

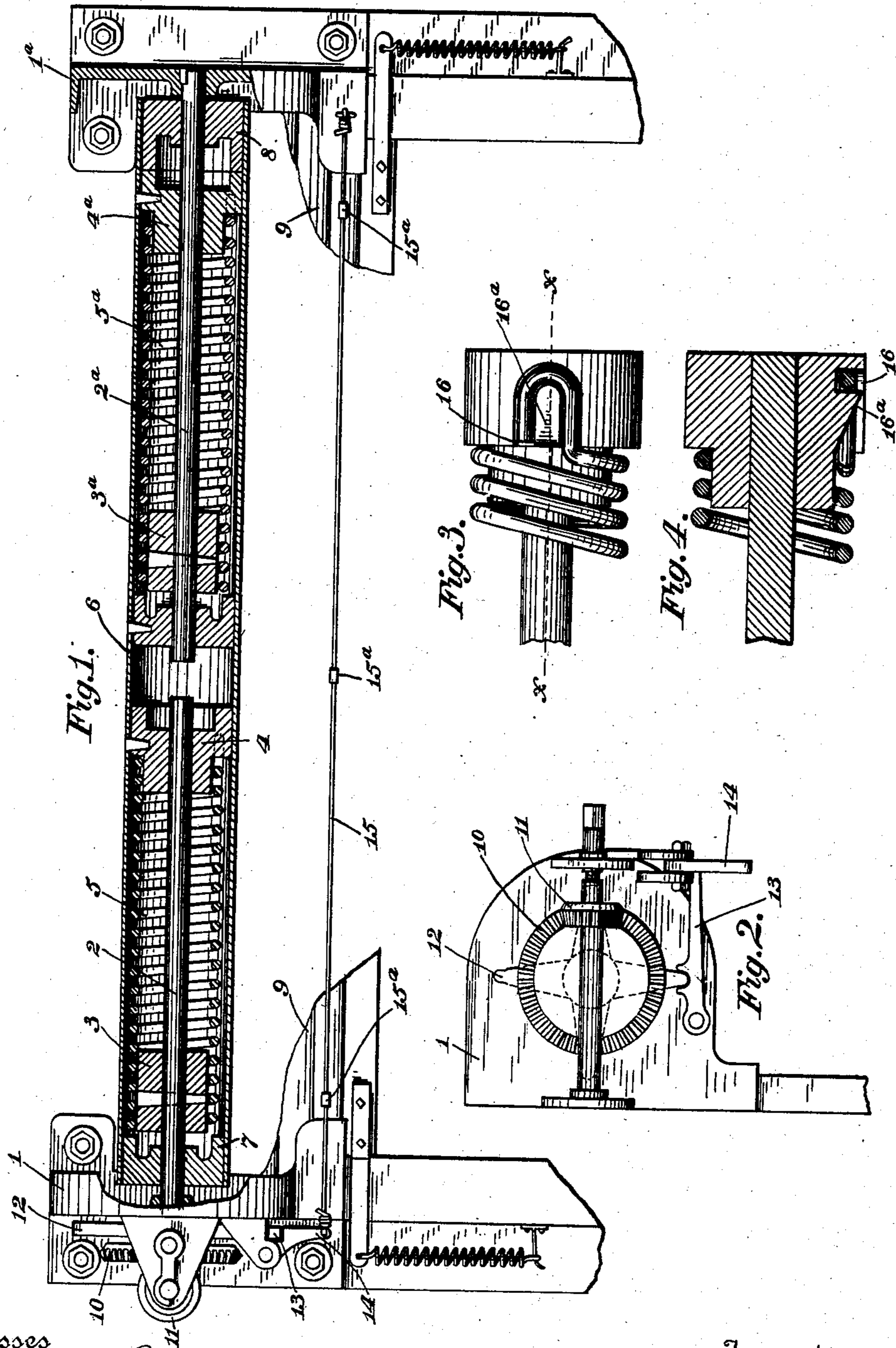
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J. VOLP.
ROLLER FOR FIREPROOF BLINDS.

APPLICATION FILED APR. 24, 1903.

NO MODEL.



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UNITED STATES PATENT OFFICE.

JOHN VOLP, OF GROVE CITY, OHIO, ASSIGNOR TO THE KINNEAR MANUFACTURING COMPANY, OF COLUMBUS, OHIO, A CORPORATION OF WEST VIRGINIA.

ROLLER FOR FIREPROOF BLINDS.

SPECIFICATION forming part of Letters Patent No. 742,262, dated October 27, 1903.

Application filed April 24, 1903. Serial No. 154,098. (No model.)

To all whom it may concern:

Be it known that I, JOHN VOLP, a citizen of the United States, residing at Grove City, in the county of Franklin and State of Ohio, have
 5 invented certain new and useful Improvements in Rollers for Fireproof Blinds; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to
 10 which it appertains to make and use the same.

The object of this invention is twofold: first, to provide an improved spring-roller for metallic fire-resisting blinds, and, second, to provide improved means for effecting the connection between the spring or springs in such
 15 rollers and the sleeve or collar to which they are attached.

Heretofore in the sort of blinds that are automatically released upon the occurrence
 20 of fire the entire winding or counterbalancing spring has been released and the blind, if heavy, descends with too great violence, endangering the integrity of the curtain. Further, in the manufacture of spring-rollers the
 25 connection of the counterbalancing or winding spring with the collar or sleeve on the roller-supporting shaft has been troublesome and expensive, because it was necessary to reheat the end of the spring to bend it into
 30 locking position in the collar.

The present invention therefore consists in the constructions, as hereinafter described and claimed, whereby the troubles recited are relieved.

35 In the accompanying drawings, illustrating one embodiment of the improvements, Figure 1 is a vertical sectional view of a roller, parts of the construction being shown in full lines. Fig. 2 is an end view of means for winding up
 40 and temporarily holding a shaft of the roller; but the parts shown in this view are not of my invention except so far as they may constitute an element in my combination. Fig. 3 is a plan view of the connection between the
 45 spring and a collar or sleeve, and Fig. 4 is a sectional view on the line *x x*, Fig. 3.

In the several views, where like parts are designated by corresponding characters of reference, 1 and 1^a designate the end casings,
 50 between which the roller is located.

2 designates a rotary shaft, and 2^a a fixed shaft, on which the roller is mounted. The outer end of the rotary shaft is journaled in the left-hand end casing, as shown in Fig. 1, and the fixed shaft is keyed in the right-hand
 55 end casing.

3 and 3^a designate hubs keyed to the shafts 2 and 2^a, respectively, 4 and 4^a collars turning loosely on said shafts, respectively, and 5 and 5^a designate coiled springs connecting
 60 the hub 3 and collar 4 and the hub 3^a and collar 4^a, respectively.

The drum or cylinder 6 is secured to the loose collars 4 and 4^a, so that if the loose shaft is held stationary both coiled springs 5 and
 65 5^a are tightened or placed under tension when the curtain is unrolled; but if the shaft 2 is released the spring 5^a only is tightened or placed under tension.

7 and 8 are collars or hubs attached either
 70 to the shafts or to the drum, said collars forming merely supports for the drum.

9 designates fractions of the curtain which is to be attached to the drum, as usual.

In Fig. 2 is illustrated means for winding
 75 up the curtain comprising a master-wheel 10, keyed to the shaft 2, and a pinion 11, journaled on the outer side of the casing and engaging the master-wheel. Fixed to the shaft 2 is also a star-wheel 12, any arm of which is
 80 adapted to be engaged by a notched lever 13, pivoted on the outer side of the end casing. The notched lever is held up in position to lock the shaft from rotation by a gravity-latch 14, and the gravity-latch is secured in
 85 lever-holding position by a wire 15, containing several fusible points 15^a. One or more of these fusible points 15^a melt on a dangerous rise of temperature, and the gravity-latch 14 is therefore released, thus also
 90 liberating the shaft 2. In such event the spring 5 is rendered inoperative and is not tightened when the blind drops, because the hub 3 is carried around with the released shaft; but the spring 5^a is tightened and
 95 while permitting the descent of the blind tends to prevent its violent descent.

It is preferred that the power of the springs used shall be such that when the shaft 2 is locked the weight of the curtain will be nearly
 100

counterbalanced, so that the curtain will be self-winding and, if desired, be pulled down or pushed up in the manner of an ordinary window-shade. By the term "counterbalance," therefore, I mean partly or wholly counterbalanced. The spring construction can be varied, because the gist of the invention in this respect resides in means whereby a portion of the power of the spring or counterbalancing device may be relieved when it is desirable to have the curtain drop automatically. The two springs can of course be regarded as one counterbalancing device for the roller and as having a portion of its tension released upon the occurrence of fire.

16 designates a U-shaped groove in the periphery of the sleeve, to which the spring is attached. The surface of the sleeve within the groove is preferably inclined or beveled inward, as indicated at 16^a. The end of the spring is preferably made of hook shape, corresponding to the shape of the groove 15, as indicated at 16. To connect the hook-shaped end of the spring with the groove 16, the said end is forced up over the incline 16^a until the said end lodges by the resilience of the spring into the groove. After the drum is put on over the periphery of the sleeve the end of the spring will be inclosed and prevented from accidental escape under the stress of use.

The form of the parts herein shown can of course be varied without departing from the essence of the invention.

The winding-up gears (illustrated in Fig. 2) are employed to wind up the blind when heavy, and particularly after a portion of the counterbalancing - spring has been released, as by a rise in temperature, as hereinbefore stated.

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

1. A roller for fire-resisting blinds, a curtain-counterbalancing device therefor and means whereby a portion of said counterbalancing device is automatically rendered inoperative by a dangerous rise of temperature.

2. A roller for fire-resisting blinds, a counterbalancing-spring therefor, and means actuated by a rise of temperature for rendering inoperative a portion of the tension of said spring.

3. A roller for fire-resisting blinds comprising a drum, a fixed shaft supporting one end of the drum and a rotary shaft supporting the other, springs connecting each shaft with the drum and means for temporarily holding the rotary shaft stationary.

4. A roller for fire-resisting blinds comprising a drum, a fixed shaft supporting one end of the roller and a rotary shaft supporting the other, springs connecting each shaft with the drum in combination with means for temporarily holding the rotary shaft stationary and automatically releasing the same upon a dangerous rise of temperature.

5. In a roller for fire-resisting blinds, a tension-spring therefor having its end bent to hook form, in combination with a sleeve or collar having a socket for said hook in its periphery.

6. In a roller for fire-resisting blinds, a tension-spring therefor having its end bent to hook form, in combination with a sleeve or collar having a socket for said hook in its periphery and an inclined portion over which the hook rides into said socket.

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

JOHN VOLP.

Witnesses:

GEO. M. FINCKEL,
C. E. JUSTIN.