J. S. BROWN.

Curtain-Fixtures.

No. 165,299. Patented July 6, 1875.

Fig. 1.

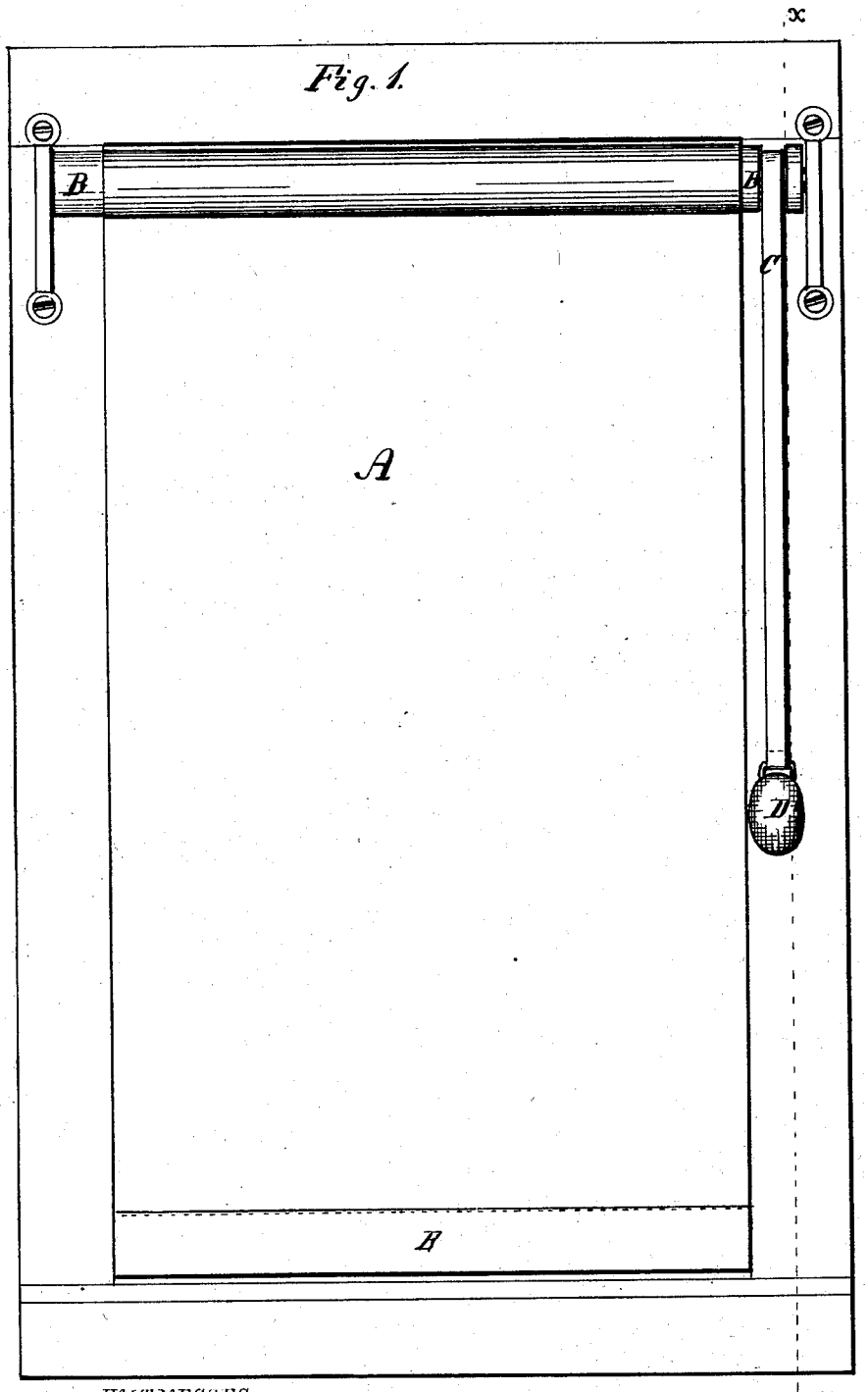
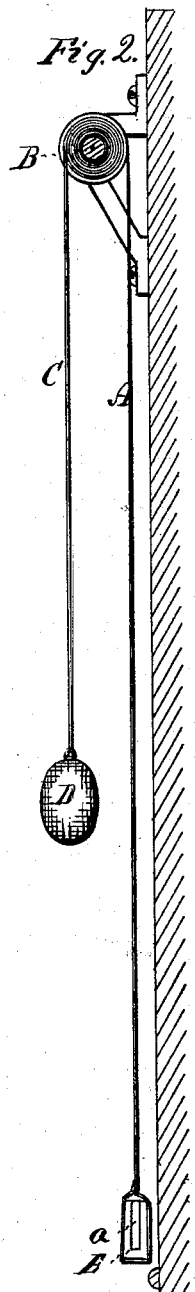



Fig. 2.




WITNESSES

E. M. Gallaher.

R. D. O. Smith

INVENTOR

John Sullivan Brown.

# UNITED STATES PATENT OFFICE.

JOHN SULLIVAN BROWN, OF WASHINGTON, DISTRICT OF COLUMBIA.

## IMPROVEMENT IN CURTAIN-FIXTURES.

Specification forming part of Letters Patent No. **165,299**, dated July 6, 1875; application filed June 21, 1875.

*To all whom it may concern:*

Be it known that I, JOHN SULLIVAN BROWN, of Washington, in the county of Washington and District of Columbia, have invented an improved Curtain and Window-Shade Fixture; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings making part of this specification—

Figure 1 being a front view of a window-shade provided with my improvement; Fig. 2, a view of the same taken in a plane indicated by the line *x x*, Fig. 1.

Like letters designate corresponding parts in both figures.

My invention consists in a counter-weight, and a flat band, tape, or ribbon, applied to the shade or curtain roller, the band winding in the counter direction to the shade, and made of such a thickness that its coiling upon itself will, while the shade is unwinding, increase the diameter of its coil to the requisite extent, or number of times, to produce an even, or nearly even, balance of the shade by the constant counter-weight at all heights of the shade, and in weighting the lower end of the shade or curtain to such an amount as to bear the requisite ratio to the weight of the whole shade for a given thickness of weight-band and consequent increase of its coil in unwinding the shade, all substantially as hereinafter specified.

In the drawings, A represents a shade or curtain; B, its roller; C, the flat band; D, the counter-weight attached to the band; and E, the weighted stick at the lower end of the shade, *a* being additional weight, of lead or other heavy material, since the stick itself ordinarily does not furnish sufficient weight for the purpose. In the roller B is cut a groove, or a grooved spool is attached to the roller, for the flat band C to coil in, the diameter of the empty groove being as small as convenient, in order to employ as short a band as practicable, say, a quarter or a third of an inch. The thickness of the band is graduated, so that when wound upon itself a sufficient number of times to unwind the full length of the shade it will enlarge its coil two, three, or other desired number of times in diameter. The counter-weight D is to be of sufficient weight to counterbalance the entire shade when fully unwound, and the weight-band is fully wound, together with whatever weight there may be at the bottom of the shade. If the coil of the band is equal in diameter to that of the shade when the latter is fully drawn down, (which is usually little more than that of the roller,) the counter-weight will weigh the same as the shade and its bottom weight together. The band C, thus so graduated in thickness as to cause a constant counter-weight, D, to equally or nearly balance a shade or curtain, A, whether entirely unwound upon its roller B, or unwound therefrom to any extent, I here define, for convenience and conciseness of expression, a self-balancing band. The additional weight *a*, which is conveniently applied in the stick E in the usual manner of weighting spring-balance shades, together with the weight of the said stick, is determined by the weight of the shade and the thickness of the band C. Thus, if the shade weighs eight ounces, and the diameter of the band-coil is increased three times in drawing down the shade, the weight is required to be half that of the shade, or four ounces, so that, when the shade is entirely wound up, the counter-weight D has only the weight (four ounces) to counterbalance, and when the shade is drawn down its full length the counter-weight has both the weight of the shade and that of its weight (twelve ounces) to counterbalance; and having then three times the leverage on the roller compared with what it has when the shade is wound up, the counterbalancing is perfect to whatever height the shade is raised. This calculation is made irrespective of the increase of the diameter of the shade-roll in winding up, which proportionally diminishes the amount of weight required. A shade-weight, E *a*, proportioned to the weight of the shade or curtain, and to the thickness of the coiling counter-weight band C, as herein specified, I term, for the purpose of this specification, a proportional weight. This self-balancing counter-weight fixture, while it is one of the cheapest of shade-fixtures, is perfect in its action, never varies with time, and can scarcely get out of order. It is also very convenient in use, the movement of the counter-weight, which generally serves as a knob or tassel to move the shade with, being only

about one-third or one-half as great as that of the shade, and always being within reach, while, if preferred, the shade may be operated directly by hand when within reach.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of a coiling, self-balancing, flat band, C, and counter-weight D, with a weighted shade, A, and its roller B, the said band winding upon itself, and thus varying its acting distance from the center of revolution in proportion to the variations in the active weight of the shade, the said distance decreasing as the shade is wound up and increasing as the shade is lowered, substantially as and for the purpose herein specified.

JOHN SULLIVAN BROWN.

Witnesses:

J. TYLER POWELL,

E. M. GALLAHER.