A. D. HILL.

HAT RACK AND LOCK.

APPLICATION FILED APR. 4, 1908.

930,289.

Patented Aug. 3, 1909.

3 SHEETS—SHEET 1.

Fig. II

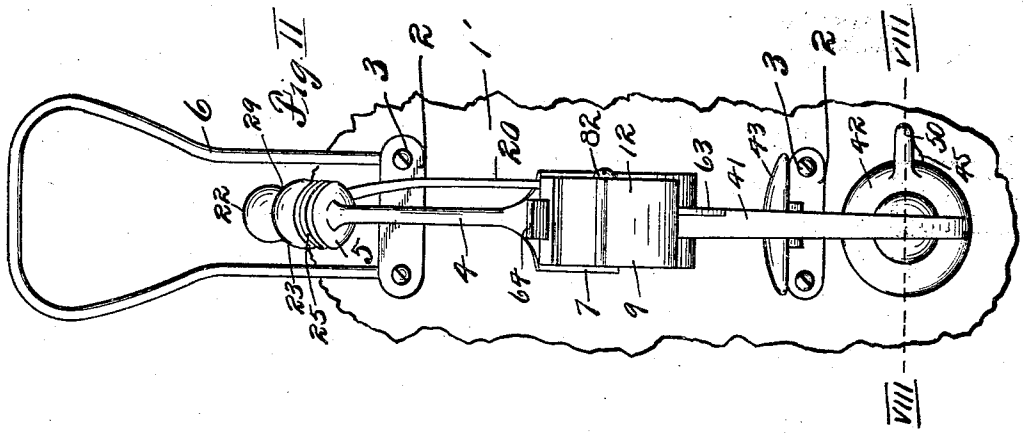
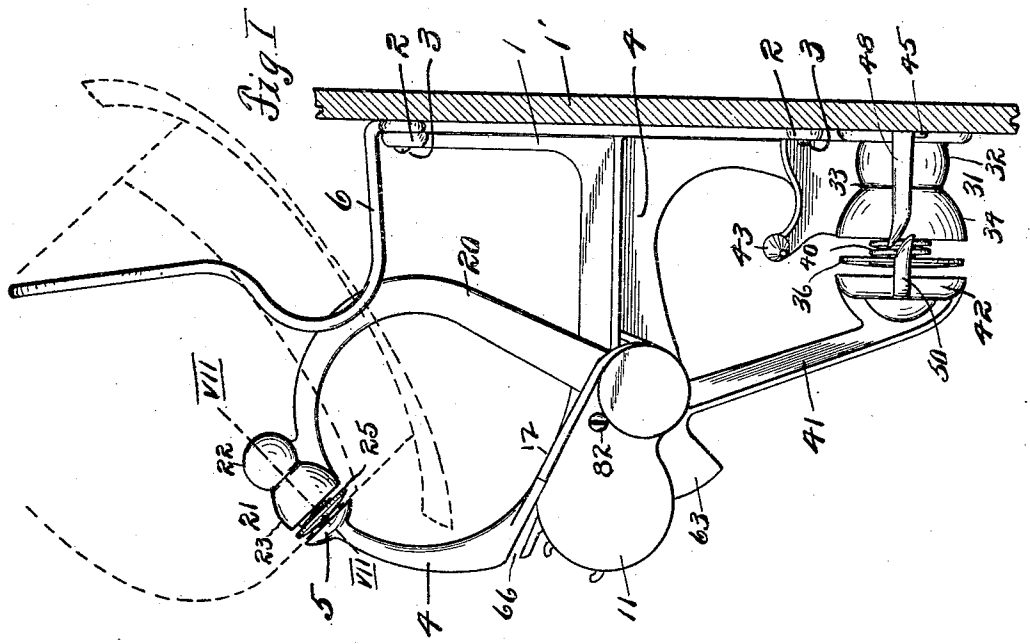


Fig. I



WITNESSES:

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3 SHEETS—SHEET 2.

Fig. VI

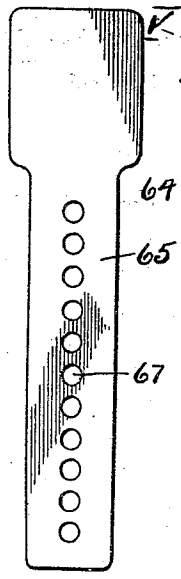


Fig. III

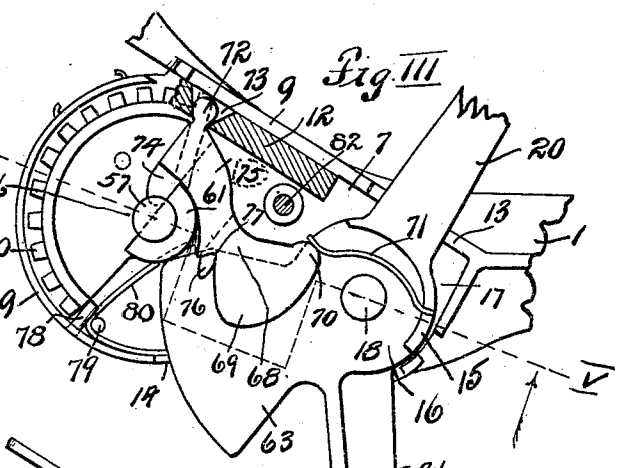


Fig. IV

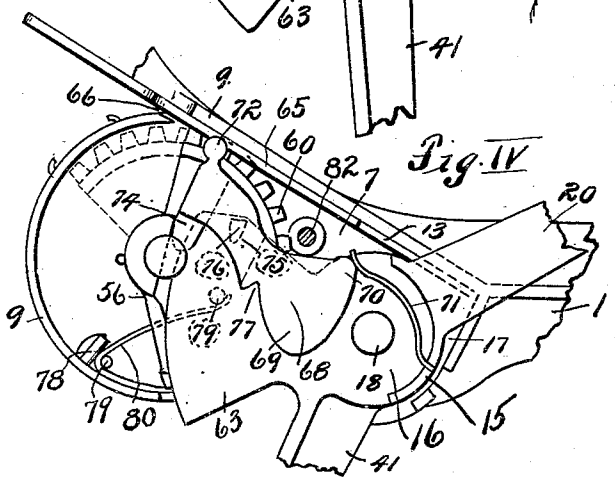


Fig. V

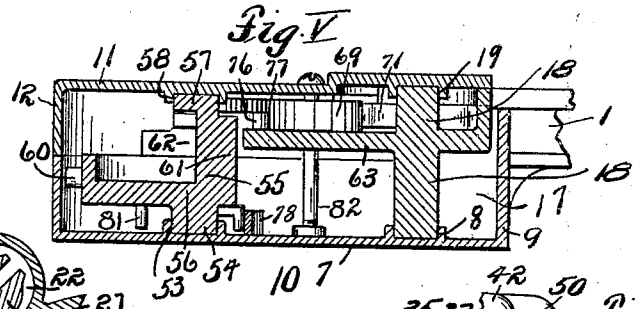


Fig. VII

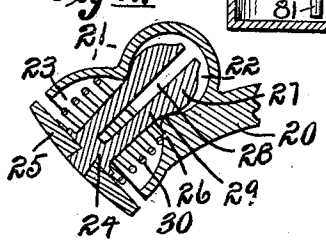
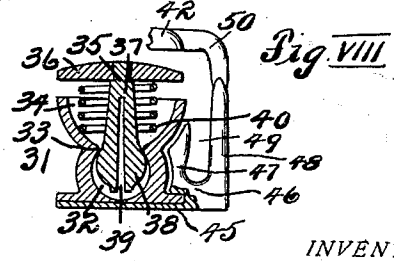


Fig. VIII



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3 SHEETS—SHEET 3.

Fig. XIII

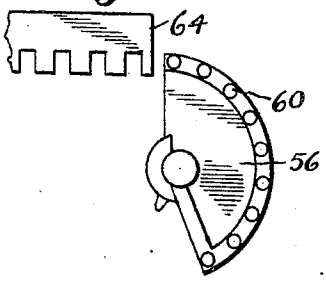


Fig. IX

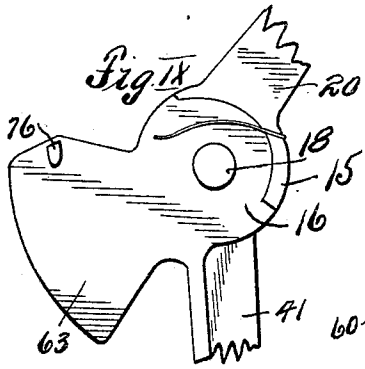


Fig. XIV

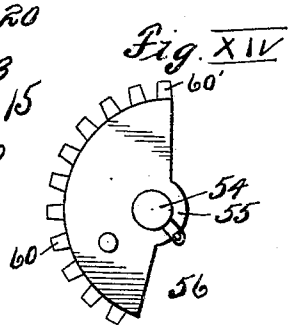


Fig. XV

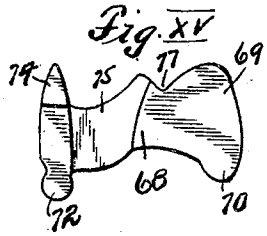


Fig. X

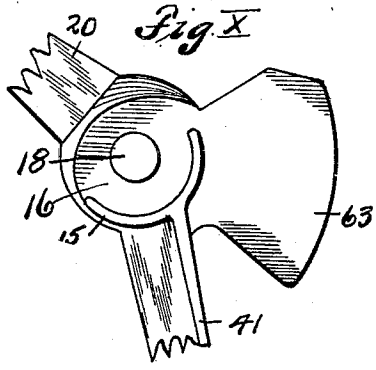


Fig. XVI

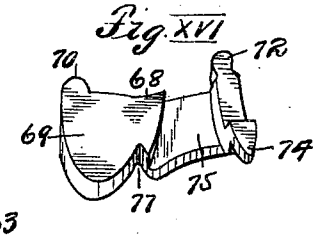


Fig. XI

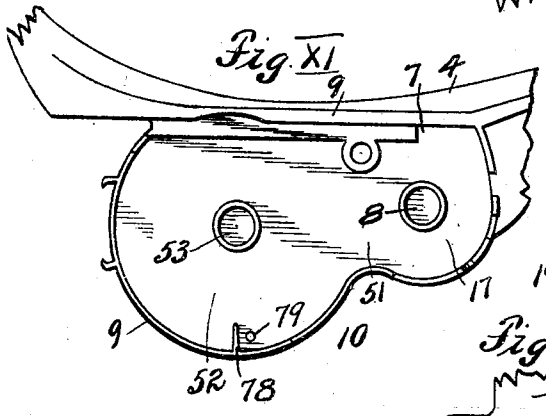


Fig. XII

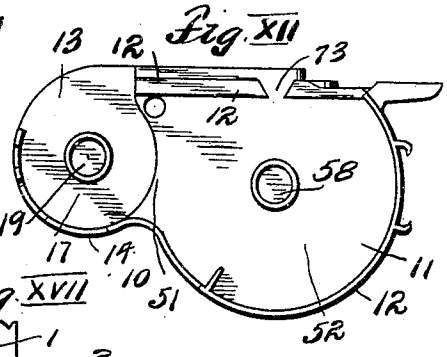
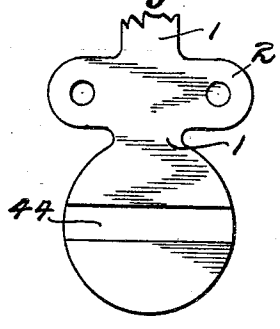


Fig. XVII



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UNITED STATES PATENT OFFICE.

ADELBERT D. HILL, OF EXCELSIOR SPRINGS, MISSOURI, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF FOUR-TWELFTHS TO A. J. DUNLEVY, OF EXCELSIOR SPRINGS, MISSOURI, AND ONE-TWELFTH TO J. C. WILLIAMS.

HAT RACK AND LOCK.

No. 930,289. Specification of Letters Patent. Patented Aug. 3, 1909.

Application filed April 4, 1908. Serial No. 425,107.

To all whom it may concern:

Be it known that I, ADELBERT D. HILL, a citizen of the United States, residing at Excelsior Springs, in the county of Clay and State of Missouri, have invented certain new and useful Improvements in Hat Racks and Locks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to a hat rack and lock and more particularly to a device of that class for use in hotels, barber shops and like places where it is necessary, or desirable, to remove one's hat and leave same in a hall or ante-room where there would be danger of its loss by mistake or theft; the device comprising means for supporting and locking an umbrella and a top-coat, cloak or like garment, and a single locking mechanism by means of which the articles named may be safely locked to the rack without danger of removal or of damage from the rack and locking parts.

It is the object of my present invention to improve the device of this character disclosed in Letters-Patent of the United States No. 785,305, granted to William Glenn, of Mount Vernon, Iowa, and myself on the 21st day of March 1905, by simplifying that structure, particularly in relation to the yielding hat and coat engaging tips forming part of the locking frame and lever, and to the lock itself; by the elimination of the extension rack against which the hat was previously made to rest, and by the addition of an umbrella locking mechanism.

A further object is to provide a more economical and sightlier structure.

With these objects in view I have provided the improved details of structure which will presently be fully described and pointed out in the following claims, reference being had to the accompanying drawing in which:—

Figure I is a view, in side elevation, of a hat rack and lock constructed according to my invention. Fig. II is a front view of same. Fig. III is an enlarged detail view, in side elevation, of the improved lock, the parts being shown in locking position. Fig. IV is a similar view, the parts being in unlocked position. Fig. V is a sectional view on the line V—V, Fig. III. Fig. VI is a face view of a key adapted for use with my improved lock. Fig. VII is an enlarged detail view of the tip on the upper lever arm in section on the line VII—VII, Fig. I. Fig. VIII is a similar view of the tip on the lower end of the rack rail, on the line VIII—VIII, Fig. II. Fig. IX is a side view of the lever hub and flange. Fig. X is a view of the opposite side of the same parts. Fig. XI is a side view of the interior of the lock chamber. Fig. XII is a similar view of the lock chamber cover. Fig. XIII is a side view of the lock wheel, showing a modified arrangement of the rack teeth and a modified key. Fig. XIV is a side view of the opposite side of the wheel. Fig. XV is a view of the inner face of the tumbler plate. Fig. XVI is a view of said plate in side perspective. Fig. XVII is a rear view of the base of the rear supporting rail of the device.

Referring more in detail to the parts:—1 designates the back rail of the rack which is adapted to rest vertically against a wall or partition 1′ and is provided with the upper and lower screw flanges 2 through which attaching screws 3 may extend. Projecting from near the vertical center of rail 1 is a stud 4, the outer end of which is preferably curved upwardly and provided with a button 5 upon which a hat, of any shape or size, may rest; the body of the hat bearing against button 5 and a bracket 6 which is secured to the partition 1′ by rail 1, and projects upwardly and outwardly therefrom as illustrated in Figs. I and II, while the lower edge of the hat rim is extended into the space between stud 4 and rail 1, as indicated in Fig. I. On stud 4, near its longitudinal center, is a web 7 that is provided with trunnion socket 8 and with an edge flange 9, which latter forms, with web 7 a lock and lever pivot chamber 10; said chamber being covered by a plate 11 having the edge flange 12 provided with slots 13—14 at the top and bottom respectively.

15 designates a lever, preferably of a bell-crank formation and provided with a hub 16 that is adapted to seat in the cup 17 of chamber 10 and is provided with the trun-

nions 18 which are adapted to revolve in the sockets 8 and 19 in web 7 and cover plate 11 respectively.

Extending through the slot 13 in plate 11 is the upper lever arm 20, said arm being preferably curved as shown, in order that it may provide the space for a hat rim and terminate adjacent to and substantially in the longitudinal line of the outer end of the stud 4. On the outer end of arm 20 is a housing 21 the end of which farthest from the stud button is cupped to form a ball socket 22, while the end adjacent to said button is flared and provided with an open mouth recess 23. Carried by housing 21 is a buffer 24 comprising a plate 25 which is adapted to engage the body of a hat when the latter is placed in the rack, and has a shank 26, the end of which is provided with a ball 27 that is adapted to fit within the socket 22; both the shank 26 and ball 27 being slotted (numeral 28) in order that the ball may be compressed to enable it to pass through the housing neck 29 to gain its seat in socket 22.

30 designates a coil spring which surrounds shank 26 and is adapted to engage neck 29 at one end and plate 25 at the other to provide the buffer with a yielding outward pressure in the direction of button 5.

At the lower end of rail 1 is a housing 31, similar to the housing 21 on the free end of lever arm 20; said housing 31 being provided with the ball socket 32, neck 33 and open mouth recess 34 which are similar to like parts in the lever arm housing, and located therein is a buffer 35 having the plate 36, shank 37, ball 38, slot 39 and coil spring 40 which are similar to although preferably of greater dimensions than like parts in buffer 24.

From the lower edge of hub 16 is extended a lever arm 41, the free end of which is provided with a plate 42 which is made to face the plate 36 of buffer 35 so that a coat or like garment may be held therebetween; 43 designates a cross arm that projects from rail 1 and upon which the collar of the garment may be placed so that the back thereof may extend between the lever and buffer plates.

In the back of rail 1 is a groove 44 (Fig. XVII) within which the base 45 of an umbrella supporting bracket 46 is adapted to seat; said bracket comprising a short arm 47 that is set in close to housing 31 and a long arm 48 that extends upwardly to approximately the height of said housing to provide a recess 49 for the reception of an umbrella shank and is curved slightly at its free end. Preferably integral with and projecting from the plate 42 of lever 41 is a finger 50 which, when the parts are in locking position, is so closely adjacent to bracket 46 as to form a practical continuation of the bracket arm 48 so as to close the top of recess 49.

Forming part of the lock and lever hub chamber 10 and communicating with cup 17 through a neck 51 is the lock cup 52 in the bottom of which is a socket 53 for receiving the trunnion 54 of the hub 55 of a lock wheel 56; the opposite end of said hub being provided with a trunnion 57 which is adapted to revolve in a socket 58 in the cover plate 11. The wheel 56 is preferably segmental as shown and is provided with the peripheral rack teeth 60 and buffer tooth 60′. On one side of the portion of hub 55 between trunnion 57 and the wheel body is a lug 61 and in said hub in the side opposite lug 61 is a recess 62, both for a purpose presently set forth. On the lever hub 16 and projecting forwardly therefrom is a flange plate 63 which is of sufficient length to engage the lug 61 of the lock wheel when the parts are in locking position and is adjusted to pass through the recess 62 when the parts are in open position.

64 designates the key by means of which the lock is operated; such key comprising a flat metal plate 65 that is adapted to pass through the slot 66 in the flanges 9 and 12 of the rail web 7 and cover 11 into contact with the teeth of wheel 56 and is provided with perforations 67 that are adapted to mesh with such teeth, while the lever flange and wheel hub form an effective lock for the device, the friction of the flange against the hub tends to bind the parts when the lug 61 is of a decided projection, and there is a tendency of the hub to wear and chip which would in time impair the effectiveness of the device. For these reasons I have provided a second locking piece which in the present device serves as the main lock. This main lock consists of a tumbler plate 68, the head 69 of which rests on the flange 63 of lever 15 and is provided with a tip 70 for engaging a spring 71 that is suitably mounted, preferably on the lever hub or arm, while the outer end of said plate is provided with a lug 72 that normally engages the rail web 9 and has a contracted neck that pivots in a slot 73 in the cover flange 12 when the parts are assembled. On the corner of plate 68 opposite lug 72 is finger 74 that is offset from the inner face of said plate and projects into the recess 62 of the wheel hub 55. In the inner face of plate 68 is an intermediate groove 75 for the accommodation of a laterally projecting lug 76 on the lever hub flange 63; the edge of said slot adjacent to the hub end being arranged diagonally as shown, and for a purpose presently set forth, and there being a notch 77 in the edge of plate 68 immediately adjacent to the end of groove 75 that is nearest the lever hub.

Projecting into chamber 10, from flange

9, is a dog 78 that acts as a stop for wheel 56 and as a post between which and a second post 79 is held a flat spring 80, one end of which bears against flange 9, and the other against a post 81 on the lock wheel hub for the purpose of yieldingly directing the wheel 56 to a neutral position (indicated by dotted lines Fig. IV).

82 designates a screw or bolt by means of which the cover 11 is secured to the stud web 7.

In the use of the device the umbrella bracket may be dispensed with if desired by simply omitting to place the bracket 46 on the rail when the latter is assembled, and I will first describe the device without that part.

Presuming the parts to have been assembled as described, and in the unlocked position, a hat is placed over the bracket 6 with the lower side of the crown against the button 5 on the outer end of the stud 4. The lever is then rocked on its pivot until the buffer plate 25 contacts with the hat crown. As the upper arm moves down to such engagement the flange 63 is moved downwardly until its edge leaves the recess in the lock wheel hub, and the dog 76 is withdrawn from groove 75, when the spring 71 forces the head 69 of plate 68 forwardly so that the dog 76 will engage the notch 77 so that any upward movement of the lever arm will be resisted by the tumbler plate which is now held between the flange 9 and dog 76. As soon as the parts have gained this position the spring 80 will move wheel 56 around to the neutral position, the key being automatically moved outwardly a short distance when the wheel is moved by said spring. When the key is drawn out it revolves the lock wheel, owing to its mesh with the teeth 60 and brings the lug 61 around to the position shown in Fig. III, when, should it be attempted to rock the lever back to its original position the corner of the lever flange would, should the main lock fail, contact with the wheel hub and prevent such action. When the wheel 56 has moved around until the edge of recess 62 contacts with the lip 74 on the tumbler plate, a continued rotation of the wheel will rock such plate on its pivot in the slot 73 so that should the spring 71 fail to move the plate as described said plate will be drawn downwardly by the lug on the lock wheel until the grooved portion has been drawn from the dog 76 on the lever flange and the notched portion of the tumbler made to engage said dog as described, when a movement of the lever in the unlocking direction will push the tumbler plate into contact with the flange 9, thereby forming a positive lock for the lever and producing a double locking action, either of which will act independently of the other.

When it is desired to unlock the device, the key is inserted into the slot 66 until its end comes in contact with the first or buffer tooth 60′, when the wheel is pushed around until the subsequent teeth engage the key perforations when the wheel is moved to the first position as noted; the wheel hub recess moving over the lever flange to permit its passage therethrough and the forward edge of the recess engaging the lip 74 to rock the tumbler plate so that the notch 77 is moved from the dog 76 and the grooved portion of the plate moved thereon, when the lever can be rocked to the unlocked position and the hat removed, the spring 71 automatically throwing the lever arm 20 upwardly as soon as the dog 76 has been released from notch 77; the spring 71 only being tensioned during the time the dog is moving into or out of notch 77 so that its life is not wasted by remaining under tension for long periods of time.

By means of the buffer on the end of the lever arm, a hat of any thickness will be held in the device, as should one of thick material be inserted, the buffer will move back against the tension of spring 30, while with a thinner material a less or no tension will be put on the spring. Should it be attempted to remove the hat while the device is locked the plate 25 will be brought into contact with the edge of the housing 21 and the plate shank into contact with the housing neck, producing a diagonal binding action with the plate so directed toward the stud button that the removal of the hat or the buffer from the housing would be impossible.

Should it be desired to lock a coat, or like garment in the device, the collar of the garment is placed over the bracket 43 and the arm 41 brought into locking position simultaneously with the hat arm; the locking action of both the hat and coat arms being identical.

To lock an umbrella, the umbrella shank is placed between the arms 47 and 48 and the lever rocked so that the arm 50 will close the end of the slot 49, when the handle will support and prevent the removal of the umbrella.

While I have shown but one key for operating my lock, it is readily apparent that by varying the alinement of the perforations in various keys, a great number of combinations may be arranged. It is also readily apparent that the invention would not be varied by placing the rack teeth on the side of the wheel and providing a vertical instead of a horizontal key engagement.

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

1. A hat rack and lock comprising an attaching rail having a forwardly projecting

hat locking arm, a hat supporting bracket mounted independently of the locking arm and projecting forwardly and upwardly in proximity to said arm, a lever having a curved upper end adapted for engagement with the interior of a hat carried by said supporting bracket, and means for locking said lever in its hat engaging position.

2. In a hat rack and lock, a supporting rail having a transverse groove, a supporting bracket having a base adapted for insertion into said groove, and a rocking lever said lever being provided with a finger adapted for coöperation with said bracket, for the purpose set forth.

3. In a hat rack and lock, a supporting rail having a groove in its rear face, a supporting bracket having a base adapted to fit within said groove, and a lever pivoted on said rail and provided with a locking member adapted for coöperation with said supporting bracket, substantially as set forth.

4. In a hat rack and lock a supporting rail, having a groove in its rear face, a bracket base adapted to seat in said groove, a pair of arms carried by said base and projecting forwardly of said rail, a lever pivoted to said rail and provided with a head adapted to swing into proximity to said bracket arms, and a finger on said head adapted for coöperation with the bracket arms, substantially as and for the purpose set forth.

5. In a hat rack and lock a supporting rail having a groove in its rear face, a supporting bracket having a base fitted into the rail groove, yoke arms carried by said base and projecting forwardly from said rail, a lever pivoted on said rail, and having an arm adapted for movement into proximity to said yoke arms, a finger on said lever arm adapted for coöperation with said yoke arms to form a locking unit, and means for locking said lever, for the purpose set forth.

6. In a hat rack and lock a buffer housing having a contracted neck, a buffer comprising a garment engaging member, a plate shank adapted for projection through said neck, and means on the inner end of said shank for anchoring same within the housing.

7. In a hat rack and lock a buffer housing having an interior chamber and an outer socket connected by a contracted neck, a buffer comprising a garment engaging plate, a shank on said plate extending through said socket and neck to said interior chamber, and a ball on said shank adapted for free rotary and limited longitudinal movement within said chamber.

8. In a hat rack and lock a buffer housing having an interior ball chamber and flaring, open mouth socket, said chamber and socket being connected by a contracted neck, a garment engaging plate, a shank on said plate extending through said socket and neck into said chamber, a ball on said shank adapted for movement within said chamber, and a spring surrounding said shank and engaging said plate and neck, substantially as and for the purpose set forth.

9. In a hat rack and lock, a projecting buffer housing provided with a shank socket, a buffer comprising a shank carried by said housing and a plate carried by said shank and extending over the edges of said housing, and a clamping member adapted for coöperation with said buffer, for the purpose set forth.

10. In a hat rack and lock, a buffer housing, a shank carried by and adapted for movement in said housing, a plate on said shank of greater diameter than and adapted for engagement with the edges of said housing, and clamping means adapted for cooperation with said plate and housing to bind a garment therebetween for the purpose set forth.

11. In a hat rack and lock, a buffer housing, a locking member adapted for coöperation with said housing when the parts are in locking position, and a buffer plate carried by said housing, said plate being adapted for rocking movement and for binding engagement with both the buffer housing and coöperating locking part, substantially as set forth.

12. In a hat rack and lock, a buffer housing, a shank anchored and adapted for lateral movement in said housing, a plate on said shank of greater diameter than and adapted for engagement with the outer edge of said housing, and a locking part adapted for coöperation with said plate, to bind a garment therebetween, said plate being adapted for tilting movement to bind directly against the housing edge at one side and for binding a garment against the cooperating locking part, substantially as and for the purpose set forth.

13. In a hat rack and lock, a buffer housing comprising an open mouth socket, and a buffer comprising a garment engaging plate adapted for contact with the outer edge of said housing, a shank on said plate projecting into said socket, said housing and buffer being so arranged that a lateral movement of the buffer will bring said plate into contact with the outer edge of the housing and the shank into contact with the interior of said housing to form a positive lock of the buffer parts, substantially as set forth.

14. A hat rack and lock comprising a plurality of garment engaging members, one movable toward another, a locking wheel adapted for partial revolution in proximity to the movable member, a tumbler plate adapted for engagement with said wheel, and means on said movable member adapted

for locking engagement with said tumbler when said member is in coöperative engagement with the opposite garment engaging member.

15. A hat rack and lock, comprising a plurality of garment engaging members one of which is movable toward another, a locking wheel movable to and from a locking position, and a tumbler plate adapted to permit a free movement of the movable garment engaging member when said wheel is out of locking position and for holding same in coöperative relation with its opposite member when said wheel is in locking position.

16. A hat rack and lock comprising a plurality of garment engaging members, one of which is movable toward another, a locking member adapted for partial revolution, and a tumbler plate, said locking member and plate having coöperating means whereby the latter is rocked out of binding engagement with one of the garment engaging members, when the former is moved from its locking position.

17. A hat rack and lock comprising a plurality of garment engaging members, one of which is movable toward the other and is provided with a tumbler engaging portion, a locking wheel movable to and from a locking position, a tumbler plate, means on said movable garment supporting member for rocking said tumbler into engagement with its tumbler engaging portion as it moves into coöperative relation with the opposite garment supporting member, and means on said wheel for rocking said tumbler as said wheel is moved from its locking position.

18. A hat rack and lock comprising a plurality of garment engaging members one movable toward another, a tumbler plate, a tumbler engaging lug on said movable garment engaging member adapted for movement into locking engagement with said tumbler when said member is moved into coöperative relation with the opposite garment supporting member, and a wheel member adapted to engage said tumbler and rock same from its locking position.

19. A hat rack and lock comprising a plurality of garment engaging members, a tumbler plate suitably anchored and adapted for rocking movement, means on the movable garment engaging member whereby it is held by said tumbler in coöperative relation to the opposite garment engaging member, a lug on said tumbler, and a lock wheel having means for engaging the tumbler lug to rock said tumbler out of its engagement with said garment engaging member.

20. A hat rack and lock comprising a plurality of garment supporting members, one of which is movable toward the other, a pivoted tumbler, a lug on the movable garment supporting member adapted for locking engagement with said tumbler when said member is in coöperative relation to its opposite garment supporting member, means for tensioning said tumbler toward its lug engaging position, and a lock wheel adapted to rock said tumbler out of its lug engagement.

21. A hat rack and lock comprising a plurality of garment engaging members one of which is movable toward another, a pivotally mounted tumbler having a face groove and an edge notch, a lug on the movable garment engaging member adapted to travel in said groove and seat in said notch, and means for rocking said tumbler for the purpose set forth.

22. In a hat rack and lock, a suitable supporting rail, having garment engaging portions, a lever pivoted on said rail, and adapted for coöperation with the garment engaging portions on said rail, a lock housing, a flange on said lever projecting into said housing, a dog on said flange, a tumbler plate pivoted in said housing and adapted for engagement with a portion of said rail, said plate being provided with a face groove within which the flange dog is adapted to travel and with an edge notch for receiving said dog when the latter leaves said groove, and means for automatically rocking said plate when said lever is rocked, substantially as and for the purpose set forth.

23. In a hat rack and lock a suitable supporting rail having garment engaging portions, a lever pivoted on said rail and adapted for coöperation with the garment engaging portions on said rail, a lock housing on said rail, a lock wheel trunnioned in said housing and provided with a recessed hub, a tumbler plate pivoted in said housing and provided with a face groove and an edge notch, a lug on said plate adapted for projection into the recess in said wheel hub, a flange on said lever, and a dog on said flange adapted for engagement with the grooved and notched portions of said tumbler plate, substantially as and for the purpose set forth.

24. In a hat rack and lock, a suitable supporting rail having garment engaging portions, a lock housing on said rail, a lever trunnioned in said housing, a tumbler plate pivoted in said housing and provided with a face groove and an edge notch, a dog on said lever adapted for travel in said groove and for engagement with said notch, means for rocking said plate to bring the notched portion of said plate into position for engagement by said dog when the lever is rocked into position for coöperation with the rail parts, and means for rocking said plate to free said dog, substantially as set forth.

25. In a hat rack and lock, a suitable supporting rail having garment engaging members, a lock housing on said rail, a lever

having members adapted for coöperation with the garment engaging members on said rail, a tumbler plate in said housing, a flange on said lever adapted for locking engagement with said tumbler plate, means for automatically moving said plate into locking position when said lever is rocked into its coöperative position, and for automatically rocking said lever to open position when said plate is released, and means for releasing said plate.

In testimony whereof I affix my signature in presence of two witnesses.

ADELBERT D. HILL.

Witnesses:
MILTON DUNCAN,
J. W. MCCLURE.