Aug. 30, 1938. J. M. WRIGHT 2,128,630

PRESS FOR FLATTENING TIN CANS

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Fig. 1.

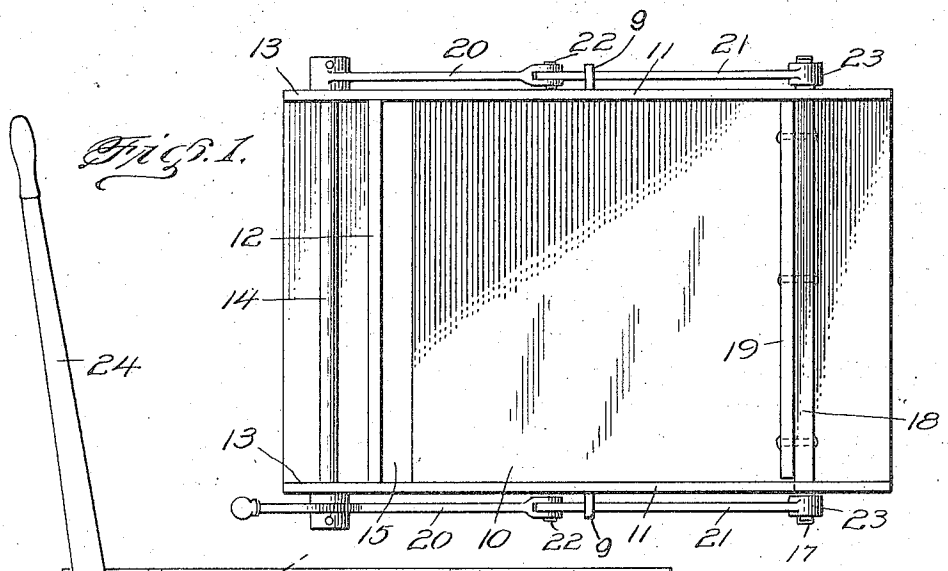


Fig. 2.

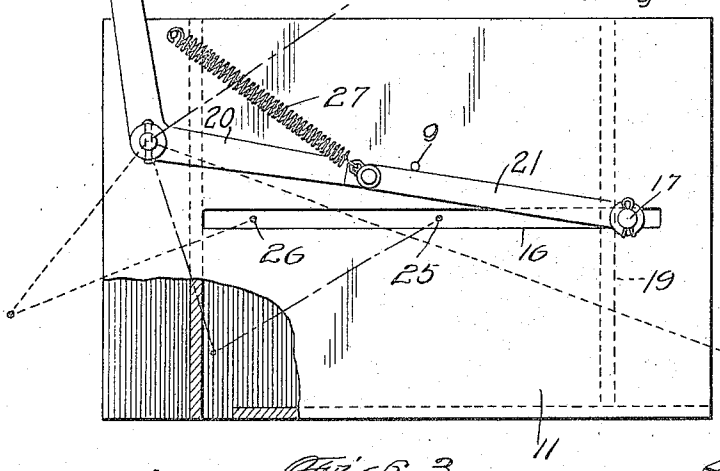


Fig. 4.

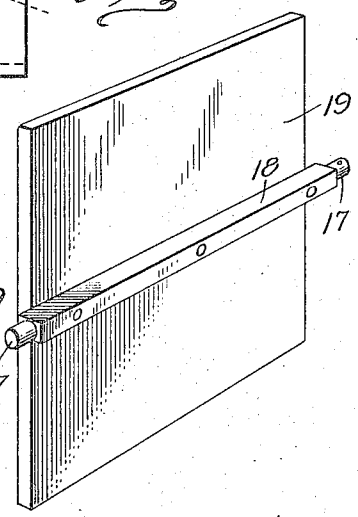
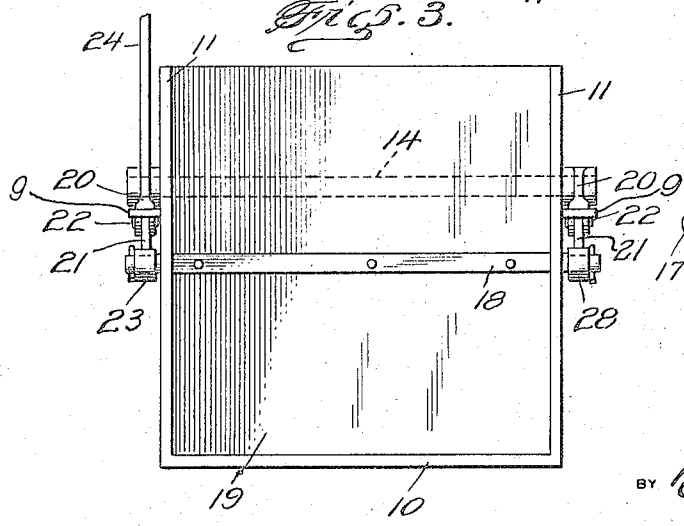


Fig. 3.



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Fig. 5.

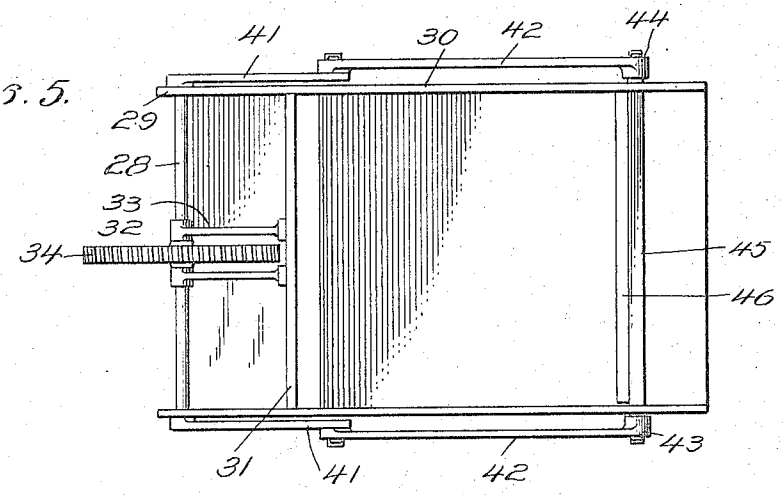


Fig. 6.

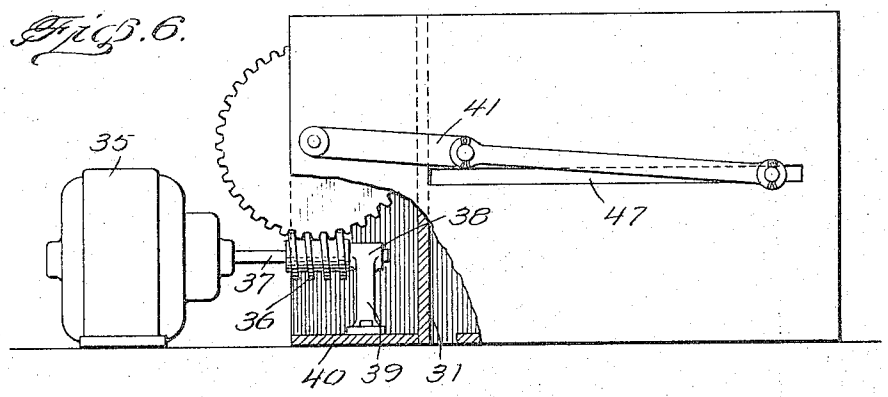
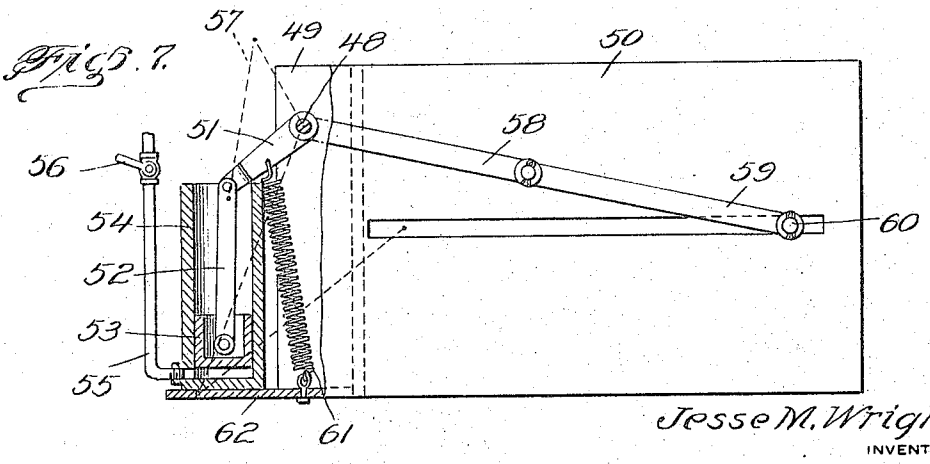


Fig. 7.



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UNITED STATES PATENT OFFICE

2,128,630

PRESS FOR FLATTENING TIN CANS

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Application June 14, 1937, Serial No. 148,194

5 Claims. (Cl. 153—10)

This invention relates to a press for flattening tin cans.

Tin cans, in which fruits, vegetables, meats and the like are packed, are bulky when empty and tend to accumulate in unsightly piles. With this objection in mind the object of the present invention is to provide a press for crushing and deforming tin cans into substantially flat condition so that a large number of cans so pressed flat may be stored in a small space.

A further object of the invention is to provide a device of this character which will be formed of a few strong simple and durable parts, which will be inexpensive to manufacture and which will not easily get out of order.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings forming part of this specification,

Figure 1 is a plan view of a press constructed in accordance with the invention.

Figure 2 is a side elevation of the press with portions broken away and showing diagrammatically two positions of the press plate.

Figure 3 is a front end elevation of the press.

Figure 4 is a detail perspective view of the press plate.

Figure 5 is a plan view of a modified form of press which may be power operated by an electric motor.

Figure 6 is a side elevation of the press shown in Figure 5 but showing the motor and pinion drive.

Figure 7 is a side elevation of a modified form of the invention, with parts broken away, in which compressed air is employed as a power source.

Referring now to the drawings in which like characters of reference designate similar parts in the various views, the can flattening machine is shown to comprise a metal box consisting of a bottom 10, side walls 11, and a rear end wall 12. The side walls are extended beyond the rear end wall and mounted in the extensions 13 is a shaft 14. The bottom of the box terminates short of the rear end wall 12 to provide a discharge slot 15 for the flattened cans.

The side walls 11 are provided with longitudinal slots 16, best shown in Figure 2, and slidably mounted in the slots are the ends 17 of a bar 18 which is rigidly secured to a press plate 19, as best shown in Figure 4.

Crank arms 20 are fixed to the ends of the shaft 14 and links 21 are pivoted to the ends of the crank arms as shown at 22 and are provided with collars 23 which are swivelly mounted on the cylindrical ends 17 of the bar 18.

A lever 24 is fixed at one end to the shaft 14 and provides means by which the shaft may be rocked when the lever is pushed forwardly. When the lever is operated the crank arms 14 on the shaft pull the press plate rearwardly, two positions of the press plate being indicated diagrammatically at 25 and 26 in Figure 2. Movement of the press plate flattens the empty tin cans against the rear end wall 12 and when in this flattened condition the cans may readily drop through the discharge slot 15.

The lever is supported normally in an upright position and the press plate is normally held in its most forward position by springs 27 that are secured to the side walls 11 and to the pivot pins 22 of the crank arms and the links 21. Stop pins 9 prevent the springs from producing upward movement of the inner ends of the arms 20 and the links 21.

In Figure 5 there is shown a modified form of the invention in which the shaft 28 is journaled in the extensions 29 of the side walls 30 of the box and is supported upon the rear end wall 31 of the box by bearings 32 mounted on the ends of brackets 33 which are secured to the rear end wall. A worm gear 34 is fixed to the shaft for rotating the shaft through the instrumentality of an electric motor 35 having a worm 36 on its shaft 37 to rotate the bevel gear at reduced speed. The motor shaft is supported in a bearing 38 that is carried by a bracket 39 which is secured to a base 40 that connects the side wall extensions 29 in rear of the rear end wall 31.

As previously described the shaft is equipped with crank arms 41 which are pivotally connected to links 42 the outer ends of which are provided with bearings 43 to receive the projecting ends 44 of a bar 45 which carries the press plate 46. The projecting ends of the bar are slidably mounted in slots 47 formed longitudinally in the side walls of the box.

In the modified form of the invention shown in Figure 7 the shaft 48 is journaled in the side wall extension 49 of the box 50 and is provided intermediate its ends with a crank 51. The crank is connected to the upper end of a piston rod 52, the piston 53 of which works in an air cylinder 54 to which compressed air is admitted

from an air pipe 55. When air is admitted underneath the piston by opening the controlling valve 56 in the air pipe the piston will be moved upwardly and rock the crank arm to the dotted line position shown at 57 to move the press plate rearwardly through the medium of crank arms 58 on the shaft 46 and links 59 connected to the crank arms and to the projecting ends 60 of the bar carried by the plate, as previously described. A spring 61 is connected to the crank 51 and to the base plate 62 which supports the air cylinder between the side wall extensions 49. The spring returns the piston and the shaft as well as the press plate to initial position after each actuation.

From the above description it is thought that the construction and operation of the invention will be fully understood without further explanation.

What is claimed is:

1. A press for flattening tin cans comprising a box having a bottom, side walls, and a rear wall, the side walls being extended beyond the rear wall, the bottom of the box terminating short of the rear wall and providing a discharge slot for flattened cans, a shaft journaled in the extensions of the side walls, the side walls having longitudinal slots therein, a presser plate having guide members on the sides fitting in said slots, links carried by the guide members, crank arms carried by the shaft and connected to the links, and means for rocking the shaft to rock the crank arms and through the medium of the links move the presser plate into close proximity of the rear wall to crush and flatten out cans against the rear wall to be discharged through the slot upon retrograde movement of the presser plate.

2. A press for flattening tin cans comprising a box having a bottom, side walls, and a rear wall, the side walls being extended beyond the rear wall, a shaft mounted in the extensions of the side walls in rear of the rear wall, the bottom of the box terminating short of the rear wall to provide a discharge slot for flattened cans, the side walls being provided with longitudinal slots, a bar having cylindrical ends slidably mounted in said slots, a presser plate secured to the bar, crank arms fixed to the ends of the shaft, links pivoted to the ends of the crank arms and provided with collars swivelly mounted upon the cylindrical ends of the bar, and a hand lever fixed at one end to the shaft for rocking the shaft to move the crank arms and links to pull the presser plate rearwardly toward and against the rear wall for crushing and flattening tin cans against the rear wall.

3. A press for flattening tin cans comprising a box having a bottom, side walls, and a rear wall, the side walls being extended beyond the rear wall, the bottom of the box terminating short of the rear wall and providing a discharge slot for flattened cans, a shaft journaled in the extensions of the side walls, the side walls having longitudinal slots therein, a presser plate having guide members on the sides fitting in said slots, links carried by the guide members, crank arms carried by the shaft and connected to the links, a gear fixed to the shaft for rotating the shaft to rock the crank arms and through the medium of the links move the presser plate into close proximity of the rear wall to crush and flatten out cans against the rear wall to be discharged through the slot upon retrograde movement of the presser plate, an electric motor, and a pinion on the motor shaft meshing with the gear for driving the gear.

4. A press for flattening tin cans comprising a box having a bottom, side walls, and a rear wall, the side walls being extended beyond the rear wall, the bottom of the box terminating short of the rear wall and providing a discharge slot for flattened cans, a shaft journaled in the extensions of the side walls, the side walls having longitudinal slots therein, a presser plate having guide members on the sides fitting in said slots, links carried by the guide members, crank arms carried by the shaft and connected to the links, means for rocking the shaft to rock the crank arms and through the medium of the links move the presser plate into close proximity of the rear wall to crush and flatten out cans against the rear wall to be discharged through the slot upon retrograde movement of the presser plate, and a spring secured to one of the side walls and to the pivotal connection between the links and the crank arms for returning the parts to initial position after each actuation.

5. A press for flattening tin cans comprising a box having a bottom, side walls, and a rear wall extended beyond the side walls, the bottom of the box terminating short of the rear wall and providing a discharge slot for flattened cans, a shaft journaled in the extensions of the side walls, the side walls having longitudinal slots therein, a presser plate having guide members on the sides fitting in said slots, links carried by the guide members, crank arms carried by the shaft and connected to the links, a second crank arm on the shaft, a piston connected to said second crank arm, a piston cylinder for the piston into which compressed air may be admitted to move the piston and rock said second crank arm for turning the shaft to move the links and the first named crank arms to advance the presser plate against the rear wall for crushing cans against the rear wall, and a spring connected to said second crank arm and to a part of said box for returning the parts to initial position after each actuation.

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