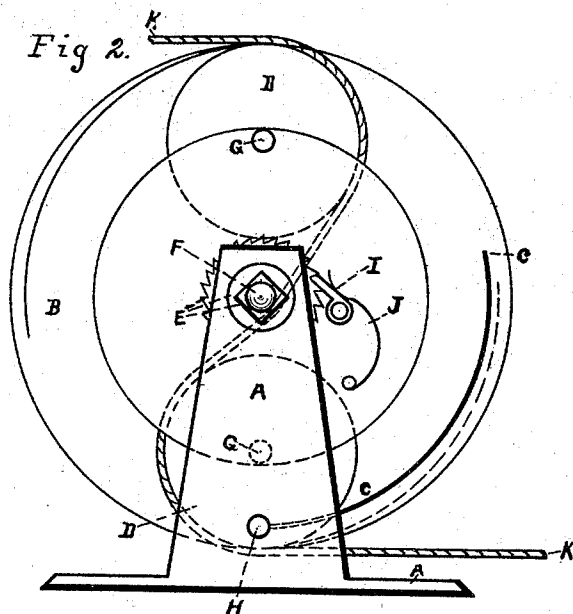
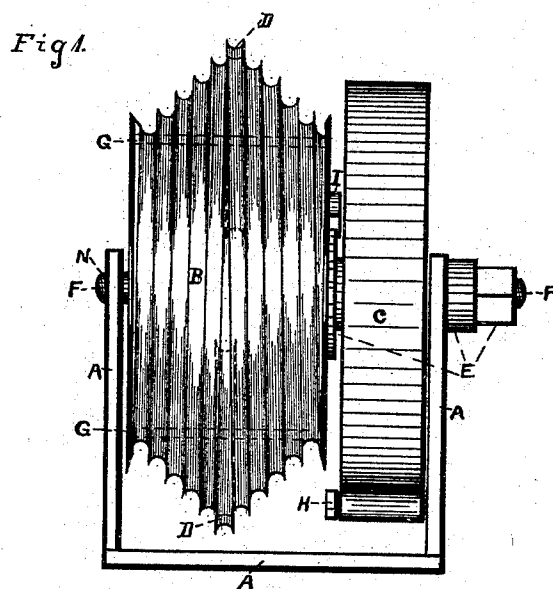


(No Model.)

J. M. SMELSER.
SASH BALANCE.

No. 488,294.

Patented Dec. 20, 1892.



Witnesses.

Joseph Modlin
George P. Rumples

Inventor.

James M. Smelser

UNITED STATES PATENT OFFICE.

JAMES M. SMELSER, OF RICHMOND, INDIANA.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 488,294, dated December 20, 1892.

Application filed May 25, 1892. Serial No. 434,338. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. SMELSER, a citizen of the United States, and a resident of Richmond, State of Indiana, have invented certain new and useful Improvements in Sash-Balances, as hereinafter specified.

My invention relates to improvements in that class of ware commonly called window springs, but I prefer the term counter balance for windows, as it is not intended to spring the window either up or down, but it is intended to counterbalance the weight of windows so that they may be easily raised or lowered at will or pleasure. I attain this object by the mechanism illustrated in the accompanying drawings of which

Figure 2 is a side view and Fig. 1 is an edge or end view.

A A A A A Figs. 1 and 2 is the bed plate and frame on which the device rests.

B B is the pulley around which the cord is wound, when the window is being raised, showing the grooves in which the cord rests. This pulley is largest at its center where the cord first begins to wind around it, and its diameter is less as the cord advances toward its edges, thus giving the spring the advantage of a long hold when the spring is at its strongest point, and a short hold when at its weakest point. This pulley is composed of two equal halves, concave on the inside, while the grooves on its outside carry the cord, one end to the right hand and the other to the left; the two halves are held together by two screws G G which screws also constitute the center-pin or spindle for equalizing pulleys D, D, D, D. This pulley is held in place by means of a pin F with a screw or thread on its point which screws into frame at N. This pulley is provided with a flange at its outer edges, which flange is smooth on its surface, and the flange next to the spring is provided with a catch I, I, which catch is held in place by a spring J.

C is the spring or power by which the device is operated; being made fast at its outer end by a pin or screw in frame at H H, and at its inner end, it is made fast to sleeve E E E in the usual manner. Spring is of flat steel, of coil order or kind.

E E E is the sleeve on which the inner end

of spring C is fastened, this sleeve is provided at one end with a small flange, notched so as to receive the point of catch I and at the other with square shoulders to admit a wrench or key when adjusting the spring.

To adjust for use standing in front of a window, place the device on the windowhead near the center with its side toward you as shown in Fig. 2, with its (the pulley's) perpendicular center directly over the sash to be raised, set the sash in position at the bottom of the window frame, then fasten one end of cord to sash at left hand top corner of sash, in the usual manner by means of screw, nail or staple, then pass other end up through window head thence over a pulley or roller, thence to the top of device and through it as indicated at Fig. 2 thence to the right hand to corner of window frame, thence over a pulley or roller, thence downward through window head to the right-hand top corner of sash where this end is to be fastened same as the other, then the spring may be tightened by wrench being applied on sleeve E as before mentioned, spring to be tightened to suit weight of sash.

D D D D are equalizing pulleys over which the window cord passes, thus allowing the cord to roll or slip whichever way is required until it pulls with equal force on each corner of the window sash.

Having described my invention, what I claim as new and desire to secure Letters Patent for is

A sash balance having a double grooved, cone shaped reel or pulley B, with equalizing, inside pulleys D D, held in position by screws or rivets G; with sleeve E provided with a square shoulder on one end, and notches on the other end for engaging catch I, in combination with, frame A, operating spring C, center pin N, catch I, spring J, cord K, substantially as set forth in specification and drawings.

In testimony of which I affix my signature in presence of two witnesses.

JAMES M. SMELSER.

Witnesses:

HENRY C. SHAW,
JOSEPH MODLIN.