March 13, 1956 J. C. JENNINGS 2,737,995

OIL CAN CRUSHER

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FIG. 1

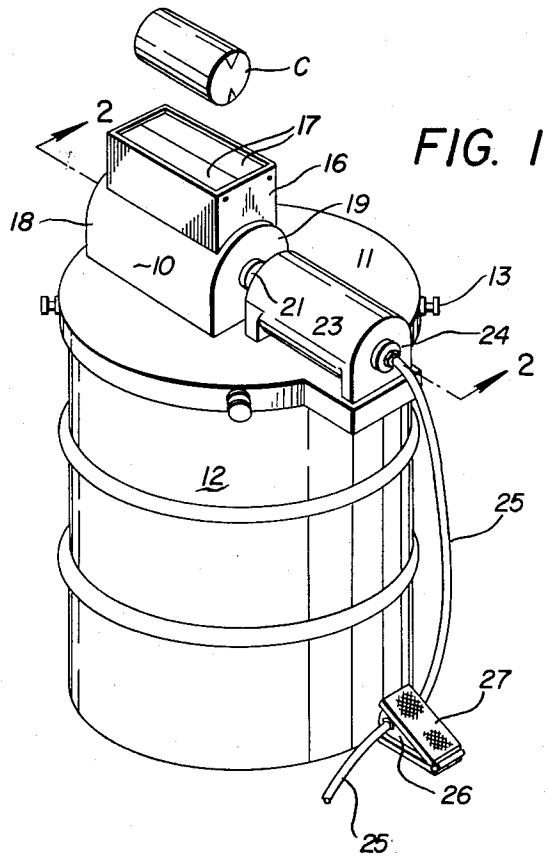


FIG. 3

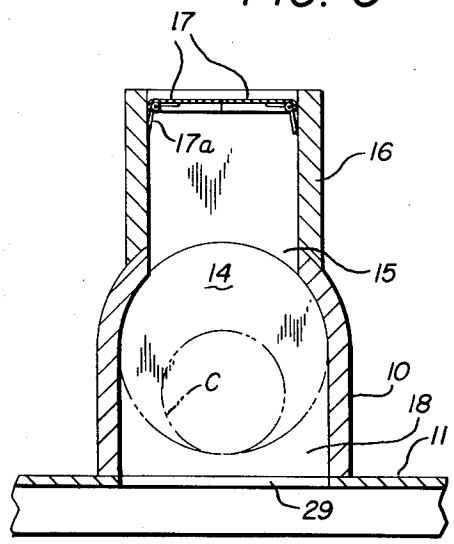
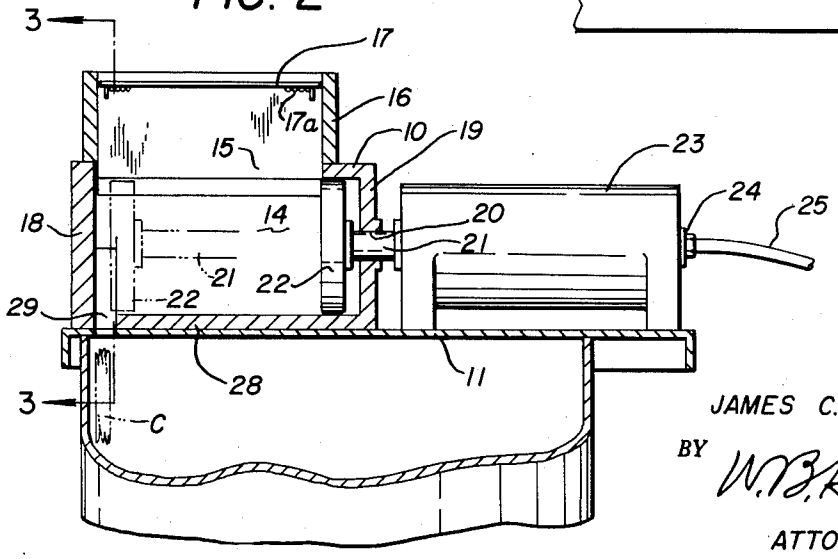


FIG. 2



INVENTOR.
JAMES C. JENNINGS

BY W. B. Hayman

ATTORNEY

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OIL CAN CRUSHER

James C. Jennings, Girard, Ohio

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4 Claims. (Cl. 153—10.5)

This invention relates to a device for crushing emptied oil cans of the type used for packaging motor oils and the like.

The principal object of the invention is the provision of an oil can crusher which may be conveniently installed on a receptacle such as an empty oil drum and supported thereby and will act to quickly and effortlessly crush emptied oil cans and drop them into the container.

A further object of the invention is the provision of an oil can crusher including a hopper having closure means enclosing the oil can during a crushing operation.

A still further object of the invention is the provision of an oil can crusher using a simple, easily operated piston and cylinder as means for imparting crushing action to an oil can.

A still further object of the invention is the provision of a simple and efficient oil can crusher that may be produced at low cost and which will operate effectively for its intended purpose.

The oil can crusher disclosed herein comprises an improvement in the art relating to such devices and more particularly it comprises a simple and effective solution to the problem of storing emptied oil cans prior to the disposal thereof.

It is generally known that a majority of the motor oil sold in retail establishments such as service stations and the like is packaged in one and five quart metal cans which are sealed at the refinery and opened at the time of purchase. Such cans, upon being emptied, are of no further value and present a storage and disposal problem.

By utilizing the device of the present invention the cans may be readily compressed to a small fraction of their normal bulk and stored in a metal drum which serves as a base for the crushing device. It has been determined that 600 one quart size empty oil cans, upon being crushed, can be contained in a standard 50 gallon oil drum.

It will thus be seen that the storage and disposal problem of the empty oil cans is considerably alleviated by the use of the device disclosed herein.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being the intention to cover all changes and modifications of the example of the invention herein chosen for purposes of the disclosure, which do not constitute departures from the spirit and scope of the invention.

The invention is illustrated in the accompanying drawing, wherein:

Figure 1 is a perspective view of the oil can crusher mounted on an oil drum.

Figure 2 is a vertical section taken on line 2—2 of Figure 1.

Figure 3 is a vertical section taken on line 3—3 of Figure 2.

By referring to the drawings and Figure 1 in particular it will be seen that the oil can crusher comprises a housing **10** mounted on a flanged disc **11** which in turn is adapted to register over and be carried on the upper end of an open top oil drum **12**. Fasteners **13** are positioned circumferentially of the flanged disc **11** and adapted to secure the same to the oil drum.

The housing **10** defines a chamber **14**, as best seen in Figures 2 and 3 of the drawings. Access to the chamber **14** is had through an opening **15** in the upper longitudinal portion of the housing **10**. The opening **15** is of a size sufficient to permit a five quart oil can to be positioned therethrough.

A box-like hopper **16** is positioned on the housing **10** in registry with the opening **15** and is open at its bottom and in communication with the chamber **14** in the housing **10**. The top of the hopper **16** is provided with hinged closures **17** which are normally held in closed horizontal position by springs **17A** (as shown in Figures 2 and 3 of the drawings). The hinged closures **17** are so arranged that an oil can may be positioned thereon and pushed downwardly therethrough into the hopper **16** and chamber **14** whereupon the hinged closures **17** will re-close.

In Figure 1 of the drawings an empty oil can is illustrated and indicated by the letter C and a dotted line representation of the same is illustrated in Figure 3 of the drawings in the chamber **14** and prior to a crushing operation. In Figure 2 of the drawings the crushed oil can C is again illustrated as the same drops from the chamber **14** into the oil drum **12**.

The housing **10** includes a heavy rear wall **18** and an opposite end wall **19** which is apertured as at **20** to receive a piston rod **21** which is slidably engaged in the opening **20**. Still referring to Figures 2 and 3 it will be seen that the lower portions of the side walls of the housing **10** are vertically disposed while the upper portions curve inwardly defining oppositely disposed arcuate guides for the piston **22**. The bottom of the housing **10** is substantially level with the lowermost part of the piston **22** and with the arcuate portions of the side walls forms a three element guide and support for the piston **22** to prevent deflection of the piston **22** and the piston rod **21**. A piston **22** is mounted on the piston rod **21** in the chamber **14** for reciprocal movement therein as occasioned by an air cylinder **23** into which the other end of the piston rod **21** extends.

The air cylinder **23** includes a secondary piston (not shown) secured to the piston rod **21** and a spring for normally urging the secondary piston and the piston rod **21** and piston **22** to retracted position—that is, to the right as shown in Figures 1 and 2 of the drawings. The air cylinder **23** is provided with an air inlet opening **24** and a tube **25** is in communication therewith and extends by way of a foot operated valve **26** to a source of compressed air such as an air compressor in a service station. The foot operated valve **26** is normally spring urged to closed position and movement of a pedal **27** thereof downwardly is required to open the valve **26** and permit compressed air to flow through the tubing **25** into the air cylinder **23** where it will move the secondary piston on the piston rod **21** outwardly of the air cylinder **23** and thus cause the piston **22** to move longitudinally in the chamber **14** and crush the oil can C previously positioned therein. A dotted line in Figure 2 of the drawing illustrates the position of the piston **22** in extended relation to the air cylinder **23**.

It will be observed that the bottom **28** of the housing **10** has an opening **29** therein adjacent the end wall **18** so that the crushed can C will drop therethrough when the piston **22** begins its return stroke in the chamber **14**.

It will occur to those skilled in the art that a hydraulic cylinder may be substituted for the air cylinder if de-

sired and a suitable source of hydraulic fluid pressure placed in connection therewith for actuating the device without departing from the spirit of the invention.

It will also be observed that the device may be installed on a supporting base other than the oil drum **12** as illustrated and described herein, and, in any event, the can crushing device will operate rapidly and effectively for its intended purpose.

It will thus be seen that the oil can crusher disclosed herein meets the several objects of the invention.

Having thus described my invention, what I claim is:

1. An oil can crusher comprising a housing of greater length than width, the bottom of which is flat and the sides of which curve inwardly thereabove, said housings having an access opening in the entire top thereof and a discharge opening in one end of the bottom thereof and a piston movable longitudinally thereof in peripheral engagement with said bottom and inwardly curving side walls, means exteriorly of said housing for moving said piston and said means comprising an air cylinder and piston rod.

2. An oil can crusher comprising a housing of greater length than width, the bottom of which is flat and the sides of which extend vertically with their upper portions curving inwardly thereabove, said housing having an access opening longitudinally in the top thereof and a narrow slot-like discharge opening in one end of the bottom thereof and a piston movable longitudinally therein in peripheral engagement with said bottom and inwardly curving side walls, means exteriorly of said housing for moving said piston and said means comprising a piston and cylinder assembly, a rectangular open bottom hopper on said housing and extending thereabove.

3. An oil can crusher for positioning on an empty open top oil drum and comprising a flanged disc for registry on the upper open top of said oil drum, a housing of greater length and width, the bottom of which is flat and sides of which curve inwardly thereabove secured to the upper surface of said disc, said housing and said disc having registering narrow slot-like openings therein, the opening in said housing being in one end thereof, a hopper positioned on the inwardly curved side walls of said housings, the bottom of said hopper communicating with the interior of said housing through a longitudinally extending opening defining the top of said housing, a piston reciprocally mounted in said housing in peripheral engagement with said bottom and inwardly curved side walls and means on said disc adjacent said housing for imparting movement to said piston.

4. The oil can crusher as set forth in claim 3 wherein the means for imparting movement to the piston comprises an air cylinder, a compressed air source and valve means controlling the same.

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