

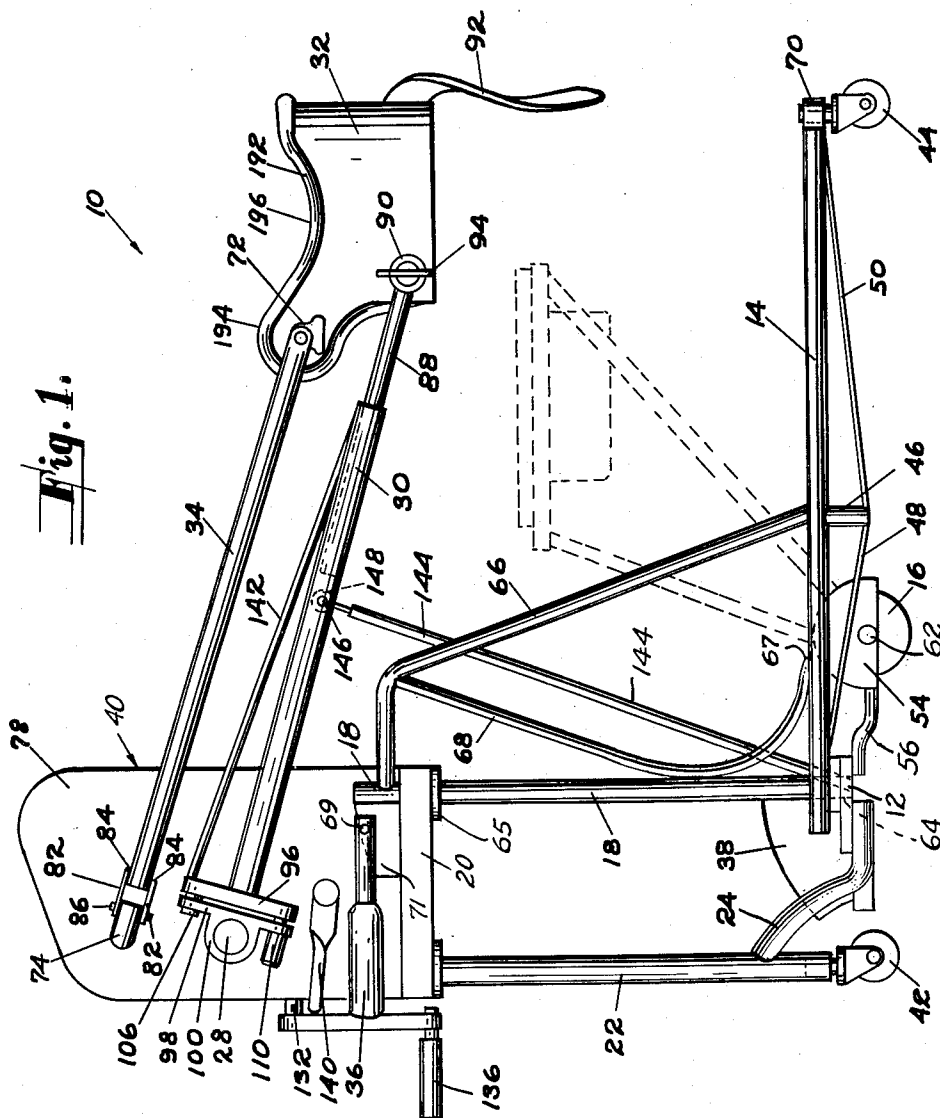
July 11, 1961

F. J. SCHULTE
INVALID'S APPARATUS

2,991,485

Filed Aug. 27, 1956

3 Sheets-Sheet 1



INVENTOR.
F. J. Schulte
BY *Arthur A. Sturges*
Attorney

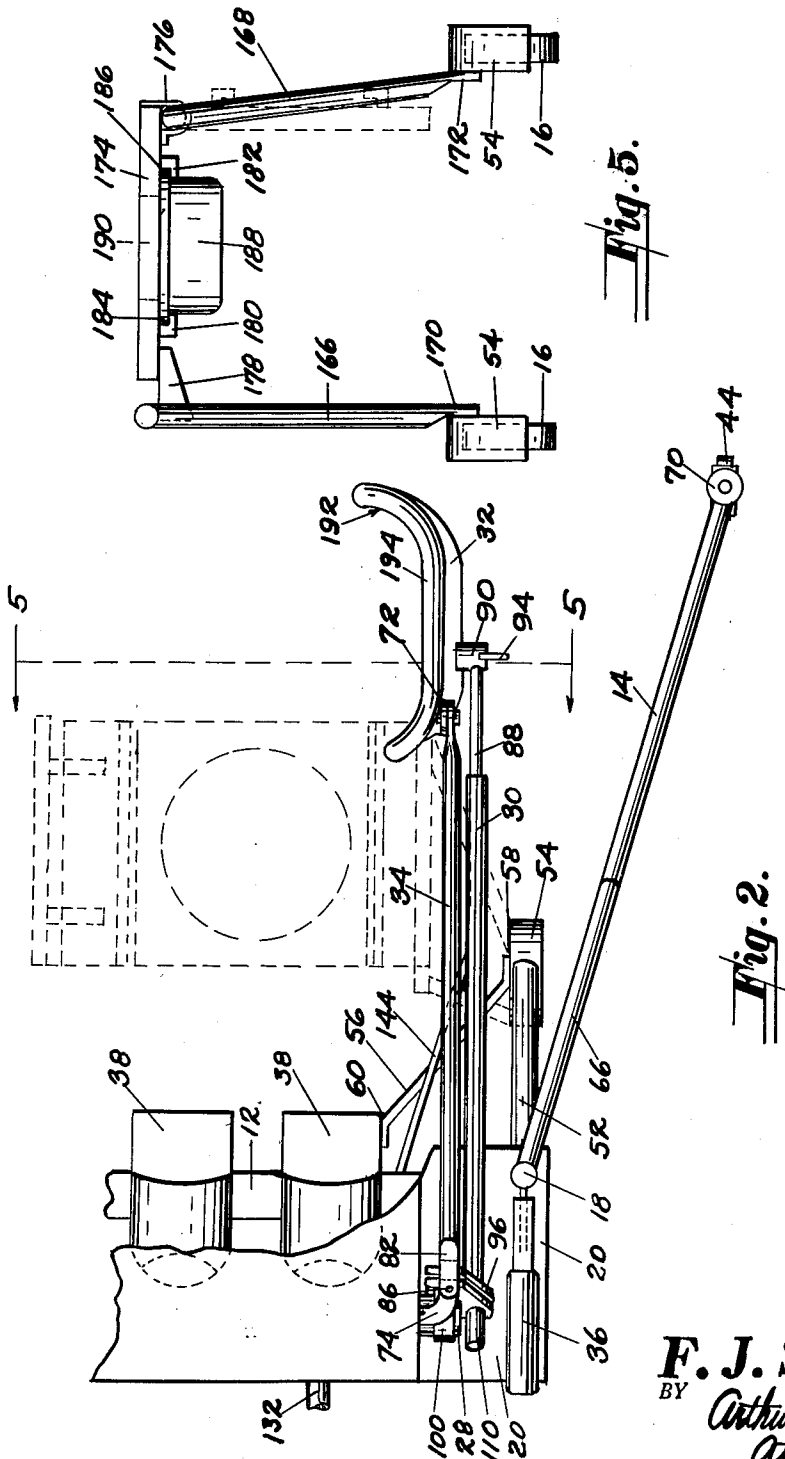
July 11, 1961

F. J. SCHULTE
INVALID'S APPARATUS

2,991,485

Filed Aug. 27, 1956

3 Sheets-Sheet 2



INVENTOR.
F. J. Schulte
BY *Arthur H. Stinger*
Attorney

July 11, 1961

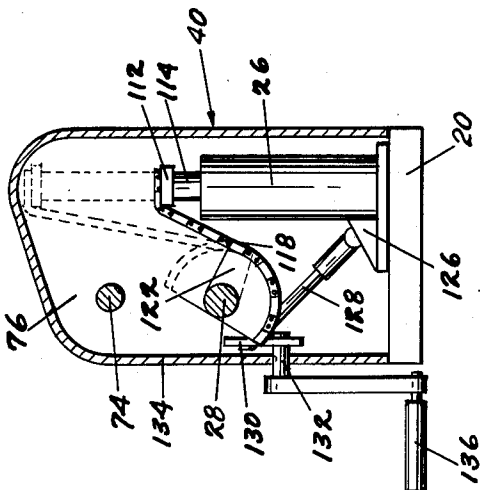
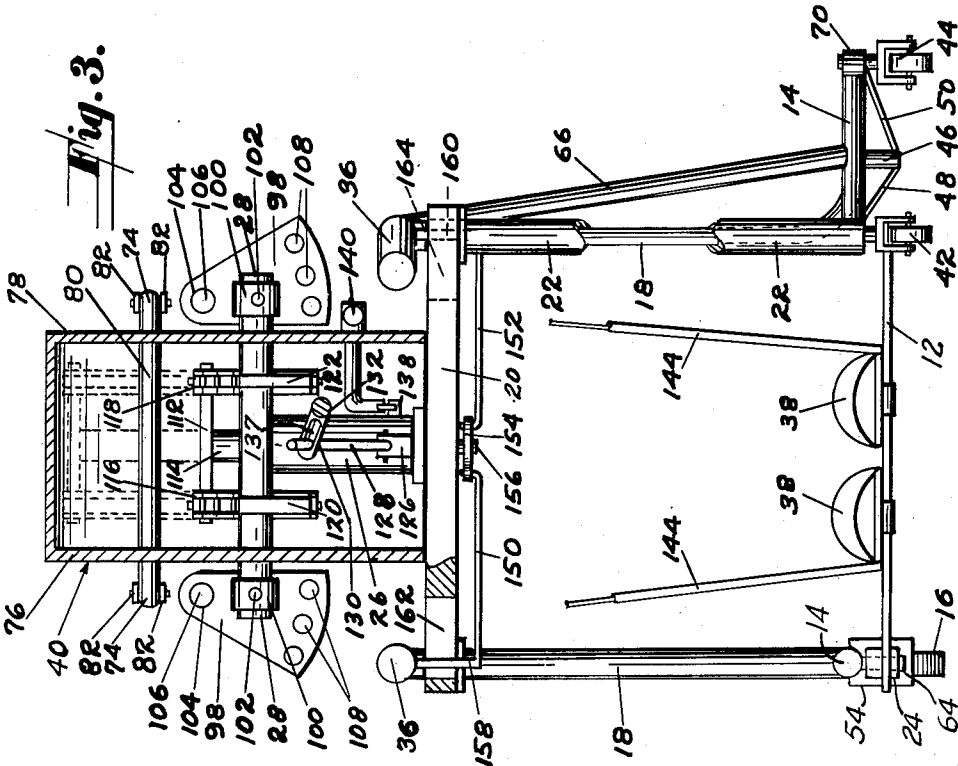
F. J. SCHULTE

2,991,485

INVALID'S APPARATUS

Filed Aug. 27, 1956.

3 Sheets-Sheet 3



INVENTOR.
F. J. Schulte
BY *Arthur H. Stunges*
Attorney

1

2,991,485

INVALID'S APPARATUS

Frederick J. Schulte, Harvard, Nebr.
(5609 21st Ave. S., Gulfport 7, Fla.)Filed Aug. 27, 1956, Ser. No. 606,431
3 Claims. (Cl. 5—81)

This invention relates to devices for picking up an invalid from a bed, chair, or the like and carrying the invalid from one point to another.

Heretofore such devices have primarily been of the kind which support the patient on a sling or seat which receives the weight of the body at the buttocks. This has had a disadvantage in that it is impossible with such construction to change the man's pants, or to place him on a bathroom seat inasmuch as the sling or other device extending under his buttocks is in a position interfering with both of these operations.

Some work has been done on devices supporting the patient partially on a seat and partially on supports fitting up under the arm pits in a manner similar to that of the upper end of a pair of crutches. However, in such devices the pressure of a great proportion of the weight of the body of the invalid presses painfully under the arm pits.

It is, therefore, an object of this invention to provide a device making use of my newly discovered principle of gripping the patient at the sides of the chest where the pressure can be applied over a broad area and the patient lifted with maximum comfort.

A further object of the invention is to provide a device in the use of which the invalid is carried without need for support at the buttocks, whereby pajamas and the like can be easily removed, either for a change of clothing or for placing the invalid on a toilet seat.

A further object of the invention is to provide an invalid carrier having stirrups for supporting an invalid by the feet for at least partially carrying his weight.

A further object of the invention is to provide a carrier which has sufficient wheels in contact with the floor for stability in all respects and yet which is quickly adjustable for placing only two center wheels in contact with the floor for ready turning and maneuvering by pivoting on the center wheels when the invalid is in the carrier.

Another object of the invention is to provide a carrier with a self-contained commode upon which the patient could be placed through the use of the lifting arms.

A particular object of the invention is to provide a carrier by means of which a single operator of small size can lift a very large man, remove his pants while he is in the machine, place him on a commode, and place pajamas on him.

A further object is to provide a carrier on which a bedridden patient can be gripped against his will and once the patient is in the machine, he can be held securely without escape.

With these and other objects and advantages in view the invention embodies a platform mounted on posts, a control box mounted on the platform, a transverse bar connecting lower ends of the posts, wheels carried by brackets extended from the transverse bar, casters on lower ends of some of the posts and also on ends of rails extended from the posts, a hydraulic cylinder in the control box, telescoping arms pivotally mounted in the control box and adapted to be adjusted by the hydraulic cylinder, arm rests on extended ends of the telescoping arms, a control lever for adjusting the positions of side rails extended from the posts, foot rests mounted on the transverse bar and positioned to at least partially support a patient and to coact with the arm rests for supporting a patient on the carrier, and means for mounting a seat on the wheel supporting elements.

2

Other features and advantages of the invention will appear from the following description taken in connection with the drawings, wherein:

FIGURE 1 is a side elevational view of the improved invalid carrier showing a toilet seat, which may or may not be used with the carrier, in broken lines.

FIGURE 2 is a plan view of the improved invalid carrier showing the portion thereof on one side of the center only, and showing a toilet seat adapted to be used in combination with the carrier in broken lines.

FIGURE 3 is an end elevational view of the improved invalid carrier looking toward the end upon which the control box is positioned and showing a section through the control box, to illustrate the mechanism therein.

FIGURE 4 is a longitudinal section through the control box showing a hydraulic cylinder therein in the retracted position in full lines and in the extended position in broken lines.

FIGURE 5 is a view taken on line 5—5 of FIGURE 2, showing a toilet seat supporting structure adapted to be used in combination with the carrier.

While one embodiment of the invention is illustrated in the above-referred-to drawings, it is to be understood that they are merely for the purpose of illustration, and that various changes in construction may be resorted to in the course of manufacture in order that the invention may be utilized to the best advantage according to circumstances which may arise, without in any manner departing from the spirit and intention of the device, which is to be limited only in accordance with the appended claims. And while there is stated the primary field of utility of the invention, it remains obvious that it may be employed in any other capacity wherein it may be found applicable.

In the accompanying drawings, and in the following specification, the same reference characters are used to designate the same parts and elements throughout, and in which the numeral 10 refers to the invention in its entirety, numeral 12 indicating a transverse bar extended across the machine, numeral 14 rails positioned at the sides of the machine, numeral 16 wheels positioned under the intermediate part of the machine, numeral 18 rotatable posts to which the inner ends of the rails 14 are secured and which are pivotally mounted in ends of the transverse bar 12, numeral 20 a platform mounted on upper ends of the posts, numeral 22 designating stationary posts extended downwardly from the forward side of the platform and connected to the transverse bar by brackets 24, numeral 26 a hydraulic cylinder positioned on the platform, numeral 28 a shaft rotatably mounted on the platform, numeral 30 telescoping arms mounted on the shaft 28 and having body engaging elements or arm rests 32 on extended ends, numeral 34 stabilizing rods pivotally connected to the arm rests, numeral 36 control levers for actuating the rails 14, numeral 38 foot rests mounted on the transverse bar 12, and numeral 40 designating a control box mounted on the platform.

Casters 42 are secured to the lower ends of the posts 22 and similar casters 44 are mounted on the ends of the rails 14. The rails 14 are reinforced with truss formations including struts 46 and tension rods 48 and 50.

The wheels 16 are supported from the transverse bar 12 by rods 52 which are secured to fenders 54 that extend over the wheels, and the fenders are further supported by braces 56 which are attached to the fenders at the points 58 and to the foot rests at the points 60. The wheels are rotatably mounted in the fenders by pins 62. The foot rests are mounted on the transverse bar 12.

The inner ends of the rails 14 are secured to the lower ends of the posts 18 and the posts and rails are pivotally mounted in ends of the transverse bar by pins 64. The upper ends of the posts 18 are pivotally mounted in the

platform 20 and the posts are provided with collars 65 on which the rear side of the platform rests. Supporting braces 66 extend from upper ends of the posts that extend above the platform 20 to intermediate parts of the rails 14, and the braces are reinforced by bars 68, lower portions of which are secured to the posts 18, and the lower ends of which are curved to points 67 on upper surfaces of the rails. The handles or levers 36 are secured by pins 69 to webs 71 extended from the upper ends of the posts 18, whereby the posts 18 are turned and the rails 14 moved laterally by the handles 36. The positions of the rails 14 are, therefore, controlled by the levers 36 whereby the rails may extend straight rearward or in diverging relation, as shown in FIGURE 2, as may be desired. The casters 44 are pivotally mounted in hubs 70 on the ends of the rails whereby the ends of the rails are adapted to travel laterally when additional supporting means is desired.

The body support members are suspended from the control box 40 with a pair of telescoping arms 30 and also a pair of the rods 34, the extended ends of the rods 34 being pivotally connected to the support members 32 with bearings 72, and the upper ends being provided with sections 74 that extend through end walls 76 and 78 of the control box and that are connected by a rod 80. The upper ends of the rods 34 are provided with side plates 82 that are connected to the rods, such as by welding at the points 84, and the sections 74 are pivotally mounted between the plates 82 by pins 86.

The arms 30 are tubular and rods 88 slidably mounted in the outer ends are pivotally connected to the body members 32 by bearings 90 whereby the body members are free to swing upwardly and downwardly. The members 32 are also provided with straps 92 and loops 94 which are positioned to receive the straps to retain the arms or other parts of the body in position in the body members. The opposite ends of the arms 30 are provided with pinions 96 that are positioned to coast with segments 98 on which bearings 100 which are secured to ends of the shaft 28 by set screws 102, are positioned. The segments are provided with an upper opening 104 by which the segments are secured to the pinions with bolts 106, and a plurality of lower openings 108 through which pins 110 extend, the ends of the pins 110 being positioned to extend into registering openings in the pinion 96. By this means the angular positions of the body support members and arm rests may readily be adjusted to correspond with the surfaces of the body of the invalid supported in the carrier.

The shaft 28, which is rotatably mounted in the control box, is rotated to adjust the elevations of the members 32 by the hydraulic cylinder 26 through a cross bar 112 on the upper end of a piston rod 114 of the cylinder and chains 116 and 118 which extend from ends of the cross bar 112 over teeth of gear segments 120 and 122 which are mounted on the shaft 28. As fluid under pressure is supplied to the lower end of the jack or cylinder 26 the bar 112 is carried upwardly drawing the chains and rotating the segments and shaft. By this means fluid under pressure may be supplied to the cylinder 26 to hold the body support members in fixed positions, or to elevate the members as may be desired.

The cylinder 26 is provided with a small pump 126, having an operating lever 128 and which is actuated by an eccentric arm 130 on a shaft 132 which is rotatably mounted in the wall 134 of the control box and which is adapted to be actuated by a hand crank 136 on the outer end of the shaft. The operating lever 128 extends through a slot 137 in the lever 130, as shown in FIGURE 3. By this means a single attendant may, by turning the crank 136, elevate a comparatively heavy patient supported by the members 32, and may also lower the patient on a bed, chair, or toilet seat or the like, by opening a release valve 138 which is provided with a handle 140.

The arms 30 are provided with upper braces 142 and

the arms are further supported by telescoping guide rods 144 extended from the foot rests 38 and pivotally connected to the arms 30 by pins 146 in eyes 148 on upper ends of the rods.

The control levers 36 are connected by rods 150 and 152 the inner ends of which are connected to a link 154 which is pivotally mounted on the under surface of the platform 20 by a pin 156 whereby both of the rails 14 are adjusted at the same time and by either of the control levers. The extended ends of the rods 150 and 152 are provided with vertically disposed portions 158 and 160 which extend through slots 162 and 164 in the platform 20, as shown in FIGURE 3.

A toilet seat, which may or may not be used, as may be desired is also provided as an accessory, and, as shown in FIGURE 5, the seat is provided with supports 166 on one side and 168 on the other and lower ends 170 and 172 of the supports are secured, such as by welding to the fenders 54 of the wheels 16. A seat 174 is connected to the upper ends of the supports 168 by hinges 176 and the supports 166 are provided with stops 178 upon which the seat rests at one side of the carrier. When not in use the seat is dropped to the position shown by the broken lines in FIGURE 5. The under surface of the seat is provided with angle bar rails 180 and 182 in which flanges 184 and 186 of a container 188 are slidably mounted whereby the container may be positioned below an opening 190 for use, and readily removed, as desired.

The arm rests or body supporting members 32 are provided with padding 192 with rolled upper edges 194, and the upper edges are provided with recesses 196 whereby the support members may be received under the arms, or against the sides of the body as may be desired.

The lower surfaces of the wheels 16 extend below a plane in which the lower surfaces of the casters 42 and 44 are positioned to facilitate transporting the carrier from one location to another.

Operation

With the parts assembled as illustrated and described the improved invalid carrier is rolled to the side or end of a bed, chair, or the like, and with the arm rests 32 positioned under the arms or in the arm pits of a patient and in gripping relation with the sides of the chest the hydraulic cylinder 26 is actuated by the hand lever 136 to rotate the shaft 28 and elevate the extended ends of the arms 30, and with the feet upon the foot rests the patient is comfortably held as he is transported from one point to another, such as from a bed to a bath room, sun porch, or the like, or from the bath room or sun porch back to the bed.

The side rails or lower arms 14 are readily contracted or spread by the control levers 36 to provide additional supporting means, and the toilet seat may or may not be used as may be desired.

From the foregoing specification, it will become apparent that the invention disclosed will adequately accomplish the functions for which it has been designed and in an economical manner, and that its simplicity, accuracy, and ease of operation are such as to provide a relatively inexpensive device, considering what it will accomplish, and that it will find an important place in the art to which it appertains when once placed on the market.

It is thought that persons skilled in the art to which the invention relates will be able to obtain a clear understanding of the invention after considering the description in connection with the drawings. Therefore, a more lengthy description is regarded as unnecessary.

Changes in shape, size, and rearrangement of details and parts such as come within the purview of the invention claimed may be resorted to in actual practice, if desired.

Having now described the invention that which is

5

claimed to be new and desired to be procured by Letters Patent is:

1. In an invalid transporting machine, the combination which comprises a horizontally disposed platform, stationary posts having casters on lower ends thereof extended downwardly from the leading edge of the platform, a transverse bar spaced rearwardly from the lower ends of the stationary posts, brackets extended rearwardly from the stationary posts and upon which the transverse bar is carried, rotatable posts positioned with the upper ends thereof pivotally mounted in the rear edge of the platform and with the lower ends pivotally mounted in ends of the transverse bar, horizontally disposed rails having casters depending from extended ends thereof secured to the lower ends of the rotatable posts and braced from upper ends thereof, a control housing mounted on the platform, a transversely disposed shaft rotatably mounted in the control housing, telescoping arms mounted on ends of the transverse shaft and extended rearwardly therefrom, arm rests carried by extended ends of the telescoping arms, stabilizing rods positioned above the telescoping arms, means pivotally mounting leading ends of the stabilizing rods on the control housing, means pivotally connecting trailing ends of the stabilizing rods to the arm rests whereby the arm rests are retained in body gripping positions, foot rests mounted on the transverse bar and positioned to coact with the arm rests for

6

supporting an invalid in the machine, and means for rotating the transverse shaft for adjusting the elevation of the arm rests.

2. An invalid transporting machine as described in claim 1, in which the transverse shaft rotating means includes a hydraulic cylinder and a hand crank actuated pump for supplying fluid under pressure to the cylinder.

3. An invalid transporting machine as described in claim 1, in which control levers are provided on the upper ends of the rotatable posts for adjusting the horizontally disposed rails at the sides of the machine laterally.

References Cited in the file of this patent

UNITED STATES PATENTS

1,961,119	Ettinger	May 29, 1934
2,165,700	Glynn	July 11, 1939
2,439,163	Farmer	Apr. 6, 1948
2,539,346	Feist	Jan. 23, 1951
2,565,536	Valentine	Aug. 28, 1951
2,610,330	Sutton	Sept. 16, 1952
2,614,267	Perri	Oct. 21, 1952
2,666,212	Flanders	Jan. 19, 1954
2,666,930	Lenahan	Jan. 26, 1954
2,777,737	Balogh	Jan. 15, 1957
2,792,052	Johannesen	May 14, 1957
2,821,406	Hoyer et al.	Jan. 28, 1958