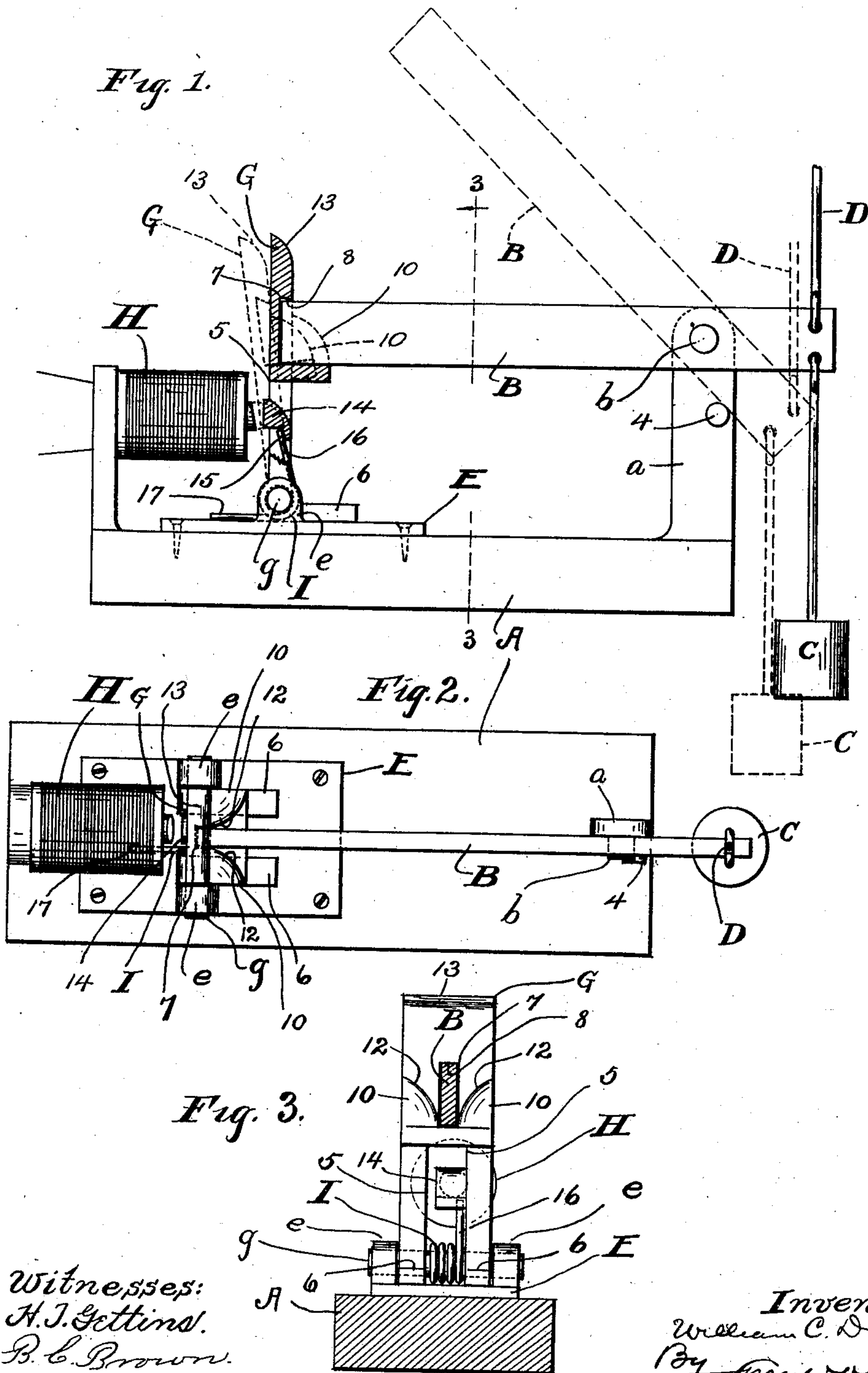


W. C. DAY.
PIVOTED LATCH.
APPLICATION FILED MAR. 25, 1910.

978,857.

Patented Dec. 20, 1910.



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UNITED STATES PATENT OFFICE.

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PIVOTED LATCH.

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Specification of Letters Patent.

Patented Dec. 20, 1910.

Application filed March 25, 1910. Serial No. 551,594.

To all whom it may concern:

Be it known that I, WILLIAM C. DAY, a citizen of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Pivoted Latches; and I hereby 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 pertains to make and use the same.

This invention relates to improvements in pivoted latches more especially designed for locking a movable member, such for instance as a lever, in one of its extreme positions.

The primary object of this invention is to provide a latch of the character indicated which is simple and durable in construction, reliable in its operation and not liable to get out of order.

With this object in view, and to the end of attaining any other advantage hereinafter appearing, this invention consists in certain features of construction, and combinations of parts, hereinafter described, pointed out in the claim, and illustrated in the accompanying drawings.

In the said drawings, Figure 1 is an elevation of a latch embodying my invention and also shows the application of the latch to a lever which in one of its extreme positions is locked by the latch against the action of a weight acting to move the lever into its other extreme position. Portions are broken away and in section in this figure to more clearly show the construction. Fig. 2 is a top plan relative to Fig. 1. Fig. 3 is a vertical section on line 3—3, Fig. 1, looking in the direction indicated by the arrow.

Referring to the drawings, A indicates a horizontally arranged oblong base which is adapted to be secured to a supporting object in any approved manner. The base A is provided at one end thereof with an upwardly projecting arm *a*.

A lever B is fulcrumed, as at *b*, horizontally and transversely of the base A, to the arm *a* near the upper extremity of the arm. The said lever is consequently arranged to swing in a vertical plane. The said lever in one of its extreme positions, as shown in solid lines Fig. 1, extends longitudinally of and is parallel with the base A, and the lever is locked in the said position by a latch which is arranged at one side of and a suitable distance from the axis of the lever,

which latch is constructed and applied as will hereinafter appear, and the lever is shown operatively connected at the other side of its axis with a weight C which is suspended from the lever and acts to swing the lever in the direction required to remove the lever from the latch when the lever-locking member of the latch is rendered inoperative. The lever B is also operatively connected above the weight with a rod or cable D through the medium of which power may be transmitted from the lever to a distant point.

The arm *a* is provided with a pin 4 arranged to form a stop for limiting the action of the lever B by the weight C.

My improved latch is shown as including a supporting member which is in the form of a base-plate E suitably secured to the base A. The plate E is provided at its upper or outer side with two lugs *e* and *e* which are spaced transversely of the said plate.

My improved latch also comprises a pivoted member G which is arranged between and pivoted to the lugs *e* and *e* by a pin *g* shown arranged horizontally and transversely of the plate E and extending into the said lugs. The latch-member G is therefore pivoted at one end and shown arranged to swing laterally in a vertical plane. The pivoted member G of the latch is preferably composed of a single iron casting.

The latch-member G is provided, centrally between the side edges of its lower portion, and consequently between the lugs *e*, with a slot 5 which extends from the lower extremity of the said latch-member upwardly a suitable distance and laterally through the said latch-member.

The pivoted latch-member G is provided at its lower end, and at its side which faces in the direction of the axis of the lever B, with two lugs 6 and 6 which are spaced longitudinally of the axis of the said pivoted member and arranged to engage the plate E in the vertical and normal or operative position of the said pivoted member. The lugs 6 and the plate E therefore cooperate in forming a stop for limiting the swinging of the latch-member G toward the axis of the lever B.

The latch-member G is provided, above its slot 5 and at its side which faces in the direction of the axis of the lever B, with an aperture 7 which is open at the said side of the said latch-member and arranged to receive the adjacent end of the lever B and be

engaged by the said end of the said lever when the lever is in one of its extreme positions, as shown in solid lines, Fig. 1, and the lever is adapted to be actuated at a given
 5 time by the action of the weight C into its other extreme position shown in dotted lines, Fig. 1.

The top wall 8 of the aperture 7 is preferably somewhat undercut and faces downwardly and consequently in the direction of
 10 the axis of the latch-member G and forms a shoulder which overlaps and locks the lever B when the latter engages the said aperture in the vertical or normal and operative position of the said latch-member. Obviously
 15 therefore the said lever is locked in one of its extreme positions by the latch-member G against the action of the weight C by which the lever is swung into its other extreme position upon the actuation of the said latch-member into its inoperative position shown in dotted lines Fig. 1.

The latch-member G is provided, at its side which faces in the direction of the axis
 25 of the lever B, with two lugs 10 and 10 which are spaced longitudinally of the axis of the said latch-member and arranged at opposite sides respectively of the sweep of the said lever and forward of the aperture
 30 7, and the opposing surfaces 12 of the said lugs diverge upwardly or away from the axis of the said latch-member and toward the upper or outer end of the said latch-member so that the lever B is properly
 35 guided relative to the aperture 7 and shoulder 8 during the actuation of the lever from its position shown in dotted lines Fig. 1 into its position shown in solid lines Fig. 1.

The latch-member G is provided at its
 40 upper end with a sloping or beveled surface 13 which faces upwardly and in the direction of the axis of the lever B and is arranged to be engaged by the adjacent end of the said lever during the movement of
 45 the said lever from the position shown in dotted lines Fig. 1 into the position shown in solid lines Fig. 1, and obviously the said lever during the said movement engages the said surface and swings the latch-member G
 50 away from the axis of the lever as required to permit the said end of the lever to move to the aperture 7, and an electro-magnet H is shown arranged at the opposite side of the said latch-member and arranged opposite a lug 14 with which one of the side walls
 55 of the slot 5 in the latch-member G is provided. The magnet H is energized in any approved manner, but the energizing of

electro-magnets is too well known to require illustration and description in this specification.

The relative arrangement of the parts is such that the magnet H in the normal and operative position of the latch-member G is spaced far enough from the lug 14 of the
 65 said latch-member to permit the said latch-member to move toward the electro-magnet and thereby remove its shoulder 8 from the lever B locked by the said shoulder in the position of the lever shown in solid lines,
 70 Fig. 1, and the magnet and the said lug cooperate in forming a stop for limiting the movement of the latch-member G toward the magnet and away from the axis of the lever B against the action of a spiral spring I
 75 which operates to retain the said latch-member in its normal and operative position, and the relative arrangement of the parts is furthermore such that the latch-member G is attracted at its lug 14 by the magnet upon
 80 energizing the magnet.

The spring I is shown arranged between the side walls of the slot 5 and coiled around the pin g. The spring I terminates at one end thereof in an upwardly projecting member
 85 16 exerting pressure against a shoulder 15 (see Fig. 1) which is formed in the lug 14 and faces in the direction of the magnet H, and the said spring terminates at its other end in a member 17 which bears against the
 90 plate E and extends under the said magnet.

What I claim is:—

A latch comprising a pivoted member provided a suitable distance from its axis with a surface forming a shoulder which faces
 95 in the direction of the said axis and in the normal and operative position of the said pivoted member is arranged to overlap and lock a movable member when the latter is at one extremity of its range of movement,
 100 said pivoted member having two surfaces which are spaced longitudinally of and diverge from the aforesaid axis, said surfaces being arranged to overlap opposite sides respectively of the aforesaid member to be
 105 overlapped by the aforesaid shoulder in the aforesaid position of the said pivoted member.

In testimony whereof, I sign the foregoing specification, in the presence of two witnesses.

WILLIAM C. DAY.

Witnesses:

C. H. DORER,
 B. C. BROWN.