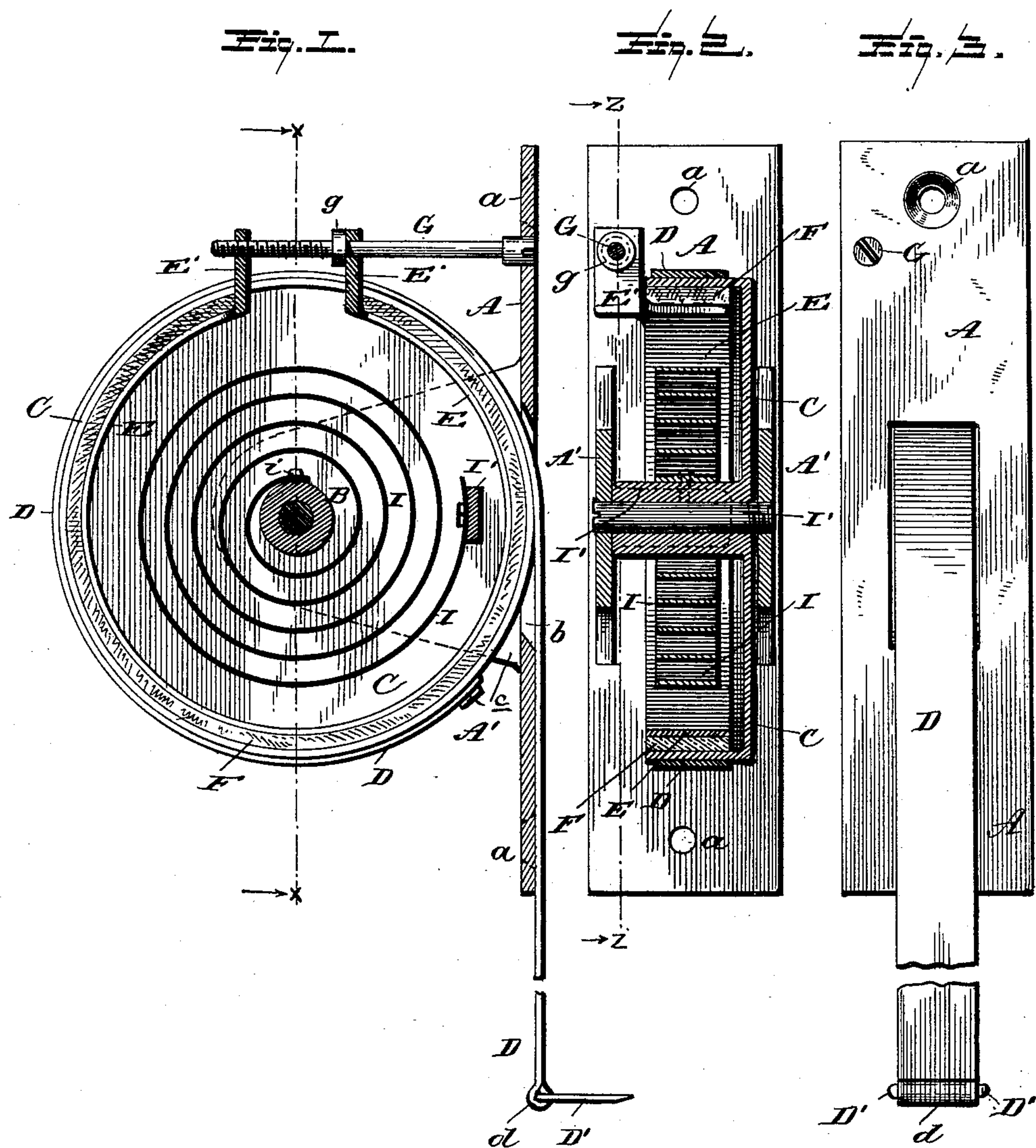


(No Model.)

G. A. COLTON.
SASH BALANCE.

No. 434,700.

Patented Aug. 19, 1890.



Witnesses

L. C. Hills
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Inventor

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UNITED STATES PATENT OFFICE.

GEORGE A. COLTON, OF LAFAYETTE, NEW YORK.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 434,700, dated August 19, 1890.

Application filed December 17, 1889. Serial No. 334,084. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. COLTON, a citizen of the United States, residing at Lafayette, in the county of Onondaga, State of New York, have invented certain new and useful Improvements in Sash-Balances, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention has relation to certain new and useful improvements in sash-balances; and it has for its object to provide an improved sash-balance of that class wherein cords, weights, and pulleys are dispensed with, 15 in which the brake is arranged within and protected by the drum or casing and acts upon the inner periphery of the drum or barrel.

Other objects and advantages of the invention will hereinafter appear from the following description, and the novel features will be particularly pointed out in the appended claims.

20 The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

30 Figure 1 is a vertical section through the line *z z* of Fig. 2. Fig. 2 is a vertical section taken at right angles to that of Fig. 1 and on the line *x x* of the latter figure. Fig. 3 is a face view of Fig. 1.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates a face-plate provided with openings *a* to receive the screws or other fastenings, by means of which it is designed to be secured in its place over an opening or recess which receives the operating parts of the balance in the usual manner. 40 This face-plate is formed with an opening *b*, through which the sash-supporting ribbon passes, and upon its rear face with ears *A'*, in which is journaled the arbor B, which is preferably screw-threaded at one end to engage a screw-thread in one of the said ears, so as to render it readily removable when desired and yet hold it in place. This arbor also serves as a brace for the ears.

50 C is a barrel or drum fast upon the arbor B, and D is the sash-supporting ribbon, rope, or chain fast at one end, as at *c*, to the outer pe-

riphery of the barrel and embracing the same, with its free end passed through the opening *b* in the face-plate and provided with any 55 suitable means for attaching the same to a sash. In the drawings I have shown the free end of this ribbon as formed with an eye *d*, in which is held a pin *D'*, adapted to be secured in the sash in any suitable manner; 60 but this is only one of the various ways in which the free end of the ribbon may be connected with the sash.

E is a tension-spring arranged within the drum, and it may be arranged to contact directly with the inner surface of the drum or barrel; or, as is preferred, a leather, felt, or other layer F may be arranged between the spring and the inner periphery of the drum or barrel, as illustrated in the drawings. The 70 ends of this spring are formed or provided with right-angled extensions or arms *E'*, against which the ends of the felt or other layer abut, as shown in Fig. 1, and through these extensions or arms passes a screw or 75 other analogous device G, being screw-threaded in one of the said extensions, as shown, and provided with a jam-nut *g*, the head of the screw being supported in the face-plate, where it may be readily gotten at for 80 the purpose of adjusting the tension of the spring for sash of greater or less weight. The forcing apart of these extensions causes the spring to bear with greater force upon the drum, as will be readily understood. 85

I is a spring attached at one end to the arbor B, as at *i*, and at the other end attached in any suitable manner to some fixed support, as *I'*, on one of the ears of the face-plate or to any other suitable support, as preferred. 90

In practice the sash is attached to the lower end of the sash-supporting ribbon, and as the sash is lowered the drum or barrel is rotated, winding up the spring I. As the sash is pushed up, the spring serves to aid it to rise, 95 the spring being of much greater length than absolutely necessary, and the friction of the sash-supporting ribbon on the outside of the drum or barrel and of the spring-brake upon the inside being regulated so as to counter- 100 balance the weight of the sash and permit the sash to remain in its adjusted position, yet permitting it to be raised or lowered with the exertion of but little strength or power.

The device is simple, cheap, and durable, and in practice has proved very efficient. The spring and brake are inclosed, the tension of the brake may be readily regulated at will, and the parts are not liable to become inoperative from dust or dirt.

What I claim as new is—

1. In a balance of the character described, the combination, with the barrel and the sash-supporting ribbon, of a brake applied on the inner periphery of the barrel, and means for adjusting the tension of the brake, as set forth.

2. The combination, with the barrel and the sash-supporting ribbon, of the brake arranged to act upon the inner periphery of the barrel and carried by a support outside of said barrel, as set forth.

3. The combination, with the barrel and the sash-supporting ribbon wound upon the exterior thereof, of the adjustable spring-brake arranged to act upon the inner periphery of said barrel, as set forth.

4. The combination, with the barrel and the sash-supporting ribbon wound thereon, of the spring arranged within the barrel and having extensions, and an adjusting device connected with the said extensions, substantially as specified.

5. The combination, with the barrel and the

sash-supporting ribbon, of the spring-brake arranged within the barrel, and a layer of felt or other analogous material arranged between the spring-brake and the inner periphery of the barrel, as set forth.

6. The combination, with the barrel and the sash-supporting ribbon wound thereon, of the spring arranged within the barrel with one end attached to the hub thereof, and a brake within the barrel and acting on the inner periphery thereof and carried by a fixed support outside the barrel, substantially as described.

7. The combination, with the face-plate and the arbor journaled thereon, of the barrel on the arbor, the sash-supporting ribbon wound on said barrel, the concentric non-rotatable spring-brake within the barrel acting on the inner periphery thereof and carried by a fixed support on the face-plate outside the barrel, and the spring within the barrel with one end attached to the arbor and the other end attached to some suitable support, substantially as specified.

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

GEORGE A. COLTON.

Witnesses:

E. C. DOBBS,

H. C. SNOW.