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RUBBISH BURNER

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2 Sheets-Sheet 1

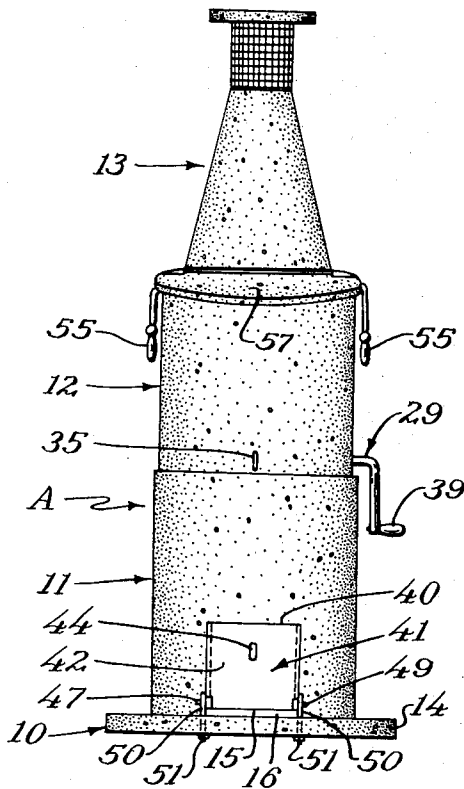


Fig. 1

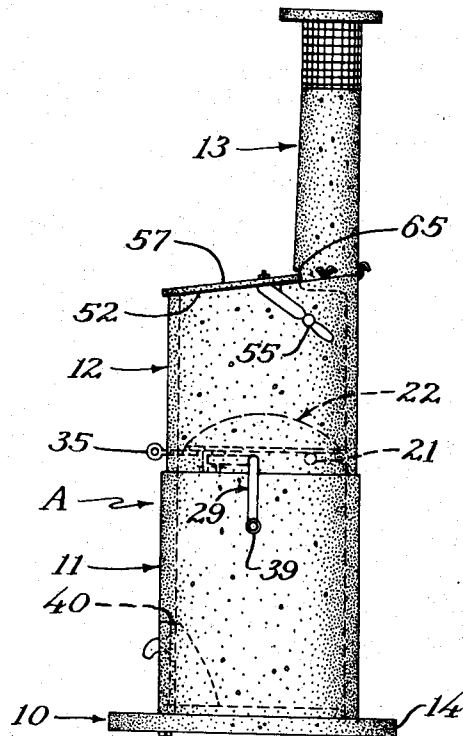


Fig. 2

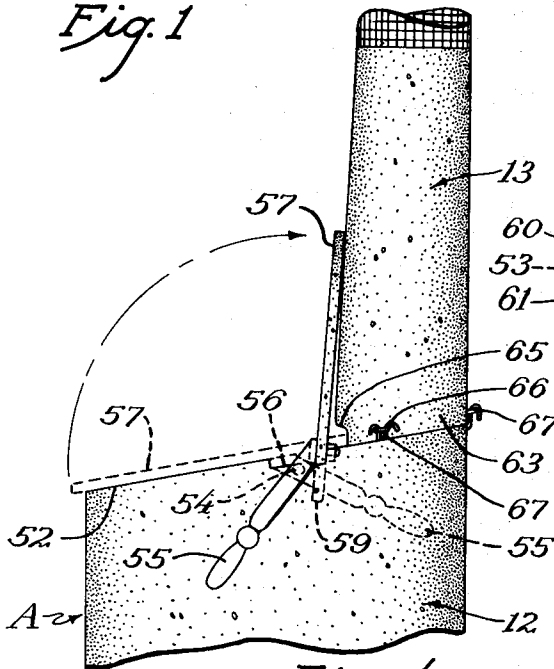


Fig. 4

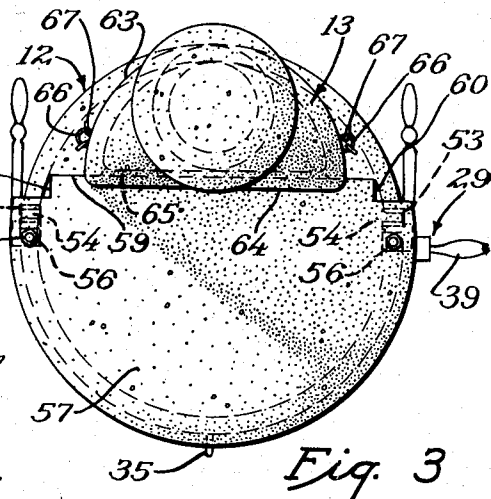


Fig. 3

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2 Sheets-Sheet 2

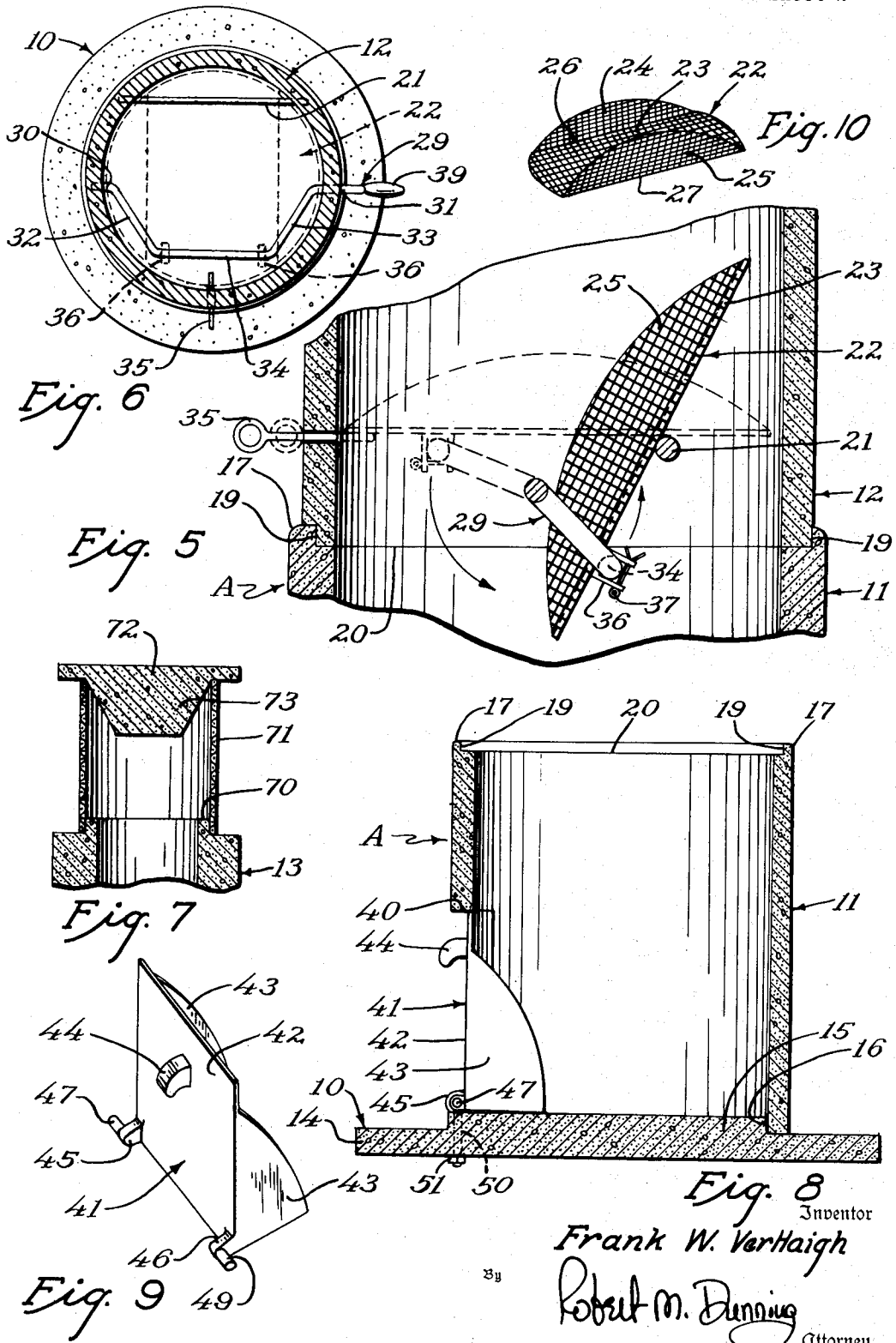


Fig. 8
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2,716,951

RUBBISH BURNER

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1 Claim. (Cl. 110—18)

My invention relates to an improvement in rubbish burner wherein it is desired to provide a simple and inexpensive apparatus for burning of trash, rubbish and the like.

It is an object of the present invention to provide a rubbish burner which will be safe to operate and which is capable of handling a considerable variety of materials. My device will function effectively without danger of setting fire to surrounding objects and may be manufactured at relatively low cost. My device is preferably constructed of cast concrete or similar material and is made in sections which may be readily assembled to produce the finished device.

A feature of the present invention lies in the provision of a door which may be readily operated and which is of sufficient size to accommodate relatively large objects. The door is arranged to enclose the major portion of the top of the burner and when swung into open position will leave the major portion of the top of the burner open so that objects of considerable size may be inserted.

A feature of the present invention lies in the provision of a novel type of grate. I have found that grates of usual construction will not open sufficiently to permit the dumping of large objects which can not be burned. My grate is so arranged that it will open the major portion of the cross section of the burner so that objects of considerable size placed thereupon may be dumped into the lower end of the apparatus.

A further feature of the present invention lies in the provision of a simple type of door which may be opened to empty the ashes and unburned trash. This door is simply formed and when opened provides access to the entire inner portion of the burner.

An added feature of the present invention lies in the arrangement of sections in the production of my burner. My burner is formed in several sections which may be independently manufactured and individually transported. Thus while my burner is formed of cast material, such as concrete or the like, it is readily portable when separated into individual sections. The sections are so arranged that one may rest upon the other by gravity so that a minimum of equipment is necessary in completing the erection of the apparatus.

A further feature of the present invention lies in the chimney construction of my burner. The upper section of the body of the burner is partially covered with a door formed of sufficient size to accommodate articles of relatively large size. The chimney extends over another portion of the upper burner body section. A spark guard of screen or similar material rests upon the top of the chimney and is centered with respect thereto. A top cap member rests upon the screen and tends to form a top closure therefor. This cap is so arranged as to guide the smoke and gases outwardly through the screen and to hold the screen firmly in place by gravity.

These and other objects and novel features of my in-

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vention will be more clearly and fully set forth in the following specification and claim.

In the drawings forming a part of my specification:

Figure 1 is a front elevational view of my rubbish burner showing the general construction thereof.

Figure 2 is a side elevational view of the burner illustrated in Figure 1.

Figure 3 is a top plan view of the burner illustrated in Figures 1 and 2.

Figure 4 is an enlarged side elevational view of a portion of the upper burner section and of the chimney section showing the manner in which the door is hingedly supported.

Figure 5 is a sectional view through a portion of the burner showing the manner in which the grate is supported.

Figure 6 is a transverse section through the upper burner body section showing the position of the grate therein.

Figure 7 is a sectional view through the upper portion of the chimney showing the construction thereof.

Figure 8 is a sectional view through the lower body section and the base of the burner.

Figure 9 is a perspective view of the ash pit door showing the construction thereof.

Figure 10 is a perspective view of the grate.

The burner A is formed of several main parts which fit together and rest one upon the other. The burner A includes a base section 10 which acts to support the lower burner section 11. An upper burner section 12 rests upon the burner section 11 and is supported thereby. A chimney section 13 rests upon the upper burner section 12 and is supported thereby. All of the various parts are held together mainly by the weight thereof.

The base section 10 is best illustrated in Figure 8 of the drawings. This section may comprise a rounded disc like body 14 having a round raised portion 15 concentric therewith. The raised portion 15 forms a peripheral shoulder 16 which is of proper size and shape to fit within the lower burner section 11. Thus the section 11 is held from transverse movement by the shoulder 16.

The lower burner section 11 is generally cylindrical in shape and may taper slightly in form if desired. If the lower burner section is tapered, the smaller diameter end thereof is usually positioned uppermost. The upper edge of the section 11 is preferably provided with a projecting peripheral flange 17 which projects upwardly beyond the remainder of the lower section. This arrangement provides a shoulder 19 between the projecting rib and the upper end 20 of the lower section 11, which is designed to overlap the upper body section 12 and to hold the upper body section in concentric alignment with the bottom section 11.

The upper section 12 is of slightly smaller outside diameter than the lower section 11 so that the upper section 12 may rest inwardly of the shoulder 19. In the construction illustrated the upper section 12 is possessed of a wall thickness somewhat less than the lower section 12 so that the inner surfaces of the two sections are substantially continuous.

A cross bar or brace 21 extends across the upper section 12 at a point spaced from the mid-point of the section. This bar 21 is arranged to provide a slidable support for the grate 22. The grate 22 is shaped as best illustrated in Figures 5 and 6 of the drawings and includes a generally flat center section 23 and opposed upwardly inclined side wings 24 and 25 joining the center section 23 along two parallel lines 26 and 27. The grate 22 is generally circular in plan and is trough shaped in cross section if the section line is taken on a vertical plane through the center of the burner parallel with the front thereof.

As indicated in Figures 5 and 6 of the drawings a crank

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arm 29 is provided with parallel pivot portions 30 and 31 which extend through opposite sides of the burner section 12 near the axis thereof. The aligned pivot portions 30 and 31 are connected by adjoining off-sets 32 and 33 to a crank portion 34. This crank portion 34 extends beneath the grate 22 and acts to support the same. In horizontal position of the grate the rear end thereof is supported by the bar 21 while the front portion thereof rests upon a latch pin 35.

I provide a pair of yokes 36 mounted upon the under-surface of the grate 22 near the front end thereof. These yokes 36 are of proper size to accommodate the crank portion 34 of the crank 29. A cotter pin 37 or other suitable device extends between opposite sides of the yoke 36 to hold the crank portion 31 pivotally engaged therein. As a result the crank portion 34 may rotate while supporting the grate 22 without becoming disengaged therefrom.

In Figure 5 of the drawings I disclose in dotted outline the grate 22 in horizontal position with the rear end thereof supported by the bar 21 and the front end thereof supported by the latch pin 35. In full lines I disclose the grate 22 in tilted position. As indicated in Figure 1 of the drawings the crank 29 is provided with an off-set crank handle 39 thereupon by means of which the grate may be actuated. If the latch pin 35 is pulled outwardly the forward end of the grate will tilt downwardly, opening the major portion of the cross sectional area of the burner and allowing unburned elements to drop into the lower section 11. By rotation of the crank handle 39 the grate may be returned to horizontal position. The grate may be returned to proper position either by rotating the crank 29 in a counter-clockwise direction until the forward end of the grate rests upon the reinserted latch pin 35, or else the crank may be rotated in a clockwise direction as viewed in Figure 5 until the forward end of the grate is elevated sufficiently to permit insertion of the latch pin 35 beneath the same. An advantage of my construction lies in the fact that the crank handle may be rotated in either direction without injury to the grate, thereby preventing injury to the operating mechanism.

The lower section 11 is provided with a generally rectangular door opening 40 in the front side thereof. The door opening 40 is designed to be closed by the door indicated in general by the numeral 41. The door 41 is preferably cast in a single piece for simplicity of construction and in the interest of economy.

The door 41 includes a flat door panel 42 having a pair of sector shaped rearwardly projecting parallel wings 43 thereupon. The wings 43 are preferably substantially flush with the side edges of the door panel 42 so as to extend into close proximity with the sides of the door opening 40. The wings 43 guide the door rearwardly as it pivots toward closed position.

The door 41 also includes a forwardly projecting curved lug 44 by means of which the door may be opened or closed. Near the lower edge of the door and at opposite sides of the door panel 42 I provide a pair of parallel forwardly projecting lugs 45 and 46 which support oppositely extending aligned pivots 47 and 49. These pivots act to pivotally support the door as will be later described.

The base 10 is provided with a pair of spaced apertures extending vertically therethrough for accommodation of eye bolts 50. These eye bolts are properly spaced to encircle the pivots 47 and 49 and to hold the door 41 in place. The eye bolts are placed upon the pivots 47 and 49 and then inserted through the spaced apertures in the base and fastened in place. When once secured the door 42 is held from disengagement unless the eye bolts 50 are removed. It will be noted that the eye bolts 50 are provided with anchoring nuts 51 which are located beneath the base 10 so as to space the threaded portions of these eye bolts from the source of heat. The upper section 12 may if desired have its upper end 52 incline upwardly and rearwardly. A pair of short pipe sections

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or nipples 53 are anchored in the upper section wall near the uppermost end thereof. These nipples or pipe sections 53 are axially aligned on opposite sides of the upper section. The nipples 53 are designed to accommodate the pivot pins 54 on hinge levers 55. Each hinge lever 55 is provided with a pivot pin 54 located near its midpoint and each such lever is provided with an end flange 56 bent to extend parallel to the upper surface 52 of the top section 12 in one pivotal position of the hinge levers. These hinge levers are designed to support the burner top cover 57 in the manner which will be described.

The cover 57 is designed to extend over somewhat more than half the cross sectional area of the upper section 12. The cover 57 is preferably of slightly greater diameter than the upper section 12 and rests upon the upper surface 52 thereof. One edge of the cover 57 extends along a chord 59 of the arc forming the periphery of the cover. The flanged ends 56 of the hinge levers 55 are secured to the cover 57 at substantially diametrically opposite sides thereof.

The cover 57 is provided with opposed notches 60 adjacent to the straight edge 59 of the cover so that the straight edge of the cover may swing down into the interior of the upper section 12 when the cover is tilted into open position. In Figure 4 of the drawings it will be noted that the cover 57 is swung upwardly against the chimney section 13 and extends slightly beyond vertical position so as to be held by gravity in open position when desired. It will be noted that the straight edge 59 of the cover projects down into the upper burner section 12 when in open position.

In preferred form of construction the levers 55 are provided with upwardly extending threaded lugs 61 on the end flanges 56 thereof. These threaded lugs extend through apertures in the cover 57. Nuts 62 on the lugs 61 hold the pivot levers engaged with the top cover 57 and form a means of connecting the hinge levers to the cover. Once the hinge levers are connected to the cover the pivot pins 54 are held in the sleeves of pipe sections 53 so that the cover is pivotally anchored to the top section 12.

The chimney section 13 tapers in width toward its upper extremity. At its lower end the chimney section is arcuate along its rear edge as indicated at 63 and straight along its forward edge as indicated at 64. Inwardly extending arcuate shoulders 58 at the upper end of upper section 12 restrict the opening thereof. As best illustrated in Figures 2 and 4 of the drawings the lower front edge of the chimney section is notched as indicated at 65 so that the rear edge of the pivotal top 57 may extend into the notch so as to produce a substantially air tight closure. As best shown in Figures 3 and 4 of the drawings wire loops 66 are embedded in the chimney section 13 near its lower rounded edge 63. Cooperable wires 67 are embedded in the top section 12 near the upper edge 52 thereof. The wire 67 may be looped through the wire 66 to hold the chimney section firmly in place.

The upper end of the chimney section 13 is substantially circular in cross section. As shown in Figure 7 the chimney section 13 is provided with an upwardly projecting flange 70 on its upper edge. A sleeve 71 of screen or wire grill work rests upon the top of the chimney section 13 and is of proper inner diameter to encircle the flange 70. A cap 72 rests upon the upper end of the cylindrical screen 71.

As may be clearly seen in Figure 7 the cap 72 is provided with an integral frusto-conical downwardly extending projection 73 which fits within the screen 71. This projection 73 fits into the upper end of the screen 71 and holds the cap 72 centered with respect to the screen. The conical projection also tends to deflect the smoke and gases outwardly through the screen and acts in the capacity of a baffle. The cap 72 is preferably formed of concrete or similar material and is of substantial weight so that the screen is held in proper position by gravity.

My burner has been found extremely effective in burn-

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ing rubbish and materials of various types. The door 57 covers substantially more than half the cross sectional area of the upper section and permits articles of substantial bulk to be inserted into the burner without difficulty. During such an operation the cover may be tilted upwardly and rearwardly and will rest in this position. The hinge levers 55 are provided with a handle and projecting beyond the pivot pins 54 by means of which the cover may be easily actuated.

When it is desired to dump the residue from the burning operation into the lower portion of the burner the latch pin 35 may be pulled outwardly allowing the grate to tilt forwardly as indicated in Figure 5 of the drawings. By actuating the crank handle 39 the grate may be moved from virtually vertical position to horizontal position and may be held horizontally by the latch pin.

The ash pit may be emptied by engagement of the handle lug 44 of the door 41 and pivoting the door forwardly and downwardly. The pivots are so formed that they may be cast integrally with the door and may extend through eye bolts which are fastened to extend through the base of the burner. This construction may be inexpensively produced and is extremely effective for the desired purpose.

The parts of the burner are held in proper relationship by gravity and by suitable shoulder means. The burner is preferably cast in its various parts and assembled at any desired location by placing one part of the device upon the next.

In accordance with the patent statutes, I have described the principles of construction and operation of my rubbish burner, and while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that obvious changes may be made within the scope of the following claim without departing from the spirit of my invention.

I claim:

A cylindrical rubbish burner comprising a separable

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assembly consisting of an upper burner section, a lower burner section and a chimney, the said lower burner section consisting of a cylindrical base provided with a centrally positioned cylindrical raised portion, an open ended cylinder wall having a rectangular opening in its lower half portion and being seated on said base about said raised portion, the said cylinder wall having a ventilated door connected thereto and hinged therewith to fit said rectangular opening, an inner peripheral shoulder and groove in the upper rim edge of said cylinder wall, said upper burner section comprising a second open ended cylinder wall mounted on said shoulder and seated in said groove, a movable grate slidably mounted on a support positioned at the base of said second cylinder wall, handle means operatively associated with said grate to tip said grate into an operable and inoperable position, a hinged cover means closing substantially over one-half of the upper open end of said second cylinder wall, and a chimney section supported on the remaining upper end portion of said second cylinder wall.

References Cited in the file of this patent

UNITED STATES PATENTS

1,066,197	Foster	July 1, 1913
1,124,529	Rudd	Jan. 12, 1915
1,147,189	Rue	July 20, 1915
1,270,574	Watson	June 25, 1918
1,586,838	Perrey	June 1, 1926
1,610,667	Feigenbaum	Dec. 14, 1926
1,906,923	Allen	May 2, 1933
1,910,817	Slocum	May 23, 1933
1,975,403	Perky	Oct. 2, 1934
1,985,962	Triggs	Jan. 1, 1935
1,997,204	Slocum	Apr. 9, 1935
2,216,287	Agar	Oct. 1, 1940
2,535,206	Hathaway	Dec. 26, 1950
2,598,603	Richtarsic	May 27, 1952