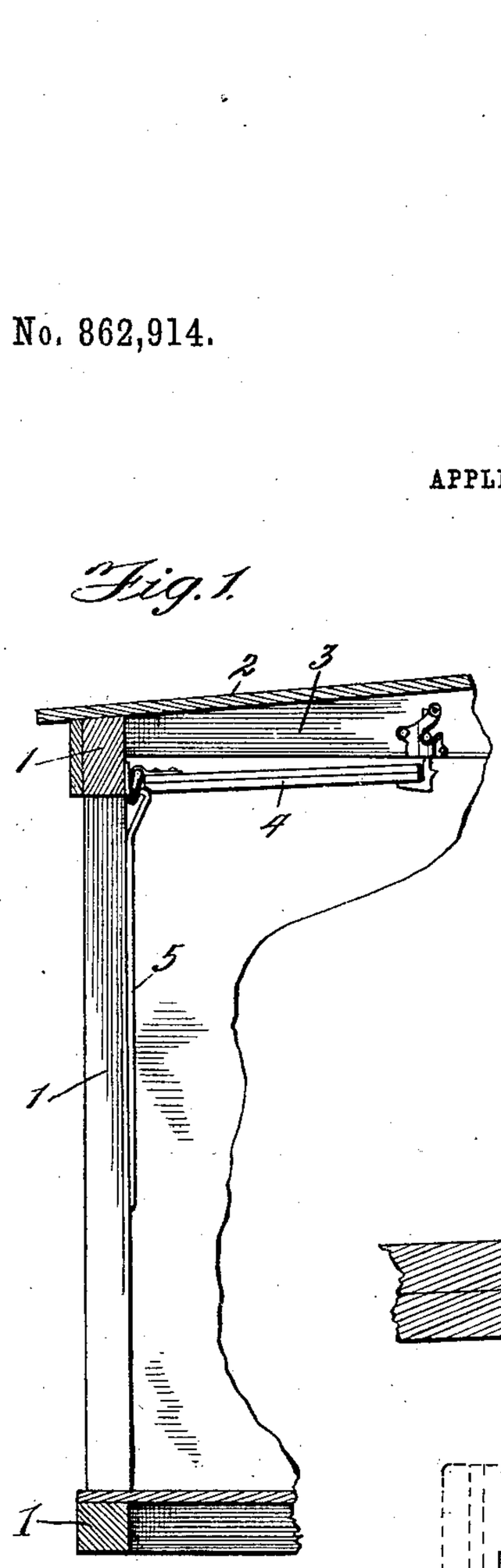
No. 862,914. PATENTED AUG. 13, 1907.

E. A. HILL.

LATCH HOOK.

APPLICATION FILED MAR. 1, 1907.

Fig. 1.



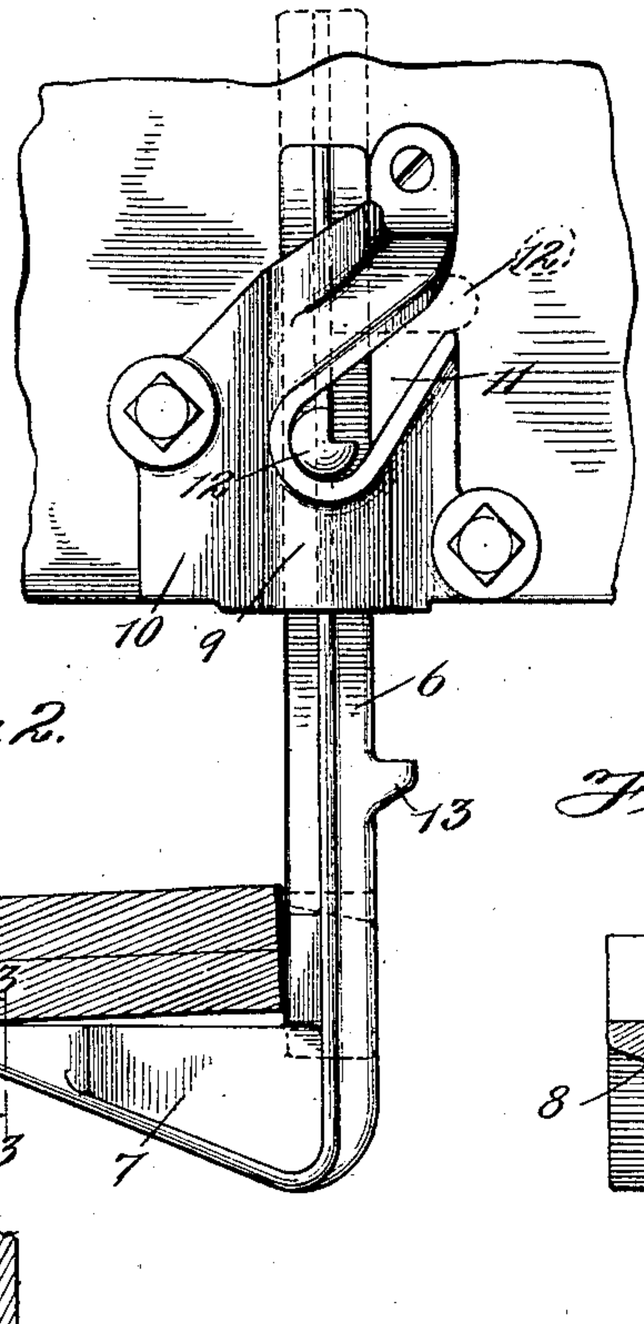
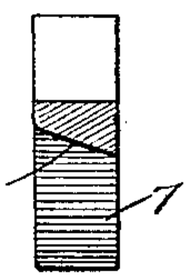


Fig. 2.

Fig. 3.



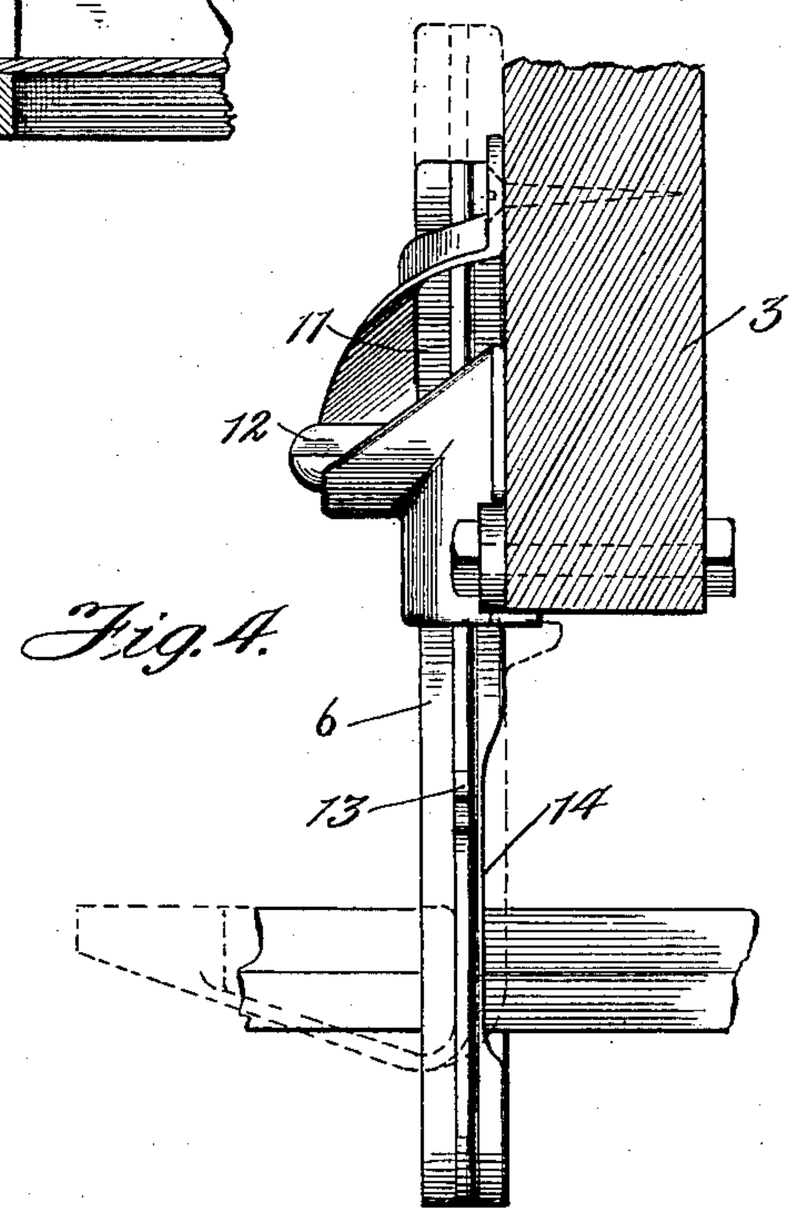


Fig. 4.

Fig. 5.

Witnesses:

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UNITED STATES PATENT OFFICE.

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LATCH-HOOK.

No. 862,914. Specification of Letters Patent. Patented Aug. 13, 1907.

Application filed March 1, 1907. Serial No. 359,991.

To all whom it may concern:

Be it known that I, EDWARD A. HILL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Latch-Hooks, of which the following is a specification.

My invention relates to latches or hangers which are particularly adapted for supporting grain doors to the roofs of freight cars, although the device of my invention might be put to other uses.

The invention has for its object to provide a latch or hanger which shall be economical in construction and simple in its operation and which will securely hold the door against jars and other accidental disturbances.

More particularly, the invention has for its object to provide a latch or hanger mounted so as to have movement longitudinally and of rotation, so that it is practically impossible to displace the latch from its holding position without the intentional application of force to the latch.

My invention has for further objects to provide a latch which may be turned out of its holding or operative position by the engagement therewith of the car door and will turn back under the door by gravity.

The invention is illustrated in the accompanying drawings, wherein

Figure 1 is a vertical, sectional view through a freight car door-way illustrating my invention as applied to grain doors. Fig. 2 a side elevation of the device. Fig. 3 a section on the line 3—3 of Fig. 2. Fig. 4 a rear, elevational view; and Fig. 5 a perspective view of the latch.

Like numerals of reference indicate the same parts in the several figures of the drawings.

1 represents the timbers forming the car door-way, 2 the roof of a car, and 3 a cross-beam, 4 the grain door which is here shown as having a sliding and hinged connection with a rod 5.

The latch, which forms the subject-matter of this invention, might obviously be used in connection with doors of different construction from the one shown. The latch or hanger itself consists of a shank 6, having a foot 7, which preferably has its under face beveled so as to form the cam 8. The shank extends through a socket 9 in a supporting plate 10, suitably secured, for example, to the beam 3 by spikes or screws. The guiding plate 10 is formed with a guide slot 11 which is preferably spiral in form and into this slot extends a projection 12 from the shank of the latch. The shank may be provided with a stop 13. Normally the projection 12 rests in the pocket formed by the end of slot 11, the foot 7 standing cross-wise of the car. When the grain door is swung up toward the roof of the car it engages with the cam on the bottom of the foot of the latch and rotates and, at the same time, lifts the shank of the latch in its socket. The latch is thus turned out of the path of the door, but as soon as the door has pushed it aside, the foot 7 falls back by its gravity to the position under the door, shown in Fig. 2. It will be seen, therefore, that the latch is perfectly automatic in its action. When the latch is in its holding position, both its own gravity and the weight of the door prevents its displacement. In order to release the door, the latch must be rotated and, at the same time, must be lifted. This compound movement sufficient to release the door will not be effected by any ordinary jolting of the car or accidental disturbance of the latch.

I wish it to be understood that I do not desire to be limited to the exact devices and arrangements herein shown and described, as obvious modifications will occur to persons skilled in the art.

It will be seen that the edge of the door preferably comes close to the shank of the latch. In order to permit the latch to turn without rubbing or scraping against the door, one side of the shank is recessed, hollowed, bent or cut away, as shown at 14.

I claim:

1. The combination with a vertically arranged socket piece, of a hanger hook provided with a shank and a door-supporting foot mounted thereon and adapted to be reciprocated and rotated within said socket-piece, and coöperating means whereby the longitudinal movement of said shank will cause the same to rotate about its longitudinal axis.

2. The combination with a vertically arranged socket piece, of a hanger hook having a shank and a door-supporting foot, said hanger hook being mounted in said socket piece so as to be reciprocated longitudinally therein, and coöperating means upon said hanger hook and said socket piece whereby upward pressure upon said hanger hook will cause the same to rotate within said socket piece.

3. The combination with a car, of a car door, means whereby the upper edge of the car door may be hingingly mounted adjacent to the under side of the car roof, and means for supporting the car door when swung under and adjacent to the car roof, said means comprising a socket piece secured to the car adjacent to the car roof, a hanger hook mounted in said socket piece and adapted to be moved longitudinally therein, said hanger hook being provided with a door-supporting foot arranged to be in position to support the door when in its lowermost position, and coacting means upon said socket piece and said hanger hook, whereby the longitudinal movement of said hook in said socket piece will result in the rotation of said hook about the longitudinal axis of its shank.

4. The combination with a car, of a hanger hook pro-

vided with a door-supporting foot and arranged to support a car door in raised position, a socket piece attached to the car, the shank of said hanger hook being mounted in said socket piece so as to be movable longitudinally therein, said socket piece being provided with a spiral slot and said hanger hook being provided with a projection engaging the walls of said slot, all so arranged that the upward movement of said hanger and hook will cause the same to rotate about its longitudinal axis so as to swing the door-supporting foot to a position to disengage the door and the downward movement of said hanger hook will cause it to rotate so as to bring the door-supporting foot under the raised door.

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