No. 867,913. PATENTED OCT. 8, 1907.

J. J. COWELL.

DOUBLE ACTING HINGE.

APPLICATION FILED NOV. 28, 1906.

2 SHEETS—SHEET 1.

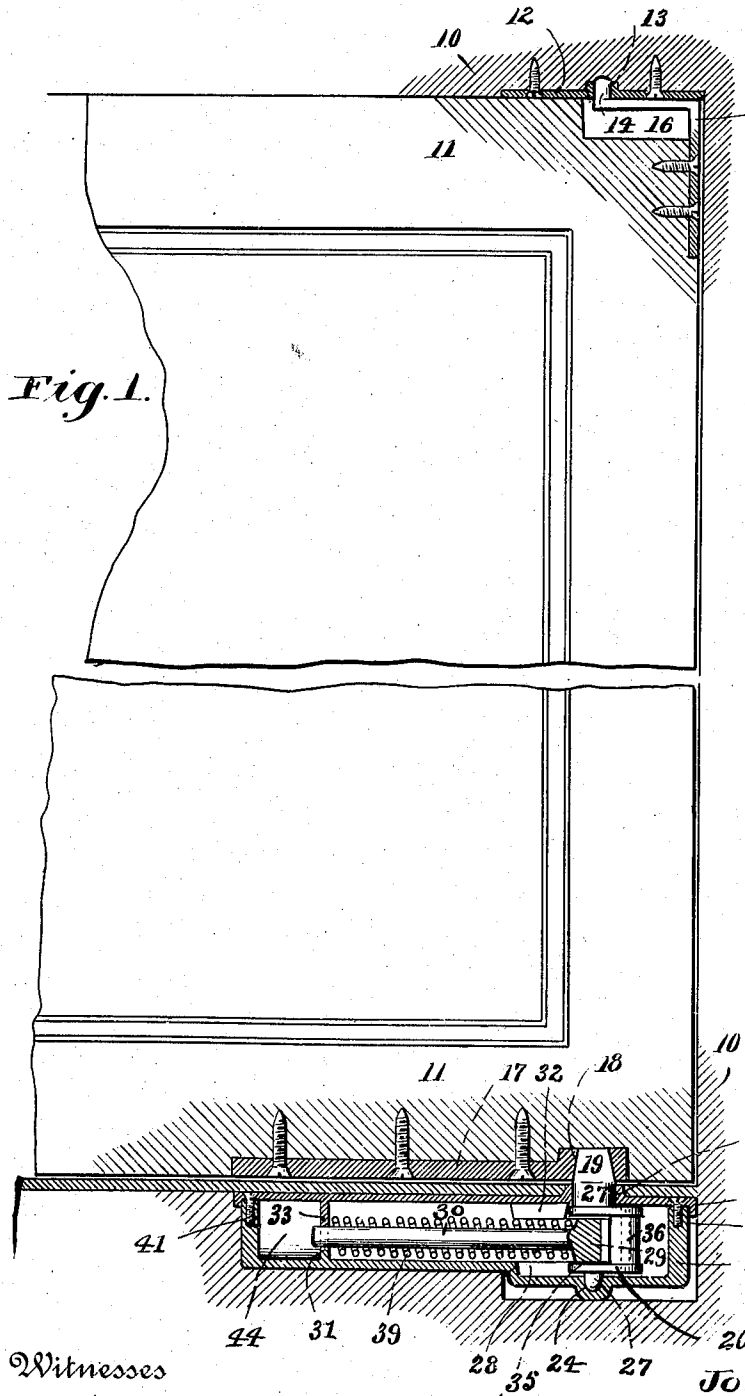


Fig. 1.

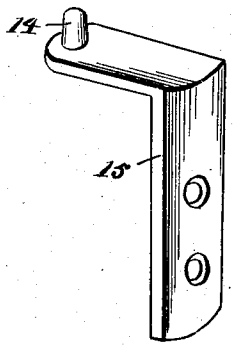


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3

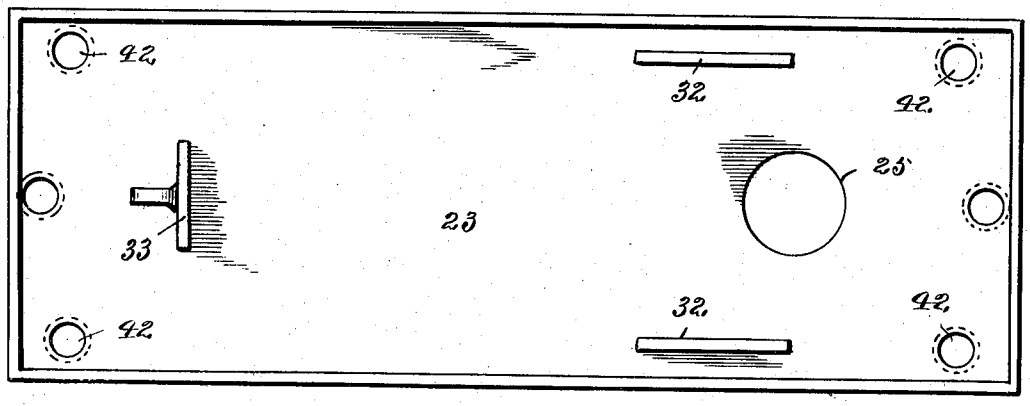


Fig. 4

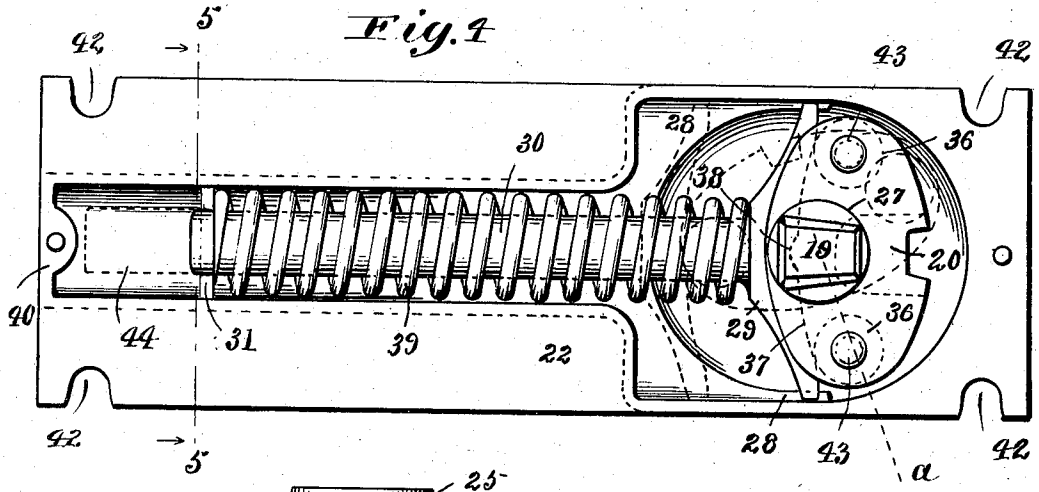


Fig. 5.

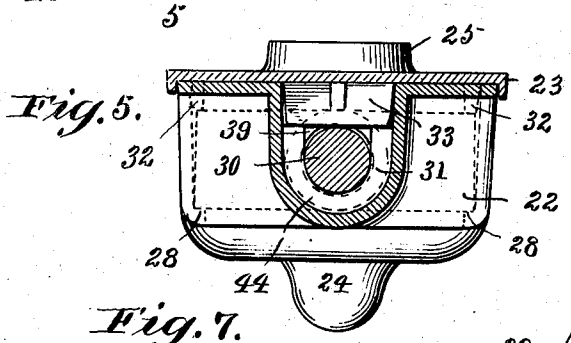


Fig. 6

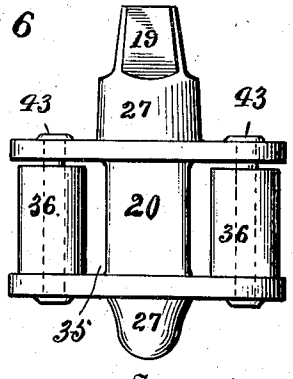
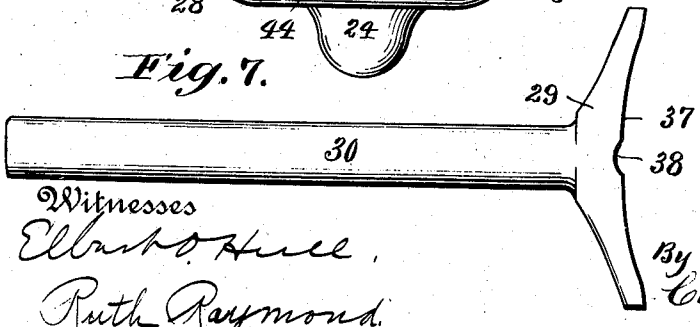


Fig. 7.



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UNITED STATES PATENT OFFICE.

JOHN J. COWELL, OF NEWARK, NEW JERSEY.

DOUBLE-ACTING HINGE.

No. 867,913. Specification of Letters Patent. Patented Oct. 8, 1907.

Original application filed March 20, 1905, Serial No. 251,162. Divided and this application filed November 28, 1906. Serial No. 345,467.

To all whom it may concern:

Be it known that I, JOHN J. COWELL, a citizen of the United States, and a resident of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Double-Acting Hinges, of which the following is a specification.

This invention relates to new and useful improvements in double acting door hinges such as are used to permit a door to swing in two directions.

It is the purpose of my invention to provide a simple and inexpensive construction of hinge whereby the same may be rendered certain and free of action and likewise susceptible of being held in an open position to allow parties to pass through the door in either direction without danger of personal injury or inconvenience.

With the above objects in view my invention resides and consists in the novel construction, arrangement and combination of parts hereinafter described, claimed and illustrated upon the accompanying drawings, forming a part of this specification upon which similar characters of reference denote like or corresponding parts.

Figure 1 shows a side elevation of a door and casing broken away with my improved hinge attached thereto as in use. Fig. 2, shows a detailed perspective view of a simple form of pintle bracket which I employ in connection with my hinge, upon the upper corner of a door to pivotally support the same in line with the shaft journaled in the casing of the lower hinge. Fig. 3, is a detached inverted plan view of the top or cover of the hinge casing and is shown upon an enlarged scale from the hinge shown in Fig. 1. Fig. 4, is a plan view of hinge and casing upon which the cover shown in Fig. 3, is attached. Fig. 5, is a transverse sectional elevation through hinge, taken on line 5—5 of Fig. 4. Fig. 6, is a detached front elevation of the shaft journaled in the casing and upon which the door is supported. Fig. 7, is a detached plan view of a T-rod used in the hinge.

Referring in detail to the characters of reference marked upon the drawing 10 indicates a casing and 11 a door hung therein through the medium of my novel hinge. The door and casing can obviously be of the usual or any preferred construction which will allow of the door swinging in both directions and forms no part of my invention.

To the upper corner of the casing I attach a plate 12 which is provided with a hole or bearing 13 to receive the pintle 14 of the bracket 15. The latter being seated in the recess 16 of the door and attached in any suitable way as for instance by means of screws as shown. By means of the recess in the door the bracket may be readily attached, while the door is in an open position by first shoving the pintle end of the bracket into the recess and then extending said pintle into bearing 13 of the plate 12 and finally securing said bracket to the door by screws in the position indicated in Fig. 1.

To the lower end of the door I attach by means of screws a plate 17 which is provided with a shouldered socket 18 to receive the shouldered stud 19 of the shaft 20 rotatively mounted within the casing of the hinge. This stud is thicker on the inner or door end than the back end to prevent its being assembled and used in a reverse direction. The casing is preferably formed in two parts and consists of a lower body portion 22 and a cover 23 which may be secured to the body by tap screw 41. The casing is secured in a suitable recess of the floor by means of screws passing through the holes 42 of both cover and casing. The lower portion contains a socket 24 while the cover is provided with a bearing 25 in line with said socket and in which said shaft 20 is operatively mounted. The lower portion of the casing is further provided on either side with a ledge 28 to form a lower slideway for the head 29 of the slide rod 30. Said lower portion of the casing is further provided with a bearing 31 for the small end of the guide rod as clearly shown in Figs. 4 and 5. The cover 23 of the casing also contains a pair of guides 32 in line with the before mentioned ledges 28 and to likewise guide the head of the rod in its reciprocatory movement within the casing. A further guide 33 as shown in Figs. 1, 3 and 5 is formed integral with the cover in line with the bearing 31 of the lower portion of the casing to engage and retain the small end of the guide rod in position within the casing. The outer end 40 of the casing is preferably closed to exclude water and dampness from pocket 44 and interior of casing, yet it may be provided with an opening if desired to allow the rod 30 to bear and operate therein, thus avoiding the use of the bearings 31 and 33.

The shaft 20 carries parallel plates which are separated or spaced apart as at 35, and the head 29 of the slide rod 30 lies in the space 35. The rollers 36 are journaled for rotation in the said space between the plates. The said rollers are located one on either side and at equal distances from the axial center of the shaft 20 and are thereby adapted to swing with the shaft in either direction. The inner face of the head of the slide-rod is concaved, as at 37, and further contains a central pocket 38 to receive either of the rolls 36, as indicated by the dotted lines in Fig. 4 to hold the door in an open position. A spring 39 is mounted upon the guide rod intermediate of the head of the said rod and the bearings 31 and 33 of the casing and serves to retain the head of the rod in close operative contact with the rolls in a manner to normally retain the same in the position shown in Fig. 4.

Having thus described my invention, what is claimed is:—

1. In a double-acting hinge, the combination with a casing, of a headed slide rod mounted therein, a shaft rotatively mounted in the casing, a pair of bearing rolls mount-

ed therein and adapted to engage the head of the sliding rod, and a spring mounted on said rod to normally hold the same in engagement with said rolls.

2. In a double acting hinge, the combination with a casing, of a shaft journaled therein and having an extended shouldered lug, a plate receiving said shouldered lug, rolls operatively connected to and moving with the shaft, a slidable rod mounted in said casing and having a head located in the path of the rolls, and a spring mounted on said rod to normally hold said rod in engagement with said rolls.

3. In a double acting hinge, the combination with a casing, of a shaft journaled therein, a pair of rolls operatively connected to and moving with the shaft, a rod having a transverse head to engage said rolls, bearings in the casing to slidably support the rod relative to the shaft and rolls, and a spring mounted on said rod to retain the rod in engagement with the rolls.

4. In a double acting hinge, the combination with a casing, of a shaft journaled therein, and having spaced plates, rolls journaled between said plates, a rod slidably mounted in said casing and having a head which lies between said plates and in the path of said rolls, a spring mounted on said casing to retain the rod in engagement with said rolls, and means slidably supporting the rod against lateral displacement.

5. In a double acting hinge, the combination with a casing comprising a body and a cover portion, of a shaft provided with spaced plates journaled in both said cover and body portion and having a projecting end, rolls journaled between said plates, a rod slidably mounted in the casing and having a concaved enlarged end and a pocket within the concavity, and a spring mounted on said rod to hold said concaved and pocketed surface of the rod in yieldable engagement with said rolls.

6. In a double acting hinge of the class described, the combination of a casing having guideways upon either side a cover for the casing having guides in line with the guideways of the casing, a shaft journaled in the casing, and having spaced plates, rolls journaled between said plates, a rod having a head slidably mounted intermediate of said guideways and guides, and a spring mounted on said rod to normally hold the same against the rolls.

7. In a double acting hinge, the combination of a casing, a shaft provided with spaced parallel plates journaled therein and having a shouldered lug, a pair of rolls journaled between said plates, a shouldered plate engaging the shouldered lug, a T-rod slidably mounted within the casing and bearing against the rolls, a spring mounted on said rod to yieldably hold the head of said rod against said rolls, and guides for said rod to retain the same in operative position.

8. In a double-acting hinge, the combination with a pintle socket-plate constructed to be let into a door-casing, of a door having a recess cut in the top edge thereof, and a pintle-bracket secured to the hinge-edge of said door and having a portion carrying a pintle projecting over said recess, said pintle arranged to engage said socket-plate.

Signed at Bridgeport in the county of Fairfield and State of Connecticut this 24th day of November, A. D., 1906.

JOHN J. COWELL.

Witnesses:
C. M. NEWMAN,
RUTH RAYMOND.