

Nov. 25, 1952

H. J. SMITH

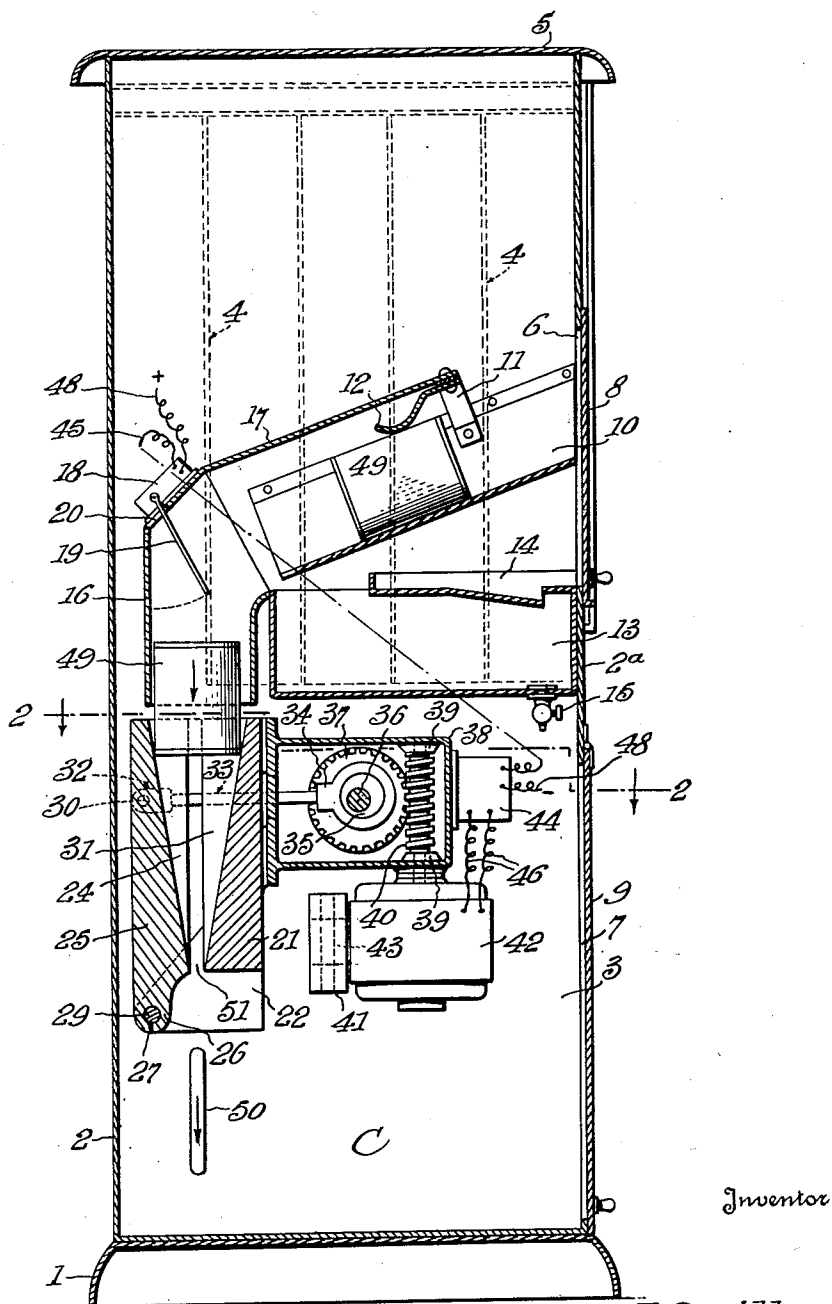
2,619,150

CAN CRUSHING MECHANISM

Filed Jan. 10, 1950

2 SHEETS—SHEET 1

Fig. 1.



Nov. 25, 1952

H. J. SMITH
CAN CRUSHING MECHANISM

2,619,150

Filed Jan. 10, 1950

2 SHEETS—SHEET 2

Fig. 2.

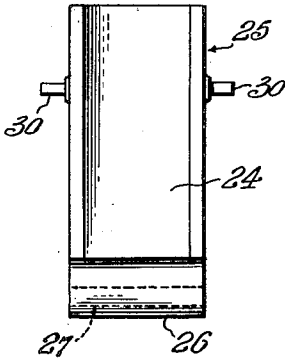
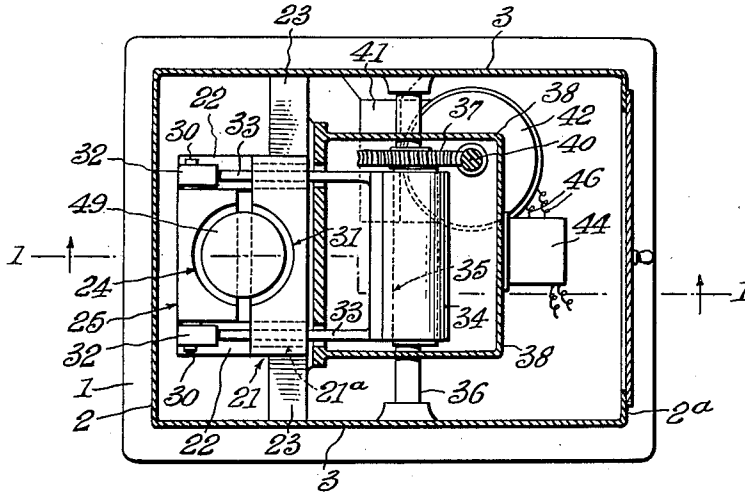


Fig. 3.

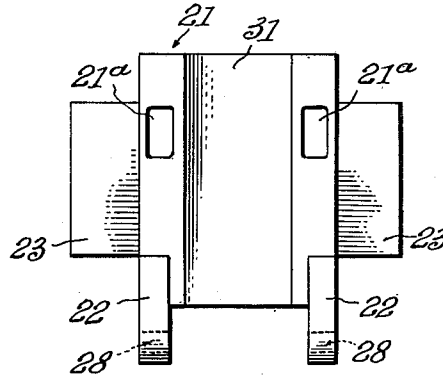


Fig. 4.

Inventor
Harvey J. Smith

By *Alfred D. Dittrich*

ATTORNEY

UNITED STATES PATENT OFFICE

2,619,150

CAN CRUSHING MECHANISM

Harvey J. Smith, Greensboro, N. C., assignor to
Modern Metal Products Company, Greensboro,
N. C., a corporation of North Carolina

Application January 10, 1950, Serial No. 137,780

1 Claim. (Cl. 153—10.5)

1

My invention relates to racks of the kind disclosed in my Letters Patent No. 2,320,159, issued May 25, 1943; No. 2,343,248, issued March 7, 1944; No. 2,432,455, issued December 9, 1947; and No. 2,443,837, issued June 22, 1948.

My present invention has for its object to provide, in combination with such racks, a means to crush and flatten the cans after they shall have been drained.

More specifically, the invention seeks to provide a can crusher which is automatically set into operation by the can to be crushed after it leaves the can chute on which it has been retained for draining purposes.

Again, it is an object to provide a motor which is set into operation as aforesaid and which will continue to operate for a predetermined time interval required fully to compress the can into the smallest possible space before delivering the can to the used-can chamber of the machine.

Other objects will in part be obvious and in part will be pointed out hereinafter.

To the attainment of the aforesaid objects and ends, invention still further resides in the novel details of construction, combination and arrangement of parts, all of which will be first fully described in the following detailed description, and then be particularly pointed out in the appended claim, reference being had to the accompanying drawings, in which:

Fig. 1 is a vertical section on approximately the line 1—1 of Fig. 2.

Fig. 2 is a horizontal section on the line 2—2 of Fig. 1.

Fig. 3 is a detail face view of the oscillatable jaw.

Fig. 4 is a face view of the fixed jaw.

In the drawings, in which like numerals and letters of reference indicate like parts in all the figures, 1 represents the base of the cabinet, 2 the back wall of the same, 2^a the front wall, and 3 the side walls of the cabinet. 4 designates the partitions on the outside of the side walls, between which unopened cans of oil are adapted to be stacked. The top of the cabinet is indicated at 5. The front wall 2^a has an upper opening 6 closable by a door 8, and a lower opening 7 closable by a door 9. Within the cabinet is a can chute 10 on a bridge 11; over the chute is carried a springy can-retarding finger 12. A drainage tank 13 for oil from chute 10 is located below the chute and carries a can opener receiving rack 14. The tank 13 can be drained via a drain cock 15.

All the foregoing parts may be of the known

2

constructions and, per se, are not of my present invention.

My present invention resides in the provision of a can crusher and flattening apparatus embodying a fixed jaw 21 and an oscillating jaw 25 between which cans 49, leaving the chute 10, are directed by means of a deflector bar 17 and a can-guide chute 16, a detector switch 18 being mounted on the guide chute 16 with its operating arm 19 projected through an opening 20 into the chute in the path of the cans.

The fixed or stationary jaw 21 has side arms 22 between which the leg 26 of the oscillating or movable jaw 25 lies and is pivoted thereto on a pivot pin 29, passing through holes 27 and 28 respectively.

The jaw 21 has mounting lugs 23 suitably secured in any desired way to the side walls 3. The face of the jaw 21 has a wedge-shaped concavity 31 to cooperate with that, 24, of the jaw 21. When the jaws are the closest together (the closed position), a space 51 between the jaws equal to the thickness of a crushed can 50 is left at the lower ends of the jaws, while at the top the jaws may be brought closer together in the closed position in order to facilitate the discharge of the crushed can 50.

Pivot studs 30 on the sides of the jaw 25 receive the pivot ends 32 of connecting rods 33 having an eccentric strap 34 on an eccentric 35 carried on a shaft 36. The shaft 36 is driven via a worm gear 37 and a worm and worm shaft 40, the latter being coupled to an electric motor 42. Bearings 39 in a housing 38 are provided for the worm shaft.

The motor 42 is securely mounted by having its lug 43 secured to fixed brackets 41. The rods 33 pass through openings 21^a in the jaw 21.

44 designates a time-switch of any approved kind whose function is to keep the motor 42 running for a predetermined time interval after a can has engaged the detector switch arm 19 and has closed the circuit of the switch 18. The motor running time should, preferably, be such as to allow a can to be processed by the crusher before a second can is delivered to the same.

45 indicates a wire from the detector switch 18 to the time-switch 44; 46 indicates wires from time-switch 44 to motor 42; and 48 indicates the power line connections.

Operation

The used cans are placed on the chute in the usual way, one at a time, the cans being successively retarded by the finger 12. Upon being

3

pushed along past the finger 12, the can moves along the chute 10 and drops into the guide-chute 16 and passes into the open ends of the jaws 21, 25, the actuating detector switch 18 in its passage thereby causing switch 44 to be set and the motor 42 started to operate. The operation of the motor effects the opening and closing of the jaws and the progressive downward feed of the can while simultaneously flattening the can sidewise and crushing it together until the crushed, flattened can drops out, as at 50 in Fig. 1; whereupon the time-switch 44 cuts out the motor, unless in the meantime a second can has engaged detector switch arm 19.

In this way another object of my invention is attained, namely, a larger number of used cans can be permitted to accumulate in the collection chamber C than would be possible with uncrushed cans.

From the foregoing description, taken in connection with the accompanying drawings, it is thought that the construction, operation, and advantages of my invention will be apparent to those skilled in the art to which it relates.

What I claim is:

In a machine of the class described wherein is provided a cabinet having a can chute, means for maintaining a can on said chute until a second

4

can has been placed on the chute, a can crusher located in said cabinet below said chute, a can guide chute between said first named chute and said can crusher, means to operate said crusher for a predetermined time interval, said means including a drive motor and a time-switch, means operable by a can passing into said guide chute for setting said time-switch in action, said crusher including a fixed jaw and a movable jaw the opposing faces of which have cooperating wedge-shaped concavities, and power transmitting means connecting said motor with said movable jaw.

HARVEY J. SMITH.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
969,720	Pickett -----	Sept. 6, 1910
1,045,205	Skirrow -----	Nov. 26, 1912
2,128,630	Wright -----	Aug. 30, 1938
2,178,461	Apprill -----	Oct. 31, 1939
2,246,394	Steele -----	June 17, 1941
2,511,506	Hruby -----	June 13, 1950
2,558,255	Johnson et al. -----	June 26, 1951