

Beverage Cans Crusher Machine Patents: A Review (Part IV)

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Abstract - While I worked in my invention for can crusher machine (patent No. 4610 in 2016), I studied all the early patents for such machines all over the world, which is hard task. This paper aims at summarizing the early patents for can crusher machines within the period from 1994 to 1995, e.g., couple of years. We presented here a title of each patent, patent number, name of the inventor, the patent issued date and an overview of patent layout. This study is thought to be very useful for inventors who worked on patents for next generation of can crusher machines.

Keywords: Machines for Can Crusher; Review; Inventions; Period 1994–1995

I. A BRIEF SUMMARY OF CAN CRUSHERS PATENTS

Within our early studies [1-6], we presented a review for patents of can crusher machines. Here we are continuing such studies by presenting review within different duration, e.g., within period from 1994 to 1995, as presented next.

1. Collector for Empty Used Recyclable Beverage Cans, Patent Number: 5469783

A vast barrel shaped fenced in area molded to resemble a colossal refreshment can has a recessed region in its external divider containing an administrator's board and an opening into the inside for embeddings void recyclable drink jars. Inside the fenced in area is a transport for getting the embedded jars, a discriminator for recognizing ferrous and non-ferrous jars and a pneumatic transporter for conveying the jars to a mechanical crusher which compacts the jars exclusively and releases them into an impermanent stockpiling territory from which they are expelled now and again to recycle. The operator's panel incorporates a photoelectric sensor for starting task of the systems in the inside of the structure and may incorporate different visual readouts and an allocator for encouraging out coins, printed credit slips and receipts [7].

2. Combination Can Crushing and Retrieving Device, Patent Number: 5469785

A mix can smashing and recovering gadget having a portable grasping and pressing jaw implies. An aluminum can be held and situated inside the gadget for essential commitment of a devastating jaw by weight embedded subsequently by the client's foot. The can is pounded and collapsed and can be transported by the gadget for discharge

and transfer and in addition introductory grasping of the can for situating inside the devastating gadget [8].

3. Waste Container Reformer and Method For Reforming Waste Containers, Patent Number: 5467704

A waste holder reformer, for improving for the most part plate molded compacted squander compartments into kaleidoscopic structures, consecutively presses the sides of the waste holder into a crystal with a 45.degree.- 90.degree.- 45.degree. triangular base with the goal that when it is put adjoining another transformed holder, the two shape a rectangular box for more productive utilization of storage room. The weight surfaces are controlled by pressure driven barrels to give the powers expected to change the compartment. The changing procedure is controlled so one point is shaped at once, starting with one of the 45.degree. points, trailed by the 90.degree. point, and after that finished by framing the other 45.degree. edge. By framing one edge at any given moment, the heap necessities of the reformer are diminished, and a reliably comparable formed improved waste compartment is made [9].

4. Device for the Preparation of Used Metal Barrels with a View to Facilitating Handling and Recycling Thereof, Patent Number: 5463887

The gadget exemplifying the development utilizes a water driven press enacting a versatile plate in a chamber inverse a base on which a metal barrel can be arranged, and progressively contains: the setting and keeping up of the barrel on the base; the puncturing of two inverse sides of the barrel by methods for a lengthened puncturing system going through the barrel from side to side and start to finish; the cleaning of the inside of the barrel by projection of a purging liquid under strain by methods for a revolving infusion head fundamental with the puncturing instrument; and the devastating of the barrel by dislodging of the plate towards the base. The creation quite concerns the preparing of dirtied metal barrels with a view to encouraging taking care of, capacity and reusing thereof [10].

5. Drum Crusher, Patent Number: 5461973

A drum crusher pounds distinctively formed as well as measured void compartments, for example, 55 gallon steel drums to encourage reusing of the material in the make-up of the holder. A compacting press impelled by remote controlled water driven weight moves in the hub course of

the drums or holders with adequate pressure driven strain to pound the compartments to a base size. Finding bars encourage manual, mechanical or gravity bolstering of the drums into the devastating contraption and the manual, mechanical or gravity expulsion of compacted slugs from the devastating device. Wellbeing mechanical assembly limits presentation of work force to conceivable dangerous conditions [11].

6. Device for Handling Recycling Packages, Such as Bottles and Cans, Patent Number: 5461972

Strategy and gadget for taking care of reusing bundles, for example, containers and jars in which a reusing bundle is brought into an accepting space in the gadget and is exchanged by a transport gadget into a distinguishing proof position. After the recognizable proof of the bundle, the reusing bundle is exchanged to a crusher gadget for pounding the bundle and afterward the smashed bundle is exchanged to a capacity holder. The transport gadget incorporates a transport having lifting individuals settled thereto and which contact the reusing bundle in the getting space. The bundle is lifted by the lifting individuals to the distinguishing proof position [12].

7. Apparatus for Cleaning and Crushing Drums, Patent Number: 5456167

A mechanical assembly for consecutively expelling the best, puncturing the sides, at the same time washing the inside and outside of a drum and pressing the drum [13].

8. Can Crusher with Safe Entry and Discharge Chutes, Patent Number: 5456166

A can crusher is given a can bolster container having an open gulf at the highest point of the can crusher through which opening a majority of jars might be embedded in a steady progression to fill the container. Consecutively, each can falls by gravity into a devastating compartment where a power-driven smash squashes the can pivotally to fold the can's barrel shaped divider subsequently diminishing the can's length to around one-fourth or less of its unique length. The pounded can falls by gravity through a release chute to be naturally released. Each can in the container consequently falls in progression into the devastating compartment to be smashed and released. To keep human fingers from being embedded through the container delta or the release chute and into the devastating compartment, the controlling chute ways are non-direct or potentially convoluted to diminish the length thereof and to obstruct a straight finger inclusion into the devastating compartment [14].

9. Bottle Compacting Apparatus, Patent Number: 5448946

A mechanical assembly to compress a holder having a base and a best. The device incorporates a lodging and a cover which releasibly joins to the lodging. The top contains a gap

or break to get the highest point of a holder. The mechanical assembly likewise incorporates a rack which has a best side containing no less than one break adjusted to get the base of the compartment. The rack and the cover collaborate to hold the compartment safely. Moreover, the mechanical assembly may incorporate poles and the rack may contain openings to get the poles. The rack goes along the poles to such an extent that it stays parallel and lined up with the top. At long last, riggings, belts, or handles serve to drive the rack against the cover and in this way squash the holder held between the top and the rack [15].

10. LP Gas Can and Gas Recycling Apparatus, Patent Number: 5441088

A liquified oil gas (LP gas) can reusing mechanical assembly which incorporates a first compacting segment which securely clears the can for recuperation of any lingering vaporous item in this way, at that point compacts the can, releases the slug presently compacted for gathering; and a second gas treatment divide which gathers the remaining gas, repressurizes it and stores it in a repressurized vaporous state. The mechanical assembly is ideally worked in a mechanized manner by packed air [16].

11. Can Crushing Device with Rotatable Casing, Patent Number: 5431097

The gadget for smashing metal jars has a supporting structure and a devastating head mounted on the supporting structure and shaping an area for resting the can to be pressed. The devastating head underpins two presser components masterminded commonly inverse along a primary pivot proximate to the resting locale. The gadget additionally has a component for moving one of the presser components towards the other presser component and turning it about the fundamental hub as for the other presser component, whereby to smash a can intervened between the two presser components [17].

12. Device for Separation and Storage of Recyclable Materials, Patent Number: 5425458

An establishment for tolerating, arranging and putting away recyclable materials, and giving a helpful strategy to outsider gathering. The gadget is contained a vault opening into which the waste materials are entered, a chute along which the materials travel, a progression of slanted door instruments which encourage the isolation of the materials, and a separated stockpiling zone including various receptacles into which the isolated materials are saved and put away. The vault is found ideally inside a working in an available basic zone. It is associated with a chute which plunges through an outside divider to interface with the capacity zone outside. The capacity region is isolated into various canisters. The capacity territory can be designed to meet the prerequisites of the shopper, that is the number and course of action of receptacles is variable. Each container is available through an entryway on its outside [18].

13. Systems for Continuously and Automatically Crushing Aluminum Cans, Patent Number: 5417154

A framework for pressing aluminum jars involving a work table with four legs and wheels on a couple of the legs, a power chamber mounted on the table for squashing aluminum jars, a power source mounted on the table for responding the power barrel, and aluminum can dealing with systems for accepting and holding a majority of aluminum jars to be smashed and permitting section of pounded aluminum jars there through for gathering there underneath [19].

14. Aerosol Can Recycling System, Patent Number: 5385177

A technique for recouping force from utilized airborne jars which incorporates the means of puncturing the can; evacuating the blend of remaining fuel and liquid item from the can; gathering the blend and after that isolating the charge from the leftover liquid item [20].

15. Segmented Wood Chip Cracking Roll, Patent Number: 5385309

A wood chip splitting gadget for use in papermaking utilizes firmly dispersed, oppositely pivoting moves which have pyramid-molded projections on the move surfaces. This chip destructuring mechanical assembly is rendered promptly useful with negligible downtime by developing the move surface of removable fragments which are dashed to a focal rotatable shaft. The fragments are measured so they can be lifted by an administration man. As harm to the move surface, for example, by introduction to tramp metal, is regularly restricted to a solitary portion, administration and repair of the roll is sped up by allowing expulsion of a solitary harmed fragment without expelling the staying flawless sections. Every division is exhausted for twelve jolts and is joined to the focal pivot by twelve recessed jolts. The surface portions enable the surface to be supplanted without expelling the moves from the edge of the wood chip splitting gadget [21].

16. Oil Filter Crushing Apparatus, Patent Number: 5383397

An oil channel smashing contraption incorporates a casing on which is mounted a channel stage arranged to get an utilized oil channel for squashing. An air spring activating gadget is anchored inside the edge, and a smash is anchored to a lower end of the air spring. A control valve directs the stream of a pressurized gas into the air spring which at that point powers the slam toward the channel stage to smash the channel. A wellbeing pneumatic circuit anticipates unintentional activation of the smash [22].

17. Can Crusher with Metal-Plastic Separation Capability, Patent Number: 5381732

A can crusher, being mechanized, and independent, and having recognizing ability between glass, plastic, and metal

jars, or bottles, and having capacity ability in the base of the bureau which houses the can compacting mechanical assembly [23].

18. Drum Processing Apparatus, Patent Number: 5371911

A drum handling device serves to cleanse and sterilize progressive item containing capacity drums. The drum handling mechanical assembly incorporates a drum deheading station, a drum discharging station, and no less than one drum cleaning station. The drum deheading station incorporates high recurrence burn or non-combustible cutting gadget for expelling a top of the drum to give an opening toward one side of the drum. The drum purging station incorporates a drum inverter for discharging the substance of the drum through the opening in the drum. The drum cleaning stations are found downstream of the drum purging station, and capacity to expel contaminants from the inside and outside surfaces of the drum. A drum table moves the progressive drums downstream from the drum deheading station to the drum purging station and the drum cleaning station [24].

19. Aerosol Can Compaction and Evacuation Apparatus, Patent Number: 5365982

A pressurized canned product compacting contraption which clears the can for recuperation of any remaining charge and item, in this manner and after that compacts the can releases the slug presently compacted for gathering. The mechanical assembly can be worked in a mechanized manner and ideally by packed air [25].

20. Can Crusher, Patent Number: 5361690

A can crusher for ecological assurance is for the most part made out of water driven pump to drive a cylinder, upwardly or downwardly. At the point when the cylinder is driven downwardly, a plate is driven downwardly to smash a can. A notch is framed at an inward base bit to deplete any buildups left in the can to a gathering container [26].

21. Opposed Belt Can Compactor Apparatus, Patent Number: 5355788

A can compactor incorporates an electric engine associated with drive a chain which, thusly, drives a couple of pounding belts orchestrated in restricting style to shape a V. One of the belts is driven clockwise while the other belt is driven counterclockwise. Jars to be pressed are set through a guide in an open territory at the highest point of the two belts, where they break a light bar, setting off a photograph touchy switch, which begins the engine. A typically shut farthest point switch is put in closeness to the chain drive, and an extraordinary connection on the tie is situated to draw in the confine change to open the ordinarily shut switch, and in this way stop the engine after a solitary unrest of the chain. This is adequate time for the crusher belts to altogether straighten the can. Can grasping hauls on no less

than one of the belts guarantee that the jars are emphatically bolstered through the component and out the base [27].

22. Apparatus for Collapsing Containers, Patent Number: 5347923

A mechanical assembly to crush void jars has a U-molded help with a base divider which underpins the tubular mass of a void can and two upstanding sidewalls. The sidewalls pivotably bolster the free end segments of two legs shaping piece of a burden having a web which constitutes a handle. The legs bolster a first smashing segment as a plate which is situated between the sidewalls of the help and characterizes with the base divider a compartment for a void can which is gotten in the compartment in such introduction that one of its end dividers or its single end divider is nearby the plate. The plate pivotably bolsters a second pressing segment as a solitary fold or two connections which can draw in the tubular mass of a can in the compartment [28].

23. Apparatus for Collecting Articles, Patent Number: 5346048

A device for gathering articles is housed in a parallelepipedic packaging, on the front board of which is masterminded a show some portion of a having impact. An article-return part with an article-getting compartment is additionally given in the contraption. The front board of the packaging is subdivided into various fields of which one field shapes an entryway for an entrance to an article gathering holder. A gaming machine is masterminded in another field, and the article-return part in the third field. The gaming machine is in any event halfway noticeable through a window so its amusement can be seen. Expanded utilization of the mechanical assembly results from the perceivability or potentially perceptibility of the amusement [29].

24. Cylinder Rupture Vessel, Patent Number: 5337793

A waste barrel crack vessel for discharge and recontainerization of lethal substance of compacted gas chambers is characterized by an encased chamber which suits a majority of bearing surfaces for supporting and situating an objective barrel consequently. A cut spike arranged inside the chamber is adjusted to cut the objective barrel at its midriff, in this way discharging its substance. Associations are furnished speaking with the encased chamber for clearing and recontainerizing the substance discharged by a punctured barrel without arrival of the substance into the earth. The greater part of the barrel handling tasks might be given remotely [30].

25. Oil Filter Crushing Apparatus Having Air Bag Actuator, Patent Number: 5337656

An oil channel pounding device has a devastating casing, mounting a channel stage on which an utilized oil channel is upheld on end for pressing by a smash gadget having a

solitary slam bar. An air spring inciting gadget is mounted on the casing and works on low weight shop air for specifically constraining the slam gadget downwardly to pound the channel against the stage [31].

26. Apparatus for Collecting and Compacting Aluminum Cans, Patent Number: 5333542

Contraption for gathering and putting away void aluminum compartments for reusing. The holders are embedded into a chute having a directing feed system. The jars drop out of this one-by-one into a devastating zone between a responding ram and a stationary platen, and interfere with a sensor bar which starts the devastating cycle of the slam. In the wake of squashing, the jars drop into a holder past the external end of a can stop. The stop is counteracted that unfilled jars will be held in the devastating zone for smoothing, while incompletely full holders dislodge this and fail to work out. The drive instrument for the smash is given by a compound unconventional cam having pushed and withdrawal appearances, and first and second roller devotees for connecting with these. Ideally, the get together is mounted in a bureau for consideration in a remain of candy machines [32].

27. Pressurized Canister Recycling Apparatus and Methods, Patent Number: 5332009

A pressurized canister reusing mechanical assembly is utilized to reuse substance of a majority of pressurized canisters of differing length and distance across. The canisters are kept up in a container and discharged. The canisters are pushed into a canister penetrating station where they are punctured while disengaged from the outside condition. In the wake of being punctured and keeping in mind that still detached from the outside condition, the canisters travel inside a clearing tank. The cleared substance of the canisters are drawn far from the departure tank with channels recuperating the dynamic elements of the canisters and refining the charge. The charge is then set in a capacity tank. The present innovation is especially valuable for reusing therapeutic Freon ingested into the body since the Freon recuperated does not require extra cleansing before reuse [33].

28. Manual Multiple Size Can Crusher, Patent Number: 5331889

A manual can crusher for smashing a can having a lodging with a best opening for accepting a can to be pressed, a base opening for releasing a pounded can, and an inside squashing divider with a wrinkling square mounted subsequently. A devastating ram is arranged inside the lodging and is pivotable between a vacant position where the slam is inverse the devastating divider and a shut position where the smash is contiguous the devastating divider. A longitudinally expanding handle is rotatably mounted on the lodging, and linkage couples the handle to the slam. A can to be squashed is set into the best opening

and the handle is pivoted to move the smash between the open and shut positions by means of the linkage. The can is smashed against the inside squashing divider until is adequately pressed to be released through the base opening [34].

29. Oil Filter Crusher Assembly, Patent Number: 5331888

An upright oil channel crusher gathering has an even head plate and an air chamber framed by a barrel shaped divider welded at an upper end to an underside of the head plate and uninhibitedly suspended there from over a flat platen with dispersed tie bars stretch out between and interfacing the head plate and the platen, with an open well for naturally administering greasing up oil noticeable all around barrel [35].

30. Apparatus for Crushing Articles, Patent Number: 5327822

A contraption for pressing articles, for example, metal jars. A settled blacksmith's iron is mounted on a casing and a slam is mounted for development toward a path toward and far from the blacksmith's iron to smash an article situated there between. The articles are encouraged successively to the devastating zone between the iron block and the smash through a vertical chute. A spring stacked wedge plate broadens ostensibly from the slam toward the iron block and at first contacts the article middle of the road its length to twist or distort the article to in this manner safeguard uniform smashing of the article by the smash [36].

31. Oil Filter Crushing Apparatus and Method, Patent Number: 5325771

An oil channel smashing device and technique using a lodging characterizing an inside space and a base surface, a devastating part fitted inside the lodging having a devastating surface and characterizing an opening through the devastating surface, a puncturer having a point and versatilely appended to the devastating part inside the space opening so that the puncturer is behind the devastating surface in a withdrawn position and in any event the purpose of the puncturer is forward of the devastating surface in a puncturing position [37].

32. Press for Compressing Drums of Contaminated Waste, Patent Number: 5323698

A press for packing drums of polluted waste. The press involves an edge made up of a table and a crosshead associated with the table by methods for vertical backings, and a pressure get together including a principle chamber anchored to the crosshead. A primary cylinder is arranged inside the fundamental barrel and delimits a principle chamber between the cylinder and the chamber leader of the fundamental barrel. The fundamental cylinder is reached out by a depending ram bar. A skirt is intended to encompass the drum when it is being compacted by the slam. The skirt

is stretched out at its best by a tubular cylinder slidably got in the primary chamber between the principle barrel and the slam pole. A middle of the road chamber is delimited between the tubular cylinder and the principle cylinder. An annular chamber is delimited between the tubular cylinder and the base of the primary barrel [38].

33. Aerosol Can Propellant Recovery System, Patent Number: 5322093

A framework for recuperating fuel from vaporized jars and different sources having a vaporous force in that, which framework constitutes a division tank in which the charge is isolated from the item it was to convey, a blower to both pack the force and bring it into a warmth exchanger which cools the charge into a fluid which fluid can be gathered in an accumulation chamber in correspondence therewith [39].

34. System for Puncturing Aerosol Cans, Collecting Liquid Contents, and Filtering Environmentally Objectionable Constituents From Released Gases, Patent Number: 5309956

Vaporized shower jars are situated each one in turn at a workstation by embeddings the base mass of each can through a properly estimated focusing ring to focus the base divider in respect to an annular seal that connects with fringe parts of the base divider to help the can at the workstation. The base divider is braced into fixing commitment with the annular seal by utilizing a lever worked cinching instrument that is movable to suit all known standard sizes of vaporized splash jars. The base divider is punctured by utilizing a lever worked, rack and pinion driven penetrating component that expands a puncturing pin through the middle opening of the annular seal. Substance that release from a penetrated can are ducted into a getting compartment, a lower part of which is utilized to gather fluid substance for naturally safe transfer [40].

35. Food Press, Patent Number: 5303640

A sustenance press having a stretched body including a forward end to which a punctured top or the like is removably joined and through which squeezed foodstuffs pass, and a chamber implies inside the body nearby the forward end of the press for accepting and squeezing foodstuffs. A responding cylinder is slidably fitted inside the chamber implies for moving and squeezing foodstuffs, wherein the cylinder is adjusted to be situated rearwardly of the foodstuffs in the chamber implies in its withdrawn position and against said forward end for squeezing the foodstuffs through the punctures in the top in its forward position. The press likewise has a rotatable handle critically associated with the stretched body rearwardly of the cylinder, and a connecting part associated with the handle and to the cylinder. At the point when the handle is turned one way the cylinder is moved to its withdrawn position to permit the chamber intends to get foodstuffs [41].

36. Waste Container Crusher, Patent Number: 5303643

A waste holder crusher especially adjusted for squashing car compose oil channels or other basically inflexible disposables containing dangerous waste has a lodging with an open base which is shut off by an iron block plate. The iron block plate slideably gets three equiangularly divided presents which are anchored on a rooftop plate at the highest point of the lodging, over the blacksmith's iron plate. Nuts on the posts bolster the iron block plate beneath the rooftop plate, with the goal that the blacksmith's iron plate is suspended from the rooftop plate by the posts. The rooftop plate is anchored to a water powered chamber which delivers a 10 ton main impetus for a platen guided by the presents on squash a holder set on the iron block plate underneath the platen. In the iron block plate, four visually impaired bores in a rectangular example in the best surface cross a focal visually impaired bore reaching out from the base surface, and a littler focal through-bore gives correspondence between the lower focal visually impaired bore and the highest point of the blacksmith's iron plate [42].

37. Oil Filter Crusher Apparatus, Patent Number: 5297479

An enhanced oil channel crusher, incorporates a chamber situated over a versatile stage. Endless supply of activity of the crusher, the stage moves upwardly toward a base individual from the chamber to squash the oil channel and release oil there from [43].

38. Reduced hand force can crushing apparatus, Patent number: 5293816

A hand worked can pressing mechanical assembly introduced on a vertical divider or over a capacity compartment to smash singular jars and enable them to drop into the capacity holder utilizing a contraption with a lodging that incorporates an inside channel to pound the jars between a moving cylinder surface and a finish of the lodging with the power connected by a handle that is urgently associated with a backside of the lodging to turn downwardly over the lodging constraining the cylinder part to slide the long way in the channel. Power against the cylinder part is first connected through an arched cam surface expanding frontwardly from a backside of the handle part against a pivoting wheel cam devotee and afterward through a lever associated toward one side to a middle position on the handle and at the opposite end to the cylinder part with the interfacing mechanical assembly of the lever postponing the impact of that lever until the point when the cylinder development has moved the cam adherent wheel out of scope of the cam surface [44].

39. Can Crushing Apparatus, Patent Number: 5287803

A tube shaped lodging incorporates a cylinder displaceable therewithin, wherein the cylinder incorporates a cylinder plate mounted to a restricted end of a cylinder pole, wherein the cylinder plate is in agent correspondence and

coordinated through a guide tube having a tube floor to impact pressing of a related can part coordinated between the cylinder plate and the guide tube floor. Feet structure is orchestrated to cross the guide tube between the cylinder plate and the guide tube floor to legitimately position a can part to impact pounding thereof [45].

40. Mechanism for Crushing Cans, Patent Number: 5284086

A component for squashing jars incorporates a construct, a lodging arranged in light of the front bit of the base and having a board, a slide slidably occupied with the lodging and moveable toward the board. The jars to be smashed are arranged in the lodging and arranged in a position situated between the slide and the board. A couple of levers are significantly coupled to the base and coupled to the slide, the can is squashed when the slide pushes toward the board [46].

41. Machine for Crushing Oil Filters, Patent Number: 5279215

A machine for pressing oil channels and gathering the oil there from. The machine has a cylinder and barrel get together to move a devastating part into a devastating chamber to squash an oil channel. A control valve controls the supply of water powered liquid to the cylinder and chamber get together. Air under strain is additionally provided to the cylinder and chamber get together to move the devastating part back to its underlying position.

A bolt is mounted on the actuator of the control valve for holding an entryway giving access to the devastating chamber in the shut position. At the point when the actuator is moved to a situation to enable liquid to stream to the barrel the entryway is secured in the shut position. A second bolt structure keeps up the entryway in the shut position amid the time that the devastating part is playing out the devastating activity. The devastating part should be moved to its underlying position to discharge the second bolt structure before the entryway can be opened [47].

42. Waste Collecting Machine with Coin Refund Mechanism, Patent Number: 5277291

A waste gathering machine containing a lodging having two passageways for squander metal jars and glass bottles, a mechanical arm to gather and convey squander metal jars or glass bottles into said doors separately, a roller smashing component to pound squander metal jars rusty, a metal locator to recognize metal jars from glass bottles, an electromagnet controlled by said metal identifier to move a sub-slide path to one side or appropriate as indicated by discovery result, an including gadget to tally the quantity of waste jars or glass bottles passing consequently, and a discount gadget to give coins as an end-result of the waste jars or jugs got [48].

43. Oil Filter Shear and Crusher, Patent Number: 5274906

A holder for a vertically arranged oil channel with its connector plate situated downwardly. A pushing part to push the channel on a level plane over a shearing part to shear the connector plate off of the channel. The pushing part additionally pushing the channel on a level plane against the back mass of the compartment along these lines packing the channel and the oil from the channel, the connector plate and the compacted channel falling through an opening in the holder into a container [49].

II. SUMMARY AND CONCLUSION

A brief summary of different patents for can crusher machines are presented here. The study would be useful for inventors and researchers of can crusher machines. The study presents a summary of about forty three patents, however, complete descriptions for patents is presented in a separate studies.

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