

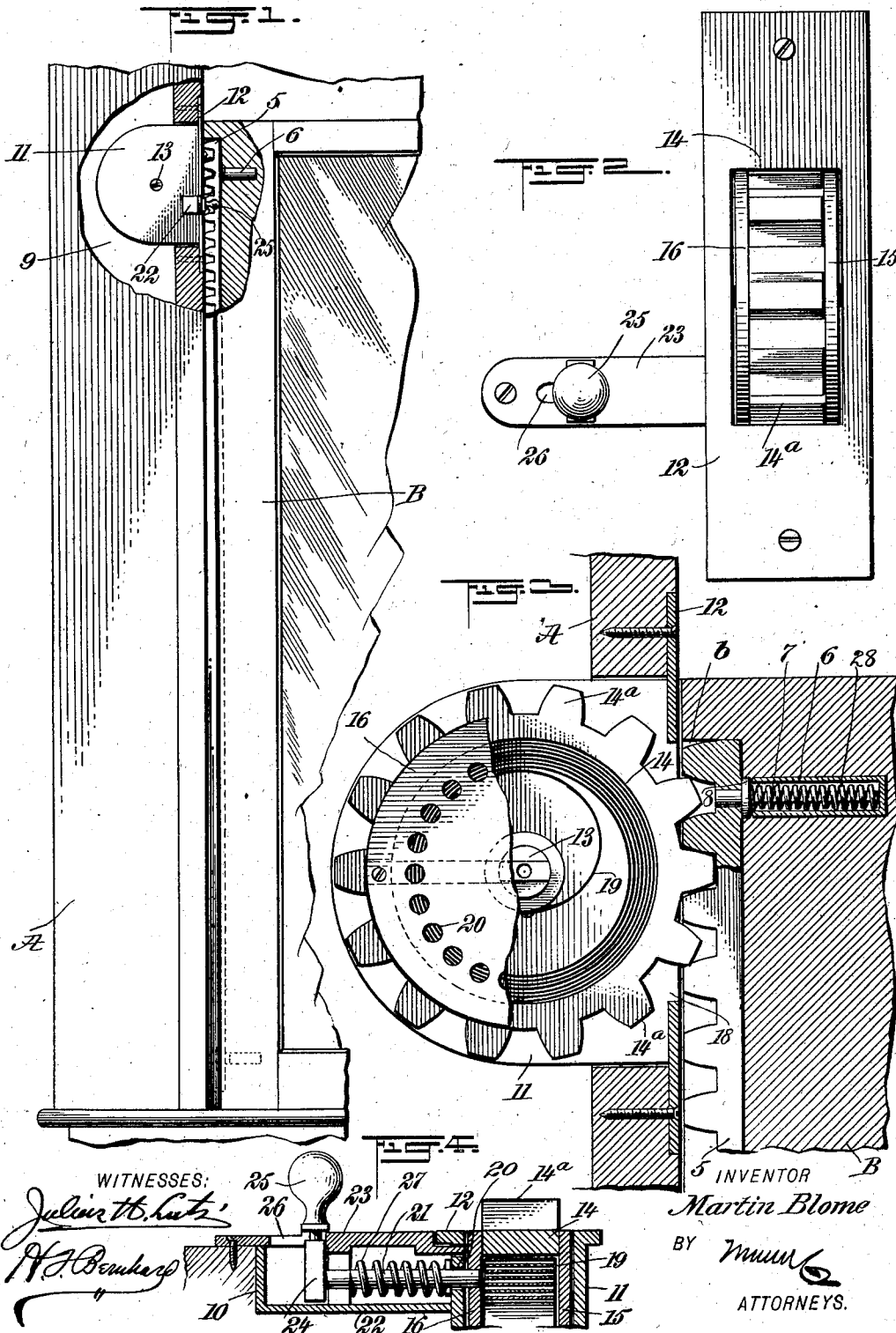
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PATENTED JUNE 2, 1903.

M. BLOME.
SASH BALANCE.

APPLICATION FILED OCT. 6, 1902.

NO MODEL.



UNITED STATES PATENT OFFICE.

MARTIN BLOME, OF ST. CHARLES, MISSOURI.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 729,994, dated June 2, 1903.

Application filed October 6, 1902. Serial No. 126,147. (No model.)

To all whom it may concern:

Be it known that I, MARTIN BLOME, a citizen of the United States, and a resident of St. Charles, in the county of St. Charles and State of Missouri, have invented new and useful Improvements in Sash-Balances, of which the following is a full, clear, and exact description.

My invention relates to improvements in sash-balances; and the object that I have in view is the provision of a simple and cheap construction which may be easily and quickly applied to a window, is capable of ready operation in order to facilitate the elevation of the sash, and is equipped with a positive locking device to hold the spring-driven drum under restraint until such time as it is desired to raise the sash.

Further objects and advantages of the invention will appear in the course of the subjoined description, and the novelty will be defined by the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a part of an ordinary window, showing my improved sash-balance applied thereto. Fig. 2 is an elevation, on an enlarged scale, of the balance with the rack removed from the window. Fig. 3 is a vertical sectional elevation, on an enlarged scale, showing the improved balance applied to a part of the casing and to a part of the sash; and Fig. 4 is a horizontal section showing the means for locking the spring-driven drum against rotation.

A designates a part of the window-casing, and B is a part of the lower sash. This sash is provided in one of its stiles with a longitudinal recess or groove *b*, and in this recess is arranged a vertical rack 5, the latter being secured to the stile in any suitable way. As shown by Fig. 3, the sash-stile is provided with a transverse metallic socket 6, in which is fitted a stem 7, the latter being provided with a washer 8 and secured at its outer end to an end portion of the vertical rack 5.

The casing A is provided with a recess or chamber 9 and with a lateral offset or extension 10. (See Figs. 1 and 4.) In the chamber 9 is secured a drum-casing 11, having a

face-plate 12, which is firmly secured by screws to the exposed inner edge of the window-casing. This drum-casing is equipped with a non-revoluble arbor or spindle 13, which serves as a support for a rotary drum. This drum consists of a rim 14 and the heads 15 16, said heads being fastened to the rim in any suitable way, or, if desired, one of the heads may be made an integral part of the rim. The heads of the drum are mounted loosely on the arbor or spindle 13 in order that the drum may turn freely thereon, and the rim 14 of the drum is provided with an annular series of gear-teeth 14^a, which project through a slot 18, provided in the face-plate 12, whereby the drum is geared directly to the rack 5, which is carried by the sash B. Within this drum is arranged a coiled spring 19, one end of which is fastened to the arbor or spindle 13, while the other end of said spring is fastened in any suitable way to the rim of the drum, whereby said spring is adapted to impel or turn the drum in one direction and to make it exert pressure in an upward direction on the rack 5, thus disposing the parts in a way to balance the weight of the sash and to assist in the elevation thereof.

The head 16 of the drum is provided with a circular series of apertures 20, (see Figs. 3 and 4,) and into either of these apertures is adapted to fit a locking bolt or dog 21. Said dog is slidably mounted in a chambered arm 22, which extends outwardly from the casing 11, said arm being made in a single piece with one side of the casing, or it may be arranged in a stationary position to have an operative relation to said casing. The chambered arm 22 is fitted snugly in the offset 10 of the chamber or recess in the window-casing A, and the arm is held in place and practically covered by a plate 23, which is fastened to the window-casing in a suitable way. The bolt 21 is slidably mounted in the hollow arm 22, so as to move in a direction toward and from the apertured head 16 of the drum, and this bolt is provided at its outer end with a head 24, to which is attached a finger-piece 25, the latter being slidable in a slot 26, which is provided in the plate 23. A coiled spring 27 is fitted loosely around the bolt or dog 21, and one end of said spring bears against a suitable part of the hollow arm 22,

while its other end acts against the bolt or dog so as to normally impel the latter toward the drum and into one of the apertures of the head 16.

5 One of the drums and racks is used in connection with each sash, and for the lower sash the drum is mounted in the casing so as to lie opposite to the upper part of said sash when it is lowered. Assuming that the sash
10 is raised and the operator desires to lower it, the bolt 21 is withdrawn by manipulating the knob 25, and then the sash is pulled down. The movement of the rack 5 turns the drum through the teeth 14^a, and the spring 19 is
15 thus placed under tension, after which the knob 25 is released, so that the bolt is pressed by the spring 27 into engagement with the perforated drum-head 16. Before raising the sash the bolt 21 is again withdrawn from en-
20 gagement with the drum, and the spring 19 is free to exert its energy through the drum on the sash, thus assisting the operator in raising the sash.

The socket or thimble 6 in the sash houses
25 a coiled spring 28, (shown by Fig. 2,) said spring being seated against the washer or collar 8 on the stem 7. The springs on the stems

at the upper and lower parts of the sash tend to press the rack against the window-casing, and thereby make the rack engage properly 30 with the toothed drum.

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

A sash-balance comprising a chambered 35 casing having a hollow arm, a spindle fixed in said casing and extending through the chamber thereof, a drum having heads and a toothed rim, said heads being loosely mounted on the spindle for the drum to rotate di- 40 rectly thereon and one of said heads provided with a row of apertures, a spring fastened to the drum and the spindle, a bolt slidably confined in said arm, and a spring also confined in said arm and acting against the bolt to 45 project it into an aperture of the perforated drum-head.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MARTIN BLOME.

Witnesses:

MAX MILLER,

JOHN THEILMANN.