

July 14, 1953

L. A. KANDLE

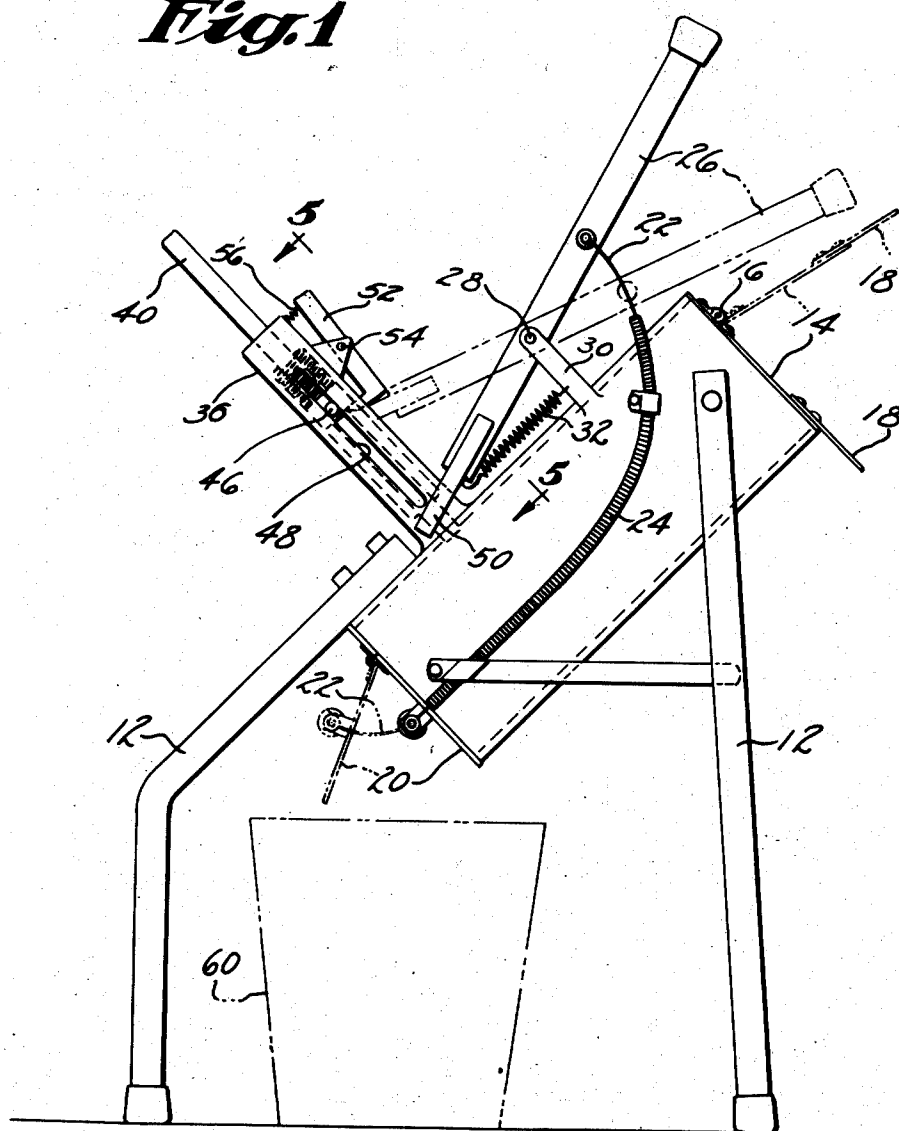
2,645,428

BOTTLE BREAKING APPARATUS

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2 Sheets-Sheet 1

Fig. 1



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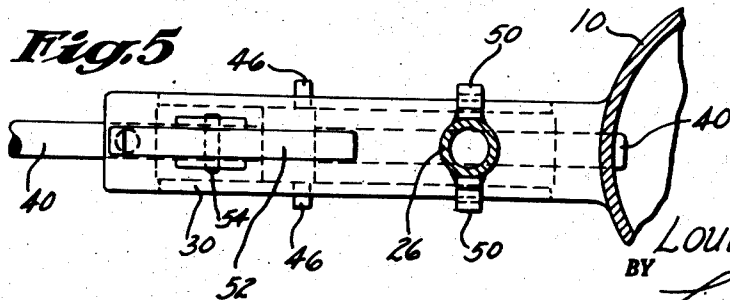
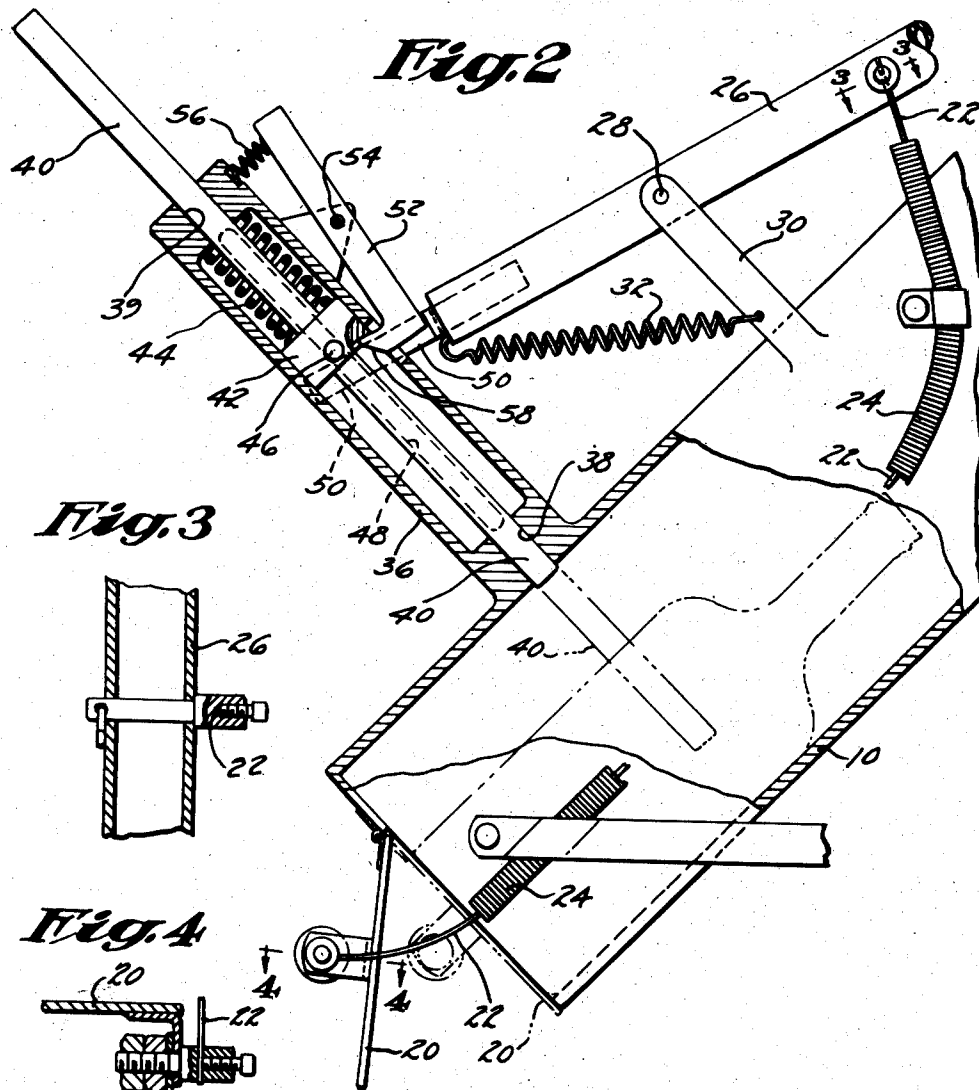
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BOTTLE BREAKING APPARATUS

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5 Claims. (Cl. 241—99)

1

My invention relates to a bottle breaking apparatus of the type disclosed in Anderson Patent 2,115,406, in Legg Patent 2,137,191, in Ospalewicz Patent 2,142,915, and in Fritz Patent 2,168,026.

The object of the invention is to produce an improved bottle breaking apparatus of the type set forth.

The nature of the invention will be understood from the following specification and the accompanying drawings in which:

Fig. 1 is a side elevational view of a bottle breaking apparatus embodying the invention.

Fig. 2 is an enlarged, fragmentary vertical sectional view of the same.

Fig. 3 is an enlarged sectional view on line 3—3 on Fig. 2.

Fig. 4 is a sectional view on line 4—4 on Fig. 2.

Fig. 5 is an enlarged view partly in horizontal section and partly in top plan, looking in the direction of line 5—5 on Fig. 1.

The apparatus includes an open-ended, bottle-receiving receptacle 10 which is suitably mounted on three or more legs 12 only two of which are shown. The upper end of the receptacle 10 is closed by a door 14 which is hinged at 16 and which is provided with an extension handle 18. Because of the position of the receptacle 10, the door 14 can move to closing position by gravity. But, if desired, it may be biased to closing position by a spring. The lower open end of the receptacle is provided with a door 20 which is moved to closing and non-closing position by means of a cable 22, enclosed in a spring sheath 24 and connected to operating handle or lever 26. The handle 26 is pivoted at 28 to a lug 30 carried by the receptacle 10 and is biased to the position of Fig. 1, in which it moves lower door 20 to its closing position by a spring 32 which is connected to lug 30 and to the lower end of handle 2. The receptacle 10 is provided, at a suitable point above the bottom thereof, with a sleeve 36 which is provided at either end thereof with lower and upper passages 38 and 39 for guiding the bottle breaking plunger 40. The plunger 40 is provided with a fixed collar 42 which forms a stop for one end of a compression spring 44 the other end of which abuts the shoulder which defines upper passage 39. The collar 42 is provided with opposite pins 46 which project laterally through slots 48 formed in opposite sides of sleeve 36. See Fig. 1. The pins 46 are adapted to be engaged by the arms 50 of a bail or yoke carried by the lower end of operating handle or lever 26.

Mounted on the outer end of sleeve 36 is a trigger 52 which is fulcrumed at 54. The inner

2

end of the trigger is bent downwardly and its outer surface is slanted as at 58. See Fig. 2. The outer end of the trigger 52 is biased in clockwise direction by spring 56.

The operation is as follows:

The lever 26 is moved, against the tension of spring 32, from the solid to the broken line position of Fig. 1. This causes the yoke 50, which engages pins 46 to move plunger 40 and collar 42 outwardly and to compress spring 44. Because the hooked inner end of trigger 52 is slanted, collar 42 can move past the hooked end of the trigger. But, under the urging of spring 56, the inner hooked end of trigger 52 engages the inner edge of the collar 42 and thus retains the plunger 40 in its outer, spring loaded position. It will be noted that when lever 26 is moved to the position of Fig. 2, the lower door 20 is moved, by means of cable 22, to the open position shown in solid lines in Fig. 2. After the plunger has been spring loaded as shown in Fig. 2, the lever 26 is released and is returned, by spring 32, to the position of Fig. 1 in which the lower door 20 is closed. The upper door is now open, a bottle to be broken is dropped into receptacle 10 and the upper door is closed. The operator now presses down on the outer end of the trigger so as to disengage its hooked inner end from collar 42 to release spring 44 which now drives plunger 40 against the bottle as shown in broken lines in Fig. 2. When lever 26 is again moved in spring-loading direction, the lower door is opened and the broken glass drops into a waste receptacle 60.

The size of the receptacle 10 and its inclination relative to the axis of plunger 40 are such that, when the plunger is released and hits the bottle, there will be no tendency for the bottle to move upwardly. This is an added safety measure in case for some reason the bottle is not smashed. In practice, the force of the impact is such as to smash any bottle likely to be used for alcoholic drinks or other substances the bottles of which are ordered by law to be broken as soon as they become empty.

What I claim is:

1. A bottle breaking apparatus including a receptacle having an upper open end and a lower open end, a first door for closing said upper end, a second door for closing said lower end, a sleeve communicating with the interior of the receptacle through a side thereof, a plunger movable in said sleeve, a spring carried by said sleeve, and biasing said plunger to an inner position in which it projects into said receptacle, an actuating lever, means for selectively engaging said

3

lever with, and disengaging it from, said plunger, said lever being movable to a first position in which it moves said plunger to an outer position in which said plunger is withdrawn from said receptacle and said spring is compressed, and to a second position in which it is disengaged from said plunger, and a trigger carried by said sleeve and adapted to engage, and retain, said plunger in its outer position against the action of said spring, said trigger being disengageable from said plunger at will to permit said spring to ram said plunger against a bottle placed in said receptacle, the distance of the lower end of said receptacle to the point at which the sleeve opens into the receptacle being less than the height of a bottle to be broken in said receptacle.

2. The structure recited in claim 1 in which said lever is operatively connected to said second door in such a manner that, when said lever is moved in a direction to compress the spring, it opens said second door, and vice-versa.

3. The structure recited in claim 2 and means for automatically returning said lever to its second position automatically to close said second door.

4

4. The structure recited in claim 1 in which said trigger automatically engages said plunger when the latter is moved to its outer position.

5. The structure recited in claim 1 in which the axis of said receptacle forms an acute angle with respect to the vertical and in which the axis of said plunger is substantially normal to the axis of the receptacle.

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