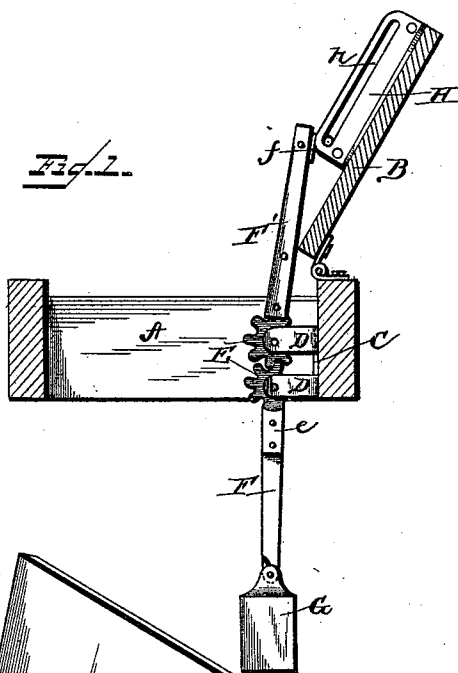
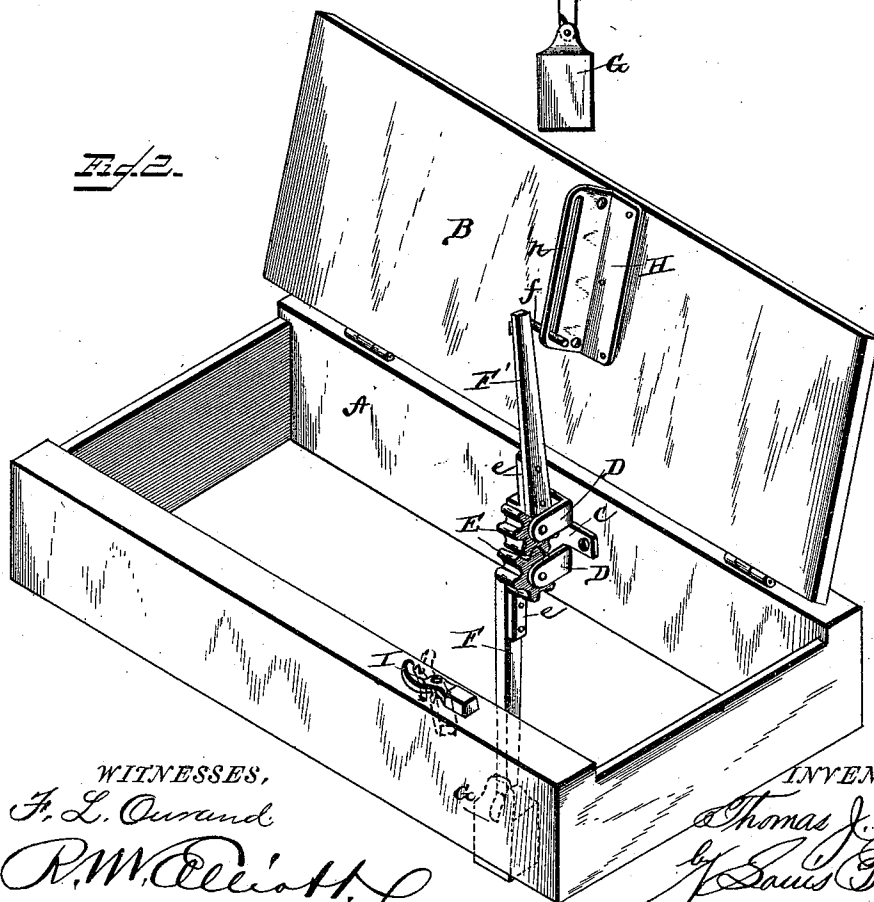


(No Model.)

T. J. JOLLY.  
DEVICE FOR OPENING TRAP DOORS.

No. 402,932.

Patented May 7, 1889.



WITNESSES,  
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# UNITED STATES PATENT OFFICE.

THOMAS J. JOLLY, OF ULYSSES, NEBRASKA.

## DEVICE FOR OPENING TRAP-DOORS.

SPECIFICATION forming part of Letters Patent No. 402,932, dated May 7, 1889.

Application filed September 22, 1888. Serial No. 286,073. (No model.)

### *To all whom it may concern:*

Be it known that I, THOMAS J. JOLLY, a citizen of the United States, and a resident of Ulysses, in the county of Butler and State of Nebraska, have invented certain new and useful Improvements in Automatic Devices for Opening Trap-Doors; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a device for automatically opening cellar or trap doors.

The object is to produce a device which will enable any one to open or close a trap-door with the foot alone, thus obviating the trouble and labor of opening a trap-door by hand; furthermore, to produce a device which may be applied to any kind of trap-door without the necessity of constructing a peculiar door for that purpose, and which shall be of great simplicity in construction, efficient and durable in use, and which may be constructed at a very slight expense.

With these objects in view the invention resides in a device for automatically opening the trap-door, which consists of arms carrying gear-wheels meshing with each other, one of the said arms engaging a flange on the door and the other arm being provided with a counter-balance, the weight of which will be greater than the weight of the door, whereby, when the device is operated, the weight will cause the door to open and remain so.

Furthermore, the invention consists in the various novel details of construction whereby its objects are attained.

In the accompanying drawings, forming part of this specification, and in which like letters of reference indicate corresponding parts, Figure 1 is a transverse vertical sectional view of the frame of the trap-door, showing the device intact therein; and Fig. 2 is a perspective view of the trap-door-frame, showing the door hinged thereon and open, the weight for operating the device, and a cleat for holding the door closed.

Referring to the drawings, A designates the frame of an ordinary trap-door having a door, B, hinged thereon. To the rear part

of the frame-work of the trap-door frame is secured a standard, C, provided with two pairs of outward-extending arms, D, in which are mounted two gear-wheels, E. On one side of each of these gear-wheels is formed, as by casting integral with the wheel or attaching thereto by rivets or bolts, an arm, *e*, to which are attached arms F and F', the lower arm, F, having the weight G hung thereon for causing the door to open. The upper arm, F', has attached to it at its outer end a projection, *f*, which is designed to fit and move in a slot, *h*, in an L-shaped flange, H, secured to the under side of the door B.

I designate a spring-actuated cleat, which is pivoted to the frame of the door and designed to hold the same closed.

In operation it is only necessary to turn the cleat I to one side with the foot and the weight G will immediately draw down the arm F' and cause the door to open and to be held in that position as long as desired. Thus it will be seen that while this device is exceedingly simple of construction, it will be highly efficient and durable in use, and may be constructed at a very slight expense.

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

The combination, with the hinged door B, the L-shaped flange H, secured to said door and provided with the slot *h*, and the pivoted retaining-cleat I, of the standard C, provided with the two pairs of arms D, the intermeshing gear-wheels E, respectively journaled between said pairs of arms and provided with the arms *e*, the depending arm F, secured to the arm *e* of the lower gear-wheel, the weight G, hung to the arm F, the arm F', secured to the arm *e* of the upper gear-wheel, and the projection *f* in the outer end of the arm F' and entering the slot *h*, substantially as specified.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

THOMAS J. JOLLY.

Witnesses:

ALBERT M. DAY,  
FRANKLIN HOWLAND DAWES.