nut 20. The lever 19 has a handle 21 on its free end whereby said lever may be operated to rotate the axle 10 and thereby the feeding roller 12. A strong spring 22 has one end connected with the end of the arm 14 opposite from the pivot 15 and has its oppo-

site end engaged with the bar or plate 1 and is effective to actuate the free end of the arm 14 upwardly in a direction to move the feeding roller 12 toward the part 4.

A lever 23 is mounted on a pivot 24 carried by the bar or plate 1 and has a cam member 25 on one end and a handle 26 on its opposite end.

The bar or plate 1 is formed with a lateral projection 27 near its lower edge projecting laterally a distance about equal to the thickness of the feeding roller 12.

One end of the bar or plate 1 is split and a number of the split portions 28 and 29 are bent laterally in one direction and at least one other split portion 30 is bent laterally in the opposite direction. The ends of these split portions are inclined and are designed and adapted to be engaged in a downwardly tapered bracket comprising a plate 31 having its two lateral edges turned inwardly to form upwardly diverging engaging portions 32. The arms 28, 29 and 30 are engaged within the guides provided by the engaging portions 32 and the device is thereby supported due to the downwardly converging relationship of the parts 32 and the inclined ends of the arms 28, 29 and 30. Fasteners 33 will hold the bracket in rigid connection with a wall or other support.

This device is used by operating the lever 23 to the position shown in Figs. 1 and 2, causing the cam 25 to push downwardly the end of the arm 14 in opposition to the power of the spring 22. In this position, the feeding roller 12 is some distance below the point 8 of the cutting member, so that the bead 34 formed by the crimped engagement of the end wall 9 with the side wall 3 of the can may be seated upon the upper peripheral portion of said feeding roller. In this position, the cutting corner 8 of the cutting member is on the inside of the bead 34 in position to be forced through the end wall 9 of the can. Then the lever 23 is operated to the position shown in Figs. 3 and 4, permitting the spring 22 to retract. When the spring 22 retracts, it draws upwardly the end of the arm 14 and thereby the feeding roller 12, thus causing the cutting corner 8 to cut through the end wall 9 of the can. This action of the parts moves the can upwardly to a position in which the upper edge of the bead 34 is against the lower edges of the ears 2. The relationship of the cutting member to the bead 34 and the fact that the bead 34 is against the inner surface of the lower end of the cutting member hold the can in proper relationship, so that when the feeding roller 12 is rotated, the can will thereby be rotated, causing the cutting member to cut cleanly through the end wall of the can so that said end wall may be removed. The can will be supported by the can opener until the lever 23 is again operated to the position shown in Figs. 1 and 2 in order to release the bead 34 from its clamping engagement between the parts 2 and 12. Preferably the periphery of the feeding roller 12 is notched or knurled in order to obtain effective gripping engagement with the lower edge of the bead 34 to assure rotation of the can when the feeding roller is rotated.

A stop 35 for the lever 23 is rigid on the support 1 and prevents overthrow of said lever, and holds said lever in the position shown in Figs. 1 and 2. In this position, the can 3 may be applied or removed because the pressure of the feeding roller 12 against the bead 34 is released.

This device may be manufactured and sold at comparatively low cost and obtains all of its intended objects and purposes in an effective and satisfactory way. The construction and arrangement of the parts may be varied within the scope of equivalent limits without departure from the nature and principle of the invention. I do not restrict myself in any unessential particulars, but what I claim and desire to secure by Letters Patent is:—

1. In a can opener, a support, a cutting member rigidly attached to and having its cutting portion spaced laterally from said support, an arm having one end pivoted to the opposite side of said support from said cutting member, an axle rotatively supported by said arm and extending through said support, a feeding roller attached to and rotated by said axle below said cutting member, a spring connecting said arm and said support and actuating said arm in a direction to move said feeding roller in the general direction of said cutting member, and means for rotating said axle and thereby said feeding roller.

2. A can opener comprising a support, a cutting member mounted on said support and having a cutting portion spaced from said support, an arm having one end pivoted to the opposite side of said support from said cutting member, a feeding roller rotatively supported by said arm at the opposite side of said support from said arm, a spring connecting said arm with said support and actuating said arm in a direction to move said feeding roller in the general direction of said cutting member, a device pivoted at a distance from said pivoted end of said arm for moving said arm in opposition to said spring, and means for rotating said feeding roller.

3. A can opener comprising a support having a slot, a cutting member carried by said support, an arm pivoted to said support, an axle rotatively supported by said arm and extending through said slot, a feeding roller attached to said axle for rotation thereby and for engagement with a can bead, guides for the can bead that is engaged by said

feeding roller and cooperating with said feeding roller to hold the can in a position in which said cutting member extends and cuts through the end wall of the can when the can is rotated, a spring engaging and operating said arm to cause said feeding roller to engage and press the can bead against said guides, and means for rotating said axle and thereby said feeding roller.

4. In a can opener, a support, a cutting member carried by and having its cutting portion spaced laterally from said support, an arm having one end pivoted to the opposite side of said support from said cutting member, a feeding roller rotatively supported by said arm in the plane of said space that is between said cutting member and said support and arranged to engage the inner portion of a can bead, a spring actuating said arm to engage said roller with a can bead and hold said bead in said space while said cutting member extends through the end wall of the can, a guide for the can, a device pivoted at a distance from said pivoted end of said arm for moving said arm in opposition to said spring, and means for rotating said cutting roller effectively to rotate the can against said guide.

5. A can opener comprising a support, a cutting member carried by said support, spaced guides for the upper end of a can adjacent to said cutting member, preventing the can from tilting, an arm pivoted to said support, a feeding roller rotatively supported by said arm, and a spring for actuating said arm in a direction to cause said feeding roller to engage one end of the bead of a can and hold the opposite end of said bead against said guide, and cause said cutting member to cut through the end wall of the can.

6. A can opener comprising a support, a cutting member carried by said support, a guide for a can adjacent to said cutting member, an arm pivoted to said support, a feeding roller rotatively supported by said arm, a spring for actuating said arm in a direction to cause said feeding roller to engage one end of the bead of a can and hold the opposite end of said bead against said guide and cause said cutting member to cut through the end wall of the can, means for rotating said roller, and means for operating said arm to release the can from clamping engagement between said guide and said feeding roller.

7. A can opener comprising a support, a cutting member rigid on said support, a guide for a can adjacent to said cutting member, an arm having one end pivoted to said support, an axle rotatively supported by said arm, a feeding roller attached to said axle in position to engage the bead of a can and press the can against said guide and cause said cutting member to cut through the end wall of the can, a spring for moving said arm in one direction, and a lever for moving said arm in the opposite direction in opposition to the power of said spring.

8. A can opener comprising a support, a device carried by said support for cutting through the end wall of a can, rigid means for guiding the can during the cutting operation, a pivotally supported arm, a feeding roller rotatively supported by said arm, a spring for actuating said arm in a direction to cause said feeding roller to engage the can and press the end of the can against said guide and cause said cutting device to cut through the end wall of the can, means for rotating said feeding roller, and means for operating said arm to release the can from clamped engagement between said guide and said feeding roller.

9. A can opener comprising a support having a slot therethrough, a cutting device mounted at one side of said support approximately above said slot, an arm pivoted to the opposite side of said support from said cutting device, an axle rotatively supported by said arm and extending through said slot, a feeding roller attached to said axle approximately below said cutting device, a member attached to said axle adjacent to said arm for rotating said axle, and a spring for operating said arm to move said feeding roller generally toward said cutting device.

10. A can opener comprising a support having a slot therethrough, a cutting device mounted at one side of said support approximately above said slot, an arm pivoted to the opposite side of said support from said cutting device, an axle rotatively supported by said arm and extending through said slot, a feeding roller attached to said axle approximately below said cutting device, a member attached to said axle adjacent to said arm for rotating said axle, a spring for operating said arm to move said feeding roller generally toward said cutting device, and a lever pivoted to said support for moving said arm in opposition to said spring.

11. A can opener comprising a support, spaced guides rigid with said support, a cutting member carried by said support between said guides, an arm pivoted to said support, an axle rotatively supported by said arm, a feeding roller attached to said axle below the space between said guides, a spring for moving said arm in a direction to move said feeding roller toward the space between said guides, and means for rotating said axle and thereby said feeding roller.

12. A can opener comprising a support, spaced guides rigid with said support, a cutting member carried by said support between said guides, an arm pivoted to said support, an axle rotatively supported by said arm, a feeding roller attached to said axle below the space between said guides, a spring for moving said arm in a direction to move said feeding roller toward the space between

said guides, means for rotating said axle and thereby said feeding roller, a lever for moving said arm in opposition to said spring, and a device preventing displacement of said arm with respect to said support.

13. A can opener comprising a support, spaced guides for the upper end of a can rigid with said support, a cutting device extending into the space between said guides, an additional guide for a can below the space between said first guides, an arm pivoted to said support, an axle rotatively supported by said arm, a feeding roller attached to said axle between said second guide and the space between said first guides, a spring for moving said arm in a direction to move said feeding roller away from said second guide and toward the space between said first guides, and means for rotating said axle.

14. A can opener comprising a support, means for holding said support rigidly in an approximately horizontal position, spaced guides projecting from one side of said support, a cutting member mounted on said support and extending into the space between said guides, an additional guide opposite the space between said first guides, a feeding roller rotatively supported between said additional guide and said space between said first guides, a spring for moving said feeding roller toward the space between said first guides, a device for rotating said feeding roller, and means for moving said feeding roller in a direction toward said additional guide.

15. A can opener comprising a rigid support, a pair of spaced guides projecting from said support, a cutting member extending into the space between said guides, a feeding roller, an axle rotatively supporting said feeding roller below the space between said guides, a crank for rotating said axle, an arm in connection with said axle, a spring engaging and actuating said arm in a direction to move said feeding roller toward said space between said guides, and a lever for moving said arm in the opposite direction.

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