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CAN PUNCH HAVING MEANS TO ACCOMMODATE CANS OF VARYING HEIGHT

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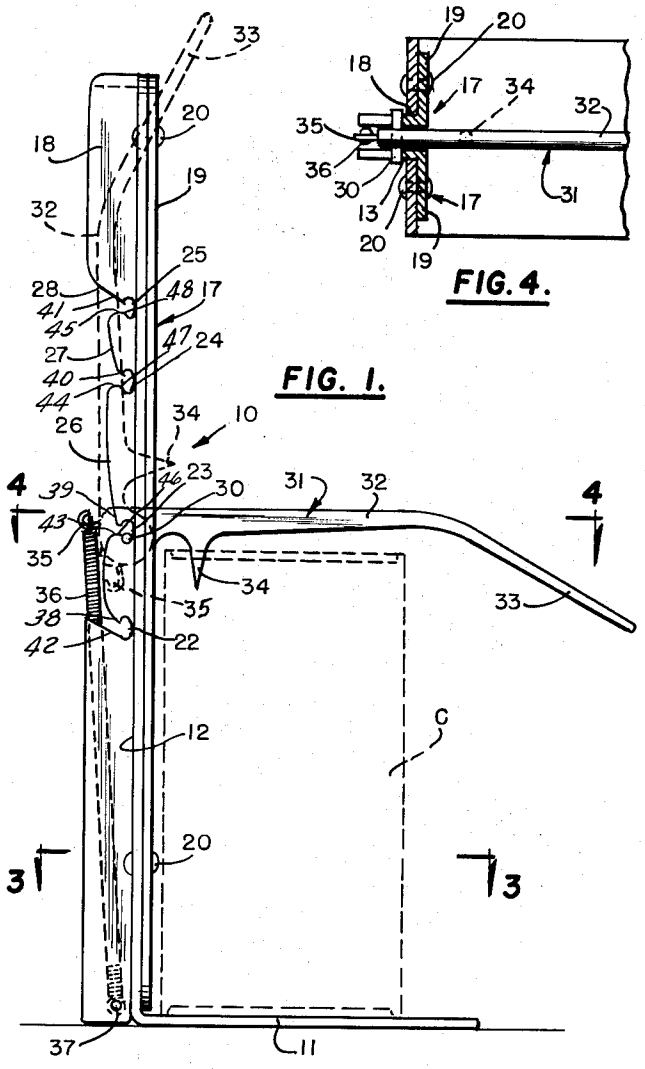


FIG. 1.




FIG. 4.

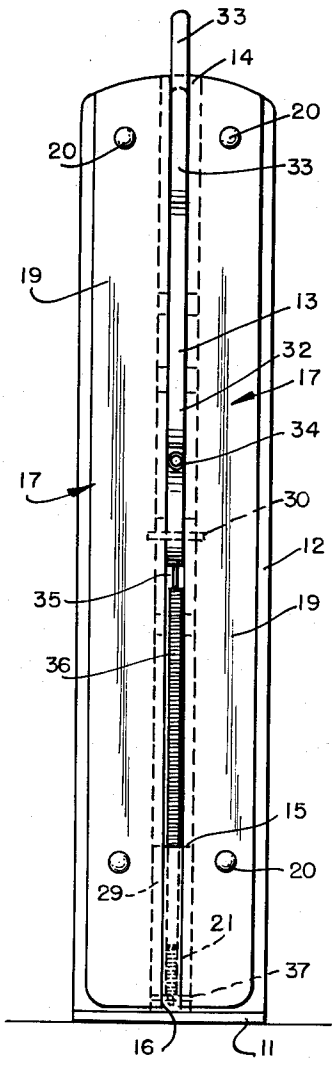


FIG. 2.

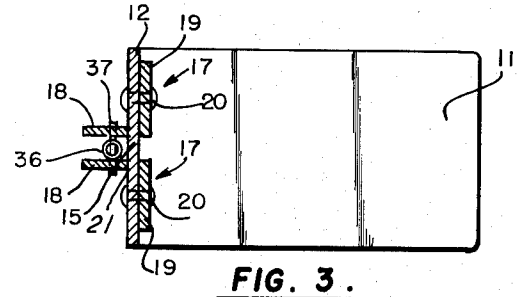


FIG. 3.

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# CAN PUNCH HAVING MEANS TO ACCOMMODATE CANS OF VARYING HEIGHTS

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This invention relates to a can punch, or can opener, and particularly for a can opener for cans containing fluids. One feature of the instant invention is the provision of a can opener having vertically spaced horizontally aligned pairs of notches having guide surfaces positioned above the notches and retaining surfaces positioned below the notches. Another feature of the instant invention is the provision of an elongated slot extending along a vertical base member of a can opener having a closure partition adjacent the lower end thereof. A primary object of this invention is the provision of an improved can punch or opener which may be positioned on a table, shelf, or other supporting surface which will effectively and expeditiously open cans of a varity of heights and sizes as deisred.

An additional object of the invention is the provision of a device of this character which may be readily adjusted with a minimum of effort and difficulty to accommodate differing heights of cans.

A further object of the invention is the provision of a device of this character which is sturdy and durable in construction, reliable and efficient in operation, and relatively simple and inexpensive to manufacture, assemble and utilize.

Other objects will in part be obvious and in part be pointed out as the description of the invention proceeds and shown in the accompanying drawing wherein there is disclosed a preferred embodiment of this inventive concept.

In the drawing:

FIGURE 1 is a side elevational view of one form of can punch embodying features of the instant inventive concept;

FIGURE 2 is a front elevational view of the device of FIGURE 1, as viewed from the right;

FIGURE 3 is a sectional view taken substantially along line 3—3 of FIGURE 1, as viewed in the direction of the arrows; and

FIGURE 4 is a fragmentary sectional view taken substantially along the line 4—4 of FIGURE 1, as viewed in the direction of the arrows.

Similar reference characters refer to similar parts throughout the several views of the drawings.

The can punch opener of the instant invention is generally indicated at **10** and includes a horizontal base plate **11** upon which a can to be opened, C, is adapted to be positioned. The plate **11** may be integral with or attached to a vertical base member **12**, which has an elongated central vertical slot **13** extending substantially the full width thereof, but closed at the top as at **14**. A further bottom closure partition **15** is provided near the lower part of the device, and the slot is continued as at **16** adjacent the bottom of vertical member **12**.

A pair of oppositely disposed, vertically positioned angle iron members generally indicated at **17** are provided, each including a rearwardly extending flange **18** which extends outwardly through the slot **13**, and a substantially right angularly disposed transverse flange **19**, the transverse flanges **19** being secured to the vertical base member **12** on opposite sides of slot **13** as by means of rivets **20** or the like. The lower portions of flanges **18** are slotted as indicated at **21** to permit the same to extend downwardly over the partition **15**, so that the angle members **17** extend substantially the full length of the vertical base member **12**.



An intermediate portion of each rearwardly extending flange **18** is provided with a series of notches **22**, **23**, **24**, and **25** each of which is bulbous in shape, and is provided with an arcuate inclined guide member or portion **26**, **27**, and **28** cut or formed from the flange **18**, which serves to direct a transverse pin **30** into an appropriate oppositely aligned pair of notches. Positioned above each of notches **22**, **23**, **24** and **25** is an initial surface **38**, **39**, **40** and **41** which describes a first acute angle with respect to the plane of vertical base member **12**. Each of surfaces **38**, **39**, **40** and **41** merge with an arcuate cut away portion of flange **18** to provide overall arcuately inclined guide portions **25'**, **26**, **27** and **28**. Positioned below each of notches **22**, **23**, **24** and **25** is a retaining surface **42**, **43**, **44** and **45**, each of which provide a portion making an angle with respect to the plane of vertical base member **12**, this second angle being greater than the first acute angle and being not greater than 90°. As is apparent from FIGURE 1, the overall arcuate guide portion **25'**, **26**, **27** and **28** above each of notches **22**, **23**, **24** and **25** provide a convenient means for guiding transverse pin **30** into the respective notch. The retaining surfaces **42**, **43**, **44** and **45** below each of the respective notches provide a means for facilitating the retention of transverse pin **30** in each notch. This retention function is enhanced by the presentation of a bulge **46**, **47** and **48** associated with notches **23**, **24** and **25** and by the difference in angles between the guide portions **38**, **39**, **40** and **41** and the retaining surfaces **42**, **43**, **44** and **45** as well as the magnitude of the angle of retaining surfaces **42**, **43**, **44** and **45**. The transverse pin **30** extends through the ends of a punch member generally indicated at **31** which includes a handle portion **32** with an inclined extremity **33** and is provided with a depending punch element **34** adjacent the pin **30**.

A hook **35** extends from the end of member **31** beyond pin **30**, and is connected to one end of the tension spring **36**, the other end of which is connected to a transverse pin **37** which extends between the lowermost portion of rearwardly extending flanges **18**.

From the foregoing, the use and operation of the device should now be readily understandable. The pin **30** is positioned in a selected pair of aligned notches **22–25** and the handle **32** is maintained in upright position, as shown in dotted lines in FIGURE 1, by the tension of spring **36**. A can C is then placed on the base platform, the height of pin **30** being selected in accordance with the height of the can to be punched, and pressure exerted on the end of handle member **33**. This causes the punch **34** to perforate the top of the can, whereupon release of the handle member **31** will permit the spring **36** to return the parts from the full line or puncturing position of FIGURE 1 to the dotted line or retracted position. The extending portion **14** at the top of slot **13** precludes passage of the handle **33** beyond vertical position, so that the same is at all times ready for reuse.

From the foregoing it will be now seen that there is herein provided an improved can punch which accomplishes all the objects of this invention, and others, including many advantages of great practical utility and commercial importance.

As many embodiments may be made of this inventive concept, and as many modifications may be made in the embodiment hereinbefore shown and described, it is to be understood that all matter herein is to be interpreted merely as illustrative and not in a limiting sense.

I claim:

1. A can punch comprising a base including a forwardly extending horizontal plate adapted to receive the base of a can to be punched and a vertical base member having an elongated slot therein, means on said vertical base member forming rearwardly extending flange projections on each side of said slot, a plurality of spaced horizontally aligned notches in each rearwardly extending flange, a punch member including an elongated handle, a transverse pin at the inner end of said handle, a depending punch element carried by said handle at a point adjacent said pin, said pin being selectively engageable in one pair of said aligned notches in accordance with the can to be punched, and spring means connected with the inner end of said handle and a pin extending between the lower portion of said rearwardly extending flanges, and a closure partition which terminates short of the bottom of said rearwardly extending flanges, and said rearwardly extending flanges being slotted vertically from the bottom to permit the same to extend over said closure member to the bottom of said vertical plate.

2. The structure of claim 1 wherein said rearwardly extending flanges are cut at a first acute angle with respect to said vertical base member to form arcuate guide surfaces above at least one of said notches and a second greater acute angle with respect to said vertical base member to form a retaining guide surface below said one of said notches to direct and retain said transverse pin in a selected pair of aligned notches.

3. A can punch comprising a base including a forwardly extending horizontal plate adapted to receive the base of the can to be punched and a vertical base member having an elongated slot therein, means on said vertical base member forming rearwardly extending flange projections on each side of said slot, a plurality of vertically spaced pairs of horizontally aligned notches in each rearwardly extending flange, said rearwardly extending flanges being cut at a first acute angle with respect to said vertical base member to form an arcuate guide surface above at least one of said pair of notches and to provide a retaining surface having a portion thereof disposed at a second greater angle not greater than about 90° with respect to said vertical base member to form a retaining guide surface below said one of said pair of notches, a punch member including an elongated handle, a transverse pin at the inner end of said handle, a depending punch element carried by said handle at a point adjacent said pin, said pin being selectively engageable in one pair of aligned notches in accordance with the height of the can to be punched, and spring means connected between the inner end of said handle and a pin extending between the lower portion of said forwardly extending flanges.

4. The structure of claim 3 wherein the angle said arcuate guide surface becomes increasing acute remote from the associated notch.




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