(No Model.) 2 Sheets—Sheet 1.

H. STUEBNER.

SASH BALANCE.

No. 539,924. Patented May 28, 1895.

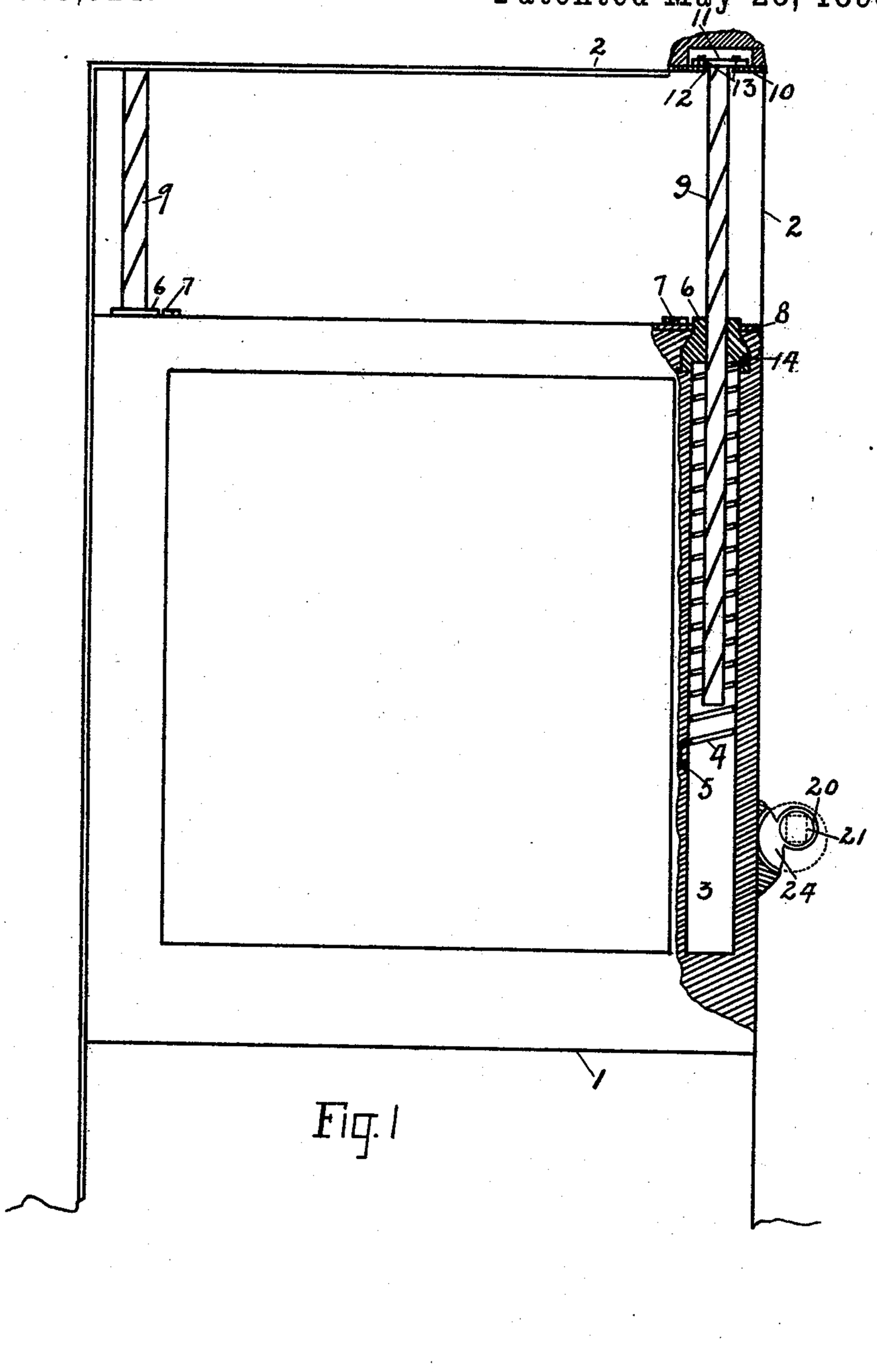

Fig. 1

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(No Model.) 2 Sheets—Sheet 2.

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SASH BALANCE.

No. 539,924. Patented May 28, 1895.

Fig. 2

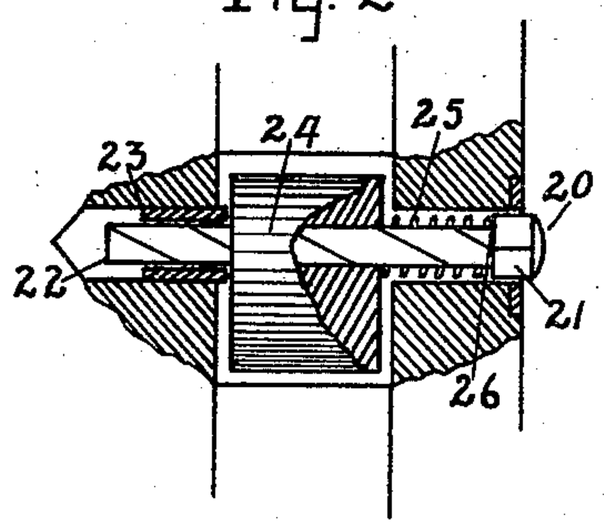
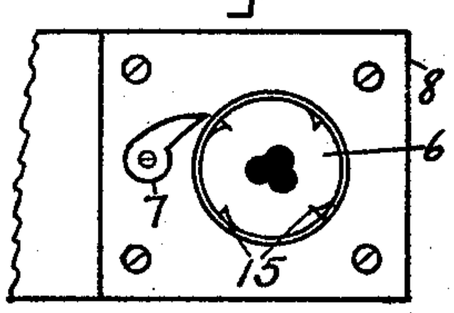


Fig. 3



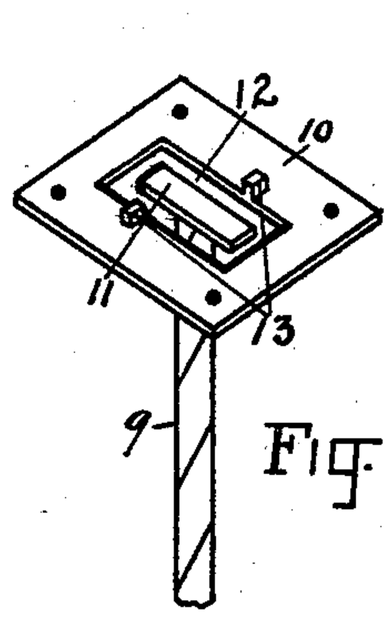


Fig. 4

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UNITED STATES PATENT OFFICE.

HENRY STUEBNER, OF PHILADELPHIA, PENNSYLVANIA.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 539,924, dated May 28, 1895.

Application filed August 7, 1894. Serial No. 519,637. (No model.)

To all whom it may concern:

Be it known that I, HENRY STUEBNER, a citizen of the United States, residing in the city of Philadelphia and State of Pennsylvania, have invented a new and useful Sash Hoist and Balance, of which the following is a specification.

My invention has for its objects, first, to provide means for automatically hoisting sash, sliding doors and kindred structures, or balancing them as may be desired; second, to provide means for automatically locking these structures in any position desired, and, third, to obviate the difficulty that attends the removal of sash balanced by weights and the usual appliances. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of a window sash and frame with my mechanism attached, parts being broken away to show the arrangement. Fig. 2 is a side view of the lock in position in the frame, parts being broken away for the purpose of illustration. Fig. 3 is a top view of the sash-plate, nut, and pawl. Fig. 4 is a view of the top of the hoist-rod and the plate which controls it.

The sash, 1, guided by the frame, 2, is provided with the well, 3, at the top of which a nut, 6, turns in a suitable bearing. A sash plate, 8, guides the nut and carries a pawl, 7, to engage the notches, 15, in the top of the nut, thus holding it from rotation. The hoist rod, 9, preferably formed like a rope by twisting strands of wire together to form a thread of the desired pitch, feeds the nut, 6, and is provided at its upper end with a cross-bar, 11, which passes through an oblong opening, 12, and engages spuds, 13, of a frame plate, 10, secured to the top of the frame after cutting away sufficient material to permit the cross-bar to turn. A helical spring, 4, in the well, 3, is secured to the sash at 5, its upper end being secured at 14 to the nut.

A button, 20, having a shank, 21, square in section, is attached to the end of a screw, 22, which passes through an eccentric, 24, and bears in a bushing, 23, set in a hole drilled in the frame. A helical spring, 25, is sleeved on the screw, one end bearing against the eccentric and the other against the shoulder, 26, of the button. It will be seen that when the button is thrust in against the action of this spring the screw, 22, is moved through the eccentric, and as the square bearing of the shank, 21, prevents the screw from turning, the eccentric, 24, threaded to engage therewith, will be turned thus disengaging the sash. The helical spring, 4, which has been wound to sufficient tension to overcome the weight of the sash, now revolves the nut, 6, which travels rapidly along the rod, 9, and the sash is hoisted. The sash may be held in any position by releasing the button, 20, thus permitting the spring, 25, to return the screw, 22, whereby the eccentric is turned and engages the sash, holding it against the action of the spring, 4. If it is desired to remove the sash from the frame, the rod, 9, may be released from its engagement with the plate, 10, by throwing the pawl, 7, into one of the notches, 15, thus holding the nut, 6, from rotation. The thread of the now stationary nut will turn the rod, 9, if the sash be lifted, and the cross-bar of the rod will drop through the opening of the plate, 10.

It will be seen that this device may be used either as a balance or a hoist depending upon the tension given the spring, 4.

I may, without departing from the spirit of my invention, apply the mechanism described to the outside of the sash, which may be desirable in connection with sash that is already in place.

It will be understood that the mechanism uncovered at the right of Fig. 1 is duplicated at the left but concealed.

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

1. In combination, the frame plate provided with the oblong opening and the spuds, the hoist rod provided with the thread and the cross-bar, the nut, and means for holding the nut against rotation, substantially as shown and described.

2. In combination, a frame plate, a stationary hoist rod, a rotating nut, a window sash, and a helical spring connecting the nut and the sash, substantially as shown and described.

3. In combination, a window sash, a rotat-

ing nut having a ratchet top, a pawl, and a helical spring connecting the sash and nut, substantially as shown and described.

4. In a sash holder, in combination, a screw, an eccentric operated thereby, and a spring for returning the screw and eccentric, substantially as shown and described.

5. In a sash holder, in combination, the screw, 22, having the button, 20, with the squared shank, 21, the eccentric, 24, and the spring, 25, substantially as shown and described.

6. In a sash holder, in combination, a frame plate, a hoist rod, a nut, a movable body, a helical spring connecting the nut and the movable body, and an automatic lock for holding the movable body, substantially as shown and described.

7. In a sash holder, in combination with an eccentric adapted to bear upon the sash, a threaded rod or screw, the eccentric being operated by the action of the threaded rod or screw, substantially as shown and described.

HENRY STUEBNER.

Witnesses:
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