C. T. ROGERS.

DOOR CHECK.

APPLICATION FILED MAY 16, 1914.

1,226,258.

Patented May 15, 1917.

2 SHEETS—SHEET 1.

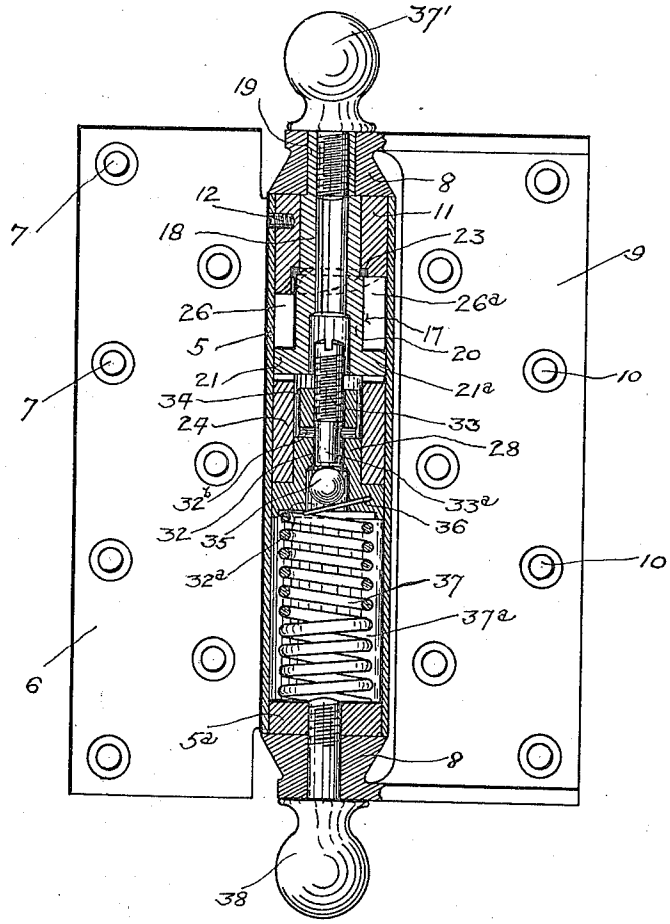


Fig. 1.

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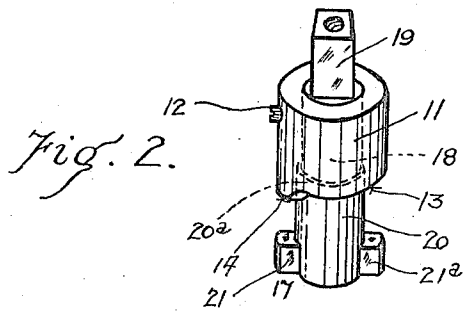


Fig. 2.

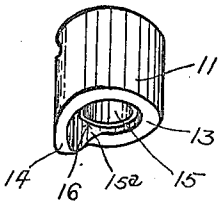


Fig. 2a.

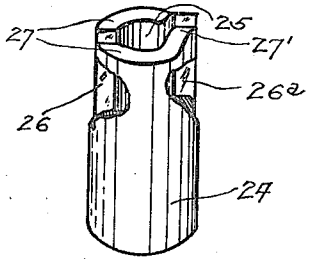


Fig. 3.

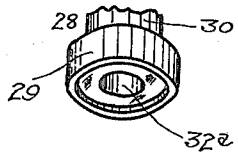


Fig. 4a.

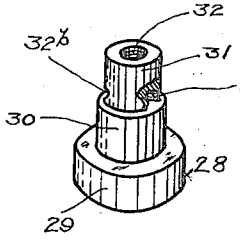


Fig. 4.

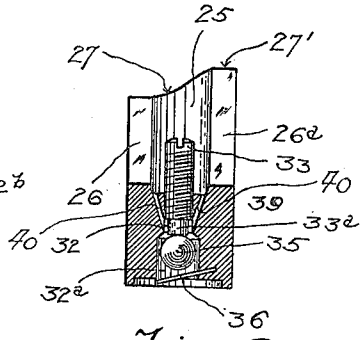


Fig. 5.

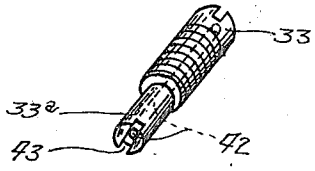


Fig 6a

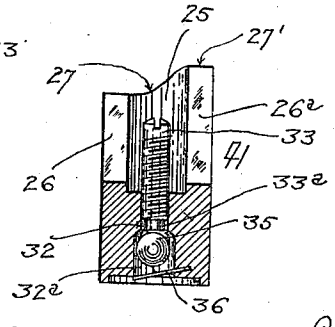


Fig 6

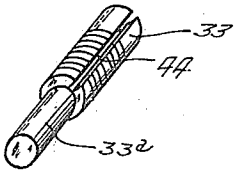


Fig 6b

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UNITED STATES PATENT OFFICE.

CLARENCE T. ROGERS, OF NEW YORK, N. Y., ASSIGNOR TO EMIL BOMMER, OF BROOKLYN, NEW YORK.

DOOR-CHECK.

1,226,258. Specification of Letters Patent. Patented May 15, 1917.

Application filed May 16, 1914. Serial No. 838,867.

To all whom it may concern:

Be it known that I, CLARENCE T. ROGERS, a citizen of the United States of America, and resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Door-Checks, of which the following is a specification.

This invention relates to door-checks, and aims more particularly to provide a device adapted to be applicable to a one-way swinging door no matter how hung.

A further object of this invention is to provide a door-check adapted to operate by the passage of liquid through a restricted passage which may if desired be in the nature of a lubricant and therefore substantially and thoroughly eliminate the working parts thereof; and an exceedingly important object thereof is to provide valve or baffle means which are conveniently and practically adjustable and exceedingly efficient in operation.

Another object of this invention is to provide a door-check adapted to be contained in one of the hinges of a door and to be operable by the other hinge.

Other objects and aims of this invention, more or less broad than those stated above, together with the advantages inherent, will be in part obvious and in part specifically referred to in the course of the following description of the elements, combinations and arrangements of parts and applications of principles constituting the invention; and the scope of protection contemplated will appear from the claims.

Referring now to the accompanying drawings, which are to be taken as a part of the specification, and wherein is shown one of the various possible embodiments of this invention as at present preferred, an embodiment, it should preliminarily be noted, wherein the leaves of the hinge are designed to lie parallel with a single plane when the door hung thereon is in open position,

Figure 1 is an assembly view of the parts constituting said embodiment, in "door-open" arrangement;

Fig. 2 is a perspective view of the stationary cylindrical cam piece and the rotatable key member therein.

Fig. 2ª is a perspective view from a different angle of the stationary cylindrical cam piece, and illustrating more clearly the cam surface thereof.

Fig. 3 is a perspective view, with parts broken away of the rotatable cylindrical cam piece, which is rotatable with the key member and coöperates with the stationary cylindrical cam piece.

Fig. 4 is a perspective view of the loosening member for the adjustable valve.

Fig. 4ª is a perspective view of the same from a different angle, and illustrating the spring bearing surface thereof.

Fig. 5 is a sectional view of a modified form of construction, in which the rotatable cylindrical cam piece and the valve loosening are made integral and inclined communicating ducts are provided between the interior of the cam piece and the valve.

Fig. 6 is a similar view of a further modified form of construction in which communication between the interior of the cam piece and the valve, is through a bore or passage in the adjusting screw.

Fig. 6ª is a perspective view showing in detail the adjusting screw employed in the form of construction illustrated in Fig. 6; and

Fig. 6ᵇ is a perspective view of a modified form of adjusting screw in which a slot is provided along one side thereof.

Similar reference characters refer to similar parts throughout the several views of the drawings.

In Fig. 1 there is disclosed a hinge-leaf 6 including an integral cylindrical shell 5, said shell having one end closed by a plug 5ª. The leaf 6 may be affixed to a door-frame in the usual way, by means of holes 7 and a suitable plurality of coöperant screws. Conical end-pieces 8 are integrally carried by leaf 9, which similarly to leaf 6 has holes 10 therein for coöperation with suitable screws whereby said leaf 9 may be mounted upon and support a door.

Reference now being had to Figs. 2 and 2ª, the cylindrical cam-piece 11 is adapted to be

fixedly located in the upper portion of shell 5 by the stud 12 which stud also engages with shell 5. The lower annular rim of cam-piece 11 is so formed as to have its major surface 13 lie in a plane normal to the axis of the cylinder and the nose 14 thereof extend below said plane in such manner as to produce a suitably shaped cam surface. The upper cylindrical bore 15 through said cam-piece 11 is of a less diameter than that of the lower bore 15^a to produce an interior annular shoulder 16.

Fitting snugly within the cam-piece 11, but rotative relatively thereof is the member 17. This member includes the main cylindrical portion 18 (shown in broken lines in Fig. 2,) a key-portion 19 of a cross section other than circular (here shown as square), an enlarged cylindrical portion 20, an exterior annular shoulder 20^a; and the cross-head blocks or wings 21 and 21^a integrally carried by the portion 20. These wings 21 and 21^a are preferably of rectangular cross-section and have their outer or end surfaces defining portions of the outer side wall of a cylinder of the same diameter as that of the outer cylindrical surface of the member 11. The shoulder 16 and 20^a are adapted to accommodate therebetween a preferably flexible washer or gasket 23 as disclosed in Fig. 1.

Referring now to Fig. 3, there is shown a cylindrical cam-piece 24. Cam-piece 24 is provided with a longitudinal bore 25 of an identical cross-section throughout. Slots 26 and 26^a formed parallel with said bore 25 are adapted to accommodate and to allow to slide therein the wings 21 and 21^a. The upper annular rim of cam-piece 24 is so formed as to have a point on its major surface 27 opposite the upwardly extending cam-nose 27′ lie below said nose, and as to carry upwardly extending cam-surfaces leading from said point to said nose, in such manner as to produce a suitable cam surface with which is adapted to coöperate the cam surface carried as aforesaid by cam-piece 11. In Fig. 3 certain portions of the cam-piece 24 are shown as being broken away in order to render more clear the presence of the slots 26 and 26^a.

Referring now to Figs. 4 and 4^a, there is shown a member 28 including a plurality of cylindrical elements 29, 30 and 31, having therethrough from end to end thereof an axial passage of varied cross-section, said passage being threaded at its upper extremity to admit the adjusting screw 33, all as shown in Fig. 1. This passage (Fig. 1) includes a cylindrical bore 32, and a generally cylindrical valve-chamber 32^a, the said bore and valve chamber being joined by a conical recess as shown. Near the lower extremity of the portion 31 there may be provided a plurality of radial holes 32^b to communicate above the valve-chamber 32^a with the bore 32; although one such hole may if desired be present.

The element 30 of this member 28 is of such cross-section that it can be forced upwardly into the bore 25 of the cam-piece 24, thereupon to become practically integral with the latter. The member 28 and cam-piece 24 thus assembled, it will be seen from Fig. 1 that the side-wall of the bore 25 and the element 31 of the member 28 include between them an annular space 34 which communicates, by way of the radial hole 32^b and the annular space established between the depending reduced portion 33^a of the screw 33 and the bore 32, with the valve-chamber 32^a.

Considering now particularly Fig. 1, the parts above described are shown as assembled within the shell 5. A ball or spherical valve 35 is disclosed as occupying the valve-chamber 32^a, and as held loosely therein by a pin 36 and by the adjustment of the stud 33.

An expansile spring 37 is accommodated within the shell 5 between the plug and the member 28, thus forcing said member and the cam piece 24 against the cam piece 11.

The squared key-portion 19 of the member 17 projects through a complementary hole in the upper end-piece 8 and said member is further held in rigid relation with said end-piece by the ornamental stud 37′.

A similar stud 38 provides connecting and rotating means between the plug 5^a and the lower end-piece 8^a.

The operation of the above described embodiment of this invention, which should largely be obvious, is substantially as follows:

Let us assume that the leaf 6 (Fig. 1) is attached to a door-frame, and that the leaf 9 is attached to a swinging door. According to the locations of the parts shown in Fig. 1, the door is assumed to have been swung to and maintained in open position, the hinge-leaves lying in a single vertical plane and the parts being located as disclosed. A suitable amount of "checking" liquid, such as a proper mixture of glycerin and alcohol, having been originally admitted to the interior of the shell 5, said liquid is now presumed to be wholly collected within the space 37^a. The operation which opened the said door, and thereby located the parts as aforesaid, was accomplished, as is desirable, without resistance, because in the door's closed position the cam-noses 14 and 27′ were arranged one vertically above the other and consequently the cam-piece 24 was depressed below its illustrated location in Fig. 1 to shorten the height of the space 37^a sufficiently to locate some of the liquid above the valve 35. It should be remembered in this connection that the wings 21 and 21^a turn fixedly with leaf 9 (the leaf which is connected to the door), and that the parts are so designed

that with the leaf 9 arranged abutting or parallel with the leaf 6 the door is in closed position and wings 21 and 21ª are through their coöperation with slots 26 and 26ª maintaining the cam-piece 24 in such a rotated location relatively of cam-piece 11 that said cam-noses are in abutment as aforesaid. So it will be seen that with the leaves 6 and 9 disposed as shown in Fig. 1, that is, with the door in open position, and with the cam-piece 24 driven by the spring 37 to overlap the cam-piece 11 as shown, upon the door-opening operation there was created a vacuum in the space 37ª sufficient to draw the ball 35 away from the portion 33ª of screw 33 and to allow the consequent suction to draw downwardly past said ball and without resistance the liquid theretofore and normally located above the valve. But let the door now be released from its illustrated open position. The said door may be arranged to be forced closed by any suitable means associated therewith, such as an ordinary spring hinge (not here shown). The ensuing closing of the door (that is, the turning as one unit of member 18 and cam-piece 24) causes the leaf 9 to move said cam-piece 24 relatively of the cam-piece 11, in turn to cause the cam-noses 27′ again to come into abutment with cam-nose 14, whereby the cam-piece 24 is forced to travel longitudinally of the wings 21 and 21ª and consequently downwardly of shell 5. The liquid in the space 37ª, being practically incompressible, is during this operation forced to pass through the ball-valve established by the ball 35 and the chamber 35ª and to pass through the annular space surrounding the portion 33ª of the screw 33, thence through the radial holes 32ᵇ, thence through the annular space 34, and thence into the upper interior of shell 5. Immediately upon the flow of liquid commencing, the ball 35 tends to rise and close communication between the chamber 32ª and the bore 32, but is predeterminedly prevented from completely doing so and consequently predetermines the restriction of liquid through the parts as aforesaid, in accordance with the preliminary adjustment of screw 33.

In the construction just described, the cam-piece 24 is shown as not having the valve-chamber 32ª formed in an integral portion thereof, the member 28 having been employed as disclosed to establish a series of tortuous or angularly offset passages leading upwardly from the valve-chamber, thereby to additionally baffle the contained liquid. And were said additional baffling of the fluid not contemplated, a single member in substitution for the member 28 and the cam-piece 34 could be readily employed, thereby attaining an added economy of construction. In Figs. 5, 6, 6ª and 6ᵇ are disclosed two of the many possible such substitute structures capable of utilization. Thus in Fig. 5 is disclosed a unitary cam-piece 39, which, similarly to the joined cam-piece 24 and member 28, includes slots 26 and 26ª, cam-surfaces 27 and 27′, a bore 25, a cylindrical passage 32 with a lower flaring mouth, and a valve-chamber 32ª, and has associated therewith a ball 35, a pin 36, and a screw 33 with a depending portion 33ª but this unitary cam-piece 39 additionally carries a plurality of radial and inclined passages 40 leading from the annular space between the depending portion 33ª of screw 33 and cylindrical passage 32 to the bore 25. And in Fig. 6 there is disclosed another type of unitary cam-piece 41, which, similarly to the joined cam-piece 24 and member 28, includes slots 26 and 26ª, cam-surfaces 27 and 27′, a bore 25, a cylindrical passage 32 with a lower flaring mouth, and a valve-chamber 32ª, and has associated therewith a ball 35, a pin 36, and a screw 33 with a depending portion 33ª; but the screw, as best disclosed in Fig. 6ª, is bored at 42 and additionally kerfed as at 43. Fig. 6ᵇ shows for purposes of illustrative disclosure a substitute form of screw 33 which could well be employed in connection with unitary cam-piece 41, the screw being longitudinally slotted as at 44.

It will thus be seen that I have provided an embodiment of the invention capacitated to attain the objects of inconspicuity and extreme flexibility of adjustment, compactness, inexpensiveness of manufacture, simplicity of construction, and reliability of operation.

I have illustrated preferred and satisfactory forms of my invention, but it is obvious that changes may be made therein within the spirit and scope thereof as defined in the appended claims.

Having described the invention, what I claim as new, and desire to secure by Letters Patent, is:

1. In a door-hinge including a plurality of leaves, the combination of a liquid container carried by one of said leaves, means partially located within said container and partially carried by the other leaf for causing the flow of said liquid from the lower part of said container to the upper part of said container upon a movement of one leaf relatively of the other upon a door-opening operation, and means for restricting the flow of said liquid, said means including a ball, a chamber for the ball within which the ball is adapted to travel vertically, a passage leading upwardly from said chamber, said passage having a lower mouth adapted to be restricted more and more as the ball approaches said mouth, and adjustable spacing means adapted to predeterminedly space said ball from said mouth at all times.

2. In a door-hinge including a plurality

of leaves, the combination of a liquid container carried by one of said leaves, means partially located within said container and partially carried by the other leaf for causing the flow of said liquid from the lower part of said container to the upper part of said container upon a movement of one leaf relatively of the other upon a door-opening operation, and means for restricting the flow of said liquid, said means including a ball, a chamber for the ball within which the ball is adapted to travel vertically, a passage leading upwardly from said chamber, said passage having a lower mouth adapted to be restricted more and more as the ball approaches said mouth, and adjustable spacing means adapted to predeterminedly space said ball from said mouth at all times, said spacing member including a vertically arranged screw and a threaded support for said screw located above said passage.

3. In a door-hinge including a plurality of leaves, the combination of a liquid container carried by one of said leaves, means partially located within said container and partially carried by the other leaf for causing the flow of said liquid from the lower part of said container to the upper part of said container upon a movement of one leaf relatively of the other upon a door-opening operation, and means for restricting the flow of said liquid, said means including a ball, a chamber for the ball within which the ball is adapted to travel vertically, a passage leading upwardly from said chamber, said passage having a lower mouth adapted to be restricted more and more as the ball approaches said mouth, and adjustable spacing means adapted to predeterminedly space said ball from said mouth at all times, said spacing member including a vertically arranged screw and a threaded support for said screw located above said passage, said screw having a depending portion adjustable vertically of said mouth, and said depending portion being of smaller cross-sectional area than said passage whereby an annular space is provided between said passage and said portion.

4. In a door-hinge including a plurality of leaves, the combination of a liquid container carried by one of said leaves, means partially located within said container and partially carried by the other leaf for causing the flow of said liquid from the lower part of said container to the upper part of said container upon a movement of one leaf relatively of the other upon a door-opening operation, and means for restricting the flow of said liquid, said means including a ball, a chamber for the ball within which the ball is adapted to travel vertically, a passage leading upwardly from said chamber, said passage having a lower mouth adapted to be restricted more and more as the ball approaches said mouth, and adjustable spacing means adapted to predeterminedly space said ball from said mouth at all times, said spacing means including a vertically arranged screw and a threaded support for said screw located above said passage, said screw having a depending portion adjustable vertically of said mouth, and said depending portion being of smaller cross-sectional area than said passage whereby an annular space is provided between said passage and said portion, and said passage having an outlet leading from said annular space to a portion of the container located above said support.

5. In a door-hinge including a plurality of leaves, the combination of a liquid container carried by one of said leaves, means partially located within said container and partially carried by the other leaf for causing the flow of said liquid from the lower part of said container to the upper part of said container upon a movement of one leaf relatively of the other upon a door-opening operation, and means for restricting the flow of said liquid, said means including a ball, a chamber for the ball within which the ball is adapted to travel vertically, a passage leading upwardly from said chamber, said passage having a lower mouth adapted to be restricted more and more as the ball approaches said mouth, and adjustable spacing means adapted to predeterminedly space said ball from said mouth at all times, said spacing means including a vertically arranged screw and a threaded support for said screw located above said passage, said screw having a depending portion adjustable vertically of said mouth, and said depending portion being of smaller cross-sectional area than said passage whereby an annular space is provided between said passage and said portion, and said passage having an outlet leading from said annular space to a portion of the container located above said support, said outlet being angularly offset from said passage.

6. In a door-hinge including a plurality of leaves, the combination of a liquid container carried by one of said leaves, means partially located within said container and partially carried by the other leaf for causing the flow of said liquid from the lower part of said container to the upper part of said container upon a movement of one leaf relatively of the other upon a door-opening operation, and means for restricting the flow of said liquid, said means including a ball, a chamber for the ball within which the ball is adapted to travel vertically, a passage leading upwardly from said chamber, said passage having a lower mouth adapted to be restricted more and more as the ball approaches said mouth, and adjustable spacing means adapted to predeterminedly space

said ball from said mouth at all times, said spacing means including a vertically arranged screw and a threaded support for said screw located above said passage, said screw having a depending portion adjustable vertically of said mouth, and said depending portion being of smaller cross-sectional area than said passage whereby an annular space is provided between said passage and said portion, and said passage having an outlet leading from said annular space to a portion of the container located above said support, said outlet including a second passage angularly offset from the passage first-mentioned and a third passage angularly offset from said second passage.

7. In a door-hinge including a plurality of leaves, the combination of a liquid container carried by one of said leaves, means partially located within said container and partially carried by the other leaf for causing the flow of said liquid from the lower part of said container to the upper part of said container upon a movement of one leaf relatively of the other upon a door-opening operation, and means for restricting the flow of said liquid, said means including a ball, a chamber for the ball within which the ball is adapted to travel vertically, a passage leading upwardly from said chamber, said passage having a lower mouth adapted to be restricted more and more as the ball approaches said mouth, and adjustable spacing means adapted to predeterminedly space said ball from said mouth at all times, said spacing means including a vertically arranged screw and a threaded support for said screw located above said passage, said screw having a depending portion adjustable vertically of said mouth, and said depending portion being of smaller cross-sectional area than said passage whereby an annular space is provided between said passage and said portion, and said passage having an outlet leading from said annular space to a portion of the container located above said support, said outlet including a second passage angularly offset from the passage first-mentioned and a third passage angularly offset from said second passage, said third passage including an annular chamber surrounding a portion of said support.

8. In a door hinge including a plurality of leaves, the combination of a liquid container carried by one of said leaves and entirely closed along its sides, means partially located within said container and partially carried by the other leaf for causing the flow of said liquid from the lower part of said container to the upper part of said container upon a movement of one leaf relatively of the other upon a door-opening operation, and means disposed centrally of said first named means for restricting the flow of said liquid, said means including a ball, a chamber for the ball within which the ball is adapted to travel vertically, a passage leading upwardly from said chamber, said passage having a lower mouth adapted to be restricted more and more as the ball approaches said mouth, adjustable spacing means adapted to predeterminedly space said ball from said mouth at all times, and a pin fixed across the lower portion of said chamber.

9. In a door-hinge including a plurality of leaves, the combination of a liquid container carried by one of said leaves, means partially located within said container and partially carried by the other leaf for causing the flow of said liquid from the lower part of said container to the upper part of said container upon a movement of one leaf relatively of the other upon a door-opening operation, and means for restricting the flow of said liquid, said means including a member which is provided with a valve chamber located in the lower portion thereof, a conical passage above said chamber, a cylindrical passage above said conical passage, an annular passage vertically overlapping said cylindrical passage, and a horizontal passage connecting said cylindrical passage and said annular passage.

10. In a door-hinge including a plurality of leaves, the combination of a liquid container carried by one of said leaves, means partially located within said container and partially carried by the other leaf for causing the flow of said liquid from the lower part of said container to the upper part of said container upon a movement of one leaf relatively of the other upon a door-opening operation, and means for restricting the flow of said liquid, said means including a member which is provided with a valve chamber located in the lower portion thereof, a conical passage above said chamber, a cylindrical passage above said conical passage, an annular passage vertically overlapping said cylindrical passage, and a horizontal passage connecting said cylindrical passage and said annular passage, and including a freely movable ball located in said chamber.

11. In a door-hinge including a plurality of leaves, the combination of a liquid container carried by one of said leaves, means partially located within said container and partially carried by the other leaf for causing the flow of said liquid from the lower part of said container to the upper part of said container upon a movement of one leaf relatively of the other upon a door-opening operation, and means for restricting the flow of said liquid, said means including a member which is provided with a valve chamber located in the lower portion thereof, a conical passage above said chamber, a

cylindrical passage above said conical passage, an annular passage vertically overlapping said cylindrical passage, and a horizontal passage connecting said cylindrical passage and said annular passage, and including a vertically adjustable screw threaded into said member above said cylindrical passage but having a depending portion extending into said cylindrical passage.

12. In a door-hinge including a plurality of leaves, the combination of a liquid container carried by one of said leaves, means partially located within said container and partially carried by the other leaf for causing the flow of said liquid from the lower part of said container to the upper part of said container upon a movement of one leaf relatively of the other upon a door-opening operation, and means for restricting the flow of said liquid, said means including a member which is provided with a valve chamber located in the lower portion thereof, a conical passage above said chamber, a cylindrical passage above said conical passage, an annular passage vertically overlapping said cylindrical passage, and a horizontal passage connecting said cylindrical passage and said annular passage, and including a vertically adjustable screw threaded into said member above said cylindrical passage but having a depending portion extending into said cylindrical passage, said depending portion being of less cross-sectional area than said cylindrical passage.

13. In a door-hinge including a plurality of leaves, the combination of a cylindrical liquid containing barrel carried by one of said leaves and entirely closed along its sides, a baffle member within the barrel, means carried by said barrel and adapted to raise and lower said baffle by the opening and closing of the door, non-reciprocating means adapted to rotate said baffle with the movement of the door, and means disposed centrally of the baffle member for restricting the flow of said liquid from one part of the barrel to the other.

14. In a door-hinge including a plurality of leaves, the combination of a liquid container carried by one of said leaves, means partially located within said container and partially carried by the other leaf for causing the flow of said liquid from the lower part of said container to the upper part of said container upon a movement of one leaf relatively of the other upon a door-opening operation, and means for restricting the flow of said liquid, said means including a ball, a chamber for the ball within which the ball is adapted to travel vertically, a passage leading upwardly from said chamber, said passage having a lower mouth adapted to be restricted more and more as the ball approaches said mouth, adjustable spacing means adapted to predeterminedly space said ball from said mouth at all times, and a pin fixed across the lower portion of said chamber, the said means adapted to permit the unrestricted return of said liquid therethrough.

15. In a door-hinge including a plurality of leaves, the combination of a cylindrical liquid containing barrel carried by one of said leaves, and entirely closed along its sides, a cam member carried by said barrel, a spring pressed baffle member within the barrel, non-reciprocating means for rotating said baffle member by the opening and closing of the door, said baffle adapted to be moved in one direction by contact with said cam member and in the other direction by said spring, and means disposed centrally of the baffle member for restricting the flow of said liquid from one part of the barrel to the other.

16. In a door-hinge including a plurality of leaves, the combination of a cylindrical liquid containing barrel carried by one of said leaves, and entirely closed along its sides, a fixed cam member carried by said barrel, a non-reciprocating key member adapted to be rotated by the opening and closing of the door, a spring pressed baffle member adapted to be rotated with the said key member and to be moved in one direction during rotation by contact with said fixed cam member and adapted to be moved in the other direction by said spring, and means disposed centrally of said baffle member for restricting the flow of said liquid from one part of the barrel to the other.

17. In a door-hinge including a plurality of leaves, the combination of a cylindrical liquid containing barrel carried by one of said leaves, and entirely closed along its sides, a fixed cam member carried by said barrel, a non-reciprocating key member adapted to be rotated by the opening and closing of the door, and provided centrally with a bore constituting a liquid receiving chamber, a spring pressed baffle member adapted to be rotated with the said key member, and provided with a cam surface engaging said fixed cam member, and adapted to be moved in one direction during rotation by contact with the said fixed cam member and in the other direction by said spring, and means disposed centrally of the said baffle member for restricting the flow of said liquid from one part of the barrel to the said bore constituting a liquid receiving chamber.

18. In a door-hinge including a plurality of leaves, the combination of a cylindrical liquid containing barrel carried by one of the said leaves and entirely closed along its sides a fixed cam member carried by said barrel, a key member adapted to be rotated by the opening and closing of the door, and provided centrally with a bore constituting

a liquid receiving chamber, a baffle member adapted to be rotated with the said key member and provided with cam surface engaging said fixed cam member, and adapted to be raised and lowered during rotation by contact with the said cam member, and means disposed centrally of the said baffle member for restricting the flow of said liquid from one part of the barrel to the said bore constituting a liquid receiving chamber, and spring means disposed below said baffle member adapted to continually sustain said baffle plate in contact with the fixed cam member.

In witness whereof I have hereunto signed my name in the presence of two witnesses.

CLARENCE T. ROGERS.

In the presence of—
CHARLES HORTON,
PETER A. LEE.

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