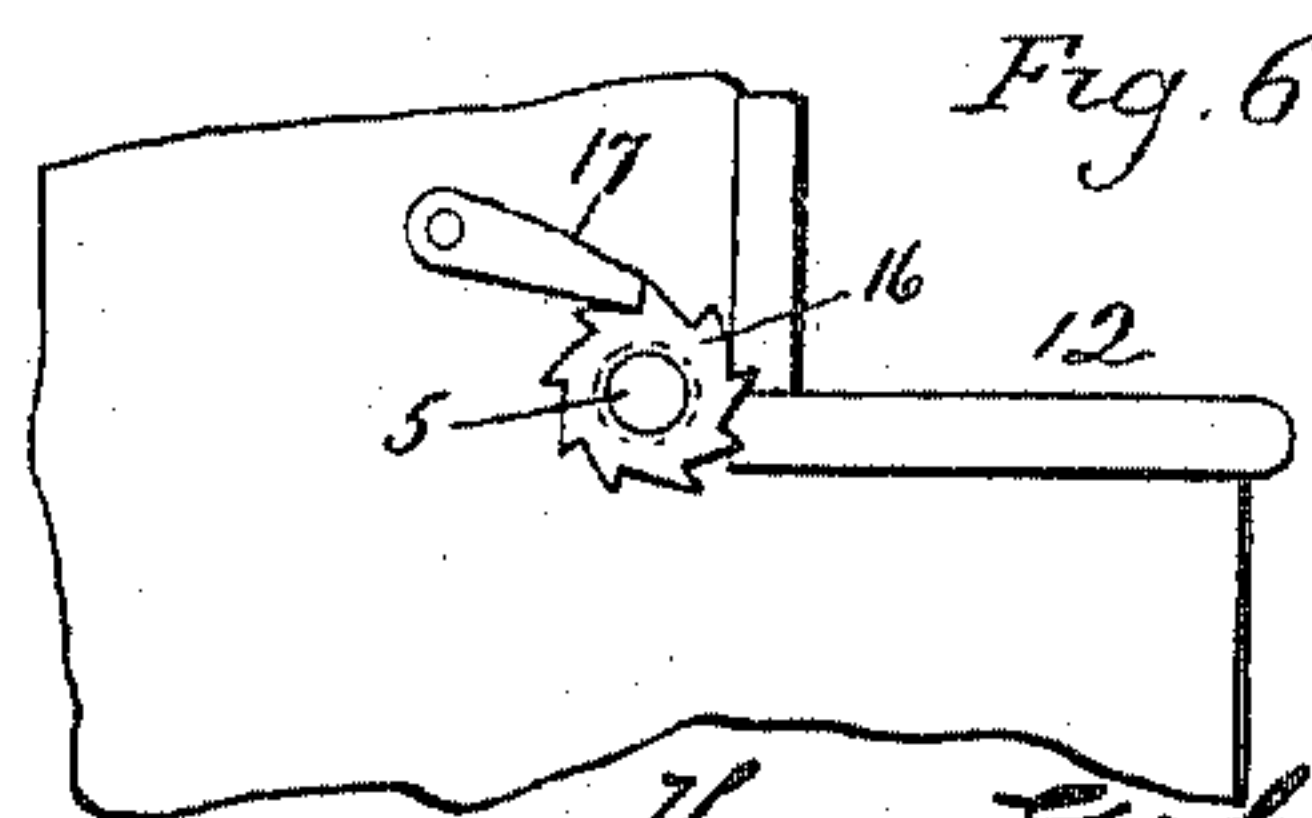
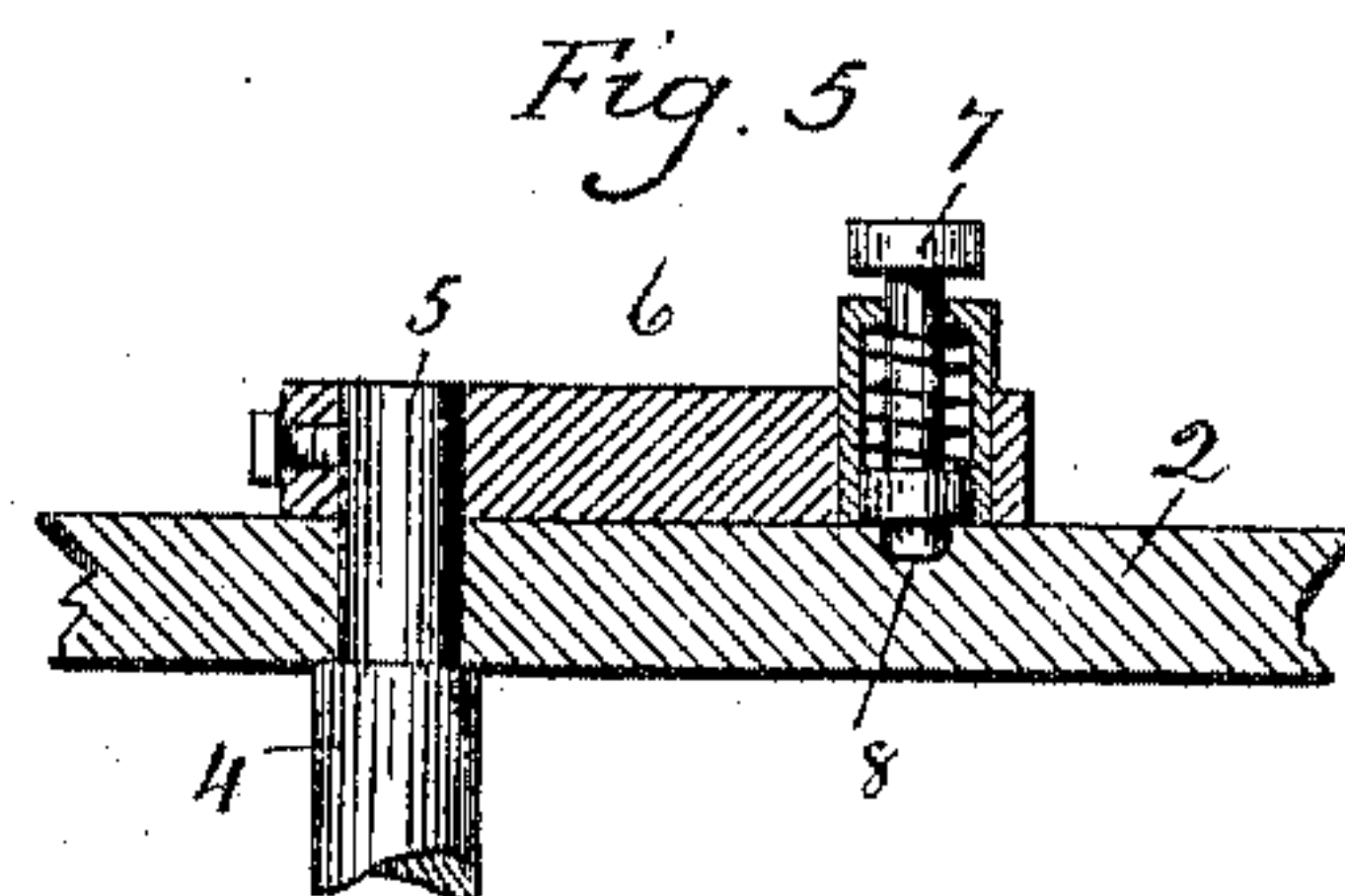
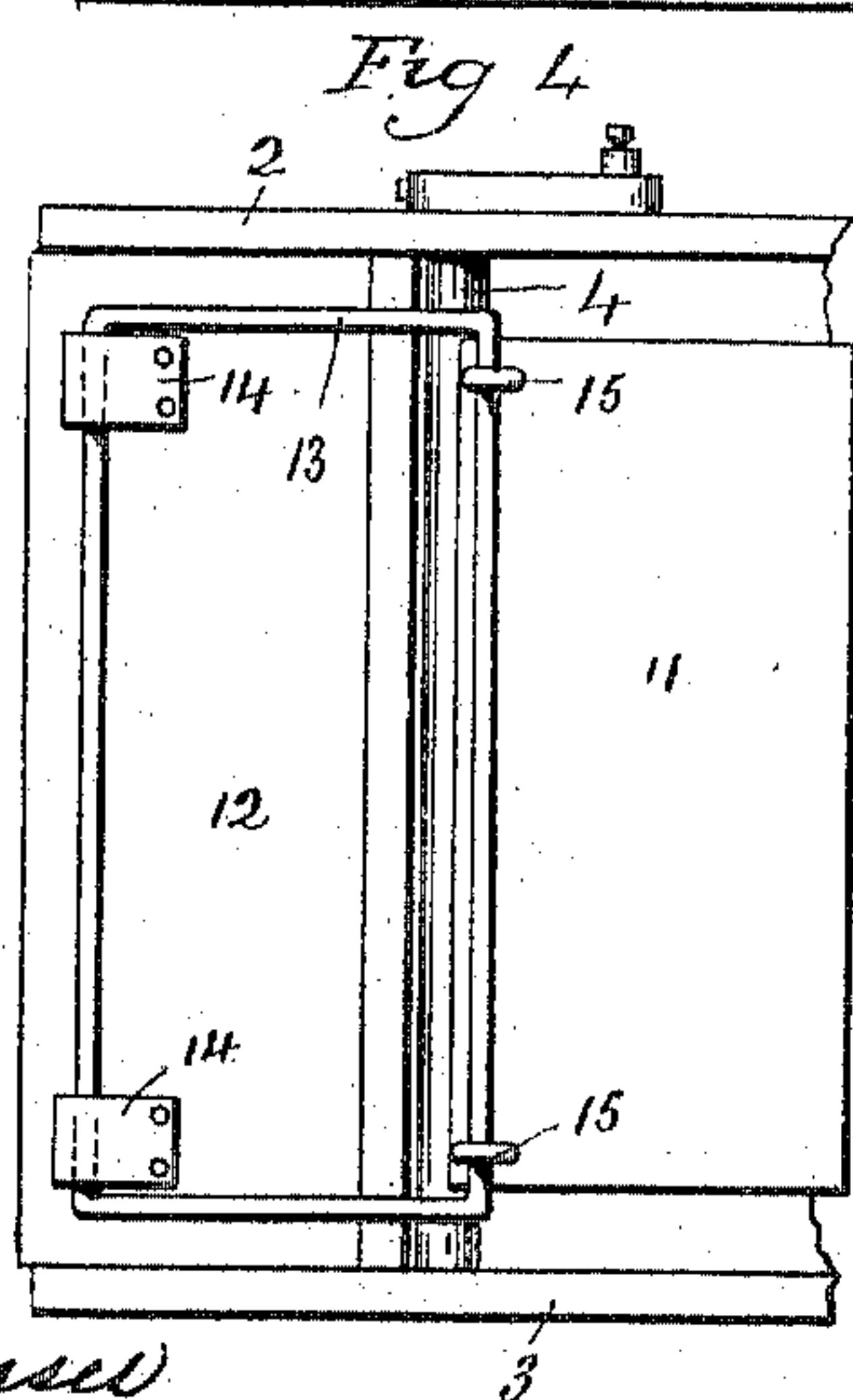
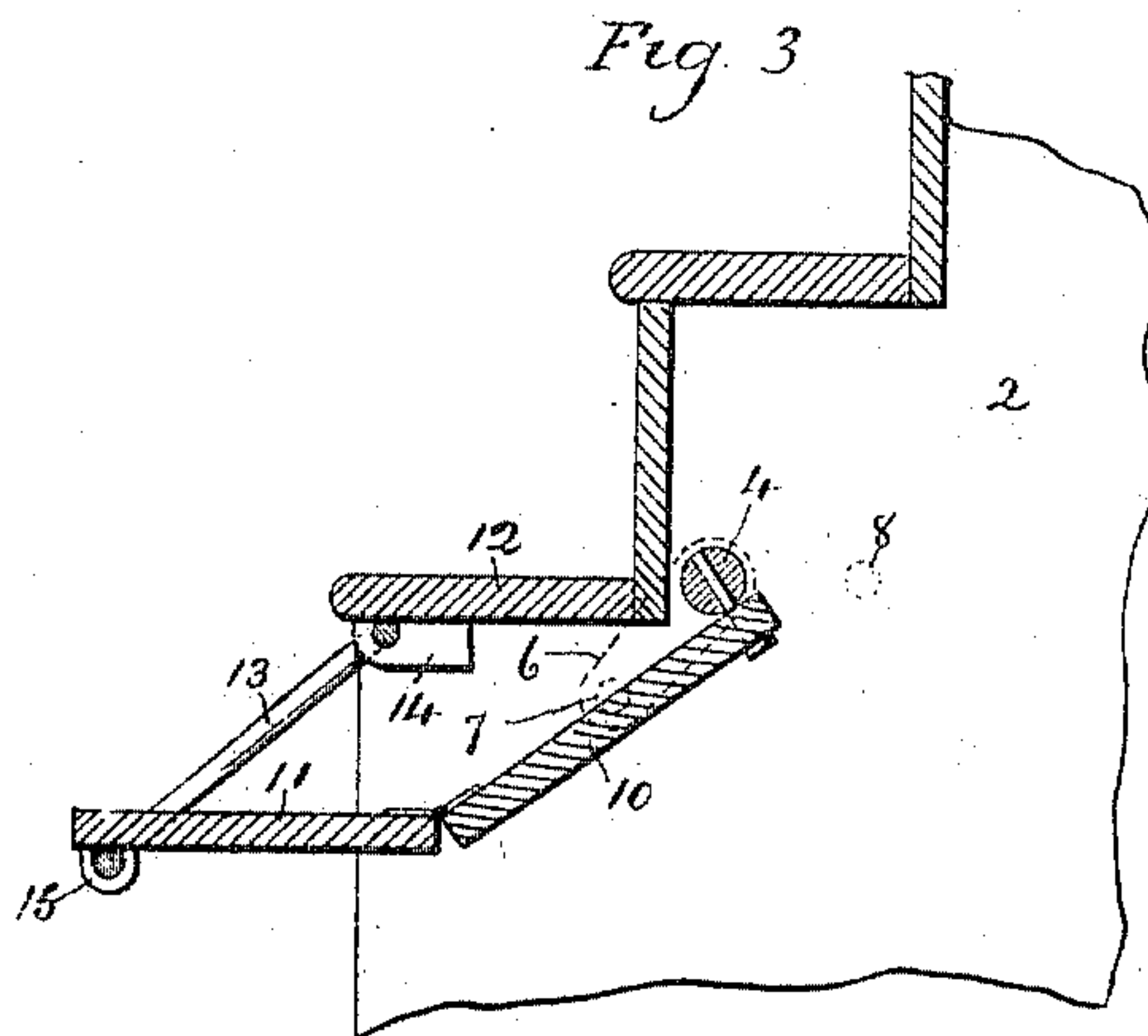
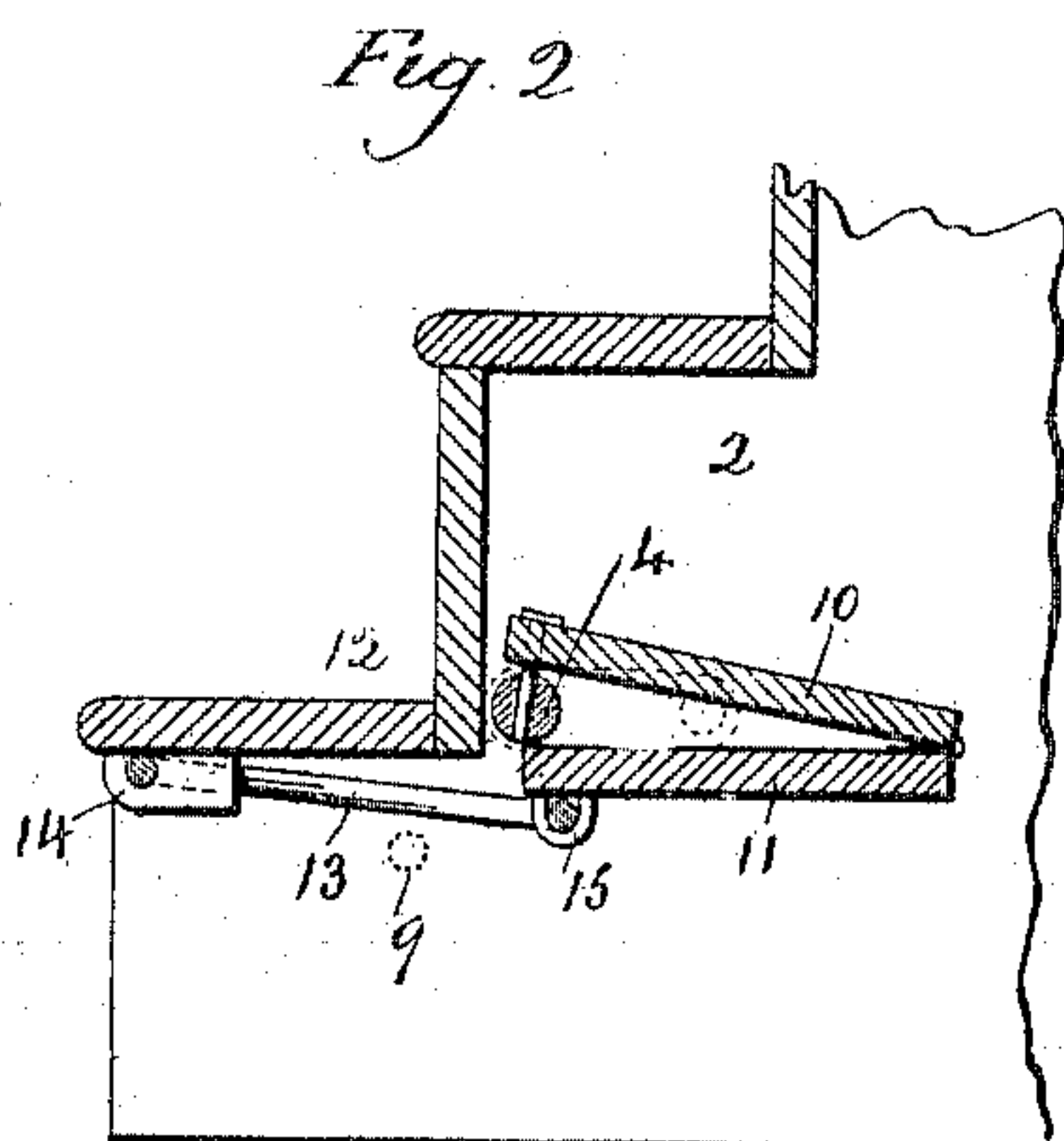
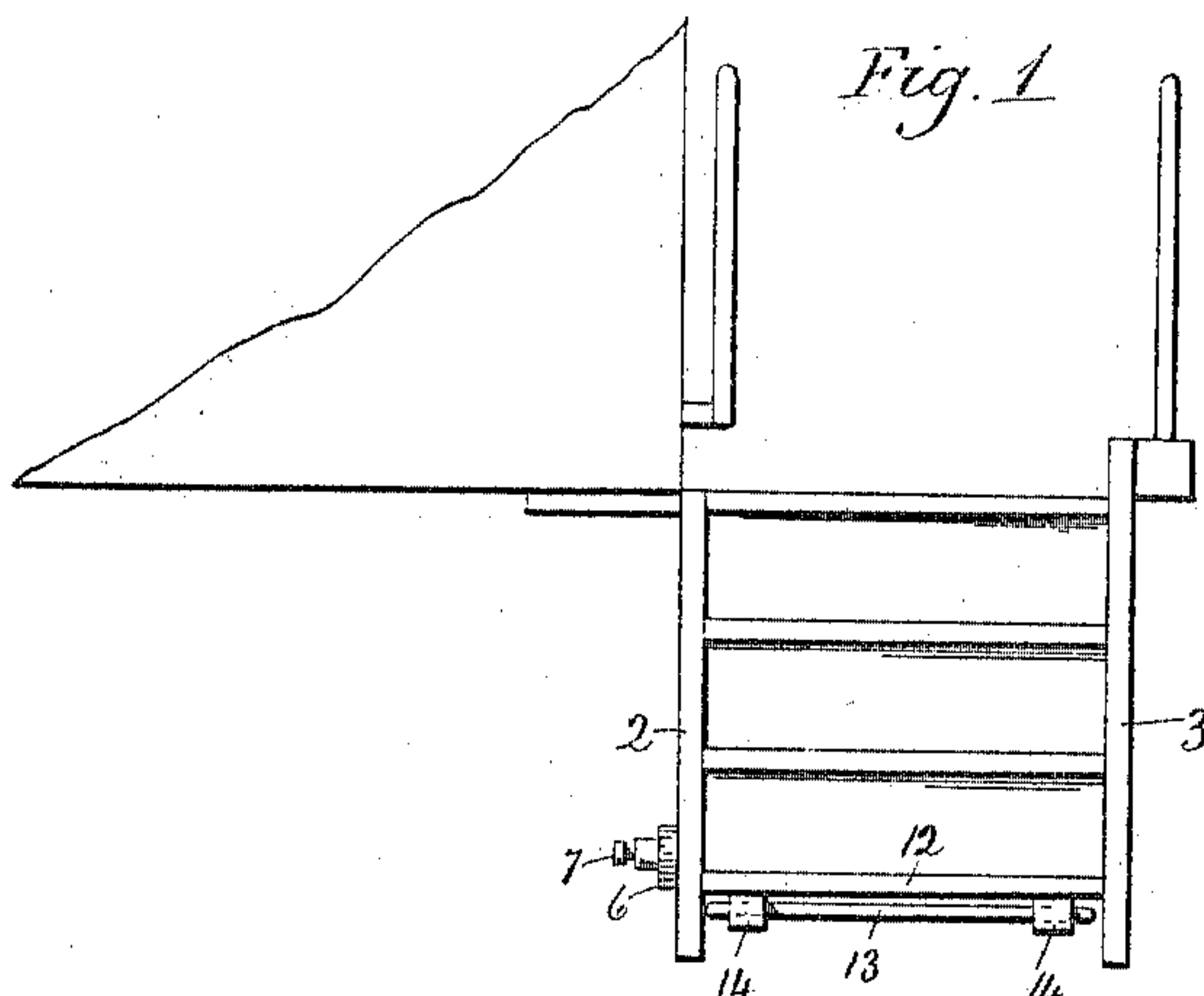


No. 817,224.

PATENTED APR. 10, 1906.

T. G. CLIFFORD.
FOLDING CAR STEP.
APPLICATION FILED NOV. 2, 1905.



Witnessed
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UNITED STATES PATENT OFFICE.

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FOLDING CAR-STEP.

No. 817,224.

Specification of Letters Patent.

Patented April 10, 1906.

Application filed November 2, 1905. Serial No. 285,564.

To all whom it may concern:

Be it known that I, THOMAS G. CLIFFORD, a citizen of the United States, residing at Hoboken, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Folding Car-Steps; and I do hereby declare the following, when taken in connection with the accompanying drawings and the numerals of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view of a car-platform having steps depending therefrom and showing my improved extension-step in its retired position; Fig. 2, an enlarged sectional view with the lower portion of the steps showing my extension-step in a retired position; Fig. 3, a similar view with the extension-step projected; Fig. 4, an under side view of car-steps with the extension-step retired; Fig. 5, a broken section view showing means for locking the extension-step; Fig. 6, a broken side view showing a modified form of locking device.

This invention relates to an improvement in folding car-steps—that is, an auxiliary step connected with the lower stationary step of a railway-car and adapted to be projected forward therefrom when the car is at rest or folded beneath the same when the car is in motion, the object of the invention being a simple arrangement of parts whereby the step may be conveniently and easily thrown forward and retired; and the invention consists in the construction as hereinafter described, and particularly recited in the claims.

Extending through the sides or frame-pieces 2 3 of the steps of a railway-car is mounted a transverse shaft 4, one end 5 projecting beyond the frame 2 to have connected with it a crank-arm 6, which at its outer end carries a spring-pin 7, adapted to enter holes 8 or 9 provided for it in the said frame 2. Secured to this shaft 4 is a riser 10, and hinged to the riser is a tread 11. To the under side of the lower step 12 a rectangular wire frame 13 is secured by clips 14, the frame passing beneath the tread 11, to which it is connected by clips or staples 15, the con-

nections of the frame with the steps 11 and 12 being such that the parts may turn on the frame or the frame turn in its bearings. The parts are so proportioned and arranged that when turned downward the step or tread 11 will project beyond the step 12 and so as to form an additional step below and beyond the lower permanent step of the car. In its projected position the spring-pin 7 engages with the hole 9 and holds the step in its projected position. To retire the step, the pin 7 is withdrawn from the hole 9 and the crank-arm turned rearward and upward, turning the shaft 4, and thereby swinging the riser 10 and withdrawing the step 11, and when turned to the limit of its movement the spring 7 will enter the hole 8 and lock the extension-step in its retired position. A reverse movement of the crank-arm will project the extension-step into the position for use. This simple arrangement of parts permits the extension-step to be readily projected or retired, and when retired does not interfere with the usual coupling or pipe connections of the car.

It will be apparent without illustration that instead of having the spring-pin engage with a hole in the frame it may engage with a socket secured thereto, or instead of employing the crank-arm 6 with its spring-pin as a means for holding the shaft in its several positions the end of the shaft 5 may be provided with a ratchet 16, as shown in Fig. 6 of the drawings, in which case a pawl 17 will be secured to the side of the frame in proper position to engage with this ratchet and so that if the step is in the retired position and the pawl 17 be disengaged from the ratchet the step will fall to its projected position. Then when the step is retired the pawl will engage with the teeth of the ratchet and lock the step in its retired position.

Having fully described this invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with car-steps including the side frames thereof, of a transverse shaft mounted between said frames and extending beyond the outer face of one of said frames, a riser connected with said shaft, a tread hinged to said riser, connections between said tread and the lower car-step, and

means connected with the said shaft for holding the same against rotation, substantially as described.

2. The combination with car-steps including the side frames thereof, of a transverse shaft mounted between said frames and extending beyond the outer face of one of said frames, a riser connected with said shaft, a tread hinged to said riser, connections between said tread and the lower car-step, a crank-arm secured to the projecting end of said shaft, and a spring-pin mounted in the

outer end of said arm and adapted to engage with holes formed for it in said frame whereby the auxiliary step may be locked in its projected or retired positions. 15

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

THOMAS G. CLIFFORD.

Witnesses:

F. M. SEAVEY,
J. W. ALKEN.