I. H. WATTERS.

HINGE.

APPLICATION FILED DEC. 27, 1910.

1,004,317. **Patented Sept. 26, 1911.**

Fig. 1.

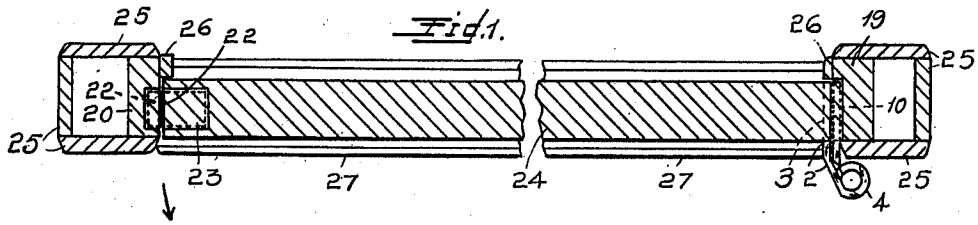


Fig. 2.

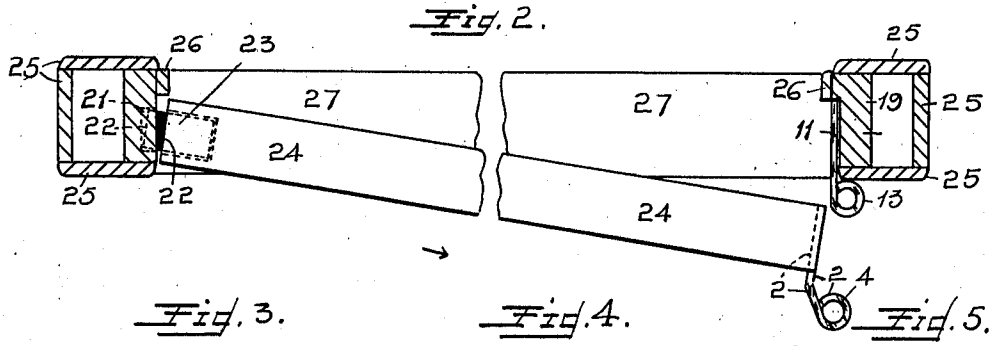


Fig. 3.

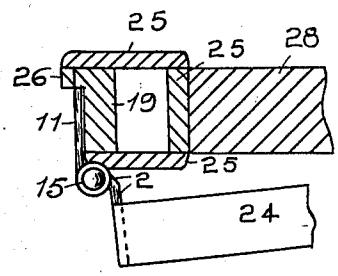


Fig. 4.

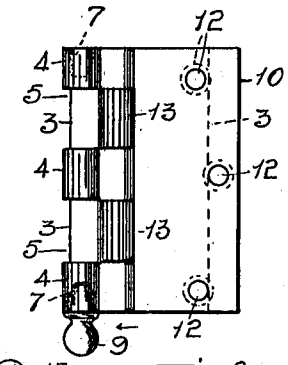


Fig. 5.

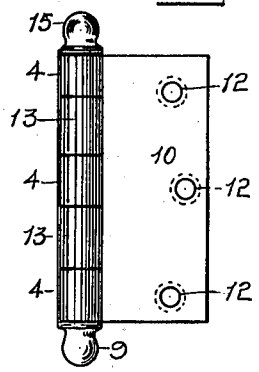


Fig. 6.

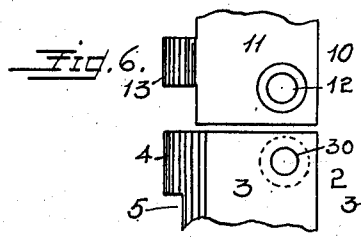


Fig. 8.

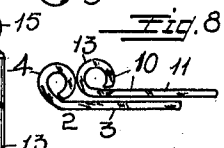
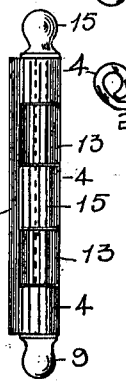


Fig. 7.



WITNESSES:

Hubert L. Miller

E. S. Bond.

INVENTOR.

BY J. H. Watters

H. M. Richards,

ATTORNEY.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ISAAC H. WATTERS, OF GALESBURG, ILLINOIS.

HINGE.

1,004,317. Specification of Letters Patent. Patented Sept. 26, 1911.

Application filed December 27, 1910. Serial No. 599,438.

To all whom it may concern:

Be it known that I, ISAAC H. WATTERS, a citizen of the United States, and a resident of Galesburg, in the county of Knox and State of Illinois, have invented a new and useful Hinge, of which the following is a specification.

The invention relates particularly to leaf or strap hinges, and especially to that type thereof which are commonly employed on doors.

In the use of hinges of ordinary constructions it has been impossible to so separate the respective butts that, after withdrawal of the pintle, the door-butt could be drawn directly past the jamb-butt, whereby the door could be released from the hinge side thereof while the bolt of the lock was engaged with its keeper. In such hinges as are separable while the butts are positioned as in use (and when the door is closed,) the knuckles have been so disposed with reference to the leaf portion that a great, unsightly gap was created between the door and the door-post, or the casing. Furthermore, the knuckles were at such distance from the points of securement to the door and casing that the weight of the former and the resultant leverage would cause the screws to become loosened from the casing. The door would not, therefore, freely swing to its closed position, but would sag and strike the floor, the threshold-board, and the other casing. The offset portion and knuckles projected to such an extent that it was unsightly and wholly incongruous with artistic environments, such as are provided in the better class of residences, hotels, offices, etc. The free edge of the door was thrown a great distance from the pivotal point, thus preventing it being swung back against the wall when the hinge-jamb is located only a slightly greater distance from the wall which is disposed at a right angle to the door than is the width of the door.

The primary object of my invention is to provide a hinge of such construction that the door-butt may, from the lock side only, be separated from and slipped past the jamb-butt, whereby the door may be opened without picking or breaking the lock and without injury to either the door, the casing, or the lock, and which hinge will be devoid of the objectionable features above noted.

Another object is to provide a more ornate and attractive hinge (when positioned) than has heretofore been presented.

Minor objects will be in part obvious and in part pointed out.

In the accompanying drawings, which illustrate the best exemplification of my improvements now known to me:—Figure 1 is a transverse sectional view, taken just above the lock, the door shown in locked position, but the pintle withdrawn. In this position the parts occupy such relative positions that the door may be opened from the hinge side. Fig. 2, is a similar view, the plane of section being just above the upper hinge, and the door shown as swung from the hinge side; Fig. 3, a fragmental sectional view, taken just above either hinge; Fig. 4, a front elevation illustrating the manner of sliding the door-butt from the jamb-butt, the arrow indicating the direction of movement; Fig. 5, an elevation of the hinge as it appears when removed from the door and jamb, the rear surface or back of the jamb-butt being seen; Fig. 6, a fragmental detail, the butts being separated and placed, the jamb-butt above its companion, to illustrate the relative sizes; Fig. 7, a bottom plan, the butts separated as in operation; and Fig. 8, a front elevation, the parts appearing as if seen from within a room and as in the same position on a door as is shown in Fig. 1. Figs. 4 to 8 inclusive are enlarged with reference to Figs. 1, 2, and 3.

In all the figures of the drawing the same reference character denotes the same part.

2 indicates a door-butt comprising a relatively broad strap or leaf 3 provided with the usual countersunk screw-receiving apertures 30 in its face. The exposed or outer edge of the leaf 3 is first bent and extended, and thence curved to form registering spaced knuckles 4, (the number and positions of these being optional,) portions of the said edge being omitted to provide spaces 5 for the reception of the knuckles of the jamb-butt presently described. The knuckles 4 are disposed entirely in front of

the plane face of the leaf 3, and are offset therefrom, whereby no portion of the knuckle lies in line with the plane of the face of the leaf. (On hinges as ordinarily constructed, the knuckle is not offset from the plane of the face of the butt, but is directly in line with the plane of the face and back thereof and projecting to both sides thereof.) The "face" of each leaf is that plane surface thereof which is opposed to the other leaf when said leaves are substantially parallel, as when the door is closed. Both the upper and lower knuckles are internally threaded as shown at 7, Fig. 4, to selectively receive an ornamentally-headed hinge-tip 9 which in use is threaded into the lower eye.

10 indicates a jamb-butt, comprising a strap or leaf 11 slightly narrower than the leaf 3 and provided with countersunk screw-receiving apertures 12. Its exposed edge is continued and immediately curved or turned to form offset, registering, spaced knuckles 13, these bearing the proper numerical and placement relationship to the number and positions of the knuckles 4. The knuckles 13 are disposed entirely in rear of the plane of the face of the leaf 11; in other words, no part of the knuckle projects forwardly of the plane face of the leaf, and the edge of the knuckle lies or rests against or substantially against that portion of the leaf which parallels the jamb. It will be seen that no portion of the knuckle (which provides the pintle-receiving eye) lies forwardly of the face-line of any plane portion of the butt 10. In order to provide a close fit, the exposed edges of the leaf 11 are beveled at both top and bottom and also between the spaced knuckles 13, which spaces are provided by omitting portions in an evident manner. When the butts are brought into the closed position shown best at Fig. 1, the leaves 3 and 11 will lie substantially parallel, with the eyes of the knuckles 4 and 13 registering and both of them offset in the same direction. The curved portion of the door-butt is, however, slightly larger than the similar portion of the jamb-butt in order to preserve proper mechanical proportions.

15 is a pintle, provided with an ornamental head. Its stem is slightly less in diameter than the diameter of the openings in the knuckles, in order that it may be freely passed therethrough from either end of the hinge. By turning the hinge upside down and reversing the positions of the screw 9 and pintle, the one shown serves with equal facility as a left hand hinge.

In order to clearly illustrate the operation, reference is to be had particularly to Figs. 1 and 2, and to some extent to Figs. 3, 4 and 8. In Figs. 1, 2 and 3, 19 indicates what I shall for the purposes hereof term the hinge-jamb, and 20 represents the lock-jamb, which latter is provided with a recess or mortise 21 adapted for the reception of the bolt 22 of a mortise lock 23 (diagrammatically shown) suitably secured in a door 24.

25 indicates portions of the casing, 26 the stops, 27 the threshold, and 28 indicates a fragment of the wall, as shown at Fig. 3.

Assume the parts to be in the relative positions shown in Fig. 1, wherein the bolt 22 is engaged with the mortise 21 and the pintle withdrawn from the knuckles 4 and 13. By drawing on the knuckles 4 the operator will cause them to move out from the spaces between the knuckles 13, and the face of the leaf 3 will slip or wipe past the face of the leaf 11, inasmuch as no portion of the knuckle of the jamb-butt projects inwardly (with reference to the room) of the proximal edge of the hinge butt, as it does in hinges where the knuckle is disposed in line with, or approximately in line with, the edge of the jamb-butt. The operation just described is best shown at Figs. 2, 4, and 8. Upon its completion the door may be drawn in the direction of the arrow at Fig. 2 to free the bolt 22 from the recess 21 in an evident manner, whereupon the lock may be removed from the door without injury to either. No expense will have been incurred; neither will the casing nor the jamb have been mutilated. Even though the door be swung entirely back, it will neither mutilate nor be mutilated by the adjacent casing board 25, being held distant therefrom as shown in Fig. 3. However, the inner edge of the door will not be thrown an extreme distance from the casing, to provide the wide gap earlier herein referred to. Neither will the free edge be thrown a great distance from the pivot or the casing. There will be no unsightly extension projecting over the casing. The leverage is practically eliminated, whereby danger of sagging is practically obviated. The curves of the knuckles present an ornate and attractive appearance to the eye, and it will be seen from an inspection of Fig. 1 that they project inwardly of neither the jamb-leaf nor the hinge-jamb. The manner of opening the door from the lock side is indicated by the arrow at Fig. 1.

It has not been thought necessary or best to encumber this specification and the drawings with illustrations of modifications which are neither essential to nor form any part of the invention herein claimed. In fact, it is apparent without such, that changes may be made in the details of construction and by modifications involving only mechanical skill, without departing from the general idea of the invention.

Therefore, without limiting myself to particularities, I claim as new and desire to se-

cure by Letters Patent the following, to-wit:—

A hinge comprising a pair of leaves, knuckles projecting from one edge of each leaf and entirely on one side of the plane of the leaf, the body of each knuckle being laterally closed throughout its length, and a pintle adapted to be removably inserted in the knuckles.

In witness whereof I hereunto affix my signature at Galesburg, in the county and State above written, this 20 day of December, 1910.

ISAAC H. WATTERS.

In presence of—
CLYDE V. WATTERS,
H. M. RICHARDS.