(Model.)

B. HANDFORTH.

Curtain-Fixture.

No. 227,001. Patented April 27, 1880.

Fig. 2.

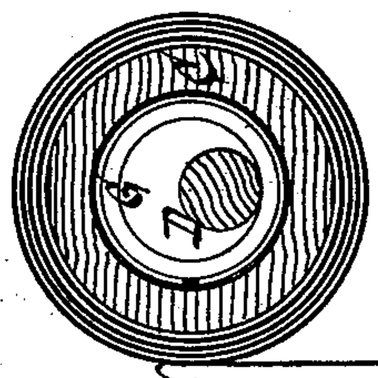
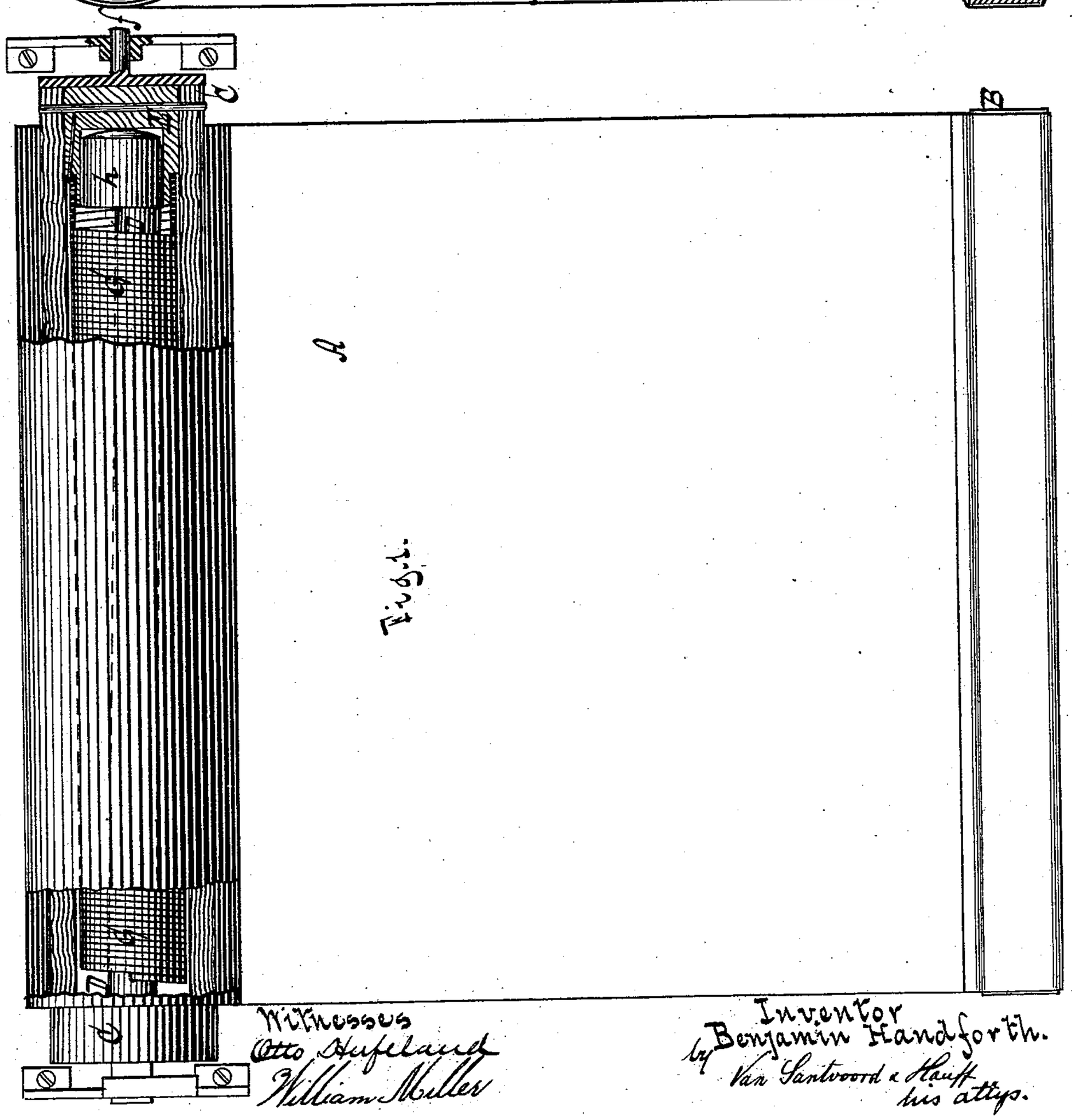


Fig. 1.



Witnesses
Otto Hufeland
William Muller

Inventor
by Benjamin Handforth.
Van Santvoord & Hauff
his attys.

UNITED STATES PATENT OFFICE.

BENJAMIN HANDFORTH, OF HOBOKEN, NEW JERSEY.

CURTAIN-FIXTURE.

SPECIFICATION forming part of Letters Patent No. 227,001, dated April 27, 1880.

Application filed March 4, 1880. (Model.)

To all whom it may concern:

Be it known that I, BENJAMIN HANDFORTH, a citizen of the United States, residing at Hoboken, in the county of Hudson and State of New Jersey, have invented new and useful Improvements in Shade-Fixtures, of which the following is a specification.

My invention relates to that class of shade-fixtures comprising a spring-roller and a shade equipped with a balance-weight, such fixtures being known to the trade as the "balance," and the theory being that the weight overcomes the tension of the spring, thereby balancing the shade. In practice this fixture is defective, because the weight counterbalances the spring only in one certain position, this being due to the fact that the tension of the spring is greater or less in different positions of the shade.

The object of my invention is to obviate this defect with a simple and inexpensive appliance; and to this end it consists in combining with a shade carrying a balance-weight a spring-roller embodying a spindle which is eccentric to the axis of the roller between its ends or bearings, the spring being attached to the roller at the end where the spindle is eccentric to the roller and to the spindle at the opposite end, so that as the tension of the spring increases with the revolution of the roller, due to the unwinding of the shade, the spring is brought to bear upon the spindle with a tendency to bring the eccentric portion thereof in line with the axis of the roller, which produces a gradually-increasing friction between the roller and the spindle, the effect of which is, added to that of the balance-weight, to hold the shade in the desired position.

This invention is illustrated in the accompanying drawings, in which Figure 1 represents a longitudinal section of the shade-roller and shade. Fig. 2 is a cross-section thereof.

Similar letters indicate corresponding parts.

The letter A designates the shade, having a balance-weight, B, applied to its lower edge in form of a slat, and C the roller, to which latter is applied a spindle, D, passing through it at one end, but terminating within the other end thereof, where the roller is closed by means of a plug, E, and where it is provided with a gudgeon, *f*. To the roller is further applied a spiral spring, G, which is attached thereto and to the spindle, respectively, at its opposite ends.

All of the foregoing parts are found in shade-fixtures; but usually the spindle is arranged with its axis coincident to that of the roller throughout the whole length of the spindle.

The axis of the spindle D coincides with the axis of the roller C at the end of the spindle where it bears on the roller, so that the roller may properly revolve thereon; but that portion of the spindle which is between or intermediate of such ends or bearings is eccentric to the axis of the roller. To thus bring the intermediate part of the spindle D out of the center, I make the inner end thereof in form of an eccentric head, as at *h*, this head being the part which enters the plug E; or in lieu thereof the end of the spindle may be provided with a pin eccentrically arranged on said end, which pin can be inserted in the center of the plug and form the axis of the spindle, which axis will be coincident with that of the roller at that end of the same. By this arrangement the intermediate portion of the spindle is brought into an inclined plane, and the eccentricity thereof gradually increases from the outer end inward. If desired, however, the spindle D may be constructed with an eccentric head or pin at both ends, so as to bring the intermediate portion thereof into a plane parallel but eccentric to the axis of the roller.

It will be readily understood that as the spring G is tightened, thus obtaining a reduced diameter, the same bears or presses on the eccentric portion of the spindle D, as shown in Fig. 2, such pressure beginning at the end where the spring is attached to the spindle and increasing in proportion to the winding of the spring. The effect of the pressure referred to is to produce a friction between the roller and spindle opposite to the point of contact of the spring, which friction increases with the tension of the spring, and which has a tendency to retard the motion of the roller, so that by the action thereof, combined with that of the weight B, the shade is firmly retained in any position to which it may be adjusted.

I am aware of the reissued patent to Buckley and Sawyer, dated March 4, 1879, No. 8,603, wherein is shown a spindle which is ec-

centric to the axis of the roller between its ends or bearings, and a spiral spring attached to the spindle at one end and connected with the roller at the opposite end, where the axis of the spindle is coincident to the axes of the roller, and this, broadly, I hereby disclaim. Such patent, however, does not show or describe the arrangement claimed by me, as in my invention the spring is connected with the roller at the end where the axes are not coincident, and this has the effect of causing the spring to press upon the eccentric portion of the spindle, such pressure beginning at the end where the spring is attached to the spindle, thereby producing a frictional contact between the roller and spindle opposite to the point of contact of the spring, and thus retarding the motion of the roller, as more fully hereinbefore set forth.

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

The combination, with a shade carrying a balance-weight, of a shade-roller embodying a spindle which is eccentric to the axis of the roller between its ends or bearings, and a spiral spring which is attached to the spindle at one end and to the roller at the opposite end, where the axes are not coincident, the whole constructed and adapted to operate substantially as described.

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

BENJN. HANDFORTH. [L. S.]

Witnesses:
CHAS. WAHLERS,
E. F. KASTENHUBER.