

J. E. GLOEKLER.

GRAVITY HINGE.

APPLICATION FILED AUG. 20, 1908.

903,704.

Patented Nov. 10, 1908.

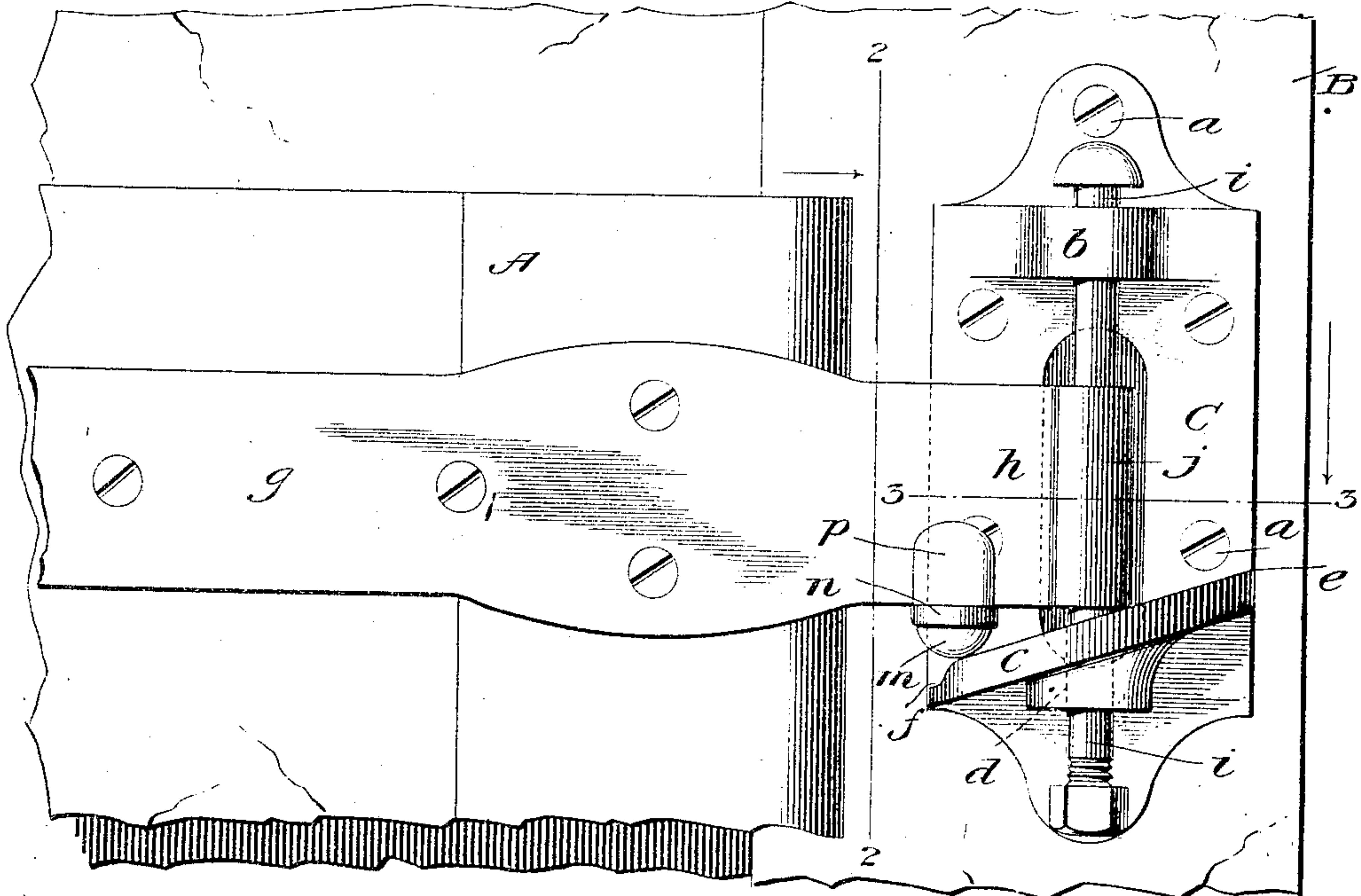


Fig. 1.

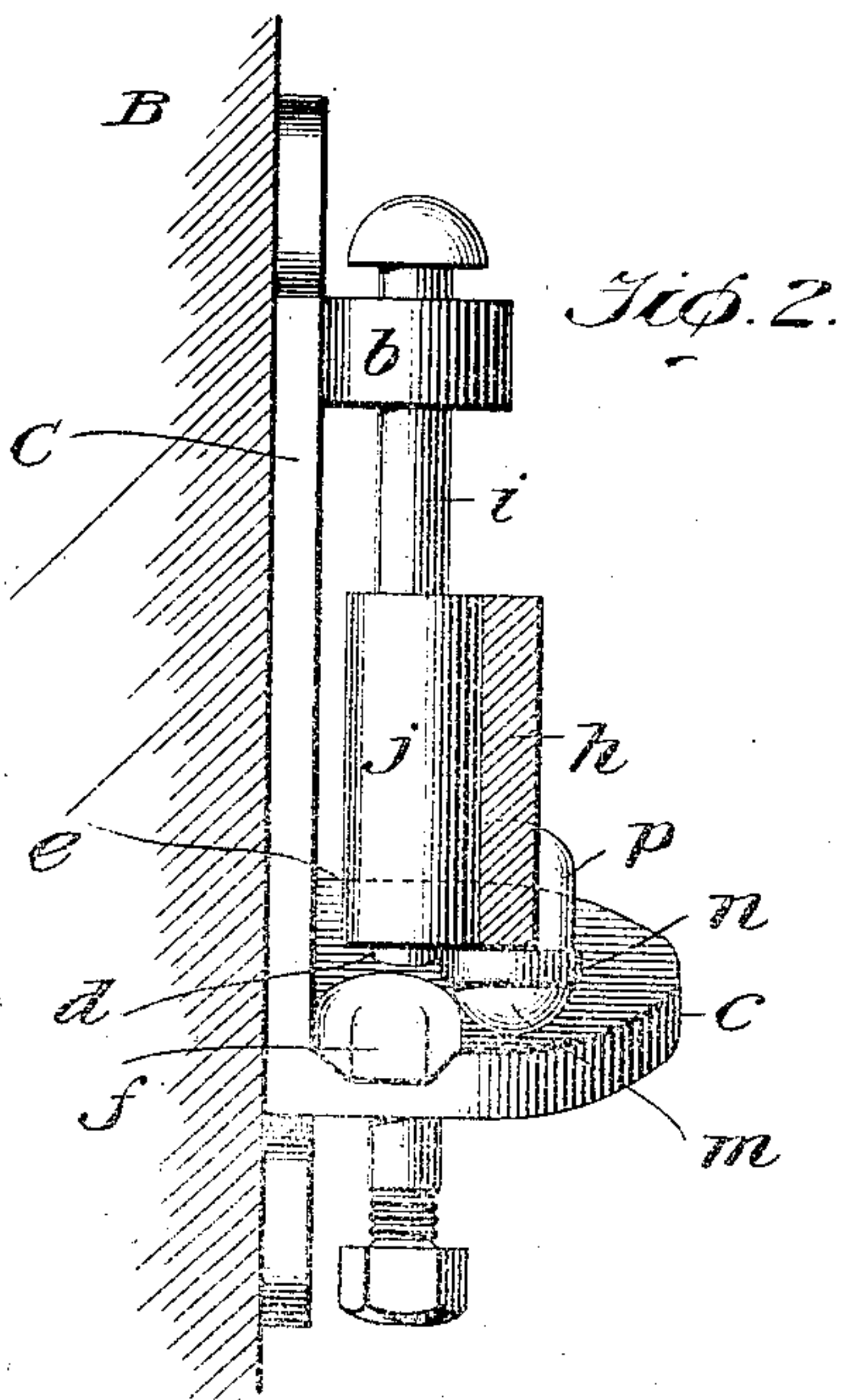


Fig. 2.

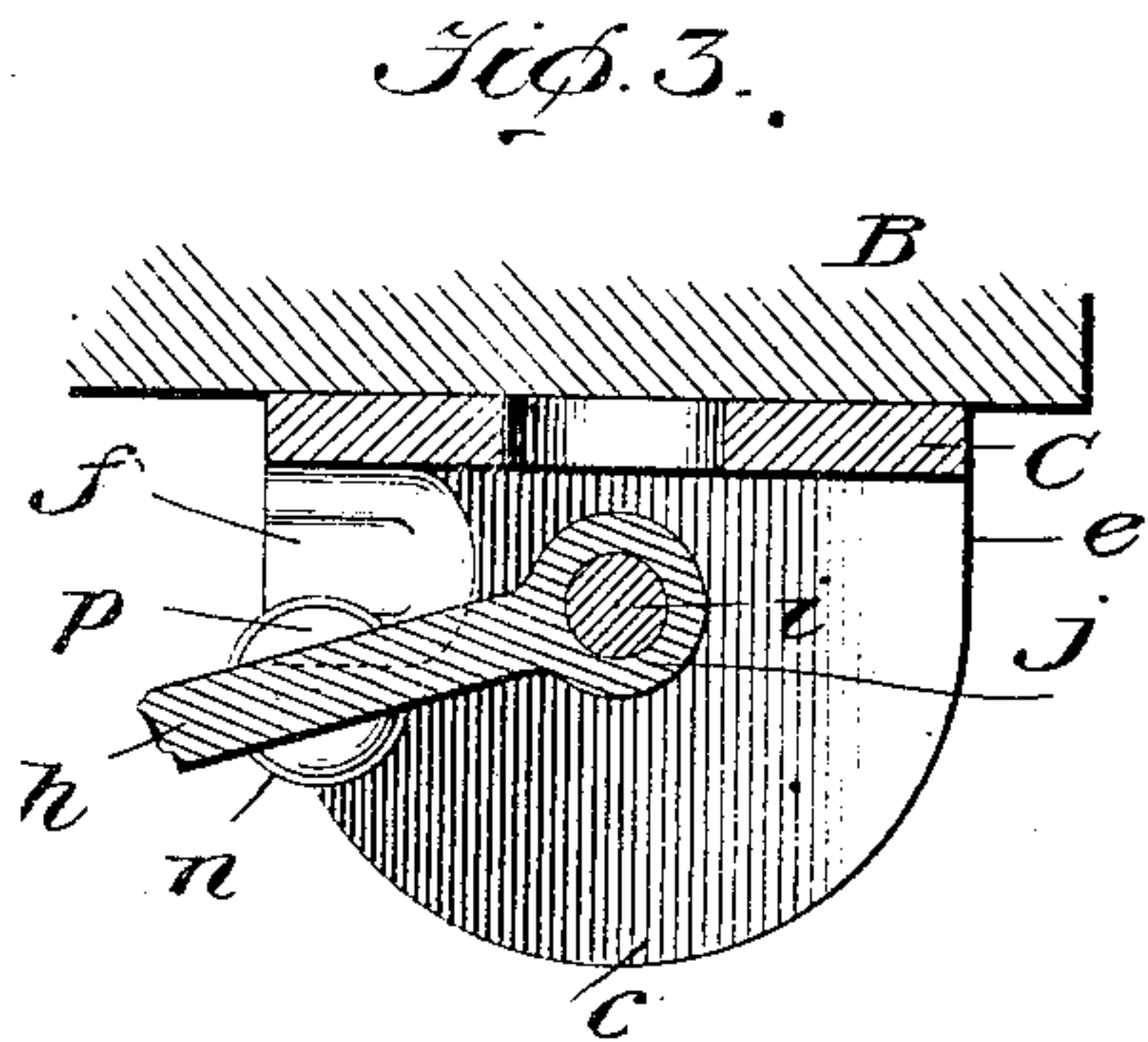


Fig. 3.

Witnesses

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GRAVITY-HINGE.

No. 903,704.

Specification of Letters Patent.

Patented Nov. 10, 1908.

Application filed August 20, 1908. Serial No. 449,454.

To all whom it may concern:

Be it known that I, JOHN EDWARD GLOEKLER, citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented new and useful Improvements in Gravity-Hinges, of which the following is a specification.

My invention pertains to what are known as gravity hinges; and it contemplates the provision of a simple, compact and strong gravity hinge, designed more especially for use in combination with a heavy refrigerator or cold-storage-apartment door, and constructed with a view of enabling the door to freely gravitate to its closed position and then drop vertically, the latter to crowd the base packing of the door against the door casing and in that way lessen the liability of cold air escaping from or warm air entering the refrigerator or storage apartment.

The novelty, utility and practical advantages of the invention will be fully understood from the following description and claim when the same are read in connection with the drawings, accompanying and forming part of this specification, in which:

Figure 1 is an elevation illustrating the application of my improvements to a door and door frame or casing; the swinging and vertically-movable member of the hinge being shown in the position it occupies as the door approaches the plane in which it drops vertically to its fully closed position. Fig. 2 is a vertical section taken in the plane indicated by the line 2—2 of Fig. 1, looking in the direction indicated by arrow, and: Fig. 3 is a detail horizontal section taken in the plane indicated by the line 3—3 of Fig. 1, looking downwardly.

Similar letters designate corresponding parts in all of the views of the drawings, referring to which:

A is a swinging and vertically movable door, B is the casing of the door, and C is the fixed member of my novel gravity hinge. The said fixed member C is attached by screws *a* or other suitable means to the face of the casing or frame B at one side of the door A, and is provided with a forwardly extending lug *b* in which is a vertical aperture, of circular form in cross-section, and is also provided with an inclined platform *c* which extends forwardly from it, below the lug *b* and is provided with a vertical aperture *d*, of circular form in cross-section, alined with the before mentioned aperture in

the lug *b*. The upper face of the platform *c* is straight, and is inclined downwardly toward the adjacent edge of the door A, and at its upper side said platform is provided with a horizontal portion *e* and a depression *f*; the horizontal portion *e* being located at the end of the platform remote from the door A, and the depression *f* being arranged at the end of the platform nearest the said door A for reasons which will be hereinafter set forth.

In addition to the fixed member C, my novel hinge comprises a swinging and vertically movable member which is made up of a strap *g* fixed in any approved manner to the door A, and having an end portion *h* located between the lug *b* and the platform *c*, a vertically disposed, rotatable and vertically movable pintle *i* extending through an eye *j* of the strap *g* and fixed to said strap so as to swing horizontally and move vertically therewith, and a ball caster *m*, the housing *n* of which bears against the lower edge of the strap *g* and is provided with a portion (not shown), disposed in a socket *p* formed by enlargements located at opposite sides of the strap *g* as clearly shown in Fig. 3 of the drawings.

In the practical use of my improvements, it will be manifest that when the door A is swung open, the ball caster *m* will travel up the inclined plane of the platform *c*, and hence the swinging movement of the door A, strap *g* and pintle *i* will be attended by upward movement thereof, with the result that until the ball caster *m* reaches the horizontal portion *e* of platform *c*, the door will tend to freely gravitate to its closed position. It will be noted, however, that when the door A is opened sufficiently to dispose the ball caster *m* on the horizontal portion *e* of the platform *c*, the door will remain in an open position, and hence when it is desired to close the door some little stress is necessary to move the ball caster *m* from the horizontal portion *e* to the inclined plane of the platform, when the door will gravitate to its closed position as before described. As the door approaches its fully closed position, the ball caster *m* will sink in the depression *f* of the platform *c*, and consequently the door will drop suddenly in a vertical plane, this latter being particularly advantageous inasmuch as it is adapted to crowd packing (not shown) on the base edge of the door against the door casing with a view of making a tight

joint at that point. From this it follows that when the door is to be opened it is necessary to first exert a sharp pull on the door to raise the caster *m* out of the depression *f*, after which the door may be opened almost as easily as the ordinary door, notwithstanding the travel of the caster up the inclined plane of the platform and the raising of the door which attends such travel of the caster.

As before stated my specific gravity hinge is designed for use in combination with a heavy refrigerator or cold-storage apartment door, and for such use it is essential that the upper face of the platform *c* be straight as well as inclined in order to obviate binding of the heavy door when the same is swinging to its closed position, and to permit of the door being swung open without undue effort. It is also essential to employ a ball caster in combination with the straight inclined upper surface of the platform, since such a caster alone is adapted to accommodate itself to the said surface incidental to the movements of the swinging member of the hinge; and it is equally necessary that the straight inclined upper surface of the platform merge sharply into the depression *f* disposed in the end of the platform nearest the door, for otherwise the packing with which such doors are ordinarily provided on their lower edges would bind and drag against the floor precedent to the completion of the door closing, and by so doing would render it practically impossible to completely and tightly close the door.

My invention contemplates the use of two or more of my novel gravity hinges in combination with a single door, but inasmuch as the said hinges are identical in construction I have deemed it necessary to illustrate but one hinge.

It will be gathered from the foregoing that the platform *c* serves as the lower jour-

nal of the pintle *i* and also serves to support the swinging and vertically movable hinge member as a whole, and in that way contributes to the simplicity and compactness of the novel hinge as well as to the strength thereof.

Having described my invention, what I claim and desire to secure by Letters-Patent, is:

The herein described gravity hinge consisting essentially of, a fixed member having a lug in which there is a vertically disposed aperture, of circular form in cross-section, and also having a platform, located below the lug, and provided with an aperture, of circular form in cross-section, alined with that of the lug, and also provided at its upper side with a straight, inclined surface and with a horizontal portion at the upper end of the inclined surface and a depression into which the inclined surface sharply merges at the point of the platform nearest the door in connection with which the hinge is employed, and a swinging and vertically movable member comprising a pintle arranged and adapted to turn and move vertically in the alined apertures of the lug and platform of the fixed member, a strap fixed to and adapted to turn and move vertically with the pintle and having a socket formed by enlargements at opposite sides of its lower portion, and an anti-friction device having a housing arranged in the said socket and against the lower edge of the strap and also having a ball disposed in the housing and on the platform of the fixed member.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN EDWARD GLOEKLER.

Witnesses:

O. BRASHEAR,
ALBERT GLOEKLER.