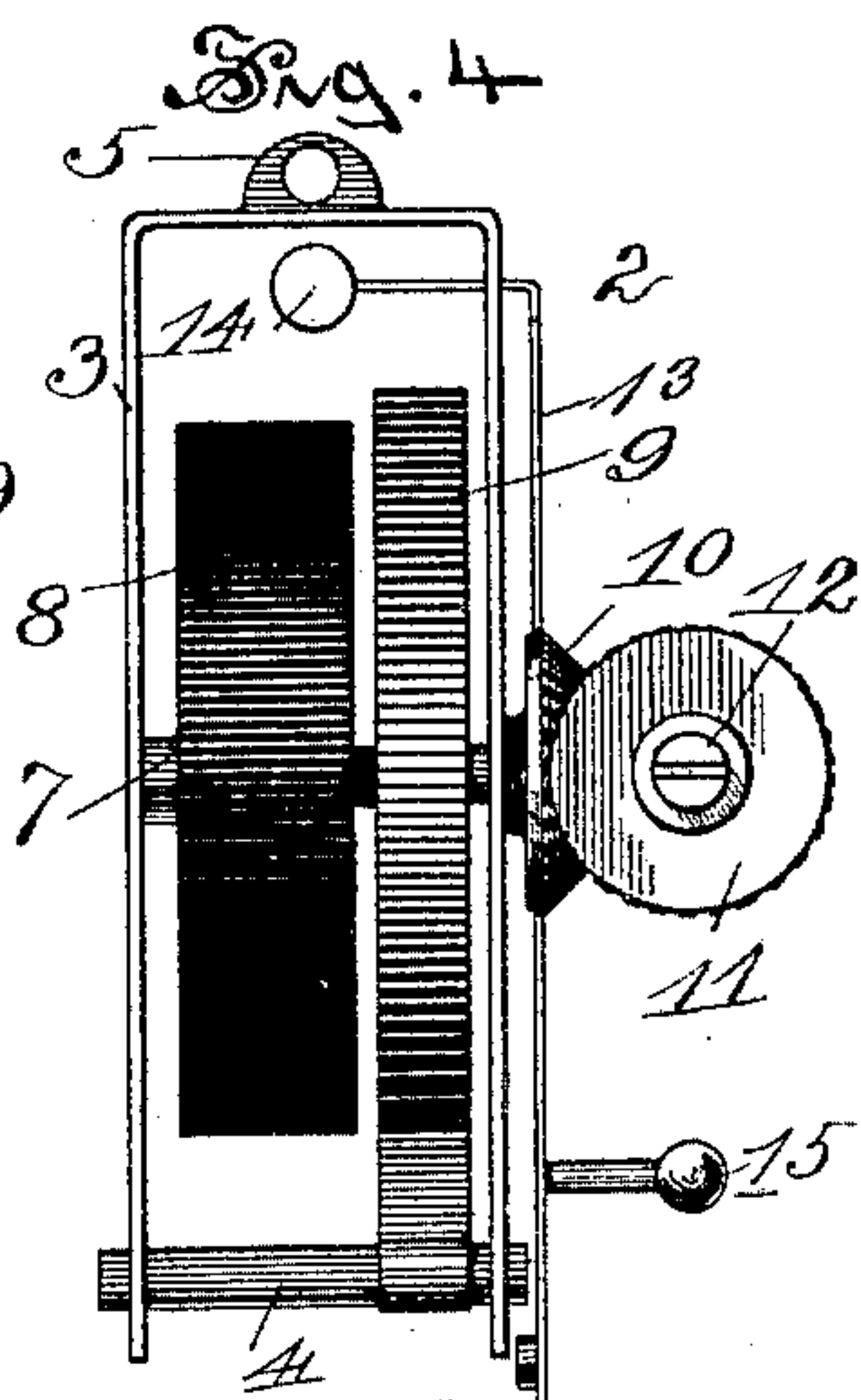
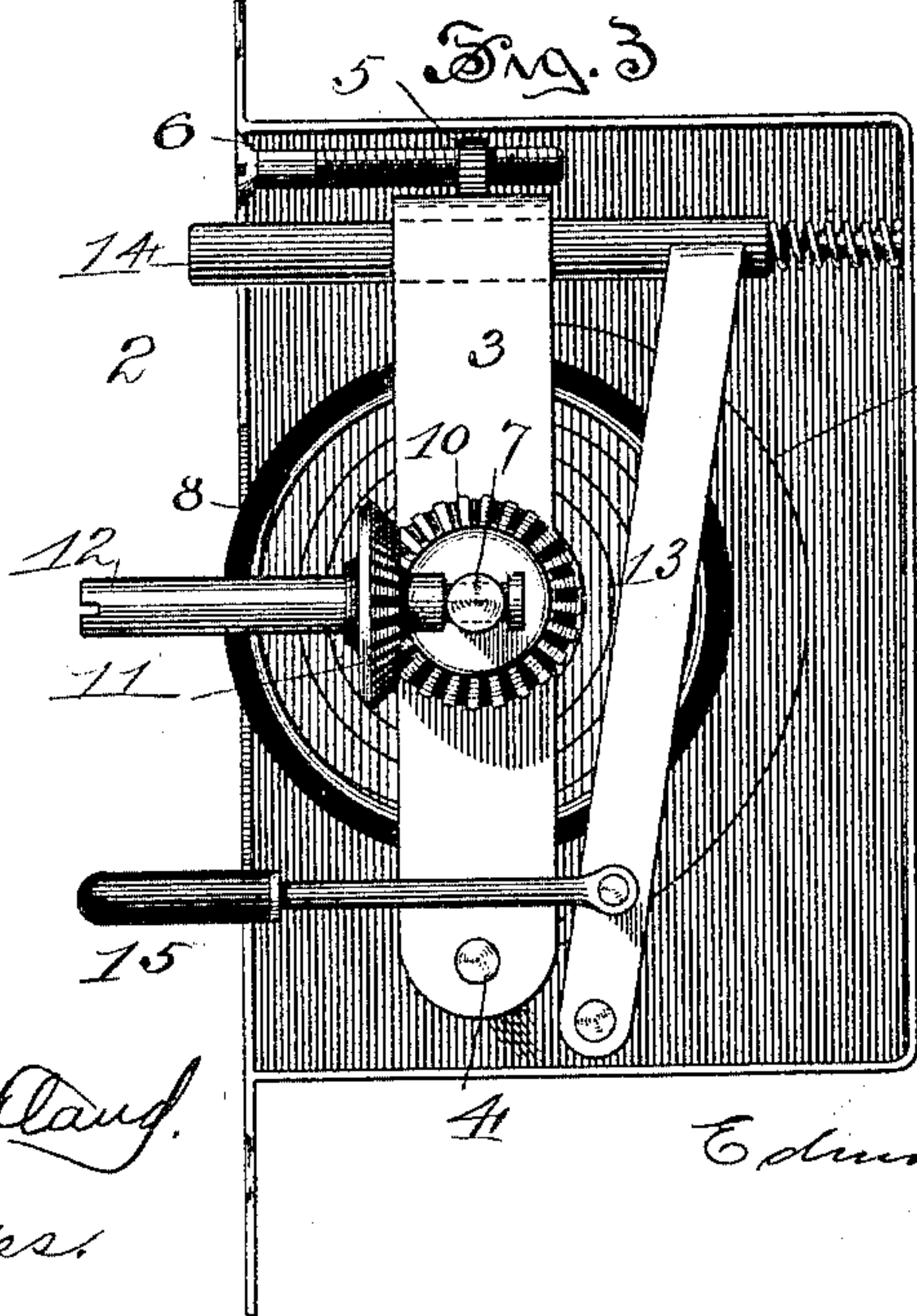
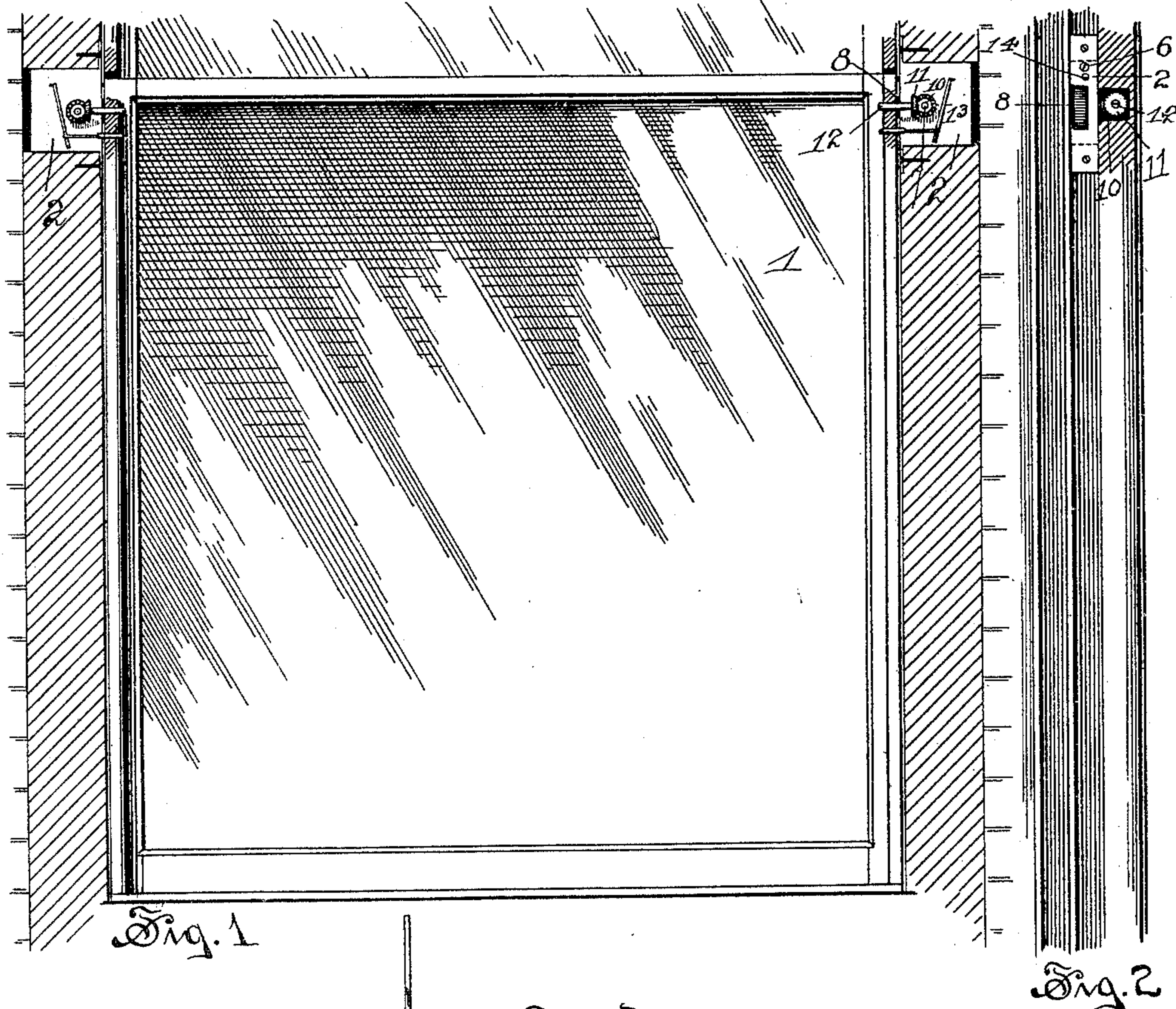


(No Model.)

E. L. BULLOCK.
SASH BALANCE.

No. 491,507.

Patented Feb. 7, 1893.



Witnesses:

C. E. Dickland.
P. A. Phelps.

Edmund L. Bullock.

UNITED STATES PATENT OFFICE.

EDMUND L. BULLOCK, OF HARTFORD, CONNECTICUT.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 491,507, dated February 7, 1893.

Application filed July 13, 1892. Serial No. 439,931. (No model.)

To all whom it may concern:

Be it known that I, EDMUND L. BULLOCK, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Sash-Balances, of which the following is a full, clear, and exact specification.

The invention relates to the class of sash balances in which the weight of the sash is counterbalanced by means of a coiled spring; the object being to provide a simple and cheap balance of this class which can be readily placed in position in the frame of a window, and at any time easily adjusted to balance the sash and aid in opening the window.

To this end the invention resides in a casing or shell adapted to be secured to the frame, with a friction wheel movably hung in the shell, a coiled spring connected with the wheel, means for regulating the tension of the spring, means for adjusting the friction of the wheel against the sash, and means for locking the sash so that it cannot be raised, as more particularly hereinafter described and pointed out in the claims.

Referring to the accompanying drawings: Figure 1 is a view of the lower sash of a window, with the frame broken away to show the balance. Fig. 2 is an edge view of the frame. Fig. 3 is a detail enlarged view of the balance, with one side of the shell removed; and Fig. 4 is an edge view of the balance without the shell.

In the views 1 indicates the sash of a window of common construction, which is adapted to be raised or lowered in the frame in the usual manner. Mortises are cut in the guide-ways of the frame near the top of the sash upon each side, preferably upon both sides of each sash; and in these mortises is inserted and secured the shell 2 of the balance. A yoke-shaped frame 3, hung at one end on a pivot 4 that passes through the side walls of the shell, is provided at the other end with a threaded hub 5 in which turns a screw 6 that extends through the shell just above the top of the sash, so that any time when the sash is down the screw may be turned by means of an ordinary driver to oscillate the frame 3 toward or from the sash. This frame supports on a suitable arbor 7 a wheel 8 having a fric-

tion surface, usually of rubber, that projects through the front of the shell into the path of the edge of the sash; and to this arbor is attached one end of a spring 9, the other end of which is attached to the pivot of the frame 3, or some other stationary post. To one end of this arbor 7 is usually secured a bevel gear 10, in mesh with which is a bevel gear 11 on the end of a short shaft 12, the head of which projects through the window casing and is provided with a slot so that it may be rotated by means of an ordinary screw-driver. Pivoted to one side of the shell of the balance is a lever 13 that is in engagement with a spring bolt 14 adapted to pass into a socket in the edge of the sash to lock it. A handle or push-button 15 is connected with this lever so that it may be pushed back to throw the bolt. When the balance is in position in the mortises near the upper edge of the sash, usually in the ways upon both sides, a few turns of the screw 6 draws the frame out so that the wheel presses against the surface of the edge of the sash with the desired friction, and then a few turns of the shaft 12 rotates the bevel gears so that the spring is coiled until a tension sufficient to balance the weight of the sash is acquired. When the sash is pushed up the friction roll under the influence of the tension of the spring, helps to raise the window, and when the sash is pulled down, of course the spring is rewound or coiled again. If at any time the tension of the spring is insufficient to balance the window a few turns of the gears wind it up to the desired degree, while the degree of pressure exerted by the roll against the edge of the sash is controlled by a few turns of the screw at the end of the oscillating frame which bears the roll.

In any desired part of the edge of the sash sockets may be made, and when one of these sockets comes opposite the end of the spring bolt, the bolt is thrust forward into the socket to hold the window locked in that position. But from this position it can be readily unlocked by pushing upon the handle connected with the bolt by the lever, which withdraws the bolt from the socket, the handle projecting through the casing at one side of the way in which the sash travels.

I claim as my invention:

1. A sash balance, consisting of a shell, an

oscillating frame supported by the shell, a screw passing from the oscillating frame to the exterior, a friction wheel held by the frame, and a spring connected with the wheel, 5 substantially as specified.

2. A sash balance, consisting of a shell, an oscillating frame supported by the shell, a screw passing from the oscillating frame to the exterior, a friction wheel held by the 10 frame, a spring connected with the wheel, and a rotary shaft connected with the spring for coiling the same, substantially as specified.

3. A sash balance, consisting of a shell, an oscillating frame supported by the shell, a friction wheel held by the frame, a spring 15 connected with the wheel, a spring bolt passing from the interior to the exterior of the shell, and a push button connected with the bolt, substantially as specified.

EDMUND L. BULLOCK.

Witnesses:

H. R. WILLIAMS,
C. E. BUCKLAND.