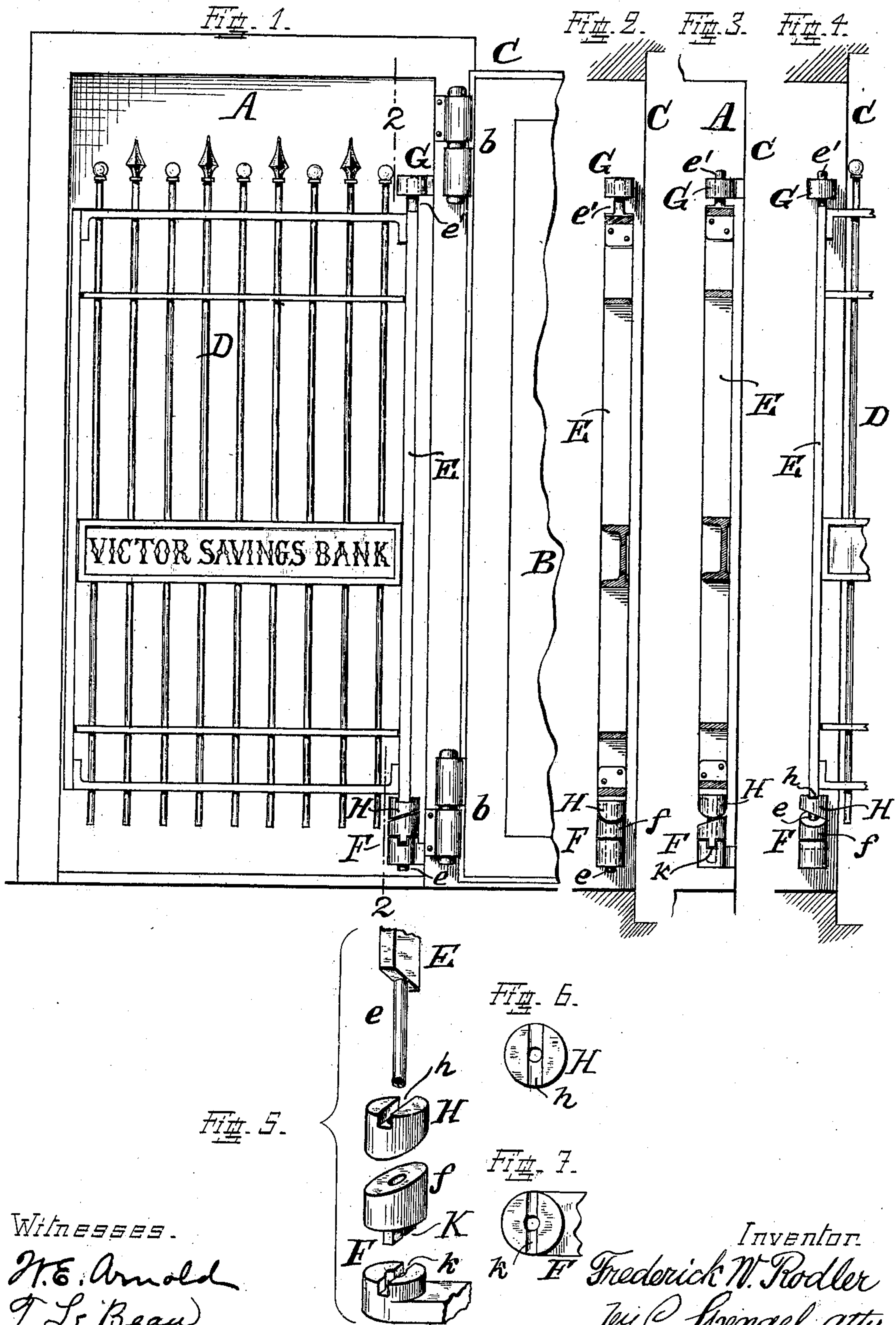


No. 898,005.

PATENTED SEPT. 8, 1908.

F. W. RODLER.
GRAVITATING HINGE FOR DAY GATES.
APPLICATION FILED AUG. 29, 1907.



Witnesses.

H. E. Arnold
J. L. Beau.

Inventor.
Frederick W. Rodler
by C. Spongel atty.

UNITED STATES PATENT OFFICE.

FREDERICK W. RODLER, OF CINCINNATI, OHIO, ASSIGNOR TO VICTOR SAFE & LOCK COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

GRAVITATING HINGE FOR DAY-GATES.

No. 898,005.

Specification of Letters Patent.

Patented Sept. 8, 1908.

Application filed August 29, 1907. Serial No. 390,602.

To all whom it may concern:

Be it known that I, FREDERICK W. RODLER, a citizen of the United States, and residing at Cincinnati, Hamilton county, State of Ohio, have invented a certain new and Improved Gravitating Hinge for Day-Gates; and I do declare the following to be a clear, full, and exact description of the invention, attention being called to the accompanying drawing, with the reference characters marked thereon, which form also a part of this specification.

This invention relates to hinges which are so constructed that a door supported by them has a normal tendency to remain closed and when opened resumes such closed condition automatically.

The invention arises in connection with a condition when such a hinge is used to support a particular kind of door and it consists of a certain construction whereby part of such a door, the construction of the same being suitable for the purpose, is utilized in a manner to constitute also part of the hinges and performs their particular function in connection with such hinges. The particular kind of doors I have here reference to are so-called day-gates used in connection with treasury vaults. They consist usually of open iron-work and are used during business hours to control in a limited manner access to large safes and vaults, while the regular doors, locked by time or combination locks, requiring too much time for manipulation remain open. It is desirable that such doors swing normally into a position across the door-opening to the vault and remain there, so that entrance may not readily be had unobserved.

In the following specification and particularly pointed out in the claim at the end thereof, will be found a full description of the invention, together with its operation, parts and construction which latter is also illustrated in the accompanying drawing, in which:—

Figure 1, shows front-view of the door-opening of a vault. Fig. 2, is a vertical section on line 2—2, of Fig. 1. Fig. 3, shows a portion of the door-opening and the jamb on the right side thereof as it appears in Fig. 1, the door, in section on same line as shown in Fig. 2, being swung open. Fig. 4, is a sectional view similar to Fig. 2, the door, a portion of which is shown, being in its open position and as it appears in Fig. 3. Fig. 5,

shows in enlarged perspective view the various parts involved in the construction of the hinge. Figs. 6 and 7, are top-views of two of the parts used in the construction of this hinge.

In the drawing, A, indicates the door-opening of the vault.

B, is the regular door hinged at *b, b*, to the front-side C, of the vault. This door is usually controlled by time- or combination-locks, and its manipulation being somewhat cumbersome, it is for this reason left open during business hours. During this time access through entrance A, is guarded by a so-called day-gate D, hinged in a manner that it assumes and remains normally in a position across the entrance-opening as shown in Fig. 1. This gate may be more readily manipulated, being constructed of open, comparatively light iron-work, and affords sufficient security for the intended purpose to prevent entrance without observation. In some cases this observation is aided by the provision of an audible signal which is sounded automatically when the gate is manipulated, all of which however has no direct bearing upon my invention.

The gate is composed of horizontal and upright members arranged in various ways and more or less ornamental to present a pleasing appearance. One of the upright end-rails at one of the edges of the gate is used in the formation of the hinges, the particular one selected being that one which is at the edge on which it is desired the gate should swing.

E, is the particular rail here used, and the ends of the same are reduced and shaped round to form the pins or pintles of the hinges, *e* being the pintle at the lower end and *e'*, the one at the upper end. These pintles are fitted to occupy non-rotary bearings or knuckles, firmly attached to the jamb at one of the sides of the door-opening, there being a knuckle F for the lower pintle and a knuckle G, for the upper pintle. The upper end of the lower knuckle upon which the gate rests and turns is inclined as best shown in Figs. 1, 3, and 5.

Seated on the inclined upper end of knuckle F, there is, what by reason of its particular function, I call a lifter block, and designate it by H. The underside of this block is inclined at an angle corresponding to the upper side of knuckle F, and the sides of block

and knuckle are arranged to form a straight line in all positions. This block is so connected as to move with the gate of which it practically forms a part, it being that part of it whereby the gate is seated upon the lower knuckle. For such purpose a notch *h* is provided in its upper end as shown in Fig. 6, into which the lower end of rail *E* of the gate is fitted, so that when said rail turns with the gate, lifter-block *H*, turns also with the rail. It is axially perforated to clear the lower pintle which extends through it and into its seat in lower knuckle *F*. When now this block turns with the door, its lower inclined side rides up on the upper, inclined end of stationary knuckle *F*, thereby lifting the gate, as best shown in Fig. 3. This act whereby the gate, while having been turned (opened), has also been lifted from the normal position it occupies vertically and has left it resting on the inclined upper end of knuckle *F*, as shown in Figs. 3, and 4, imparts at that time to the gate a tendency to drop to its normal position shown in Figs. 1, and 2, from which it has been raised. This induces the automatic closing operation of the gate and, no means being provided to hold the same open, it is clear that the gate returns at once to its normal position as soon as released by the person passing through.

The upper pintle *e'*, is of sufficient length and in its normal position there is sufficient of it below upper knuckle *G*, to provide clearance so that, as the gate rises and falls, pintle *e'*, may freely work up and down in this knuckle. The upper part of lower knuckle *F*, which contains the inclined surface upon which the weight of the gate rests and works, and which is subject to considerable wear may, for practical purposes, be made of a separate piece as shown at *f*. This piece is immovably seated on the lower permanent part of this knuckle of which it forms the upper part and on which it is held against rotation by means of a key and

groove connection or equivalent means. In this case a key *K*, is provided on the under side of member *f*, and fitted into a groove *k* in the upper side of the lower permanent part of the knuckle as shown in Fig. 7 this lower part and member *F* forming thus the lower knuckle complete.

Fig. 5, shows vertically alined, all the parts occupied by lower pintle *e*, these parts being all axially perforated and assembled in alinement to receive this pintle. As will be seen, the engaged surfaces subject to most wear, these being the inclined under side of block *H* which turns with the door and the upper inclined surface of lower knuckle *F*, which is stationary, may each be independently renewed without involving any other parts. Thus for instance, as to knuckle *F*, this may readily be done as to its upper end, upon which the weight of the gate rests, by simply inter-changing the removable upper part *f* thereat without affecting the lower part of the knuckle which is permanently attached to the jamb.

Having described my invention, I claim as new:

In a gravitating hinge, the combination of an upper knuckle, a lower knuckle inclined on its upper side, a lifter block inclined on its under side and seated on the inclined surface of the lower knuckle, both being provided with axially alined perforations, the lifter block having also a transverse notch in its upper side, and a rail, seated with its lower end in this notch and integrally extended through the lifter-block and into the knuckle below where it forms a pintle, there being a similar pintle formed on the upper end of this rail.

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

FREDERICK W. RODLER.

Witnesses:

C. SPENGEL,
T. LE BEAN.