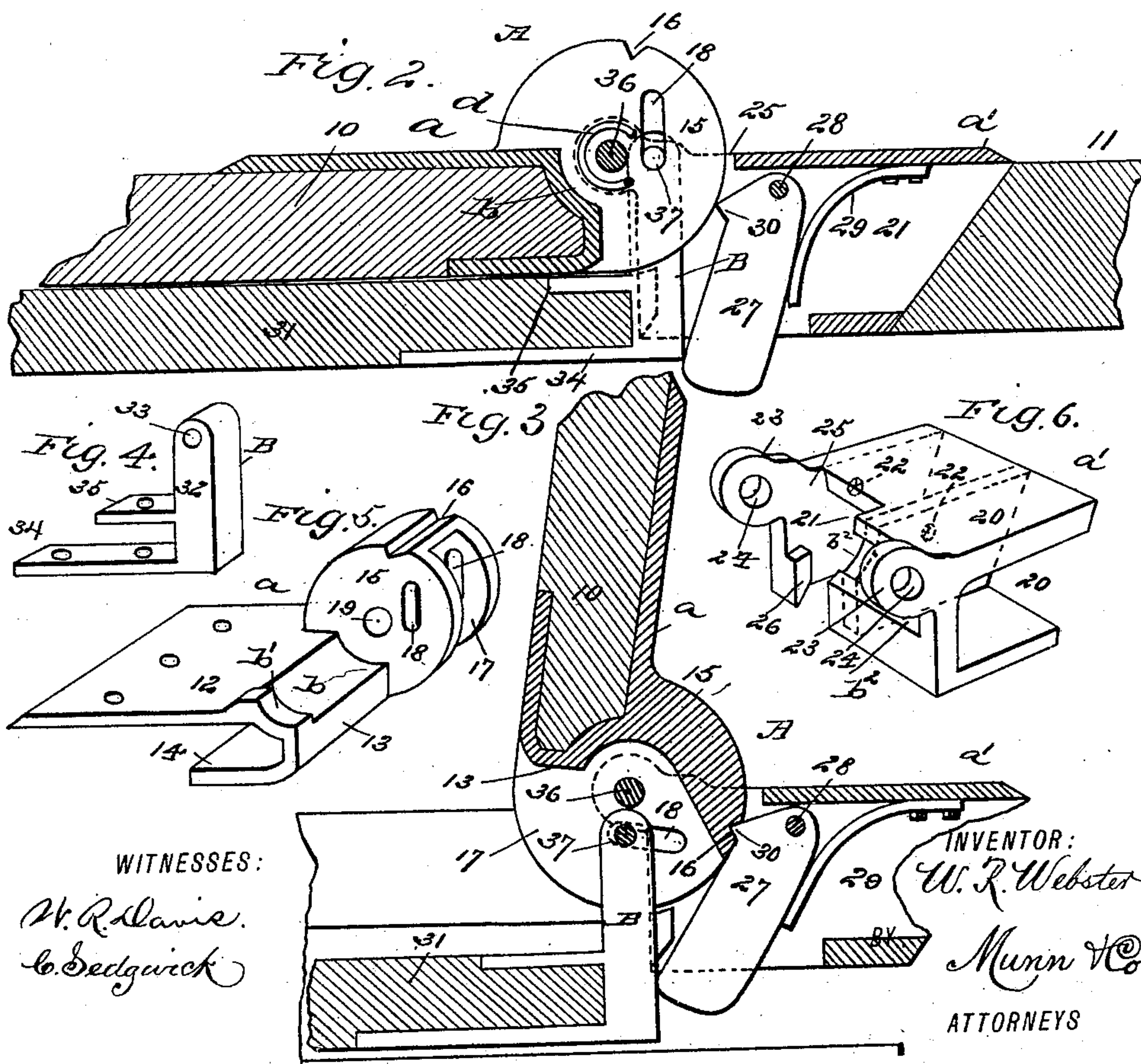
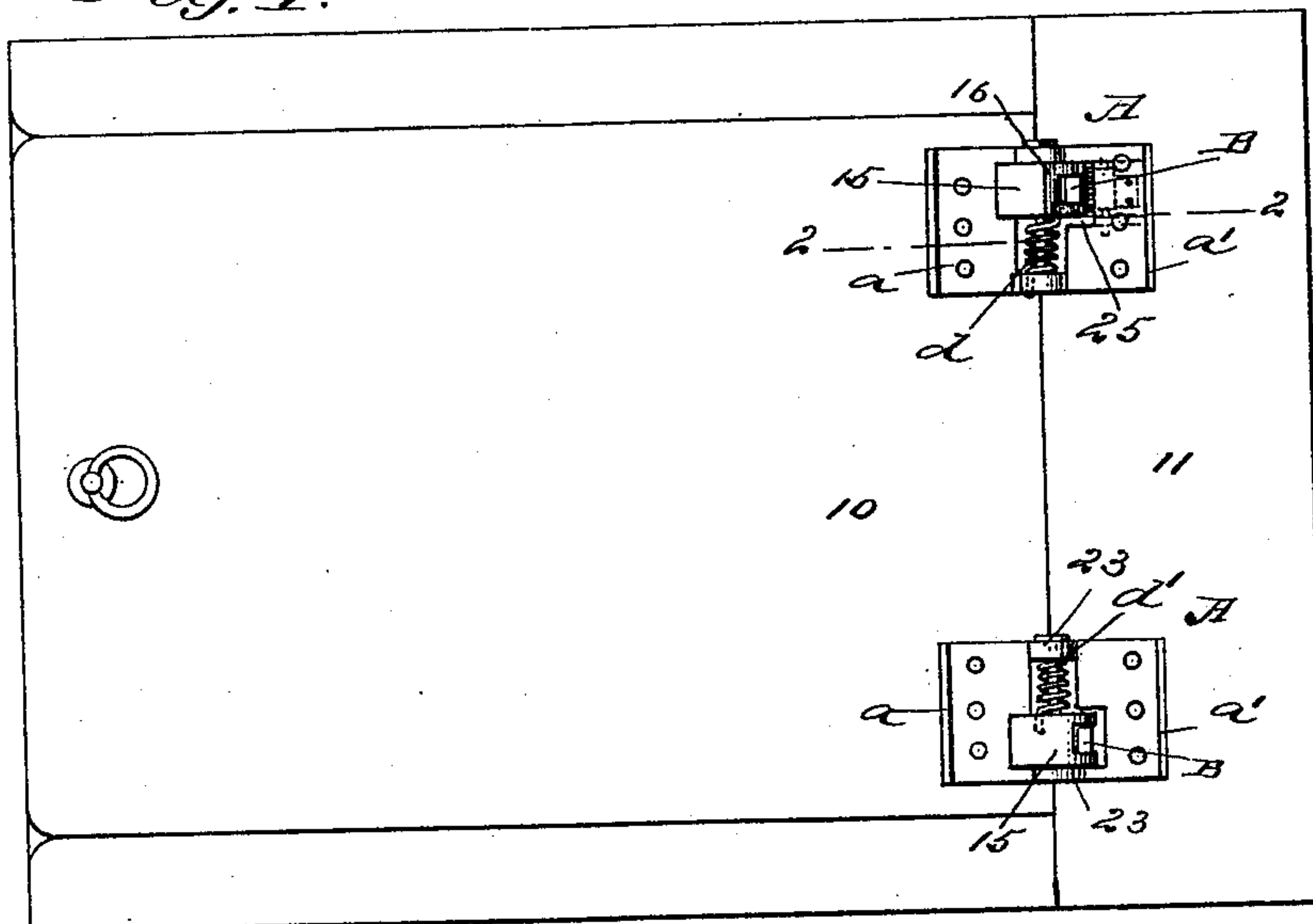


W. R. WEBSTER.
SPRING HINGE.

Patented May 19, 1891.

Fig. 1.



UNITED STATES PATENT OFFICE.

WALTER R. WEBSTER, OF PINE GROVE, CALIFORNIA.

SPRING-HINGE.

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Application filed August 29, 1890. Serial No. 363,409. (No model.)

To all whom it may concern:

Be it known that I, WALTER R. WEBSTER, of Pine Grove, in the county of Amador and State of California, have invented a new and

5 Improved Device for Automatically Closing the Lids of Water-Closets, of which the following is a full, clear, and exact description.

My invention relates to a device for automatically closing the lids of water-closets the

10 moment that the seat is unoccupied, and has for its object to accomplish such a result by means of simple and durable mechanism capable of being conveniently and expeditiously applied to any form of closet.

15 The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying

20 drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of a closet having

25 my improvements applied thereto. Fig. 2 is a vertical section on line 2 2 of Fig. 1, the lid being shown in a closed position. Fig. 3 is a similar section, the lid, however, being illustrated as elevated. Fig. 4 is a detail perspective view of the pivotal back block of the seat.

30 Fig. 5 is a detail perspective view of one member of the hinge-connection between the lid and casing of the closet, and Fig. 6 is a detail perspective view of the other member of the

35 said hinge-connection.

The hinges A, which connect the lid 10 with the frame 11 of the closet, are preferably two in number and of essentially like construction, the said hinges consisting of two mem-

40 bers *a* and *a'*. (Shown in detail in Figs. 5 and 6.) The member *a* is adapted for attachment to the lid or cover 10, and the said member to that end consists of an upper face-plate 12, which is carried down at its rear edge,

45 forming a vertical member 13, and inward a distance beneath the face-plate 12, which inward extension constitutes a lower horizontal member 14. Integral with the vertical member 13 at one end thereof a circular member

50 15 is formed, which member constitutes a

knuckle. The knuckle 15 is provided in its periphery with a diametrical groove or channel 16, preferably angular in cross-section, and the interior of the knuckle is provided with a recess 17, which recess extends through the

55 periphery from a point just below the groove or channel 16 to the lower edge of the vertical member 13. A vertical slot 18 is produced in each side face of the knuckle, which slots are in horizontal alignment, and in the central portion of each side face of the knuckle horizontally-aligning apertures 19 are formed. The upper edge of the vertical member 13 is

60 concaved in two depths, the concaved surface *b* being deeper than the surface *b'*, which is the outer end surface. The member *a'* consists of a single casting or forging and is somewhat rectangular in general contour, being open at the back and at one side, as illustrated in Fig. 6, and the interior is divided virtually

65 into two compartments by a partition 20, forming thereby one closed compartment 21. In the side walls of the compartment 21 horizontally-aligning apertures 22 are made, and from the inner side surface at each end of the

70 hinge-section *a'* a knuckle 23 is outwardly and upwardly projected, the said knuckles being provided with aligning apertures 24. The inner face of the section, between the closed end and the partition 20, is provided with a recess 25, adapted to receive the knuckle 15 of the opposed member *a*. The lower portion of the recess 25 is of less width than the upper

75 portion, and the end wall of the contracted portion of the recess is provided with an inwardly-extending guide-lug 26. The upper edge of the inner face of the hinge-section *a'* between the recess 25 and the open end is concave, as illustrated at *b''*. Within the compartment 21 a pawl 27 is pivoted, the pivotal

80 pin 28 being passed through the apertures 22 in the walls of said compartment. The back of the pawl 27 bears against a spring 29, which spring is fastened to the upper wall of the compartment 21. The pawl near its upper

85 end upon its inner face, is provided with an angular lip 30, which lip is adapted to enter the groove or channel 16 in the knuckle of the hinge member *a*.

The rear edge of the seat 31 near each end

100

has attached thereto a block B, which block consists of a vertical member 32, provided in its upper end with an aperture 33, and from the inner face of the vertical member 32 two horizontal plates 34 and 35 are projected, one located above the other, the lower plate being preferably the longer. The member *a* of the hinge A is secured to the lid or cover 10 by means of screws or equivalent devices, the edge of the lid or cover passing between the face-plate 12 and the lower horizontal member 14.

The member *a'* of the hinge is secured to the casing 11 of the closet in such manner that the knuckle 15 of the member *a* will enter and turn in the upper and enlarged portion of the recess 25, and when the knuckle 15 is thus located one of the knuckles of the member *a'* will bear upon the concaved end surface *b'* of the member *a*, and the opposite knuckle 23 will be located immediately outside of the recessed knuckle 15, as shown in Fig. 1. When the knuckle 15 enters the recess 25, the lip or tooth 30 of the pawl 27 engages with and travels upon the peripheral surface of the said knuckle 15, as shown in Figs. 2 and 3.

The hinge connection of the two members is effected by passing a pintle 36 through the apertures 24 of the knuckles of the member *a'*, and the apertures 19 of the knuckle 15 of the opposed member. The seat is supported by the knuckle 15, and this is effected by causing the vertical member of the block B to extend upward within the recess 17 of the knuckle 15, and passing pintles 37 through the apertures 33 of the block and the slots 18 of the knuckle.

Each hinge is put together in the same manner, and each pintle-block B of the seat is engaged by the lower end of a pawl 27. The guide-lug 26 is formed upon the members *a'* of the hinge in order to reduce the width of the recess 21 to accommodate the width of the block.

Each hinge is provided with a spring coiled around its pintle 36 between the knuckles 15 and 23 over the concaved edge *b* of the hinge-section *a*. I have designated the springs in the drawings, Fig. 1, as *d* and *d'*, as the two springs are coiled in opposite directions, so that when one is uncoiled by the movement of the lid 10 or the action of the hinge, the other is being coiled. The springs have their ends attached in any suitable or approved manner to the knuckles 15 and 23.

In operation, when the lid is closed, as shown in Figs. 1 and 2, as the lid is carried upward to an open position, (shown in Fig. 3,) the spring *d* is coiled and the spring *d'* is uncoiled, and when the lid is brought to an essentially perpendicular position the knuckles 15 will have been revolved sufficiently to enable the lips 30 of the pawls 27 to enter the peripheral groove 16, as shown in Fig. 3,

and the said pawls effectually retain the lid in this position while the movement of the knuckles 15 will have carried the hinge-blocks B of the seat vertically downward to a bearing upon a suitable support provided for them, as illustrated in the said Fig. 3. As soon as the seat is occupied it is, by the weight of the person and natural position, thrown down and back until the block B strikes the pawl 27, thereby disengaging the pawl from the knuckle 15, and the weight of the person on the seat retains it in that position so long as occupied, as the peculiar position of the block in the slot 18, together with the association of said block with the pintle 36, renders it impossible for the hinge to revolve. Therefore the pawl 27 is not in use at this time. When the person rises, the spiral spring acts before the strap-spring engaging the pawl has a chance to do so, as the full weight and resistance of the seat and its block is against the pawl. Thus the spiral spring causes the hinge to revolve, and the opportunity for the pawl 27 again to engage the knuckle 15 is passed.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the casing of a closet and the lid thereof, of hinges connecting the said lid and casing, and springs actuating the hinges, which springs are oppositely wound, whereby one is coiled when the other is uncoiled, as and for the purpose specified.

2. In a closet, the combination, with the lid, the casing, and the seat, of spring-hinges connecting the casing and the lid, the springs of the hinges being coiled in opposite directions, and blocks attached to the seat and connected with the hinges, substantially as described, whereby when the lid is raised the seat is lowered, and when the lid is lowered the seat is elevated.

3. In a closet, the combination, with the cover, casing, and seat, of spring-hinges connecting the cover and casing, one knuckle of the said hinges being slotted, and blocks attached to the seat, the upper ends of which blocks are pivoted in the slots of the hinge-knuckles, substantially as specified.

4. In a closet, the combination, with the lid and casing, of hinges connecting the lid and the casing, each hinge being provided with an actuating-spring, and said hinges consisting of two members, the knuckle of one member being adapted to enter a recess in the opposite member, the entering knuckle being provided with a peripheral groove and the entered recess with a spring-controlled pawl adapted to enter said groove, substantially as shown and described.

5. In a closet, the combination, with the cover, casing, and seat, of spring-controlled hinges connecting the cover and casing, the springs of which hinges are wound in oppo-

site directions, and the said hinges consisting of two members, one provided with a knuckle and the other with a recess to receive the knuckle, the knuckle having a peripheral
5 groove produced therein, and the recess being provided with a spring-controlled pawl adapted to enter the knuckle-groove, and

blocks attached to the seat, pivoted at their ends in slots produced in the said knuckles, as and for the purpose specified.

WALTER R. WEBSTER.

Witnesses:

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H. C. ADAMS.