

A. WULFF.

MOVABLE SLAT ROLLING BLIND.

No. 344,799.

Patented June 29, 1886.

Fig. 2.

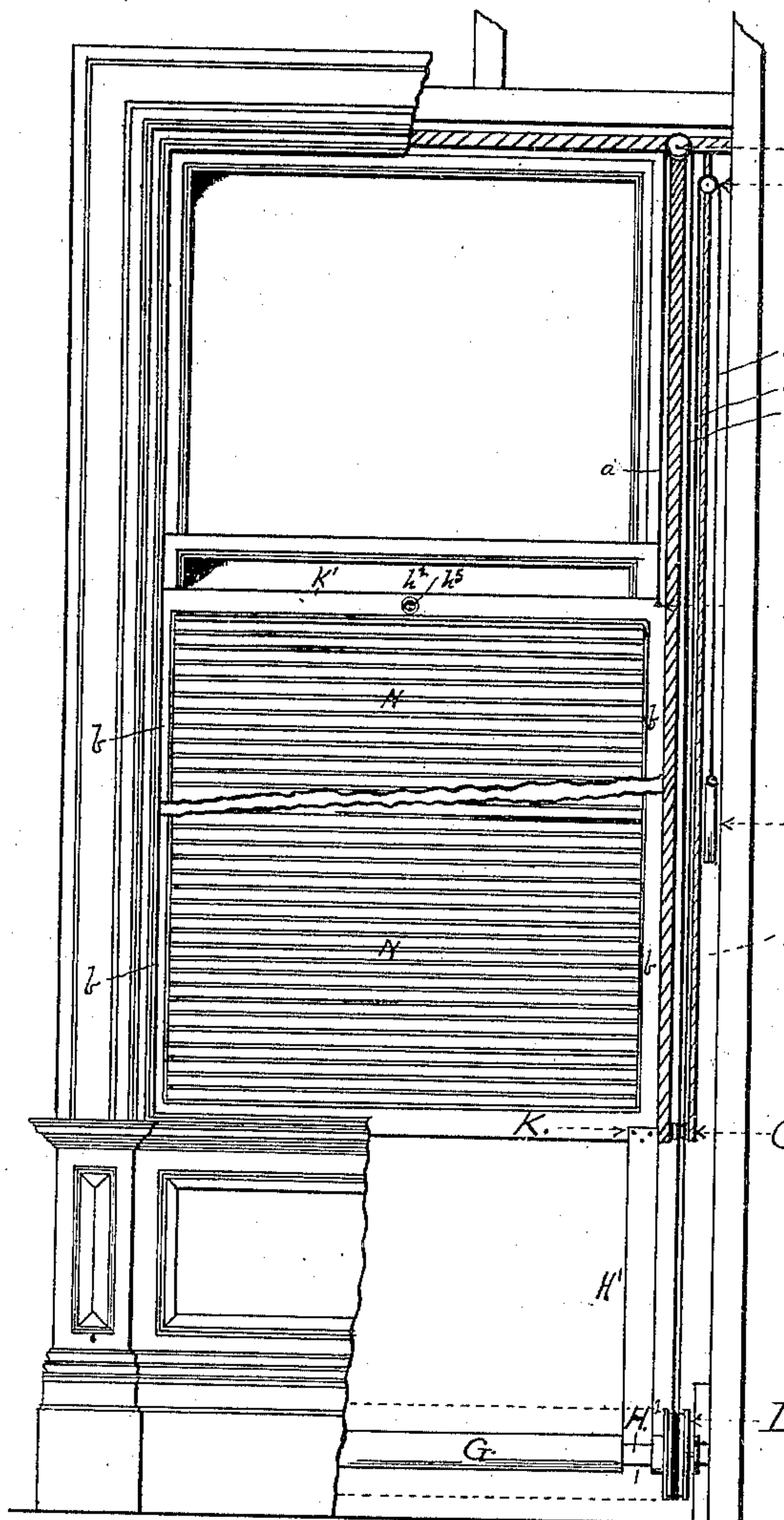


Fig. 3.

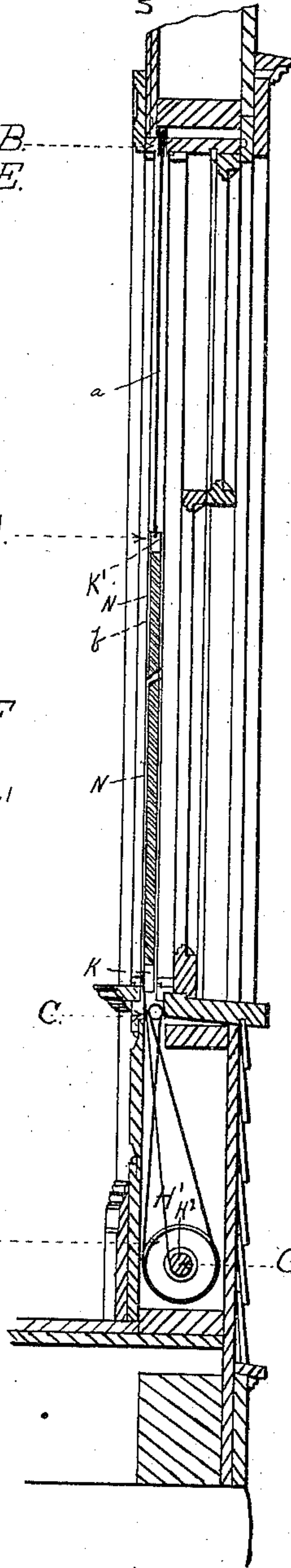


Fig. 4.

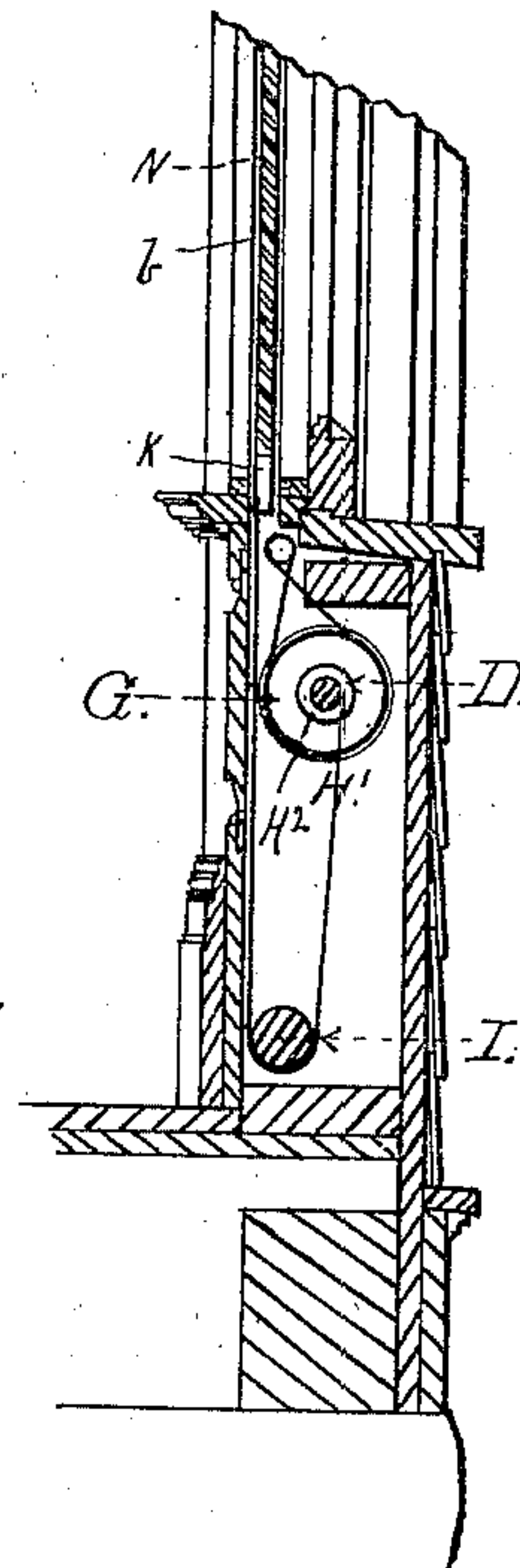
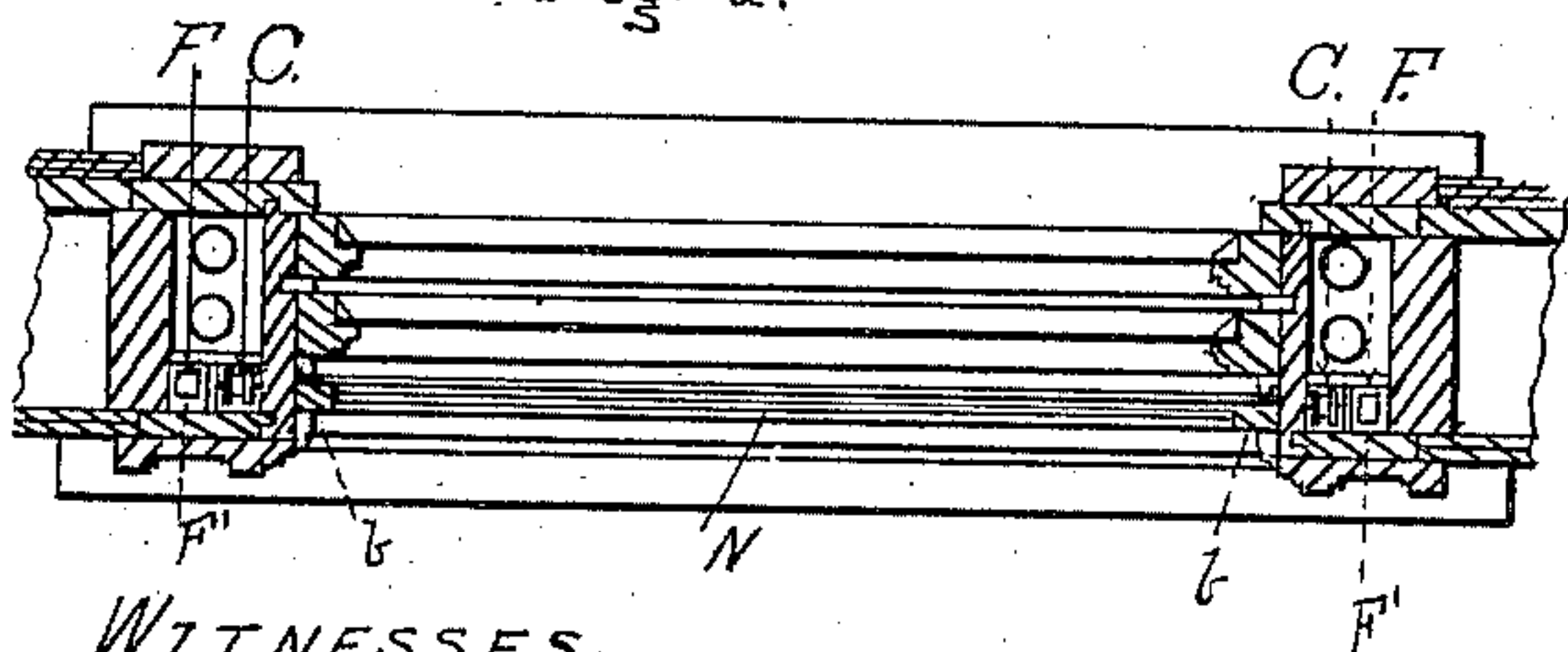


Fig. 1.



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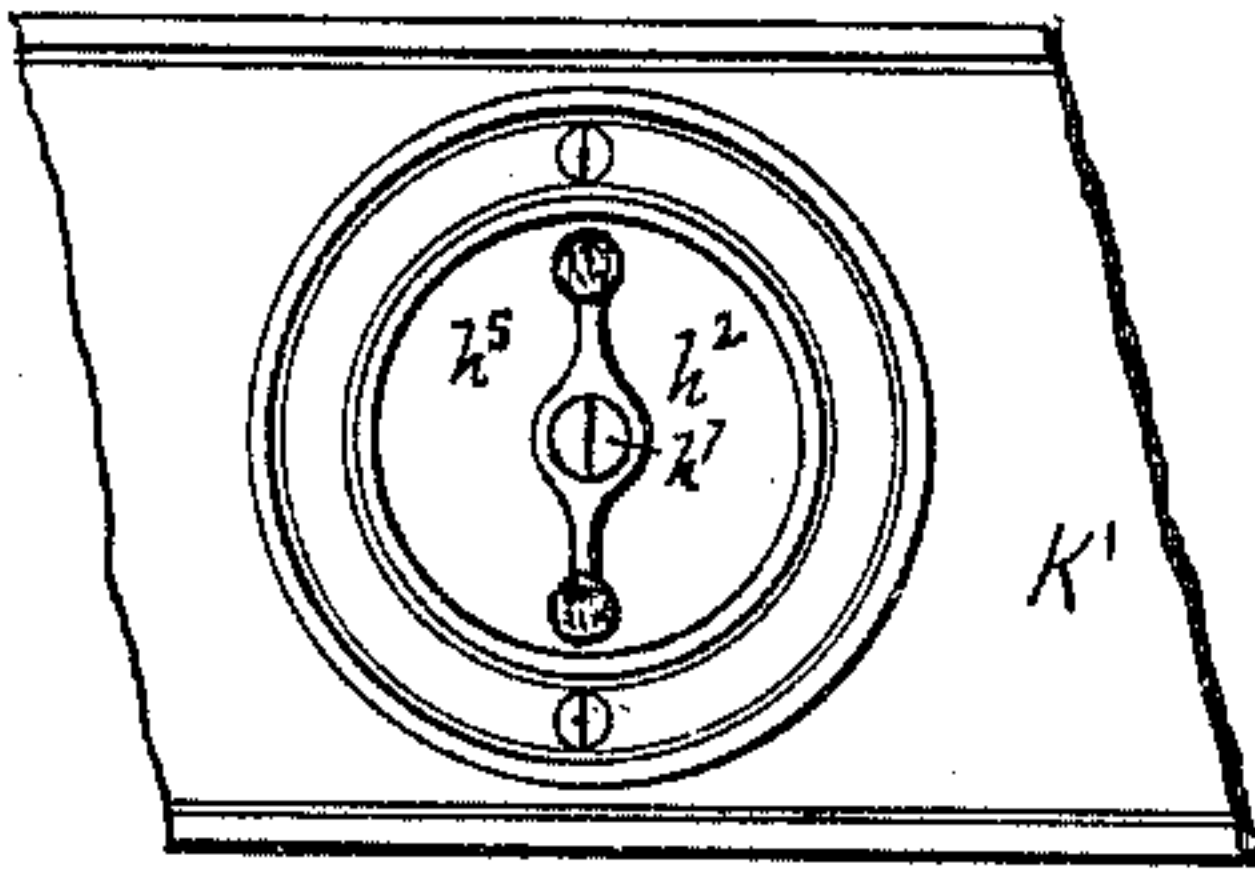


Fig. 7.

Fig. 6.

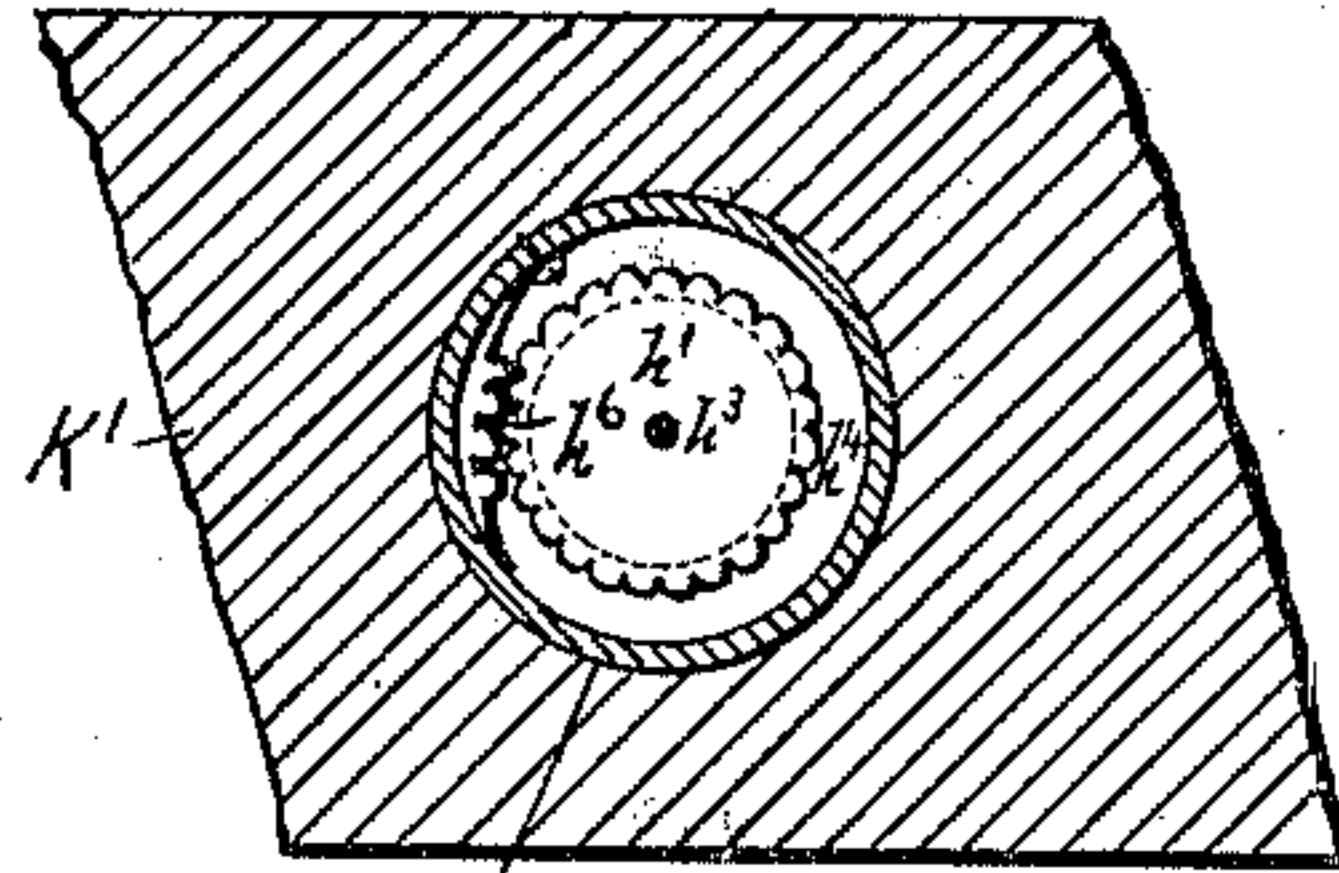
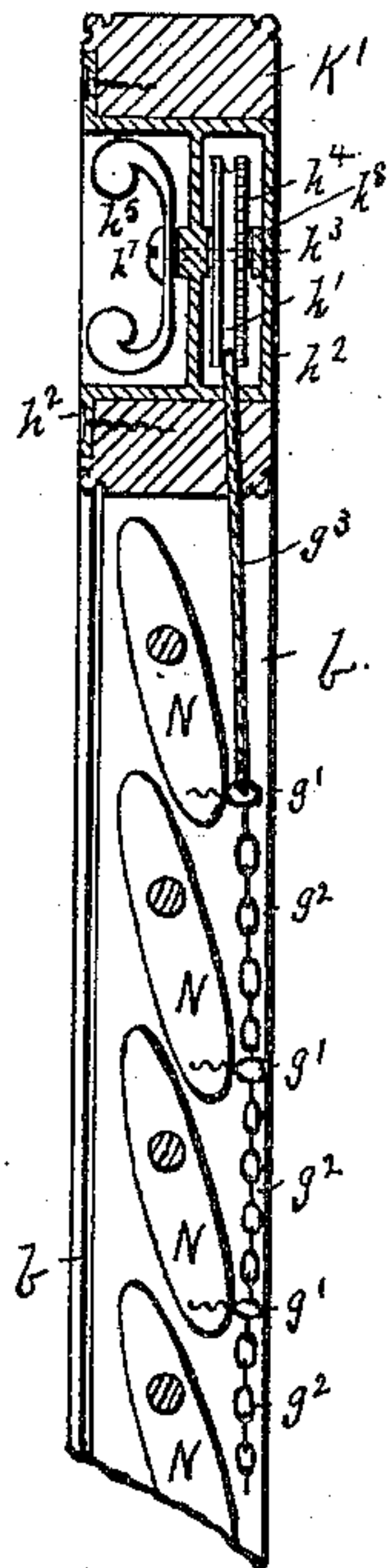


Fig. 8.

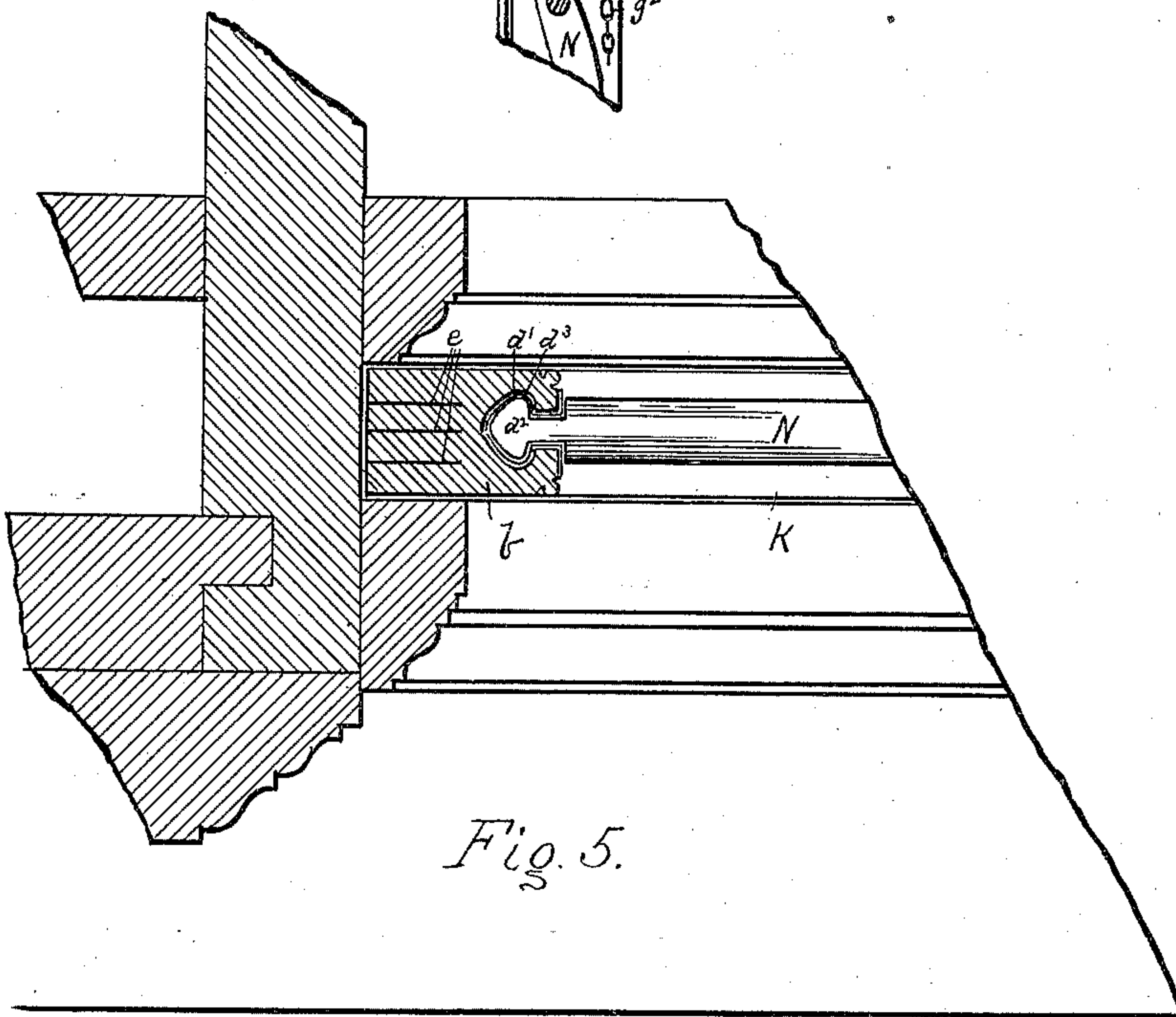


Fig. 5.

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## MOVABLE-SLAT ROLLING BLIND.

SPECIFICATION forming part of Letters Patent No. 344,799, dated June 29, 1886.

Application filed October 27, 1885. Serial No. 181,070. (No model.)

*To all whom it may concern:*

Be it known that I, ADOLPH WULFF, a citizen of the United States, and a resident of St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Movable - Slat Rolling Blinds, of which the following is a specification.

The object of my invention is to produce a window-blind capable of being rolled up into a small space, while at the same time the slats of the blind shall be capable of being opened and closed independently of the rolling feature of the blind.

The novelty consists in the manner of constructing and arranging the different parts, whereby the desired results are produced, as hereinafter shown and described, and as illustrated in the accompanying drawings, in which—

Figure 1 is a horizontal section through the jamb and is a plan view of an ordinary window-frame, showing my improved rolling blind arranged therein. Fig. 2 is an elevation of a window from the interior of the room with one of my improved blinds arranged therein, a portion of the frame and casing being broken away to show the interior construction. Fig. 3 is a sectional elevation of the parts shown in Fig. 2. Fig. 4 is a sectional view, similar to Fig. 3, illustrating a slight modification in the construction and mode of applying the belting and rollers. Fig. 5 is an enlarged sectional detail through the window-jamb and blind-stile, showing how the slat-pins work in the "stile." Fig. 6 is an enlarged sectional detail through the slats, finger-plate, and horizontal or cross stile. Fig. 7 is a front view, enlarged, of the face of the finger-plate. Fig. 8 is a sectional detail illustrating the "brake" feature of the slats.

Figs. 1, 2, 3, and 4 are on a corresponding scale, and Figs. 5, 6, 7, and 8 are on a corresponding scale.

In Figs. 2 and 3 the blind is shown broken across, so as to illustrate more fully its construction and the relative positions of the lower parts of the blind when elevated and upper part when partially elevated.

The manner of constructing and operating

the blind is as follows: The blind is set between the window-jambs and kept in place by the sash-stop and blind-stop, between which stops it will slide up and down. At the point A, Fig. 2, at each side of the blind, will be fastened a light sash-cord, *a*, which will be run between the stops to a pulley, B, Fig. 2, thence down to a small wooden spool, C, Figs. 2 and 3, and coiled once around the spool, thence the cord will be run down to a wooden wheel, D, which is fastened to the wooden cylinder G. The cord will then be wound twice around the wooden wheel D, thence returned up and over a pulley, E, and from thence down and fastened to a weight, F, the weight F being provided with a channel or box, F', in the casing in which it runs. Each side of the blind will be provided with a set of the cords, pulleys, and weights, as shown in Fig. 1. The function of these weights F is merely to take up the slack of the sash-cord *a*, and need not be as heavy as the blind, as the coiling of the cord twice around the drums D serves as a brake to support the blind in equilibrium. At each end of the bottom stile, K, of the blind will be attached a leather strap, H', which will run down to grooves H<sup>2</sup>, Figs. 2 and 3, in the ends of the cylinder G, and will be fastened onto the cylinder in the grooves. The object of having these leather straps is to do away with an unnecessary section of blind, the straps H' taking the place of the blind inside the framework of the window. When the blind is pushed down, the leather straps will coil up in the grooves H<sup>2</sup>, and by the time the bottom stile, K, of the blind arrives at the cylinder G the leather strap will have filled up the grooves H<sup>2</sup>, so as to make the straps flush with the cylinder G, and then the blind will keep winding upon the cylinder G until the top of the top stile, K', of the blind sinks to the level of the top of the stop on the window-sill. In cases where the coiling space under the window-sill is very small I will add one small wooden cylinder, I, as in Fig. 4, and put the large cylinder G up to a point just beneath the window-sill, as in Fig. 4, and then the leather straps and the blind will run down to and around the cylinder I and up to the cylinder G, where the leather straps and blind will roll up on the



cylinder G, as before described. For the pulleys B and E, I will use ordinary "ground axle" pulleys of proper size. The small spool C, I will make of hard wood smoothly worked out, and put a ground axle-pivot on each end. The large cylinder G and the wheel D, I will also make of hard wood and hang the same to a ground axle-pivot on each end.

The blind I will construct in the following manner: The vertical stiles *b*, I will make of soft rubber, and the horizontal or cross stiles K K' of wood. In the vertical stiles I will have small round holes *d'* of the shape shown in Fig. 5, so that the pins of the slats N, which have enlarged heads *d*<sup>2</sup>, can be easily pushed into the holes *d'* in the stiles, but the heads *d*<sup>2</sup> making it impossible for the same to slip out again.

In the rubber stiles *b*, I will inclose a number of strips of linen tape, *e*, to prevent the stiles from stretching. The slats N will be made the same as an ordinary slat; but in place of putting the pins *d*<sup>2</sup> in the center of the slat I will put them about two-thirds of the distance toward the top. The object of doing this is to make the slats hang down when not in use. The slat-pins I will cut of the shape shown on the drawings in Fig. 5. Around each of the slat-pins *d*<sup>2</sup>, I will put a small metal capsule, *d*<sup>3</sup>, (see Fig. 5,) in two halves, and of the same shape and size as the holes in the rubber stiles *b* and as the slat-pin. Then I will push the slat-pins with the capsules upon them into the small holes *d'* in rubber stiles *b*, in which they will remain and be free to oscillate. The object of having the metal capsules around the slat-pins is to make the slat work as smooth and light as possible, and to prevent the wooden slat-pins from working against the rubber stiles. It will not be necessary to provide all the slat-pins with the enlarged heads *d*<sup>2</sup>, only as many being provided with the heads as will retain the stiles in their proper positions. The bottom slat N of each section of the blind will be attached to the lower wooden stile, K, by soft-rubber bands or wire springs, to keep the slats in place and closed, and to keep them from rattling when the wind strikes them, and also to keep the slats in the right position when the blind is being rolled upon the cylinder G.

The slats N, I will operate in the following manner: To each slat I will fasten a small metal eye, *g'*, and to each of these eyes I will attach a light metal chain, *g*<sup>2</sup>, and thus connect one slat with the other. To the top slat of each section I will attach a small wire cable, *g*<sup>3</sup>, which will run up and fasten to the top of a small wheel, *h'*, in a finger-plate, *h*<sup>2</sup>, Figs. 6 and 7. The cable-wheel *h'* will be mounted upon a shaft, *h*<sup>3</sup>, and on this same shaft, outside the face of the finger-plate, a key, *h*<sup>5</sup>, is secured, so that the turning of the key will revolve the cable-wheel. The back edge of the cable-wheel *h'* will have small rounded-off cog-teeth *h*<sup>4</sup> cut in its periphery, as shown in Fig. 8, and a small curved steel spring, *h*<sup>6</sup>, will

be fastened to the inside of the finger-plate case, and will fit into the cogs and hold the cable-wheel with sufficient tension to prevent its turning too easily; but at the same time having it free to be turned by the key when sufficient force is used. The key *h*<sup>5</sup> and wheel *h'* will be held together by a set-screw, *h*<sup>7</sup>, running through the face of the key back through the cable-wheel and into a hub, *h*<sup>8</sup>, in the back of the finger-plate. The set-screw *h*<sup>7</sup> holds the finger-plate and cable-wheel together, and enables me to adjust the finger-plate if it should work too loose. By turning the key *h*<sup>5</sup> on the face of the finger-plate the slats can be set and held in any desired position.

The blind can be made in one or more sections, as desired, and can be made to coil up, either under the window-sill or above the head jamb, or both ways.

I do not wish to be limited to the construction shown of arranging the cord *a*, as I am aware that it can be arranged in many other ways to accomplish the same purpose, and in substantially the same manner.

The cord *a* can be formed of wire cable or any other suitable material.

Having thus described my invention, what I claim as new is—

1. A rolling blind, the horizontal stiles of which are wood or other similar suitable material, the perpendicular stiles of rubber or other similar suitable flexible material, the ends of the blind-slats being pivoted in said flexible stiles, substantially as set forth.

2. In a rolling blind, the horizontal stiles K K', of wood or other similar suitable material, the perpendicular stiles *b*, of rubber or other similar suitable flexible material and having holes *d'* at suitable intervals, and slats N, having pivot-pins with enlarged heads *d*<sup>2</sup>, adapted to fit into said holes *d'*, substantially as set forth.

3. In a rolling blind, the horizontal stiles K K', of wood or other similar suitable material, the perpendicular stiles *b*, of rubber or other similar suitable flexible material and having holes *d'* at suitable intervals, slats N, having pivot-pins with enlarged heads *d*<sup>2</sup>, adapted to fit into said holes *d'*, said pivot-pins being above the centers of said slats, chains *g*<sup>2</sup>, connecting said slats, and means, substantially as described, for opening and closing said slats and holding them at any desired point.

4. In a rolling blind, the horizontal stiles K K', of wood or other similar suitable material, the perpendicular stiles *b*, of rubber or other similar suitable flexible material and having holes *d'* at suitable intervals, slats N, having pivot-pins with enlarged heads *d*<sup>2</sup>, adapted to fit into said holes *d'*, cylinder G, having channels H<sup>2</sup> and suitably journaled above or below said blinds, straps H', connecting said blind and roller in said channels, and a cord, *a*, connecting said blind with counter-



weights F over a system of pulleys, substantially as set forth.

5. A rolling blind, the horizontal stiles of which are wood or other similar suitable material and the perpendicular stiles of rubber or other similar suitable flexible material, the ends of the blind-slats being pivoted in said flexible stiles above their centers, chains  $g^2$ , connecting the longer edges of said slats, a drum or wheel,  $h'$ , pivoted in the upper stile

and adapted to be revolved and held at any required point by springs or other means,  $h^6$ , and a cord,  $g^3$ , connecting said drum and slats, whereby said slats may be opened and closed, substantially as set forth.

ADOLPH WULFF.

Witnesses:

HAVE E. HAND,  
C. W. BUECHNER.