No. 723,482. PATENTED MAR. 24, 1903.

H. OSBORNE.

TRANSOM LIFTER.

APPLICATION FILED OCT. 19, 1901.

NO MODEL.

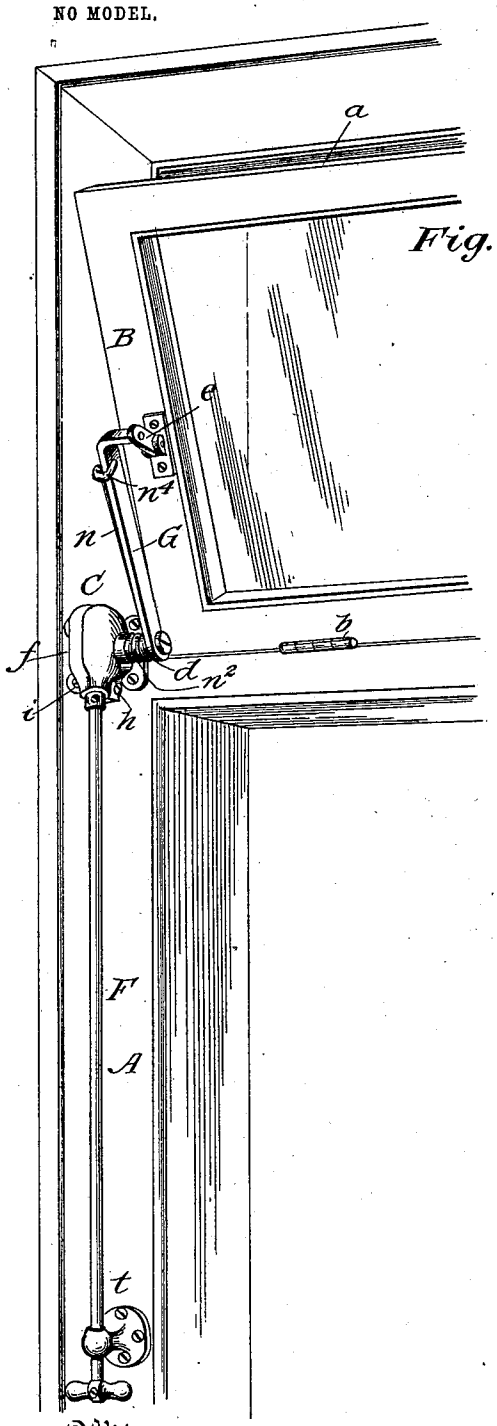


Fig. 1.

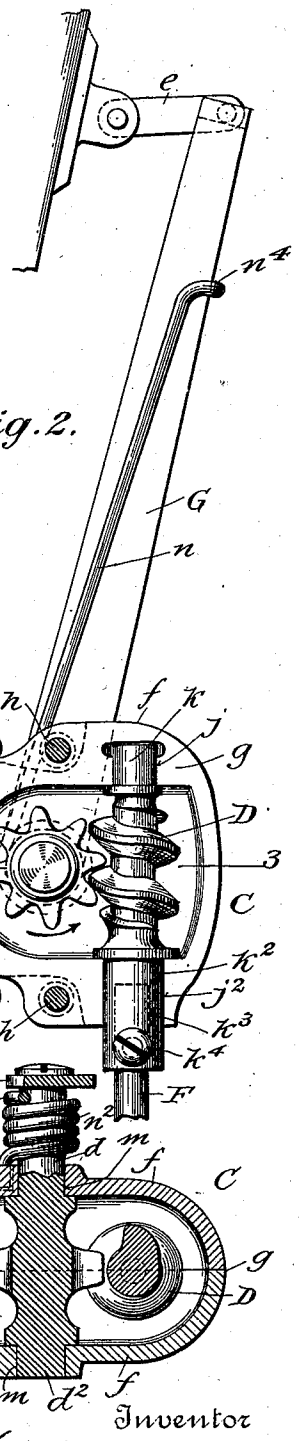


Fig. 2.

Fig. 3.

Witnesses
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TRANSOM-LIFTER.

SPECIFICATION forming part of Letters Patent No. 723,482, dated March 24, 1903.

Application filed October 19, 1901. Serial No. 79,201. (No model.)

To all whom it may concern:

Be it known that I, HEMAN OSBORNE, a citizen of the United States of America, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Transom-Lifters, of which the following is a full, clear, and exact description.

This invention relates to improvements in transom-operating mechanism or "lifters," as often termed.

An object of this invention is to provide a transom-operating device which is more certain and efficient in its action for operating the transom, especially in the starting of the transom open from its fully-closed position, than are the devices now most commonly employed, which often stick and bind in a most vexatious manner, sometimes rendering the starting of the transom in its opening movement practically impossible.

Another object of the invention is to combine in the improved mechanism a spring having the twofold functions of relieving measurably the weight of the transom from the mechanism which moves it, whereby, especially in the closing of the transom, the closing action may be more easily performed, and of taking up any lost motion or lash which there may be in the gearing, as occasioned either from the failure in the construction of the parts to have them closely mesh or from wearing in the gearing after protracted use.

Another object of the invention is to so construct and arrange or combine the parts constituting the transom-operating device as to render the device most easily and readily applicable on and in connection with the casing and transom and to reduce the parts to a minimum in number, permitting the employment of such parts as are of simple formation and inexpensive construction.

To these ends the invention consists in the construction and combination or arrangement of parts, all substantially as hereinafter particularly described, and set forth in the claim.

Reference is to be had to the accompanying drawings, in which my improved transom-operating mechanism is illustrated, and in which—

Figure 1 shows the same in perspective as applied as positioned for use on and in connection with the door-casing and transom. Fig. 2 is substantially a side elevation of the same on a larger scale, one of the shells or sectional halves of the casing being removed to expose to view the worm-gearing comprised within such casing. Fig. 3 is a horizontal sectional view taken on the line 3 3, Fig. 2.

Similar letters of reference indicate corresponding parts in all of the views.

In the drawings, A represents the door-casing, having the opening *a* above the door, for the closing of which is the transom B, hinged, as usual, at *b*.

The transom-lifting device comprises the casing C, the worm D, journaled and inclosed therein, the worm-wheel E, also journaled and inclosed within the casing, the rotatable operating-shaft F, connected to the worm and axially extended downwardly and vertically below the casing, an axial extension *d* of the worm-wheel projected to the exterior of the casing in a line at right angles to the length of the operating-shaft and parallel with the axis of the transom-hinge, which worm-wheel extension is provided at its outer end and at some distance from the side of the casing with the rigidly-connected radially-extended lever G, which has a link connection at *e* with the transom-frame at a point suitably distant from the line of the transom-hinge. The split casing is shown as composed of the two shells or half-sections *f f*, matching on the plane of cleft indicated at *g*, said shell-sections being firmly held together by the screws *h h*, and said sections are, moreover, provided with the foot-lugs *i i*, through which by screws they are firmly attached on the face of the door-casing. The shell-sections have within the matching portions at the plane of cleft the semicylindrical journal-sockets *j* j^2, the one j^2 extending downwardly through the thickness of the wall at the bottom of the sectional casing and said sockets accommodating the axial hubs *k* k^2, oppositely endwise extended beyond the worm D. The hub k^2, which is extended downwardly through the aforesaid journal-socket j^2, is itself axially socketed, as indicated at k^3, from its lower

end for the reception of the upper end portion of the operating shaft or rod F, which is entered into the socket and retained by the set-screw k^4. The opposite sides of the casing are provided with the circular journal-holes m m for the journal extensions d d^2 of the worm-wheel.

The spring n is applied in a manner to impart a stress against the lever G in a direction against the opening of the transom, which is link-connected to said lever and so that there will be correspondingly a rotating force imparted to the worm-wheel E in the direction of the arrow, Fig. 2, whereby there will be such a taking up of any lash or lost motion in the gearing that the turning motion to the operating-shaft F will always result in a corresponding movement to the lever G and the transom therewith connected and, furthermore, so that the weight of the transom will be partially or more than fully overcome to result in increased facility of operation of the mechanism, especially in the action of closing the transom. As shown, the spring n comprises the coils n^2, which encircle the worm-wheel extension d between the lever and the side of the casing, the angularly-turned end portion n^3, which is engaged in the socket o, drilled in the side of the casing, the spring-arm extending along the length of the lever G, and the hook-shaped extremity n^4, which has an edgewise engagement with the said lever. It will be explained that as the degree of the opening of the transom increases the stress on the spring becomes increased, and thus the spring by its increased reaction becomes capable of its maximum transom-closing-assisting capability when the transom is in its position of greatest angularity to the vertical.

The operating-shaft F is steadied by having its lower end portion embraced by the circularly-perforated head of the fitting t, which is secured in the side of the door-casing.

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

A transom-lifter comprising a casing, a worm-wheel journaled in the casing, one end of its shaft extending beyond the casing and provided with a rigidly-attached lever for connection with the transom, a worm to actuate the worm-wheel, and a spring having one end fixed to the casing and its other end extended to engage the lever to hold the worm-wheel in positive engagement with the worm, said spring also serving to overcome the weight of the transom.

Signed by me at Springfield, Massachusetts, in presence of two subscribing witnesses.

HEMAN OSBORNE.

Witnesses:
WM. S. BELLOWS,
JOHN ALDRICH.