

[54] GUN RACK

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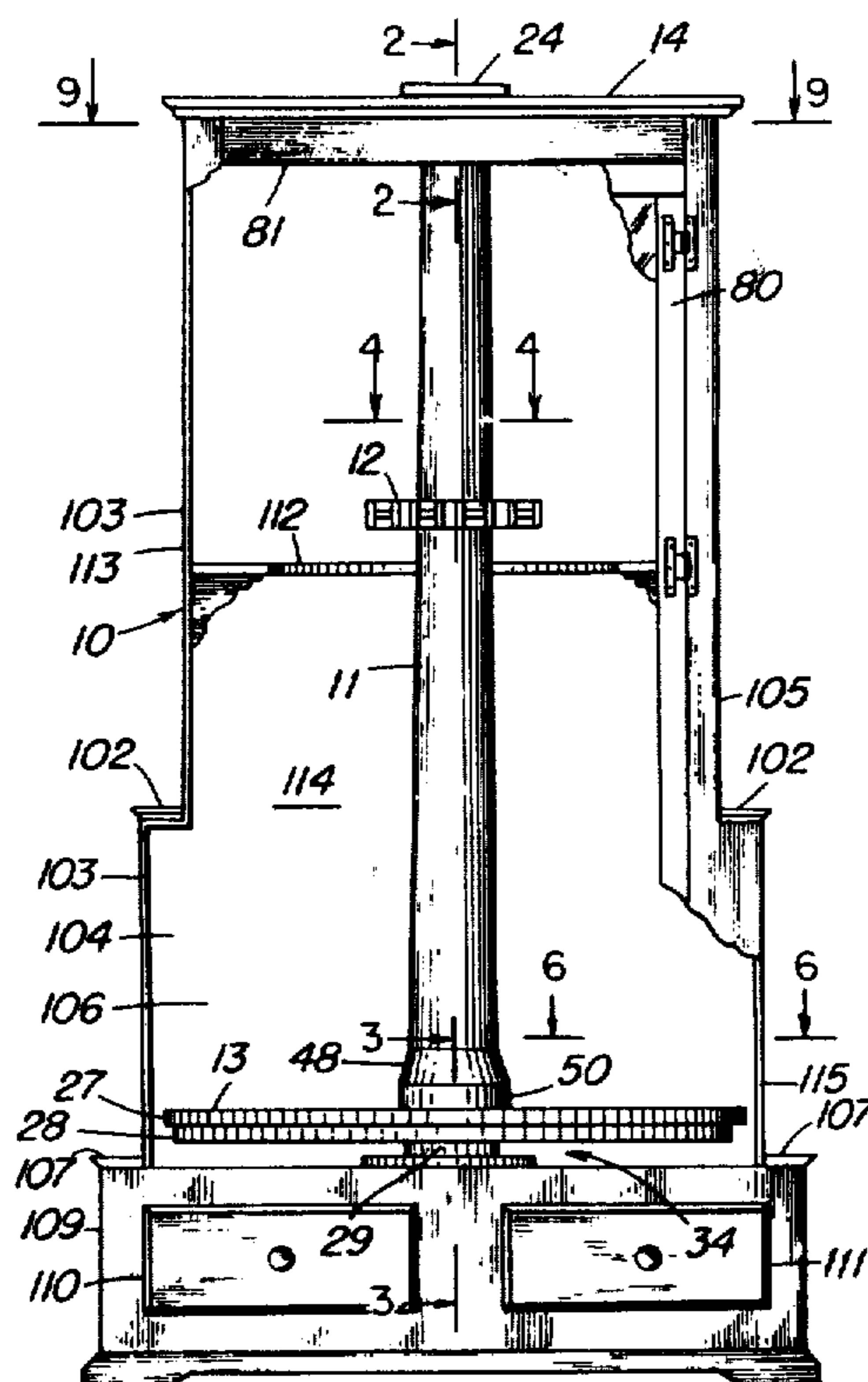
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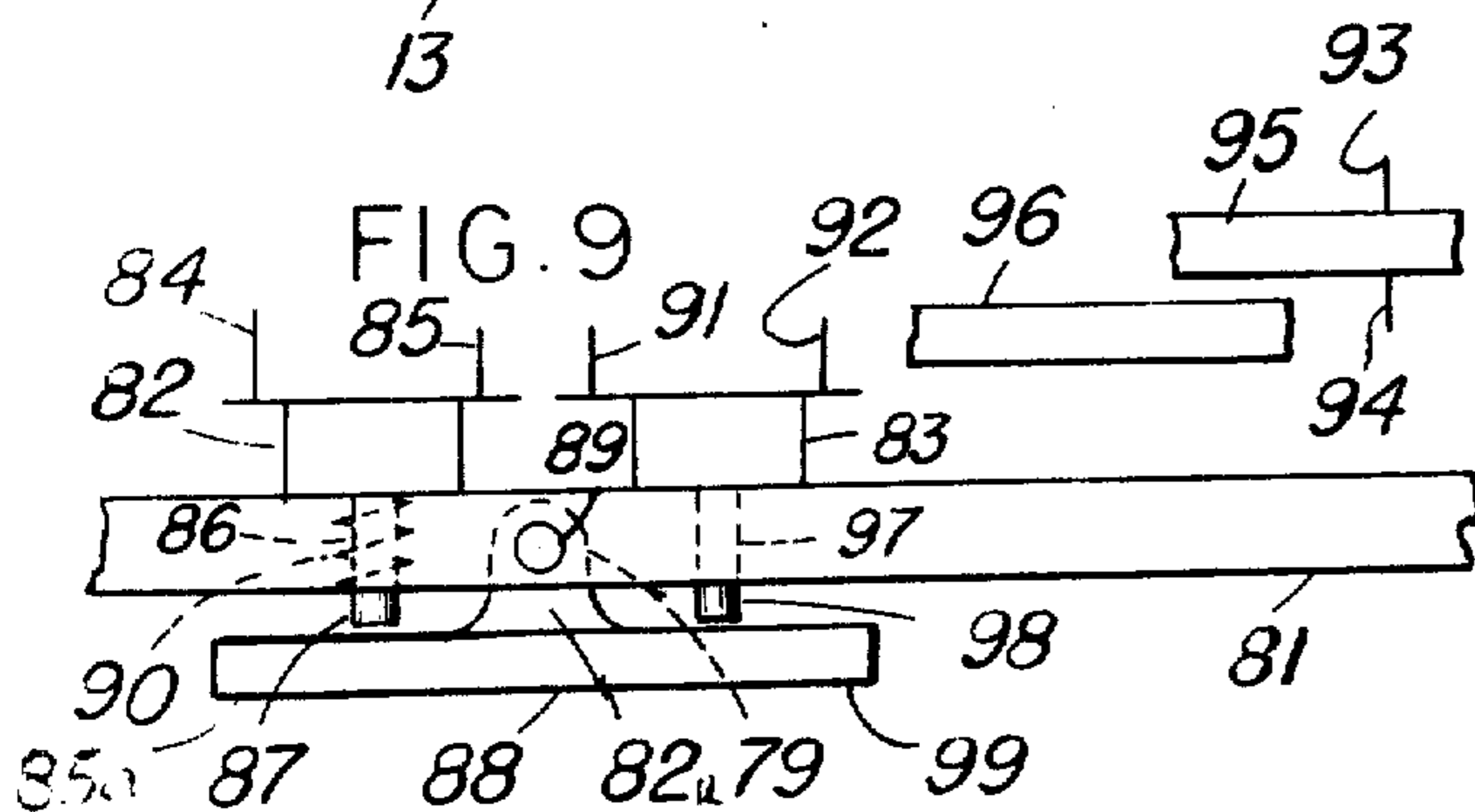
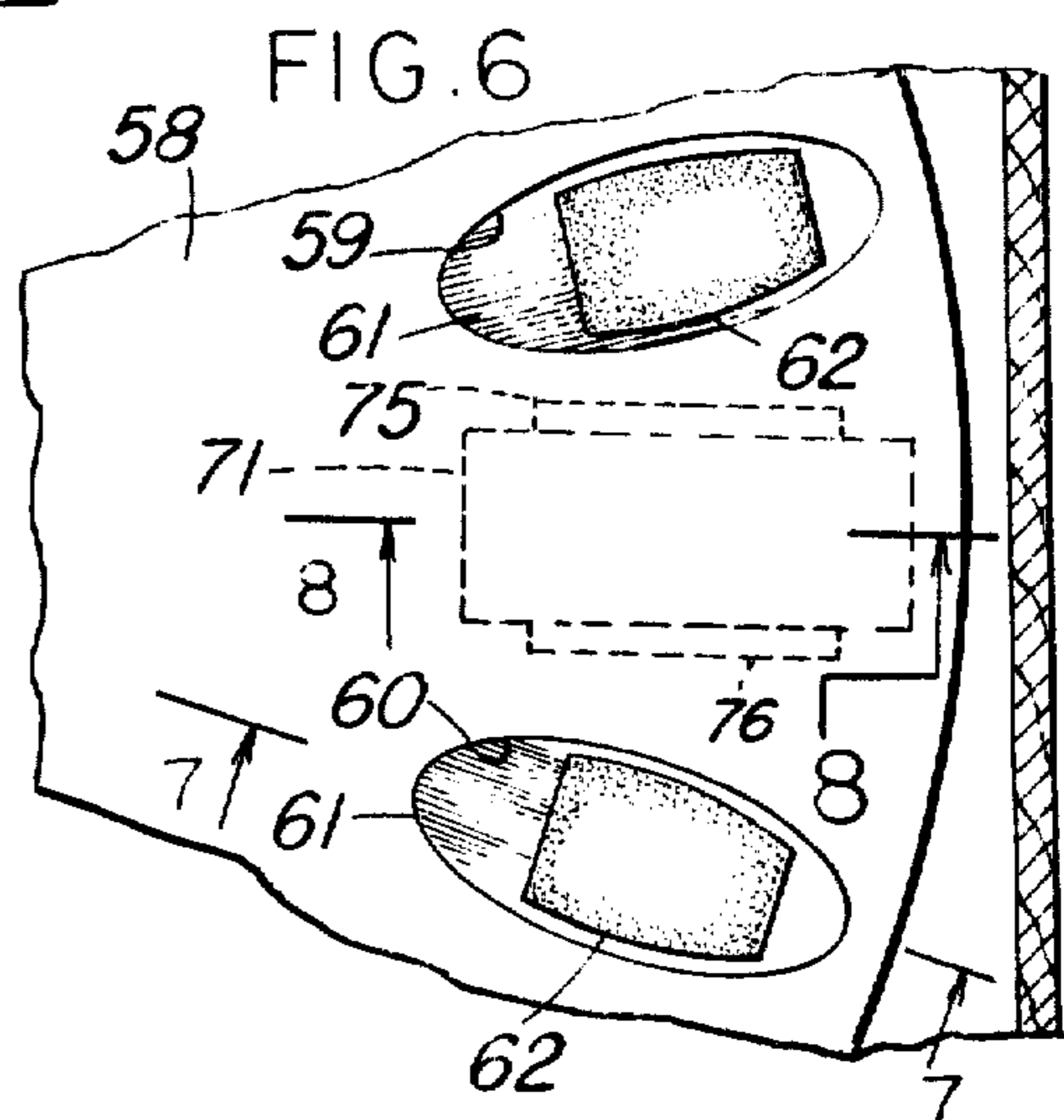
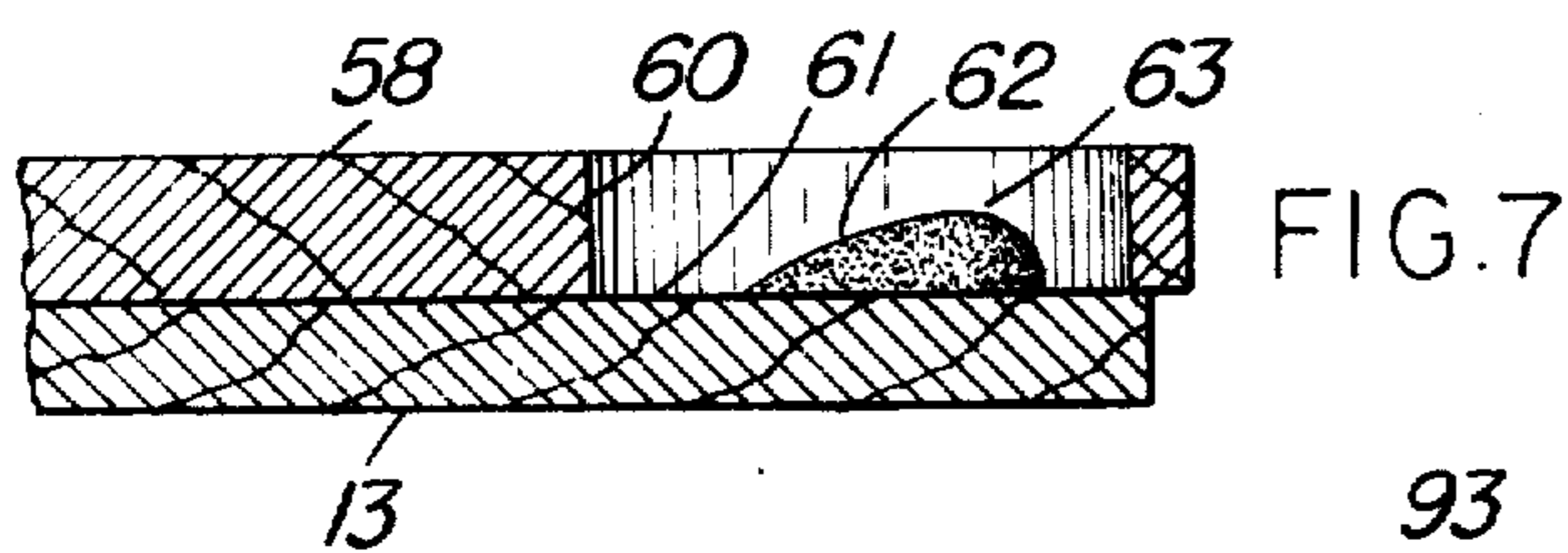
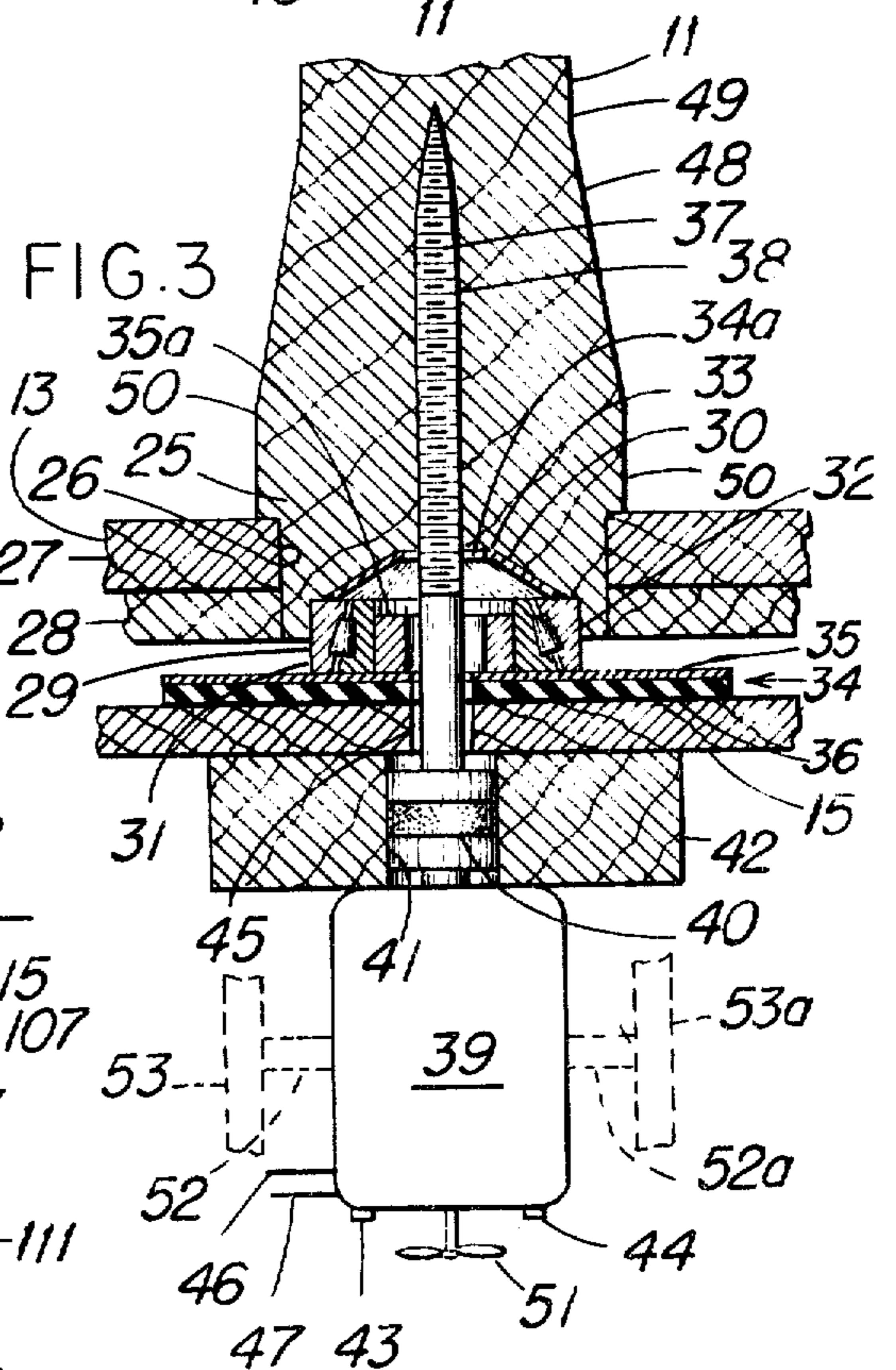
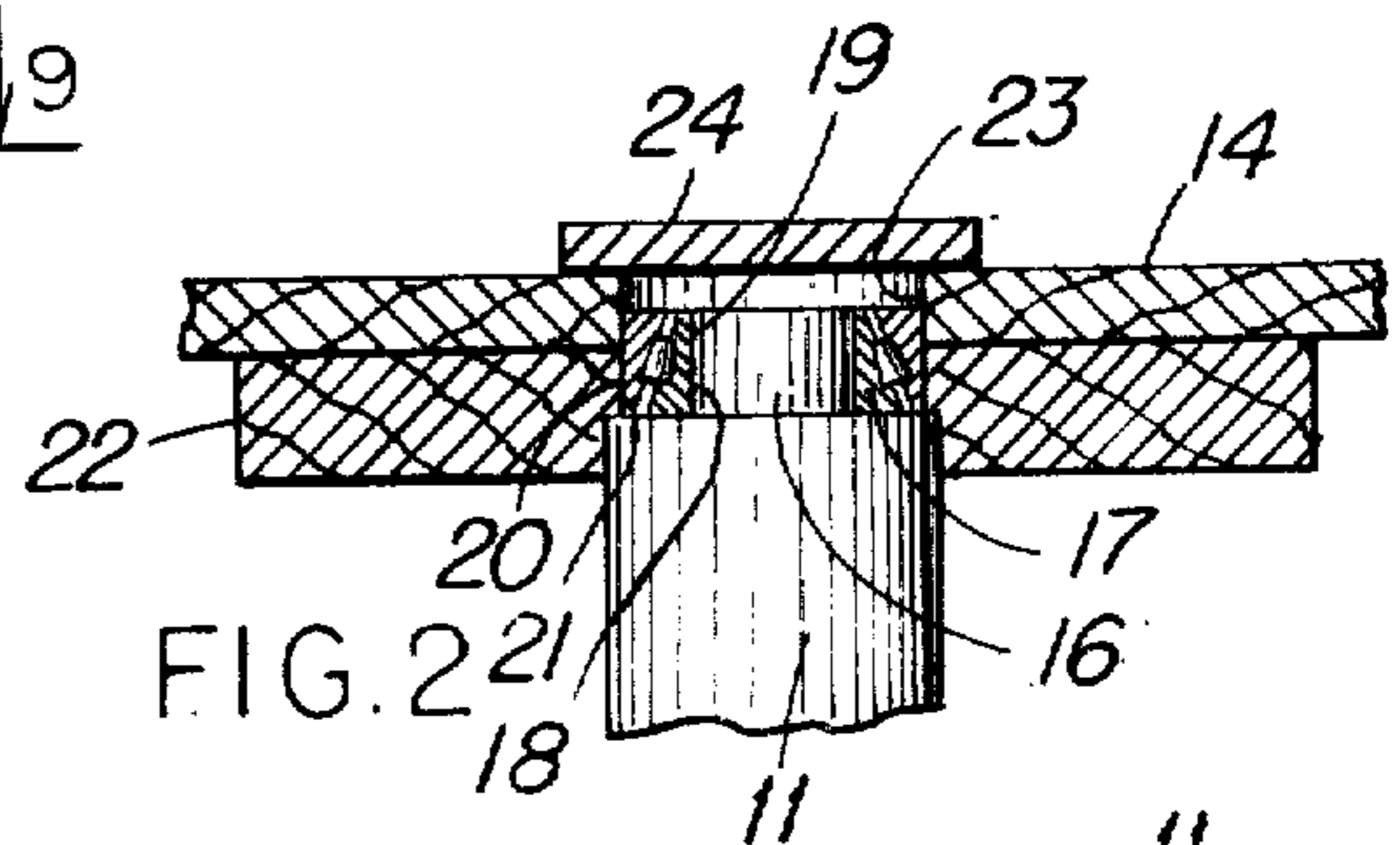
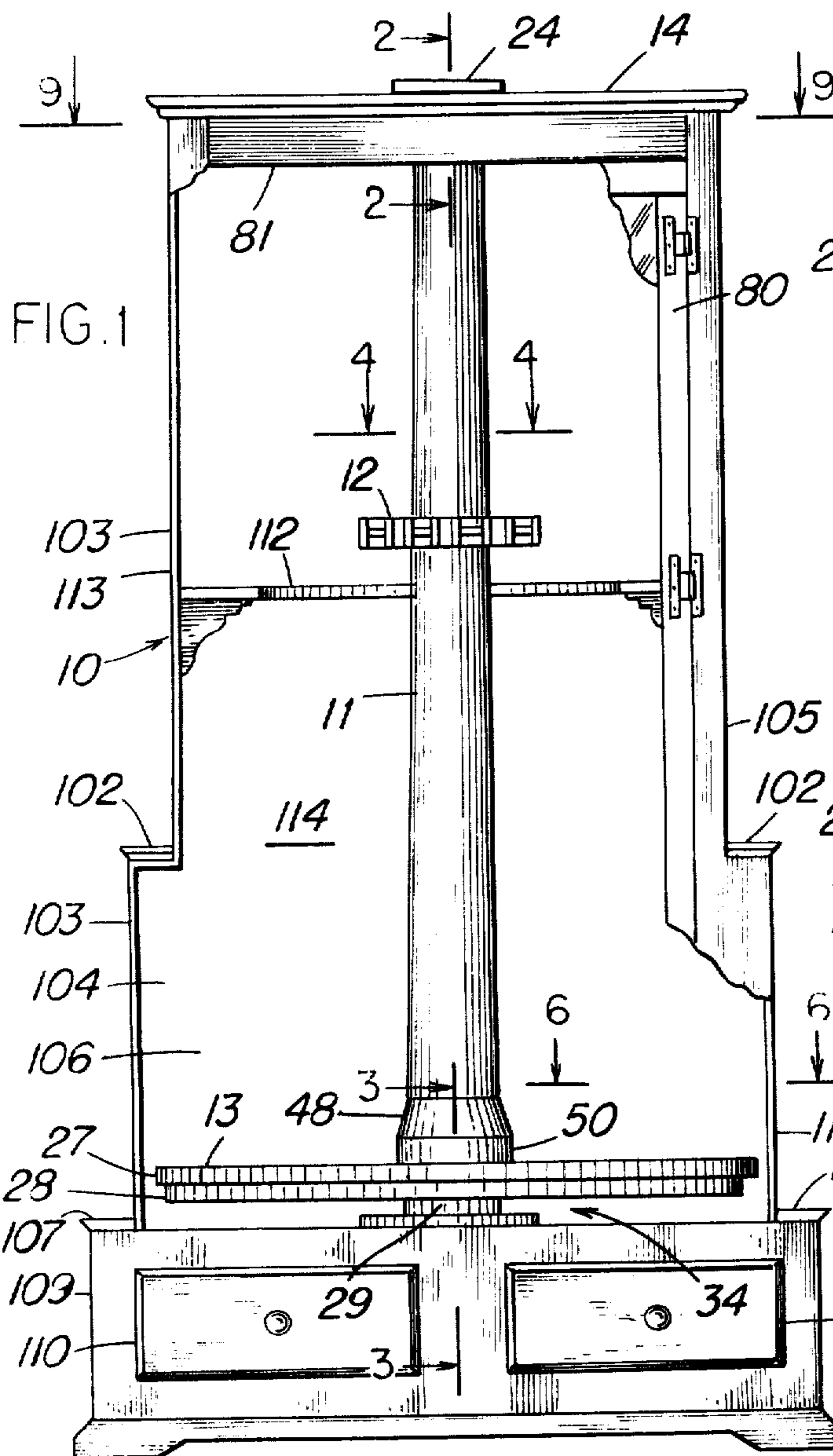
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[57] ABSTRACT

An improved cabinet-enclosed, power-rotated gun rack is provided.

10 Claims, 11 Drawing Figures





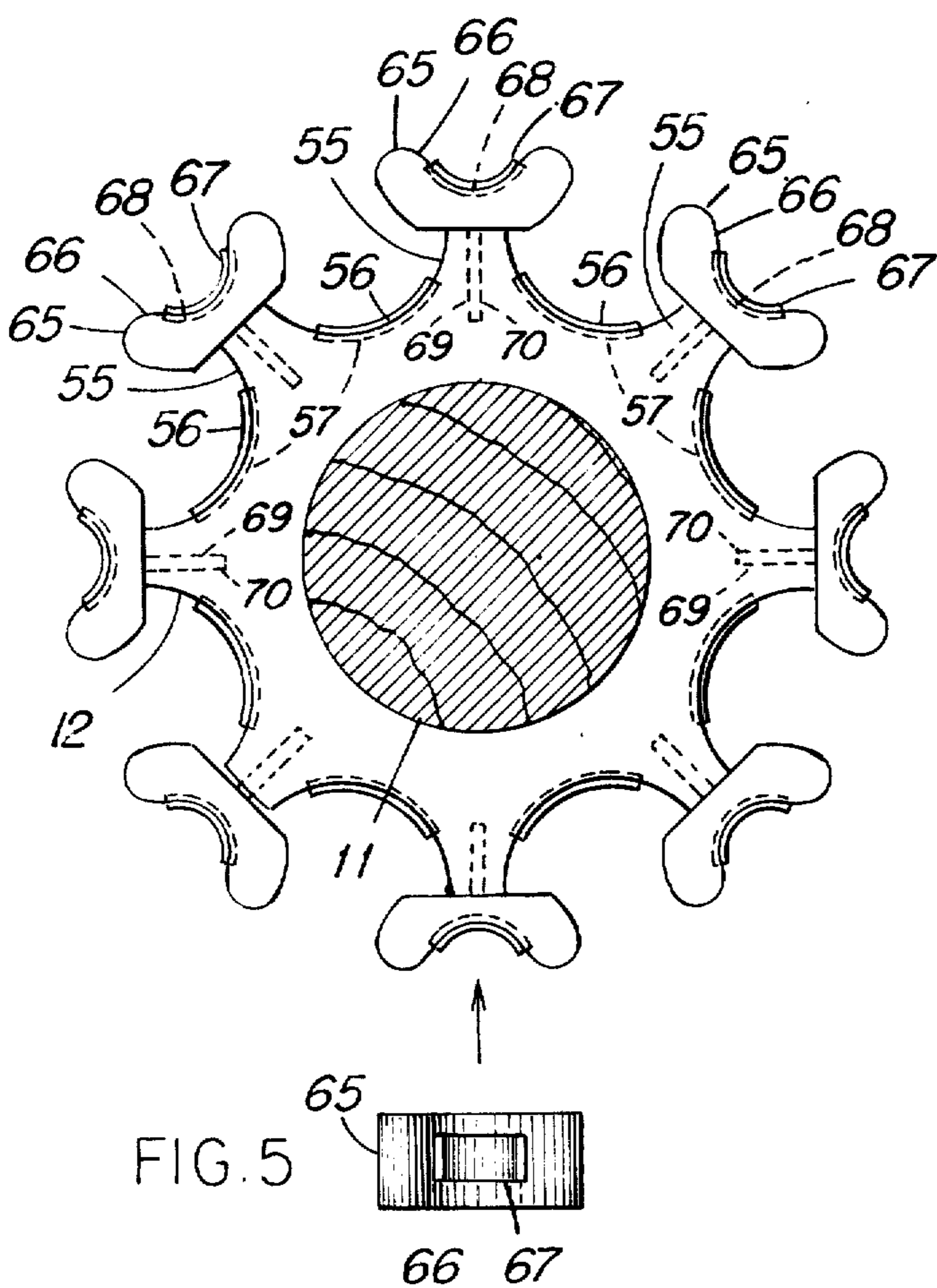
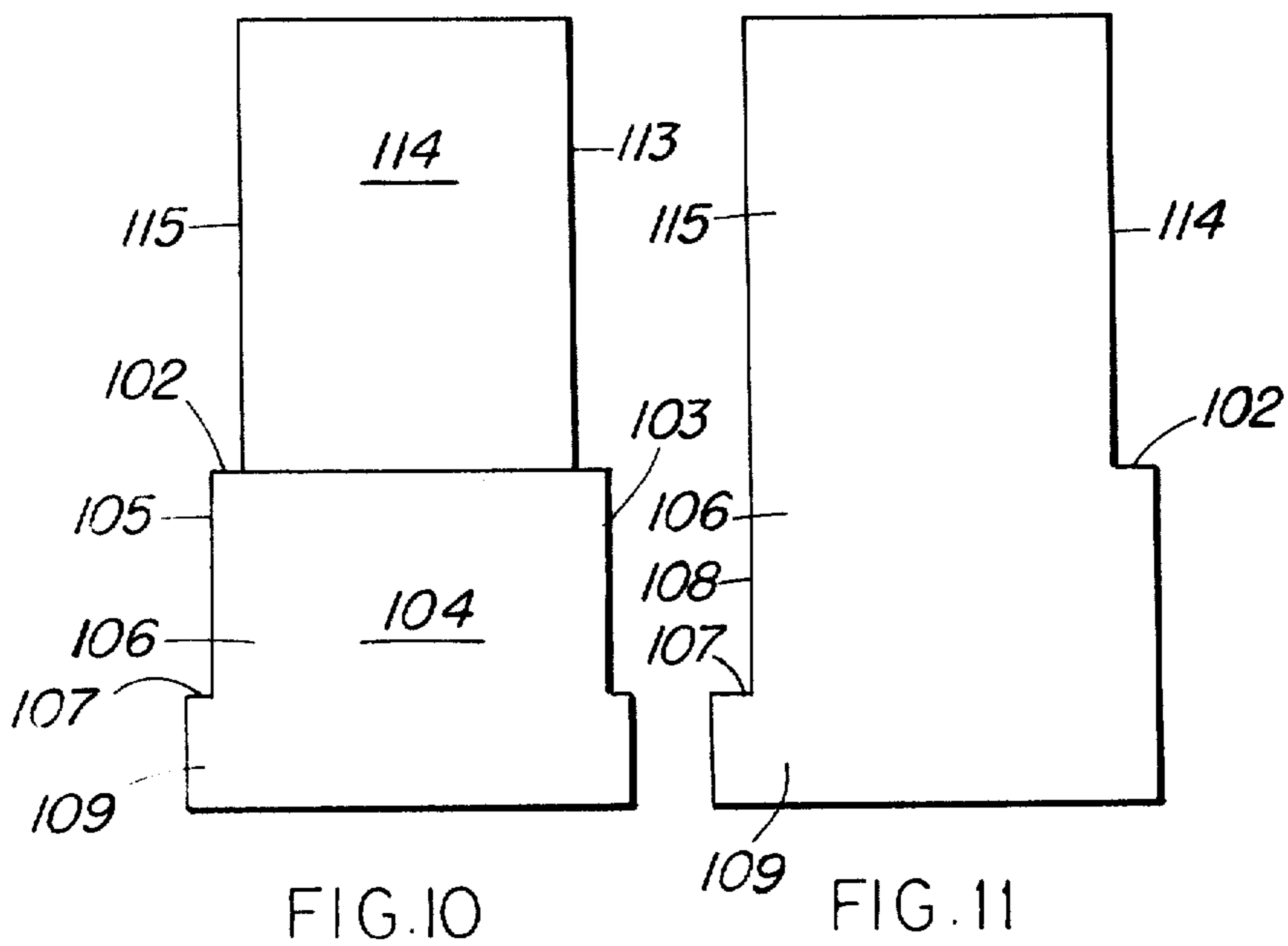
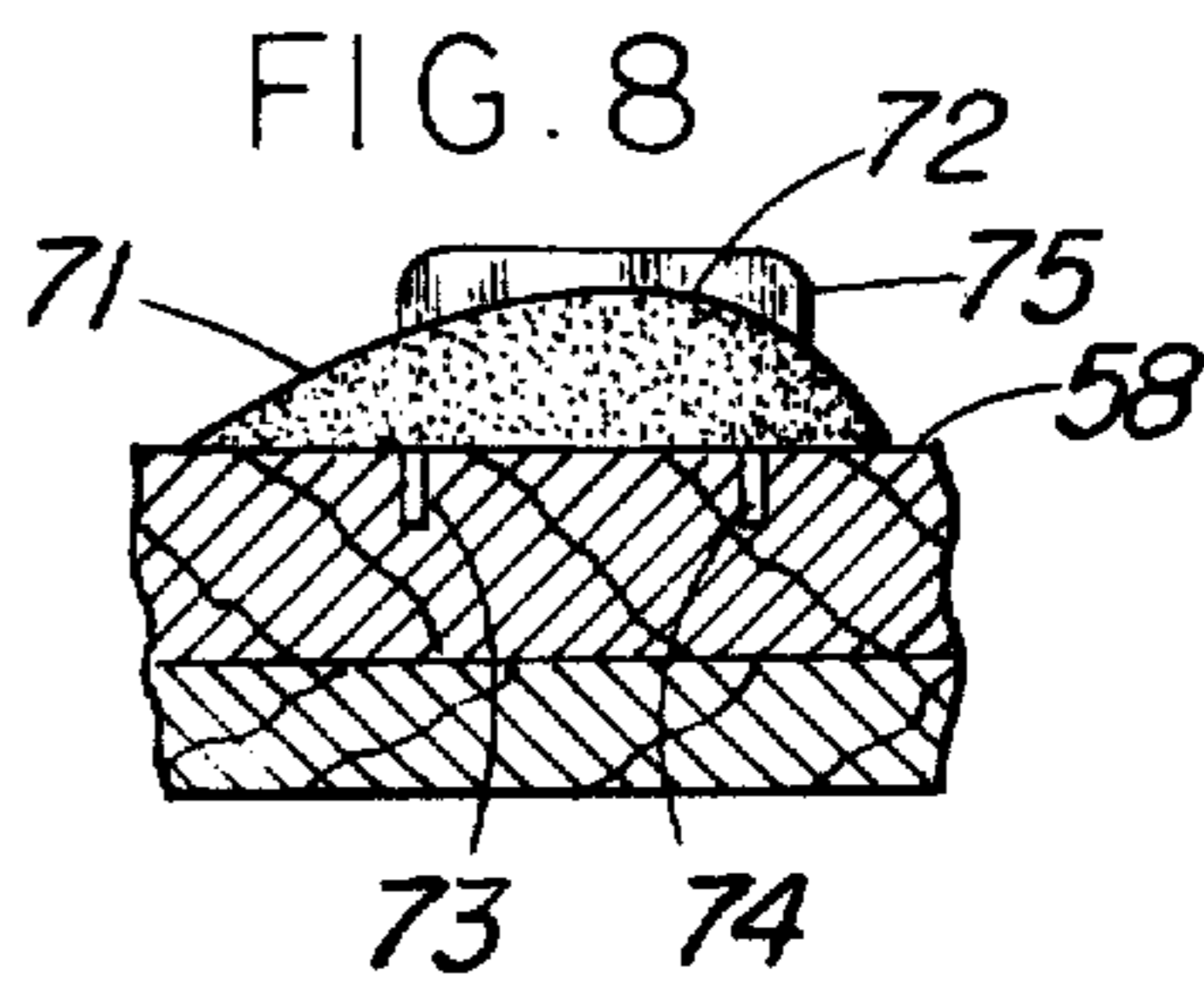


FIG. 4



GUN RACK

BACKGROUND OF THE INVENTION

1. The field of the invention comprises gun racks for storing and displaying guns.

2. Although gun racks of several types have been constructed heretofore, it does not appear that very much refinement of them has taken place. So far as is known, they have been of fixed capacity, with no means for increasing the same. In their supported positions the guns are movable, and if one is accidentally or carelessly disturbed, the uniformity of the group is affected. Usually, too, the guns have been exposed to atmosphere and become dusty, and their condition as well as their appearance suffers. And although rotatable racks are known, the rotation is accomplished by hand, using off-center bearings, and is generally noisy.

According to the invention, a gun rack is provided which avoids the foregoing and other difficulties.

SUMMARY OF THE INVENTION

The present gun rack is a cabinet-enclosed unit having a rotatable post provided with upper and lower gun-supporting rotors or plates. In particular, the post is supported on roller bearings at each end for easy noiseless rotation; also, its upper end is fixed relatively to the top wall of the cabinet and its base is supported by the cabinet floor. Anchorage of the post is thus secure at both ends. An electric motor, invisibly positioned in the cabinet, rotates the post through a simple drive train, and the motor may be started and stopped by an externally disposed, conveniently located switch that prevents unintentional operation. Each gun is supported by the two rotors, the upper one being recessed for secure reception of a gun barrel, and the lower one also being recessed to receive the gun butt or stock and having a shaped piece for engaging the concaved shoulder-engaging end of the gun butt. The gun is thus held in a stabilized position from which it is not easily disturbed and yet which lends itself to easy access. The rack has provisions for increasing the number of guns which may be stored or displayed, comprising removable inserts in the upper rotor and removable butt-supporting pieces mountable on the lower rotor.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention may be better understood by considering the accompanying drawings, which are diagrammatic, and in which

FIG. 1 is a front view of the cabinet-enclosed rotatable gun rack with most of the door and the front cover strips removed and showing the rotatable post and the upper and lower rotors or gun supports;

FIG. 2 is a partial vertical sectional view through the upper portion of the post showing how it is rotatably supported at its upper end; the view is taken along line 2—2 of FIG. 1;

FIG. 3 is a partial vertical sectional view through the lower portion of the post showing how it is rotatably supported at its lower end; the view is taken along line 3—3 of FIG. 1;

FIG. 4 is a sectional view along line 4—4 of FIG. 1 showing the upper rotor or rifle barrel support;

FIG. 5 is a view of FIG. 4 looking in the direction of the arrow showing how an individual gun barrel-supporting insert looks from the side;

FIG. 6 is an enlarged partial sectional view along line 6—6 of FIG. 1 showing how the lower rotor supports the gun butts;

FIG. 7 is a partial sectional view along line 7—7 of FIG. 6;

FIG. 8 is a partial cross-sectional view taken along the line 8—8 of FIG. 6 illustrating the optional structure shown in broken lines in FIG. 6;

FIG. 9 is a partial sectional view along line 9—9 of FIG. 1; and

FIGS. 10 and 11 are rear and side outline views, respectively, of the cabinet on a reduced scale.

DESCRIPTION OF THE SPECIFIC EMBODIMENTS

FIG. 1 shows the gun cabinet 10 as it encloses the rotatable post 11 having on it the upper and lower rotors or gun supports 12, 13, both of which are fixed to the post and rotatable therewith. The post extends between the top wall 14 (FIG. 2) and the floor 15 (FIG. 3) of the cabinet, being fixed but rotatable relatively to the former and rotatably supported on the latter.

The post has a reduced upper end portion 16 (FIG. 2) around which is an annular shoulder or land 17. Portion 16 is tightly engaged by the inner race 18 of tapered roller bearing 19, which makes contact with land 17. The outer race 20 of the bearing is tightly engaged in the recess 21 in the circular plate or cap piece 22, the latter comprising a means for holding the end portion 16 relatively to the top wall 14 and being secured to such wall by means not shown. Other bearing means besides the tapered roller bearing 19 are suitable. Wall 14 has a recess 23 to permit insertion of the bearing, and a circular plate 24 is used to cover the recess, being fixed to wall 14 by means not shown.

The lower end portion of the post is also reduced, note 25 of FIG. 3, and this portion extends through a recess 26 in the lower rotor 13. The latter comprises an upper plate or disc 27 fastened by means not shown to a lower disc 28 of slightly smaller diameter, note FIG. 7. Bearing means 29 are provided for the reduced portion 25, comprising a tapered roller bearing having an inner race 30 and an outer race 31, the latter tightly engaged in a recess 32 in the reduced end portion 25. Resting on the upper end surface of outer race 31 is an upwardly dished, centrally apertured washer 33 which fits in the upper part of recess 32 and which supports the post on the bearing. The bearing rests on a stationary bearing support means 34 fixedly attached to the stationary floor 15 as by screws or bolts and comprising an upper plate 35, preferably of smooth metal, and a lower plate 36, preferably of rubber or other noise-reducing material. Plate 35 has a fixed, centrally positioned, apertured boss or extension 35a extending upwardly therefrom, this portion or boss being tightly engaged by the inner race 30 of the bearing. Thus, it will be seen that the outer race 31 rotates with the post and washer, while the inner race is held stationary by boss 35a. In place of the washer 33, one may use a flat washer, in which case the concaved portion of recess 32 would be replaced by a flat recess.

It will be appreciated that bearing means 19 and 29 facilitate rotation of the post and help provide quiet operation.

Drive means in the form of a long lag screw 37, or other suitable element, is provided to rotate the post, the screw being threaded into a hole 38 in the post that is preferably at least an eighth of an inch smaller in diameter than the screw. The thread direction of the

screw is preferably in the direction of favoring a continuous tightening effect of the screw in the post. At 39 power means are shown in the form of an electric motor for operating the drive means, and the connection between them may suitably be made through a flexible coupling 40 in the recess 41 in block 42, the latter being fixedly attached to the underside of floor 15 by means not shown. Bolts 43, 44 can be used to secure the motor to the block. The lag screw passes through a recess 45 in floor 15 and support means 34 which is preferably larger in diameter than recess 38 to avoid noise. Electric leads for the motor are at 46, 47.

It will be noted that the post 11 has an increasing diameter at the section 48 over the diameter at 49 and that the diameter reaches a maximum at section 50. The purpose of so thickening the post is to provide sufficient material to receive a screw, nail, bolt, or other fastening means, which may be inserted through rotor 13, from the bottom upwards, into the post along an angular line; and the thickened post also adds stability to the lower rotor. A plurality of such fasteners will, of course, be used circumferentially of the post. A cooling fan for the motor is shown at 51. As seen in broken lines, the motor may, if desired, be supported laterally by a plurality of rubber mounting blocks, two of which are seen at 52, 52a, suitably supported by side pieces such as at 53, 53a. These side pieces may be secured at one or both ends to the cabinet in any desired way, for example, to the block 42.

In FIGS. 4 and 5, the upper rotor 12 is shown in more detail, revealing a plurality of peripheral recesses 55 each adapted to receive and support a gun barrel adjacent the muzzle thereof. Each recess is lined with a cushion 56 to provide a soft engagement or contact of the metal gun barrel therein. The cushion, which may be any suitable piece or strip of fabric, braid, rope, soft rubber, soft plastic, and the like, is wedged in a slot 57 formed centrally in the recess and which may extend from end to end thereof or occupy only the central portion.

To support the butt of each gun, the lower rotor 13 has a plurality of butt-supporting means in the form of circumferentially arranged recesses opening through the upper surface 58, two of which are shown at 59, 60 in FIGS. 6 and 7. In the rotor shown, a total of 8 recesses are present, although this number is variable from about 5 to 18, depending on the size of the rotor. The recesses generally conform in their outline shape to that of the average gun butt. In the floor 61 of each recess a convexly curved butt-supporting piece 62 is present, which may be dowelled, glued, or, preferably, fixedly secured in the recess. If merely dowelled, the piece is removable. The piece can also be tightly wedged into the recess and thus be removable. The outwardly convex shape of the piece, note 63 in FIG. 7, is generally complementary to the concave shape of the shoulder-engaging end of the average gun butt, and the piece thus serves to stabilize the gun in position on the rack.

The capacity of the gun rack may be increased by providing on the upper rotor 12, note FIGS. 4 and 5, one or more inserts 65, each recessed as at 66 and having a cushion 67 secured in slot 68. The inserts are preferably removable and are provided with a dowel pin 69 which fits into a recess 70 in the periphery of the rotor. As may be observed, an insert may be placed between each pair of adjacent recesses in the periphery of the rotor. Up to 8 inserts may be so placed, and the

number may vary as the number of peripheral recesses, depending on the rotor size. The inserts are preferably flush with the rotor periphery, as shown.

When inserts are used in the upper rotor, means are provided in the lower rotor to support the gun butt of the gun barrel supported in the insert. Suitably, such means comprise a removable piece, optionally shown at 71 in FIG. 6, and in cross-section in FIG. 8, having a convexly-shaped outer surface 72 which engages the concaved shoulder-engaging end of the gun butt. The added piece 71 rests on the upper surface 58 of the rotor, and preferably is dowelled therein as at 73, 74 to fix the piece against movement. One, two, three, four or more dowels may be used. At each side of the piece is a retainer wall 75, 76 for preventing a gun butt from twisting or turning as it rests on the convexity 72. As many pieces 71 may be used as the number of inserts 65, and like the latter, the number is variable depending on the rotor size.

As shown in FIG. 1, the cabinet has a glass-panelled hinged door 80 through which guns on the rack may be displayed and examined. Over the door is a headpiece 81 (FIG. 9), and on the back side of the latter a pair of spaced switches 82, 83 are mounted. Switch 82 closes a circuit which energizes motor 39, the leads 84, 85 being connectable to leads 46, 47 (FIG. 3). The switch is operated by a shaft or stud 86, which is movable back and forth, and which extends through the headpiece, terminating in a button end 87 which is engageable by an actuator 88. The latter is pivotally attached to headpiece 81, having a tongue 82a which extends into recess 79 in the headpiece and is held by pivot 89. By pressing the left hand end 85a of the actuator, the shaft 86 is depressed against the action of a tension spring 90 which is coiled about shaft 86. As long as end 85a is held depressed against the button 87, the motor circuit will be energized and the post and rotors will be rotated by the motor. When end 85a is released, the motor is cut out of the circuit, and rotation stops.

Switch 83 is of the snap-action type and has leads 91, 92 extending from it which are connectable to leads 93, 94 of a lamp 95, which as may be seen, is disposed inwardly of the headpiece 81 at the top and front of the cabinet. The lamp may be of any suitable type; as shown, it is a fluorescent lamp and is accompanied by a conventional transformer and starter box 96. Switch 83 has a shaft 97 extending through the headpiece and terminating in a button end 98. On depressing the right hand end 99 of the actuator, the button 98 is engaged and the shaft 97 is moved inwardly to operate the snap mechanism of the switch, thus energizing the lamp circuit, turning on the lamp, and illuminating the cabinet interior. End 99 can be released, and the light will stay on; to extinguish it, the end 99 is depressed again to actuate the switch.

The general shape of the cabinet 10 is apparent from FIGS. 1, 10, and 11. An upper outside ledge or shelf 102 extends from one side 103 around the back 104 and across the other side 105. It is decorative, and also useful for storing articles; and it enables the lower portion 106 of the cabinet to be made large enough to accommodate the lower rotor 13. A lower outside ledge 107 extends from one side around the front 108 and across the other side; it too is decorative, useful for holding articles, and it enables the portion 109 of the cabinet to be made large enough to accommodate the drawers 110, 111 (FIG. 1). Inside the cabinet at a convenient level is another shelf 112 which extends across

three sides. It can support various articles like trophies and ammunition. The side and back walls 113, 114, and 115 of the cabinet may be constructed of wood panels that are thinner than the rest of the construction, but any suitable thicknesses and materials may be used.

Any type of gun may be supported on the gun rack, including single and double barrelled shotguns, carbines, over and under shotguns, combination guns, and a varied assortment of high-powered hunting rifles. The recesses in the upper rotor and in the inserts are wide and deep enough to hold double barrels, whether the barrels are side by side or one behind the other. And the upper rotor is sufficiently spaced from the top wall of the cabinet, and the post therebetween unencumbered by extensions of any kind, that the cabinet can receive guns of unequal lengths.

It will be understood that the invention is capable of obvious variations without departing from its scope.

I claim:

1. In a gun rack comprising a cabinet having a floor and a top wall and a rotatable post therebetween, bearing means at the upper and lower end portions of the post to facilitate rotation thereof, an upper rotor on the post for supporting gun barrels, a lower rotor on the post for supporting gun butts, drive means for rotating the post, and power means beneath said floor for operating said drive means, the improvement comprising a reduced lower end portion on the post which extends through and is engaged by the lower rotor, said lower bearing means supporting said reduced lower post end portion and being supported by a stationary bearing support means which in turn rests on and is attached to said floor, said lower bearing means comprising a tapered roller bearing having inner and outer races, said outer race being engaged by said reduced lower post end portion and being rotatable therewith, said stationary bearing support means having a portion which engages said inner race to hold the latter stationary, and said post having a portion of increased diameter above the lower rotor to facilitate securing the latter to the post, said upper rotor having a plurality of recesses in the peripheral edge thereof each of which receives and supports a gun barrel adjacent the muzzle thereof, a barrel-supporting recessed removable insert in the peripheral edge of the upper rotor between each pair of adjacent peripheral recesses, each of said peripheral and insert recesses having a cushion liner for soft engagement with a gun barrel, said lower rotor having a plurality of gun butt-receiving recesses, a butt-supporting piece in the floor of each said gun butt receiving recesses, each said piece being surrounded by the lateral walls of said recess, said piece and said walls helping to stabilize the position of a gun on said rack, and said lower rotor having between each pair of adjacent gun butt-receiving recesses an added removable gun butt-supporting piece having butt-retaining walls, said inserts of the upper rotor and said added pieces of the lower rotor serving to increase the gun holding capacity of the rack, said drive means for rotating the post extending through said floor and into the post to operatively engage the latter, said cabinet having a transparent door through which guns on the rack may be examined, a headpiece over the door, a pair of spaced switches on the

back side of the headpiece one of which energizes a lamp-containing circuit and the other of which energizes a circuit containing said power means, each switch having a switch-operating shank extending through the headpiece and terminating on the front side thereof in a button end, a pivoted manually movable actuator on the front side of the headpiece engageable with one button or the other and operative to actuate one switch or the other, and said switch which energizes the power means-containing circuit having spring means associated with the shank thereof so that the latter moves against the action of said spring means, whereby said actuator must be held in button end-engaging position in order to rotate the post.

2. In a gun rack comprising a cabinet having a floor and a top wall and a rotatable post therebetween, bearing means at the upper and lower end portions of the post to facilitate rotation thereof, an upper rotor on the post for supporting gun barrels, a lower rotor on the post for supporting gun butts, a plurality of gun butt-supporting means on said lower rotor, drive means for rotating the post, and power means beneath the floor for operating the drive means, the improvement comprising

a plurality of recesses in the peripheral edge of said upper rotor each of which receives and supports a gun barrel adjacent the muzzle thereof, and a barrel-supporting recessed removable insert in the peripheral edge of the upper rotor between each pair of adjacent peripheral recesses,

said lower rotor having between each pair of said gun butt supporting means an added removable gun butt-supporting piece having butt-retaining walls, said inserts of the upper rotor and said added pieces of the lower rotor serving to increase the gun holding capacity of the rack,

said cabinet having a transparent door through which guns on the rack may be examined, a headpiece over the door, a pair of spaced switches on the back side of the headpiece one of which energizes a lamp-containing circuit and the other of which energizes a circuit containing said power means, each switch having a switch-operating shank extending through the headpiece and terminating on the front side thereof in a button end, and a pivoted manually movable actuator on the front side of the headpiece engageable with one button or the other and operative to actuate one switch or the other.

3. In a gun rack comprising a cabinet having a floor and a top wall and a rotatable post therebetween, bearing means at the upper and lower end portions of the post to facilitate rotation thereof, an upper rotor on the post for supporting gun barrels, a lower rotor on the post for supporting gun butts, and a plurality of gun butt-supporting means on said lower rotor, the improvement comprising

a stationary bearing support means for supporting said lower bearing means and in turn resting on and attached to said floor, said lower bearing means comprising a bearing having inner and outer races, said outer race being engaged by, and supporting, said lower end portion of the post and being rotatable therewith, said stationary bearing support means having a portion which engages said inner race to hold the latter stationary,

and said upper rotor having a plurality of recesses in the peripheral edge thereof each of which receives

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and supports a gun barrel adjacent the muzzle thereof.

4. Gun rack of claim 3 wherein the upper rotor has a barrel-supporting recessed removable insert in the periphery thereof between each pair of adjacent peripheral recesses, and wherein the lower rotor has between each pair of said gun butt-supporting means an added removable gun butt-supporting piece having butt-retaining walls, said inserts and added pieces serving to increase the gun holding capacity of the gun rack.

5. Gun rack of claim 3 wherein each said gun butt-supporting means in the lower rotor is a recess, and wherein a butt-supporting piece is present in the floor of each said recess in the lower rotor, each said piece being surrounded by lateral walls of said recess, and each said piece and said lateral surrounding walls serving to stabilize the position of a gun on said rack.

6. Gun rack of claim 4 wherein each said peripheral recess in the upper rotor and in said inserts is lined with a cushion to provide a soft engagement for a gun barrel.

7. Gun rack of claim 3 wherein the post has a portion of increased diameter adjacent the lower rotor to facilitate securing the lower rotor to the post.

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8. Gun rack of claim 7 wherein said post has a lower end portion which extends through, and is engaged by, said lower rotor.

9. Gun rack of claim 3 wherein said cabinet has a transparent door through which guns on the rack may be examined, a headpiece over the door, a pair of spaced switches on the back side of the headpiece one of which energizes a lamp-containing circuit and the other of which energizes a circuit containing power means for rotating the post, each switch having a switch-operating shank extending through the headpiece and terminating on the front side thereof in a button end, a pivoted manually movable actuator on the front side of the headpiece engageable with one button or the other and operative to turn on one switch or the other.

10. Gun rack of claim 9 wherein the shank of the switch which energizes the power means-containing circuit moves against the action of spring means, whereby said actuator must be held in button end-engaging position in order to rotate said post, thereby protecting the rack against unintentional operation of said power means.

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