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ASH TRAY

Filed Oct. 6, 1949

2 SHEETS--SHEET 1

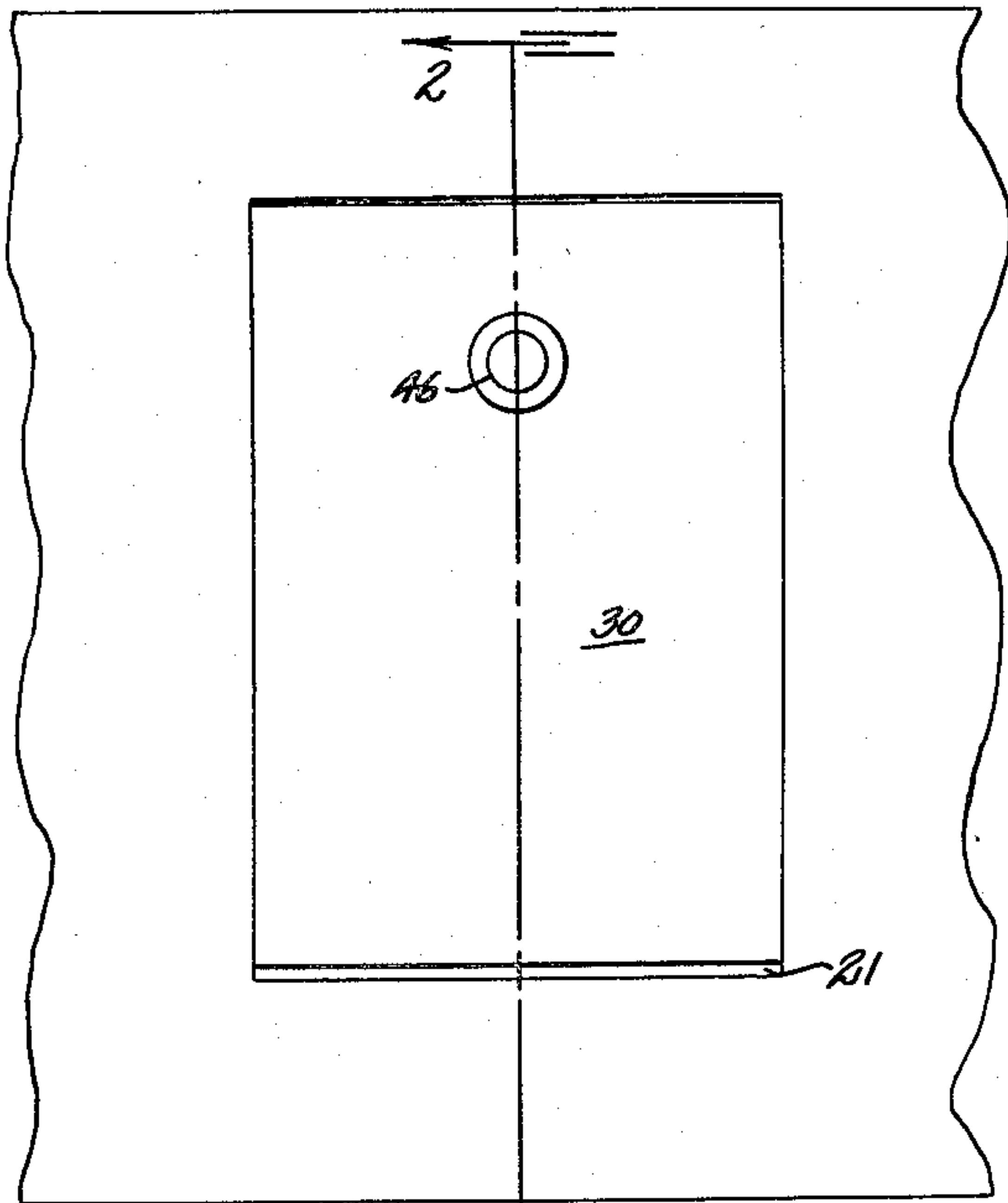


FIG. 1

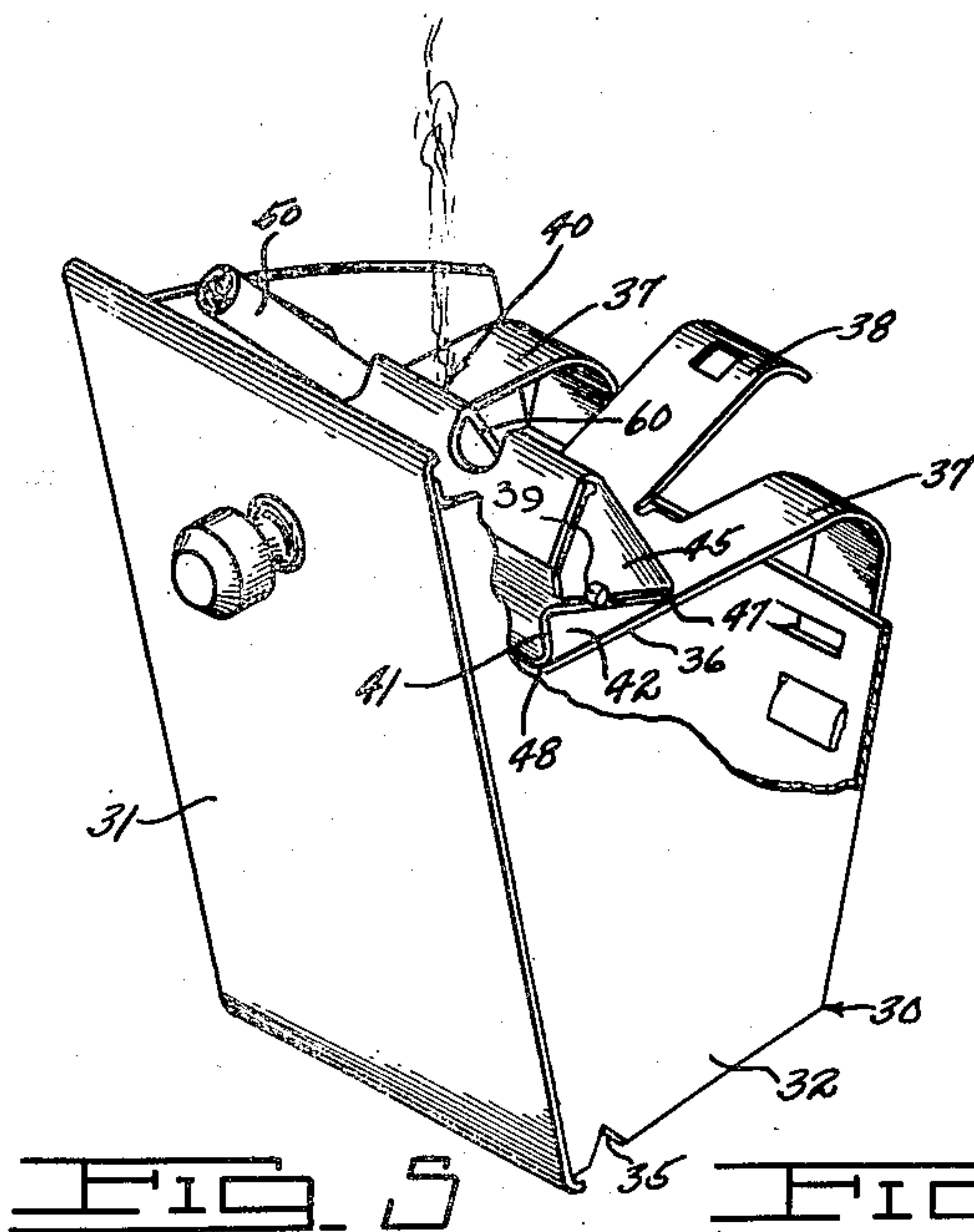
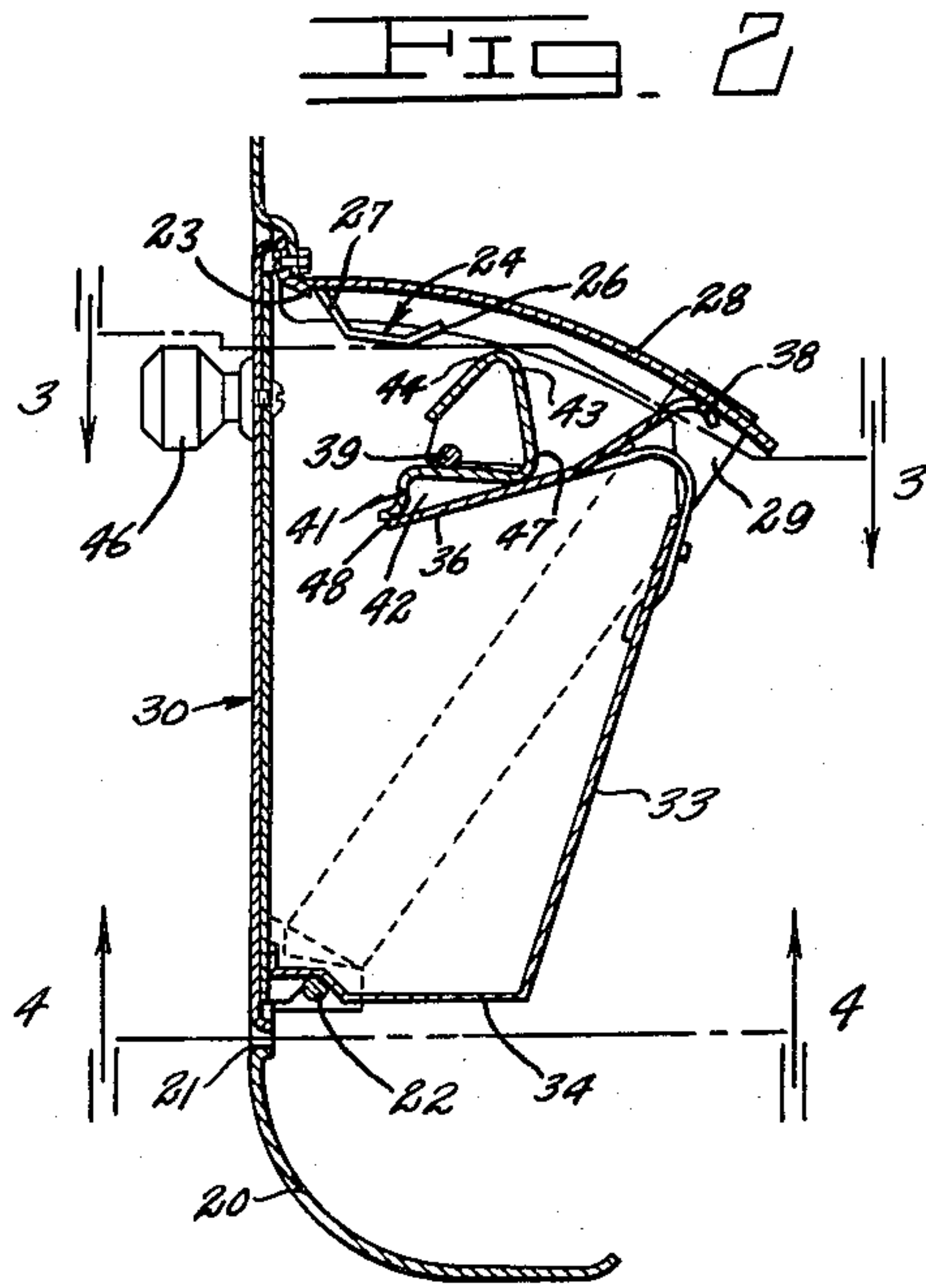


FIG. 5

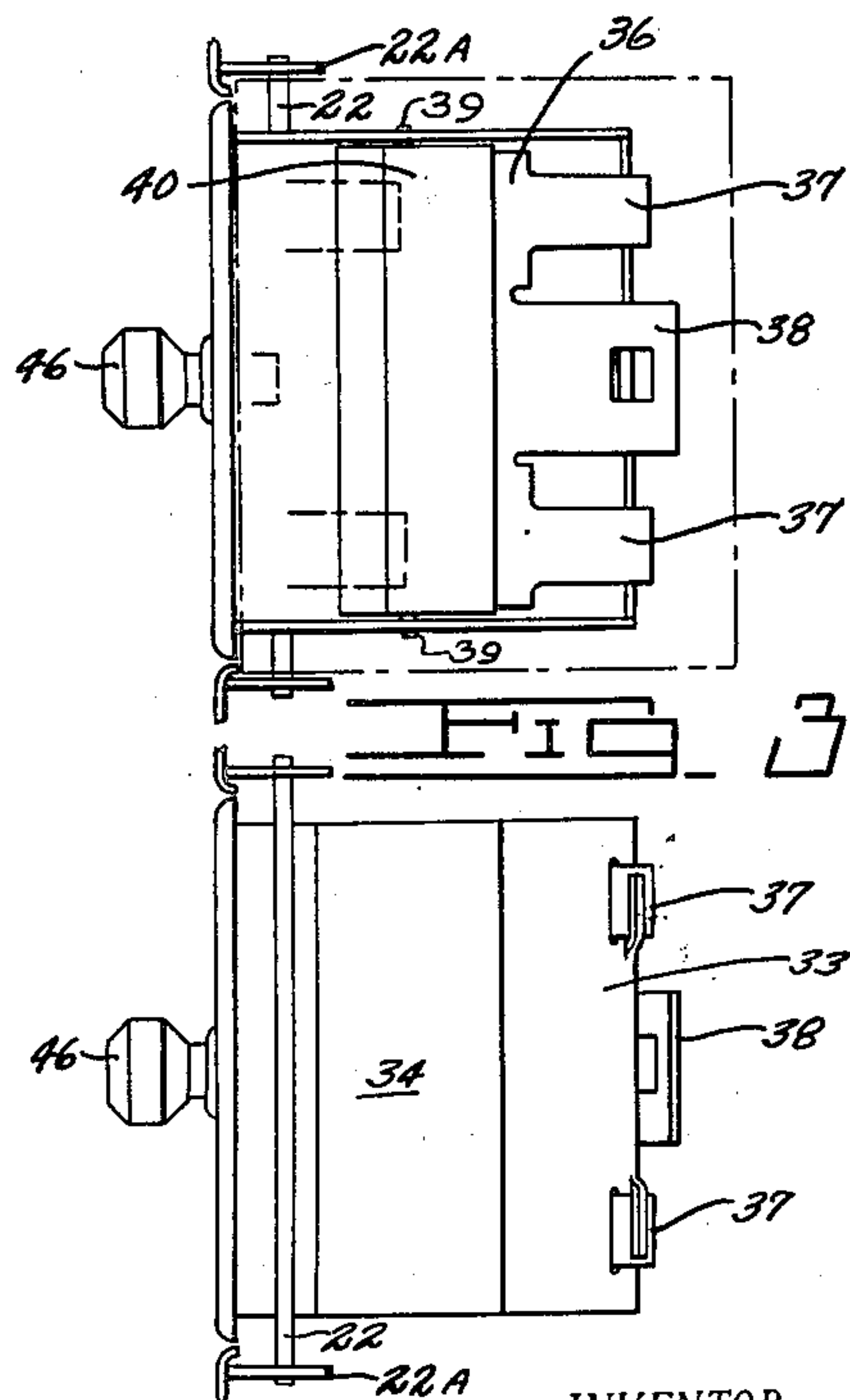


FIG. 4

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2 SHEETS—SHEET 2

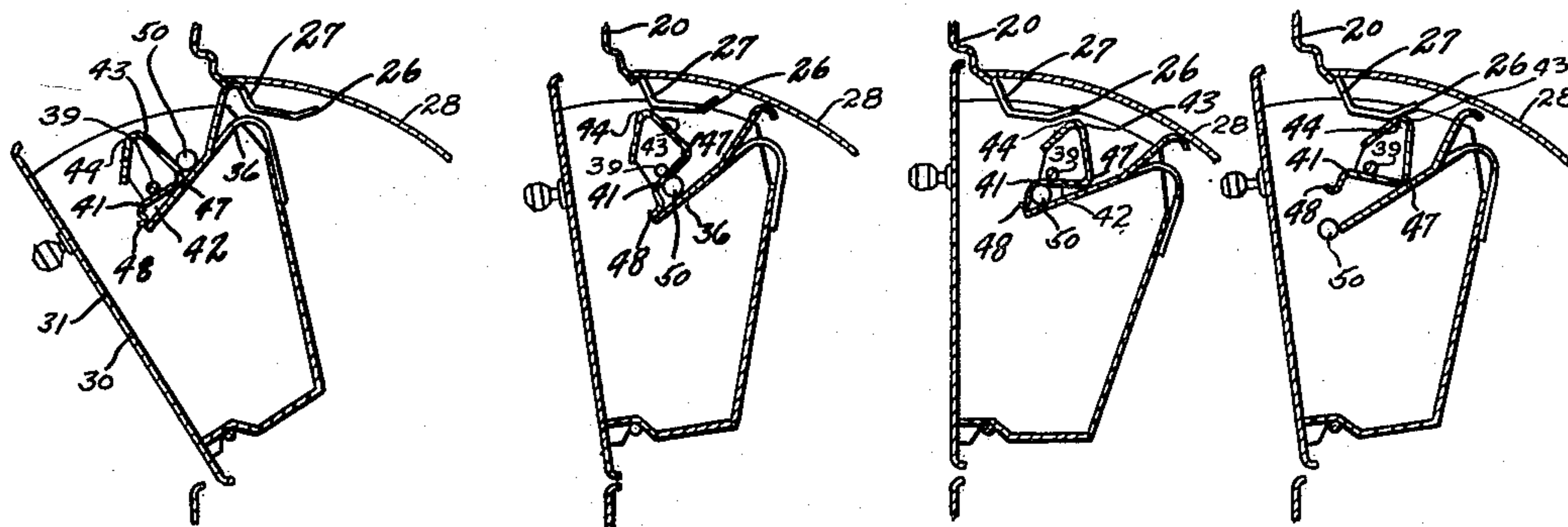


FIG. 6 FIG. 7 FIG. 8 FIG. 9

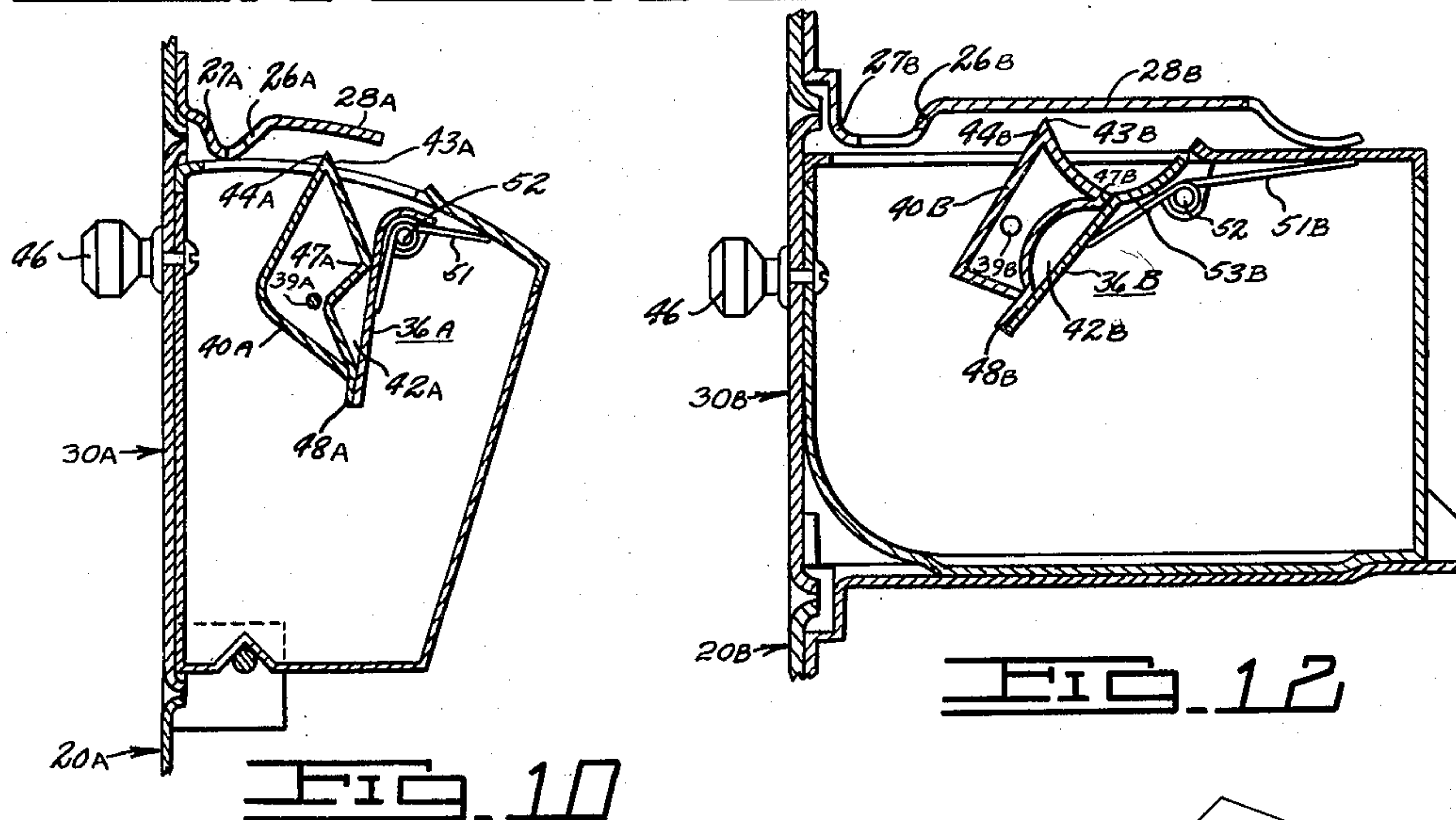
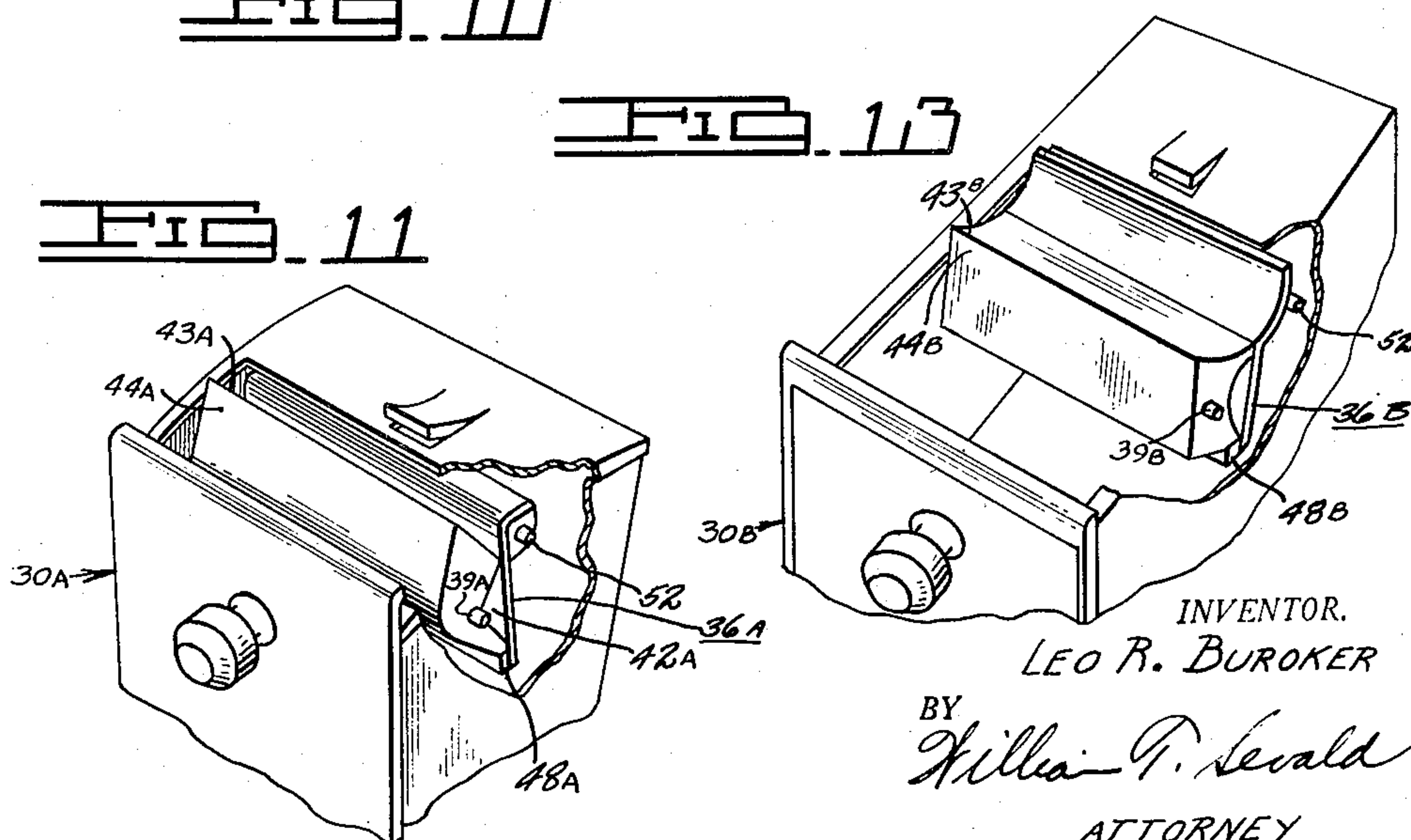


FIG. 10

FIG. 12

FIG. 13

FIG. 11



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ASH TRAY

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This invention relates to tobacco ash receptacles and in particular to ash receptacles having automatically operated means in conjunction with opening and closing the receptacle for extinguishing a burning cigar or cigarette.

The invention is particularly adaptable to vehicles, such as automobiles, trains, buses, and airplanes and it is suitable for use in homes, offices, hotels, and other places.

Tobacco ash receptacles are usually equipped with some kind of extinguisher or "snuffer" for burning cigars and cigarettes, and some of these are automatic, some semi-automatic, and others manual. It appears that manual types are reasonably certain of extinguishing the fire but are generally conducive to flying ashes and soiled fingers as the user is required to "grind" out the cigarette between his fingers and the manual extinguisher. The automatic and semi-automatic types of extinguishers usually have trap-doors of some type which allow the burning cigar or cigarette to be dumped directly into the receptacle where it creates an objectionable odor as it burns and then smoulders before it finally goes out.

In vehicle ash receptacles it is difficult for the driver to use a manual extinguisher; hazardous to put a burning cigar or cigarette into the ash tray and close the same; and it is also hazardous to throw burning cigars and cigarettes out the window of the vehicle onto the highway.

With the foregoing and other well-known facts in view, it is the primary object of the invention to provide an extinguisher for tobacco ash receptacles which is operable to automatically receive and contain a burning cigarette in a separate, small, closed chamber, thereby excluding the burning cigarette from a supply of oxygen.

An object of the invention is to provide an extinguisher for a tobacco ash receptacle which is automatically operated to extinguish a cigarette by closing the receptacle.

An object of the invention is to provide an extinguisher for tobacco ash receptacles which is operable to automatically grind the burning cigarette in some degree when the burning cigarette is contained in the chamber to assist in extinguishing.

An object of the invention is to provide an extinguisher for a tobacco ash receptacle which is automatically operated to extinguish a cigarette by closing the receptacle.

An object of the invention is to provide an extinguisher for a tobacco ash receptacle which is automatically operated to eject a previously extinguished cigarette from the extinguisher into the receptacle by opening the receptacle.

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Another object of the invention is to provide a "kicking" or scraping action between members of the extinguisher so that the device prevents previously extinguished cigarettes from sticking or adhering thereto.

These and other objects of the invention will become apparent by reference to the following description taken in connection with the accompanying drawings wherein the invention is shown in conjunction with a vehicle tobacco ash receptacle for purposes of illustration in which:

Fig. 1 is a partial elevational view of a vehicle panel equipped with a recessed, outwardly swinging or sliding ash tray.

Fig. 2 is a cross-sectional view of Fig. 1, taken on the line 2-2 thereof.

Fig. 3 is a cross-sectional view of the ash tray taken on the line 3-3 of Fig. 2.

Fig. 4 is a cross-sectional view taken on the line 4-4 of Fig. 2.

Fig. 5 is a perspective view of the ash tray with parts being broken away.

Fig. 6 is a cross-sectional somewhat diagrammatic view similar to Fig. 2 showing the ash tray in open condition with a burning cigarette adjacent to the extinguisher.

Fig. 7 is a view similar to Fig. 6 showing the extinguisher receiving the burning cigarette.

Fig. 8 is a view similar to Figs. 6 and 7 showing the burning cigarette trapped in the extinguisher.

Fig. 9 is a view similar to Figs. 6, 7 and 8 showing the extinguished cigarette being ejected from the extinguisher.

Fig. 10 is a cross-sectional view similar to Fig. 2 showing a modification of the extinguisher.

Fig. 11 is a partial perspective view of the modified device shown in Fig. 10; parts being broken away to better show the modified extinguisher.

Fig. 12 is a cross-sectional view similar to Fig. 2 showing a second modification of the extinguisher; and

Fig. 13 is a partial perspective view of the second modified device shown in Fig. 12; parts being broken away to better show the second modified extinguisher.

Referring now to the drawings wherein like numerals refer to like and corresponding parts throughout the several views, the tobacco ash receiver automatic extinguisher disclosed illustrates a preferred embodiment of the invention optionally shown in conjunction with a vehicle body comprising a housing or box 20 having an opening 21 in the face thereof, a pivot pin or rocker element 22 behind the opening 21 adjacent the bottom thereof, tabs 22A on the panel 20 sup-

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porting the pin 22, an inclined stop 23 adjacent the top thereof, a trip 24, a rear trip cam 25, a front trip cam 27, a shroud 28, a shroud support arm 29, a tobacco ash receptacle 30 comprising a face portion 31 adapted to fit flush with the housing 20 when closed, side portions 32 adapted to fit within the side of the opening 21, a back portion 33, a bottom portion 34, a downwardly and forwardly inclined plate 36 disposed within the tray or receptacle 30, spring arms 37 resiliently supporting and attaching the plate 36 to the back portion 33, a depressable catch 38 attached to the plate 36 for co-acting with the stop 23 to limit the outward movement of the tray 30 in the housing 20, a pivot pin 39 disposed between the sides 32, a rotor or actuator 40 pivotally mounted on the pin 39, an inwardly curved or recessed side 41 on the rotor 40 bearing against the resiliently mounted plate 36 creating a substantially closed cavity or chamber 42 therebetween bounded at the ends by the tray sides 32; a back portion 43 on the rotor 40 for contacting the front trip cam 27 on the trip 24, a front portion 44 on the rotor 40 for contacting the rear cam 26 on the trip 24, an end portion 45 on the rotor 40 for journaling the pin 39, and a knob 46 on the receptacle 30 for opening and closing the tray 30 by rocking the tray 30 on the pivot pin 22 so that the back 43 and the front 44 of the rotor 40 contact the trip 24 at its cams 27 and 26 when the tray 30 moved into or out of the housing 20. The rotor 40 is equipped with receiving slots 60, Fig. 5, for holding a cigarette 50 therein during periods when the smoker desires to lay the cigarette 50 down.

The tray 30 is adapted to pivot with the notched portion 35, Fig. 5, pivoting on the pin 22, Fig. 2, so that the tray 30 may be closed and opened by means of knob 46 with the face portion 31 of the tray 30 limiting the inward pivoting by contacting the stop 23. When it is desirable to remove the tray 30 from the housing 20, the catch 38 is depressed out of contact with the stop 23 and the tray 30 may then be removed from the housing 20 and the accumulated tobacco ashes and extinguished cigars and cigarettes may then be emptied therefrom. The tray 30 may be reinserted in the opening 21 of the panel 20 by placing the notched portion 35 on pivot pin 22 and then pushing the catch 38 past the stop 23 so that catch 38 will pass the stop 23 while moving in an inward direction due to the angle of the stop 23 and the configuration of the end of the catch 38.

The shroud 28, supported by the arm 29 is adapted to prevent air currents behind the panel 20 from sucking ashes out of the tray 30.

The plate 36 is disposed within the tray 30 slanting downwardly and toward the front 31 thereof and is supported by the resilient arms 37 which are attached to the back portion 33 so that the plate 36 is resiliently mounted within the tray 30 and it is to be noted that the catch 38 stems from the plate 36 thereby eliminating a separate anchorage for the catch 38. The pin 39 is disposed between the side portions 32 of the tray 30 and carries the rotor 40 freely rotatably disposed thereon with the rotor 40 bearing against the plate 36 on either end of the curved side portion 41 thereby creating a substantially closed chamber 42 between the curved side portion 41 and the plate 36 and between the tray sides 32.

Referring in greater detail to the elements of the rotor or actuator 40, it will be noted that the

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rotor 40 comprises a front cam contacting portion 44 for contacting the rear cam 26 on trip 24 to rock the upper portion of rotor rearwardly, a back cam contacting portion 43 for contacting the front cam 27 on the trip 24 to rock the upper portion of rotor forwardly, a first cam portion 47 for contacting the resilient plate 36, and a second cam portion 48 for contacting the resilient plate 36.

When the tray or receptacle 30 is moved out of the housing 20, Fig. 9, the front cam contacting portion 44 of the rotor 40 contacts the rear cam 26 of the trip 24 which rocks the rotor 40 backwardly so that the first cam 47 on the rotor 40 depresses the resilient plate 36 and the second cam 48 of the rotor moves away from the resilient plate 36 so that the chamber 42 is open at the forward lower end thereof to dump a cigarette from the chamber.

When the tray 30 is moved into the housing 20, Fig. 7, the rear cam contacting portion 43 of the rotor 40 contacts the front cam 27 of the trip 24 which rocks the rotor 40 forwardly so that the second cam portion 48 on the rotor 40 depresses the resilient plate 36 and the first cam 47 moves away from the resilient plate 36 so that the chamber 42 is open at the rearward upper end to receive a cigarette which has been deposited adjacent thereto. It will be noted that the cam portion 47 slides along the plate 36 in opening the bottom of the chamber 42 providing a scraping action helping to project a cigarette 50 out of the chamber 42.

When the tray 30 is moved to or from full out or full closed relation with respect to the housing 20, the resilient plate 36 pressing against one of the cams 47 or 48 rocks the rotor 40 to or from the positions shown in Figs. 7 and 9, to or from the position shown in Figs. 6 and 8, with the cams 47 and 48 acting as stops for each other against the urging of the resilient plate as each lies on the other side of the axis of rotation of the rotor 40.

The back of the rotor having the cam contacting portion 43 and the plate 36 intersect one another at an angle forming a V slot or channel, Fig. 6, for depositing a burning cigarette therein above and to the rear of the closed chamber 42 so that when the chamber 42 opens at its rearward upper end the burning cigarette will fall into the chamber 42, Fig. 7.

Referring to the operation cycle of the device, Figs. 6, 7, 8, and 9, it will be noted that if the tray 30 is initially in the completely opened position as seen in Fig. 6, and the smoker places his cigarette 50 adjacent the back of the rotor on the plate 36 in the V slot or channel. If the smoker then moves the tray 30 into the housing 20 so that the cam contacting portion 43 of the rotor 40 contacts the front cam 27 of the trip 24 this will cause the rotor 40 to rotate urging the plate 36 downwardly and opening the chamber 42 at the rearward upper end thereof so that the cigarette 50 enters the chamber by rolling down the inclined plate 36 as seen in Fig. 7. After the tray has been completely closed, the rotor 40 moves out of contact with the trip 24, and the rotor 40 and plate 36 then return to the position of Fig. 8 with the upward spring pressure of the plate 36 rotating the rotor 40 thereby closing the chamber 42 and imprisoning the burning cigarette in the chamber 42. When the user opens the tray, Fig. 9, the front cam contacting portion 44 of the rotor 40 contacts the rear cam 26 of the trip 24 urging the plate 36

downwardly thereby opening the chamber 42 at the forward bottom thereof so that the previously extinguished cigarette 50 may move down the inclined plate 36 and falls into the bottom of the tray 30. Upon movement of the tray to its full open position as seen in Fig. 6, the rotor 40 and tray 30 assume their normal position as seen and are now in readiness to receive another cigarette and repeat the hereinbefore described cycle.

Referring to Figs. 10 and 11, a modified rotor 40A is shown positioned adjacent a modified plate 36A with a spring 51 resiliently urging the plate into contact with the rotor. It will be noted that the plate 36A is pivotally mounted on the pin 52. Figs. 12 and 13 show a second modified rotor 40B and a second modified plate 36B which is pivotally mounted on a pin 52 and resiliently urged into contact with the rotor 40B by the spring 51B which is tortioned around the pin 52 with one arm of the spring 51B pressing against the plate 36B and the other arm of the spring 51B pressing against the tray 30B and it will be noted that the plate 36B has a top curved portion 53B cooperating with the rear cam contacting portion 43B of the rotor for creating a channel or slot for receiving and positioning a burning cigarette above the chamber 42B. The operation of the two modified devices is the same as that of the device shown in Figs. 1 to 9 inclusive.

Referring to Figs. 5, 11, and 13 relative to an open type ash tray, the panel 20 and associated parts are deleted. The rotor 40, 40A, or 40B is mounted on the top of a tray together with the spring 37 or 51 and the plate 36, 36A, or 36B so that the smoker can pivot the rotor or actuator 40 toward and away from the plate with his fingers to operate the device as hereinafter set forth. Presuming the open type has been previously used, it is necessary to clear a previously extinguished cigarette from the chamber 42 so that when the smoker desires to extinguish his cigarette, he places it in the V channel between the rotor back 43 and the top of the plate 36 and he then, with his fingers, rocks the rotor 40 toward the plate 36. This movement designedly opens the chamber 42 between the plate 36 and the rotor 40 to dump a previously extinguished cigarette therefrom and also incidentally partially extinguishes the newly deposited cigarette by crushing same. The smoker then rocks the rotor 40 away from the plate 36 opening the chamber 42 at the top thereof which allows the newly deposited, partially crushed, burning cigarette to fall into the chamber 42. The smoker then releases the rotor 40 and the spring pressed plate 36 rocks the rotor to close the chamber.

The general proportions and relationship of the rotor and resilient plate indicated in the drawings and described herein are desirable to the proper functioning of the invention but obviously can be modified such as the rotor being resiliently positioned against a stationary plate or the plate contacting the trip to effect the purpose of the invention and this reversal of function is considered within the scope of the invention.

While the invention has been disclosed and described in relation to preferred embodiments, it is obvious that many changes may be made in size, shape, arrangement, and detail of the various elements without departing from the spirit thereof, and it is not intended to limit the

scope of the invention other than by the terms of the appended claims.

I claim:

1. An extinguisher for a tobacco ash receptacle comprising a housing member, a cam on said housing member, a tray movable in said housing, a portion of said tray being adapted to pass said cam, a resiliently positioned plate disposed in said tray between the sides thereof, a rotor pivotally mounted between the sides of said tray adapted to contact said cam to rock said rotor, said rotor having a curved portion normally positioned against said resiliently mounted plate for normally positioning said rotor and for normally creating a closed chamber between said curved portion of said rotor, said plate, and the sides of said tray for extinguishing a burning cigarette by separating the burning cigarette from a supply of oxygen; said rotor being rocked by said cam upon movement of said tray to a closed position relative to said housing against said resilient plate to separate the upper end of said curved portion and said plate to open the chamber therebetween at the top to receive a burning cigarette; said rotor being rocked upon movement of said tray to a closed position relative to said housing by said cam against said resilient plate to separate the lower end of said curved portion and said plate to open the chamber therebetween at the bottom to dump an extinguished cigarette therefrom; said curved portion of said rotor and said resilient plate being adapted to maintain the normal position between themselves when the tray is in a full out or full closed position relative to said housing.

2. A tobacco ash receptacle cigarette and cigar extinguisher comprising, a housing member, a trip on said housing member, a front cam on said trip, a rear cam on said trip, a tray movable in and out of said housing, a rocker pivotally mounted on said tray adapted to pass said trip when said tray is moved into and out of said housing, said rotor having a first bearing portion, a second bearing portion, and a recessed portion between said bearing portions, a resilient plate bearing against said first and second bearing portions of said rocker normally positioning said rocker and normally covering the recess formed by said recessed portion of said rocker to form a substantially closed chamber therebetween, said rotor having a front portion adapted to contact said rear cam on said trip to rock said rocker against said resilient plate when said tray is opened relative to said housing whereby said first bearing portion of said rocker depresses said resilient plate and said second bearing portion of said rocker moves away from said resilient plate so that the chamber between the said recessed portion on said rocker and said resilient plate is opened at the bottom thereof to dump a previously extinguished cigarette therefrom, and said rocker having a cam contacting portion adapted to contact said front cam on said trip to rock said rocker against said resilient plate as said tray is closed relative to said housing whereby said second bearing portion of said rocker depresses said resilient plate and said first bearing portion of said rocker moves away from said resilient plate so that the chamber between said recessed portion on said rocker and said resilient plate is opened at the top thereof to receive a burning cigarette therein; said resilient plate and said bearing portions of said rocker being adapted to

maintain a relation so as to close the chamber between said rocker and said resilient plate when said tray is in closed relation to said housing.

3. A cigar and cigarette extinguisher comprising a rocker, means pivotally supporting said rocker, said rocker having a first upper bearing portion, a second lower bearing portion and, an arcuate portion at the lower side thereof between said first and second bearing portions, a plate normally contacting said first and second bearing portions covering said arcuate portion forming a chamber between said rocker and said plate, said rocker and said plate intersecting to form a V-shaped channel above the chamber for receiving a burning cigarette, means resiliently positioning said plate, means for pivoting the upper portion of said rocker forwardly so that said second lower bearing portion depresses said plate and said first upper bearing portion moves away from said plate opening the chamber to communicate with the V-shaped channel for receiving a burning cigarette therefrom; said resilient means positioning said plate and being adapted to return said plate and rocker to their normal relation closing the chamber after said means for pivoting are released; and means for pivoting the upper portion of said rocker rearwardly so that said first upper bearing portion depresses said plate and said second lower bearing portion moves away from said plate opening the chamber at the lower end thereof to dump an extinguished cigarette from the chamber.

4. In a tobacco ash tray, a box, a cam on said box, a receptacle movable inwardly and outwardly of said box, a rotor pivotally mounted on said receptacle adapted to contact said cam to rock said rotor about its pivotal axis in one direction when the box is moved outwardly and in the opposite direction when the box is moved inwardly when said receptacle is moved inwardly and outwardly of said box, a plate positioned against said rotor, said rotor and said plate being adapted to provide a chamber therebetween, and spring means resiliently urging said plate against said rotor to normally position said rotor in relation to said plate to close said chamber; said cam, said rotor, and said plate being adapted to open said chamber at the top thereof when said receptacle is moved inwardly of said box to receive a burning cigarette; to close said chamber when said receptacle is in said box to extinguish a burning cigarette; and to open said chamber at the bottom thereof to dump an extinguished cigarette therefrom when said receptacle is moved out of said box.

5. In a tobacco ash receiver cigar and cigarette extinguisher, a housing, a tray adapted to be moved into and out of said housing, a rotor pivotally mounted in said tray, said rotor having a front, a back and a side, said side having an upper bearing portion and a lower bearing portion, a downwardly inclined resiliently mounted plate pressing against said rotor contacting said bearing portions, said rotor and plate being adapted to provide a chamber located between said bearing portions; said back and said plate forming a V-shaped channel above the chamber for receiving a burning cigarette; a trip on said housing, a front cam face on said trip for contacting said rotor back to rock said rotor so that said lower bearing portion depresses said plate and said upper bearing portion moves away from said plate to open the chamber to adapt the V channel to receive a burning cigarette when said tray is

moved into said housing; said plate and said rotor being adapted to close the chamber after said rotor passes said trip; and said trip having a rear cam face adapted to contact said rotor front to rock said rotor so that said upper bearing portion depresses said plate and said lower bearing portion moves away from said plate to open the chamber at its lower end to dump an extinguished cigarette from the chamber when said tray is moved out of said housing.

6. A cigarette extinguisher comprising an ash receptacle, an actuator pivotally mounted on said receptacle, cam portions on said actuator, an indented wall on said actuator between said cam portions, an upper wall on said actuator above said cam portions, a resilient plate bearing against said cam portions and extending above said cam portions defining a receiver between said plate and said actuator upper wall adapted to receive a burning cigarette and defining a chamber between said plate and said actuator wall adapted to extinguish a burning cigarette; said actuator being manually pivotable in one direction to operate said cam portions against said plate to open the chamber at the top to communicate with the receiver to permit a burning cigarette to drop from the receiver into the receptacle; said actuator being manually pivotable in the opposite direction to operate said cam portions against said plate to open the chamber at the bottom to communicate with said receptacle to drop an extinguished cigarette into said receptacle; said resilient plate being adapted to operate said cam portions to close the chamber at both top and bottom when said actuator is not being manually pivoted.

7. A cigarette extinguisher comprising an ash receptacle, a plate movably mounted on said receptacle, a manually operated rotor pivotally mounted in said receptacle, a spring urging said plate into contact with said rotor, said plate and said rotor being adapted to provide a chamber therebetween adapted to contain and extinguish a burning cigarette, and also adapted to provide a burning cigarette receiver between said plate and said rotor above said chamber said rotor having a lower bearing portion bearing against said plate adapted to move said plate and said rotor apart at the top of the chamber so that the receiver communicates with the chamber to deliver a burning cigarette from the receiver to the chamber when said rotor is manually pivoted in one direction; said spring and said plate being adapted to pivot said rotor to close the chamber when manual influence on said rotor terminates; and said rotor having an upper bearing portion bearing against said plate adapted to move said plate and said rotor apart at the bottom of the chamber so that the chamber communicates with said receptacle to deliver an extinguished cigarette from the chamber to said receptacle when said rotor is manually pivoted in the opposite direction.

8. In a tobacco ash tray, a housing, a receptacle movable into and out of said housing, a spring pressed plate on said receptacle, an actuator pivotally mounted on said receptacle contacting said plate so that its pivotal movement is resiliently restricted in either direction by said plate, means on said actuator normally defining a closed chamber in conjunction with said plate, and a cam on said housing for contacting said actuator when said receptacle is moved into and out of said housing so that when said receptacle is moved out of said housing said actuator and

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plate are moved to open the normally closed chamber therebetween at the bottom to drop a previously extinguished cigarette and so that when said receptacle is moved into said housing said actuator and plate are moved to open the normally closed chamber therebetween at the top to allow a cigarette positioned thereover to drop thereinto.

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REFERENCES CITED

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

Number
825,078
1,533,682
1,912,598
2,282,036
2,377,713

10 Number
517,221

10

UNITED STATES PATENTS

| Name | Date |
|---------------|---------------|
| Schoen | July 3, 1906 |
| Woywot | Apr. 14, 1925 |
| Snaddon | June 6, 1933 |
| Cobbs et al. | May 5, 1942 |
| Penney et al. | June 5, 1945 |

FOREIGN PATENTS

| Country | Date |
|---------------|---------------|
| Great Britain | Jan. 23, 1940 |