

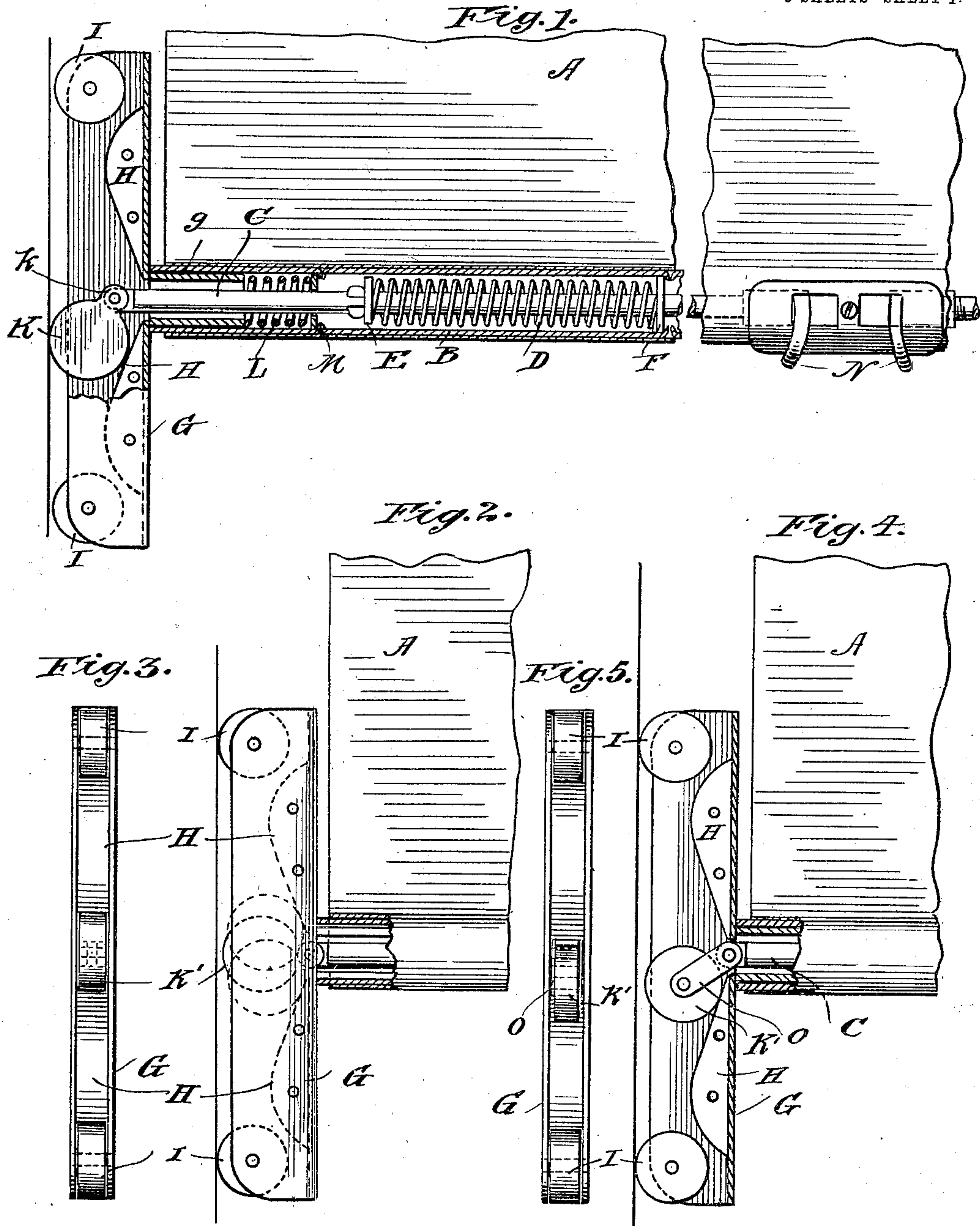
No. 725,063.

PATENTED APR. 14, 1903.

H. H. FORSYTH.
SHADE HOLDING MECHANISM.
APPLICATION FILED AUG. 29, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses,
J. B. Mann,
S. N. Pond.

Inventor,
Henry H. Forsyth,
By Offield, Towle & Lathrop
Attys

H. H. FORSYTH.
SHADE HOLDING MECHANISM.
APPLICATION FILED AUG. 29, 1902.

NO MODEL.

3 SHEETS—SHEET 2.

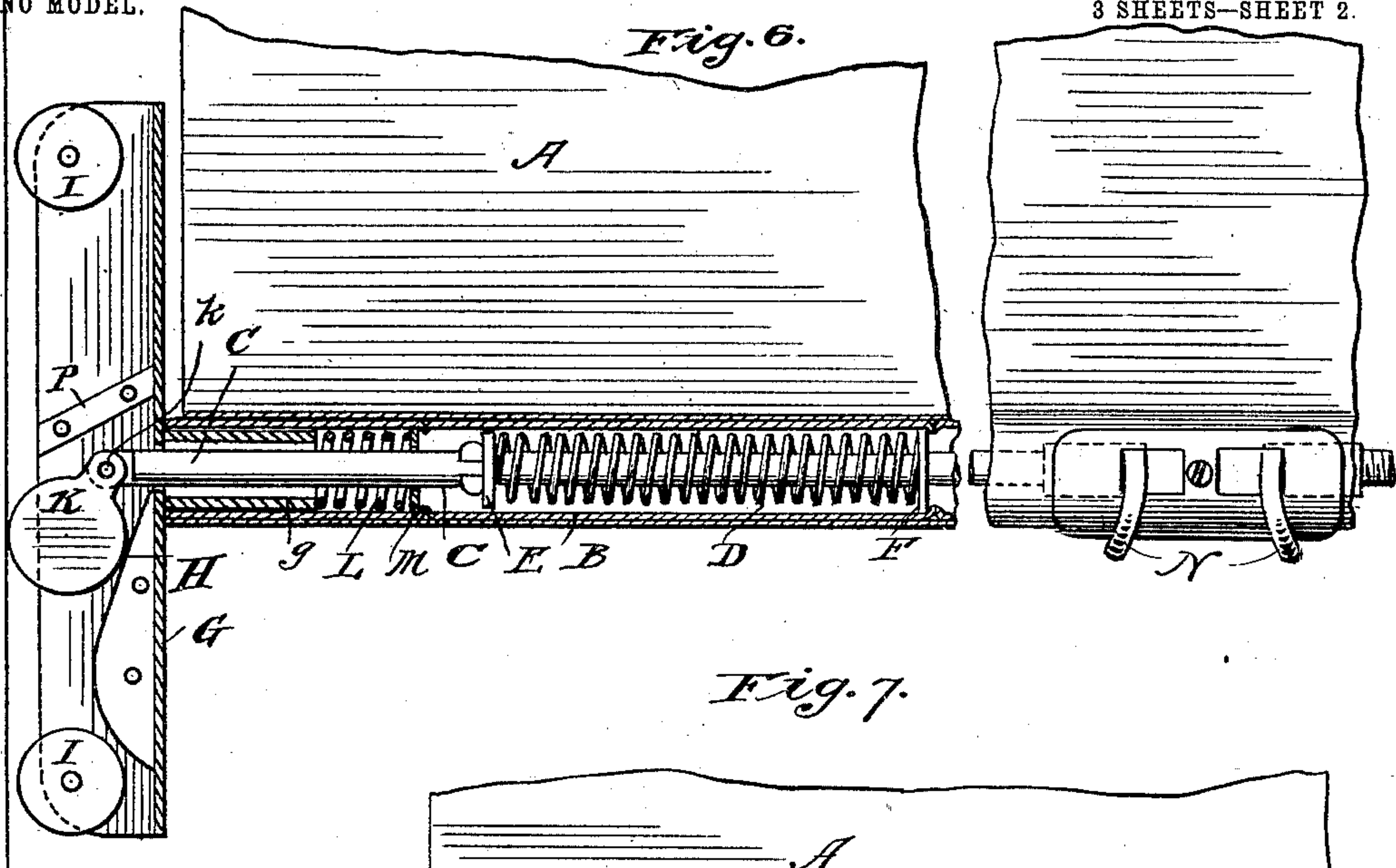
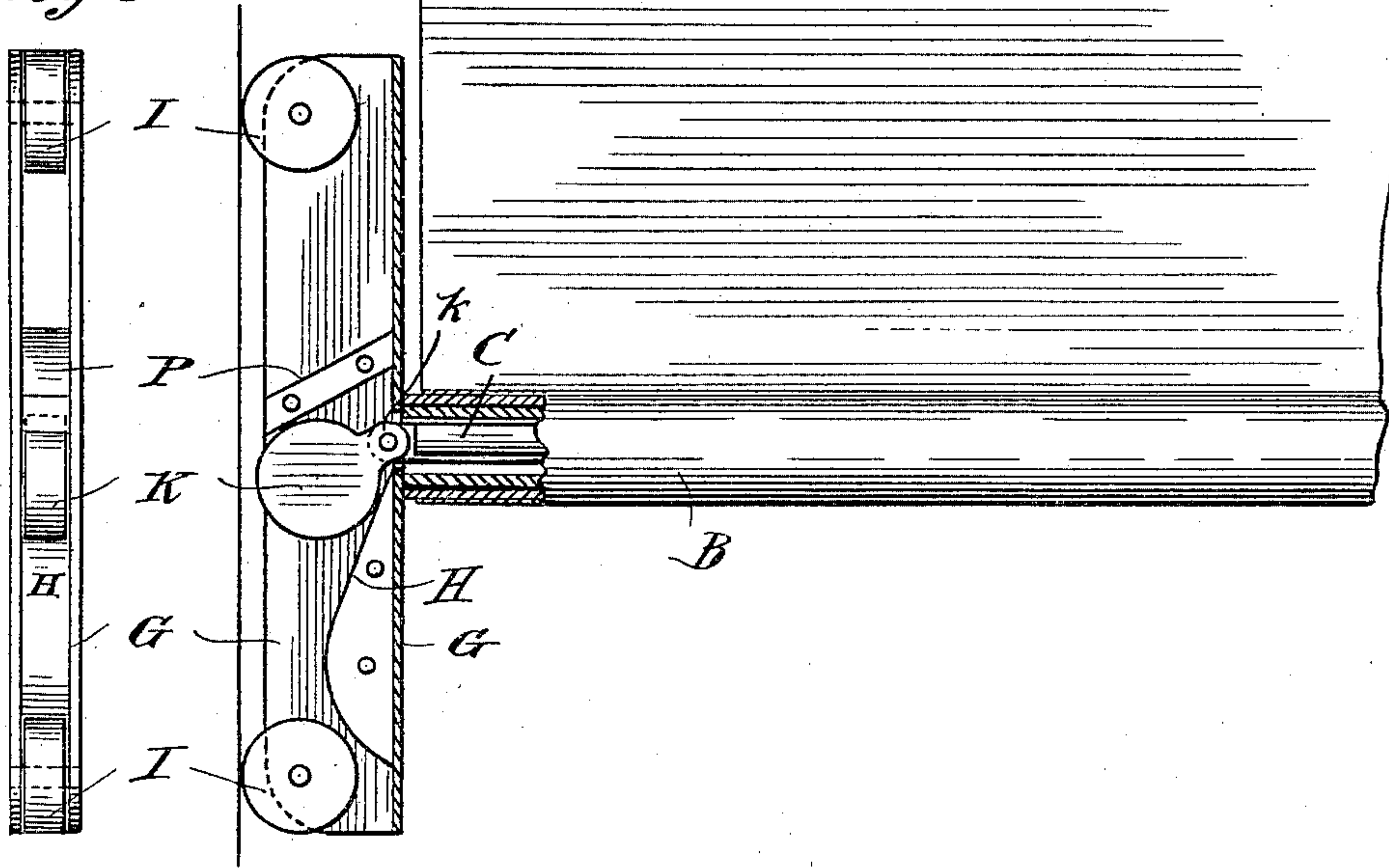


Fig. 8.



Witnesses,
S. J. Mann,
S. N. Pond.

Inventor,
Henry H. Forsyth
By Offield, Towle & Lathrop
Attys.

H. H. FORSYTH.
SHADE HOLDING MECHANISM.

APPLICATION FILED AUG. 29, 1902.

NO MODEL.

3 SHEETS—SHEET 3.

Fig. 9.

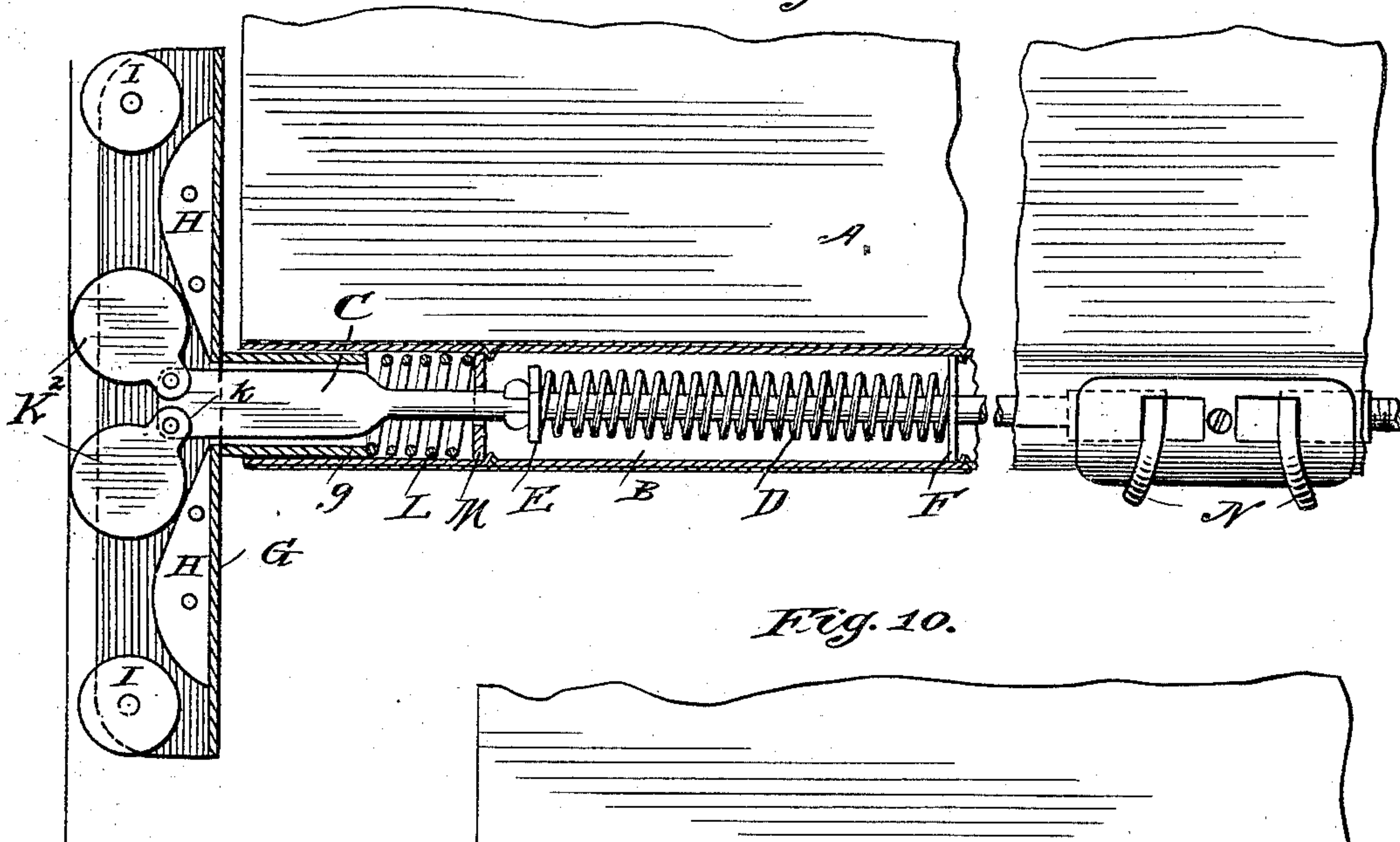


Fig. 10.

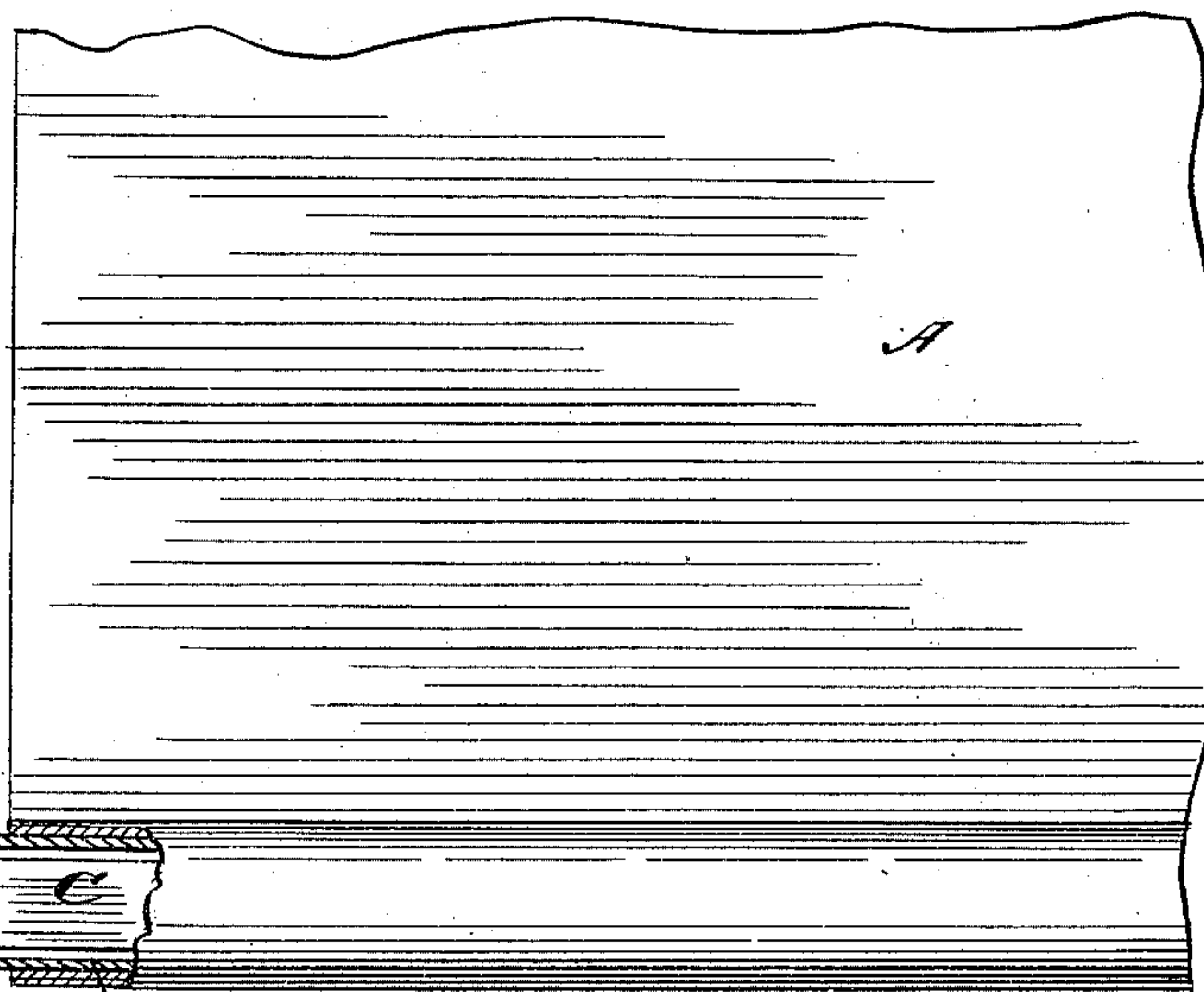
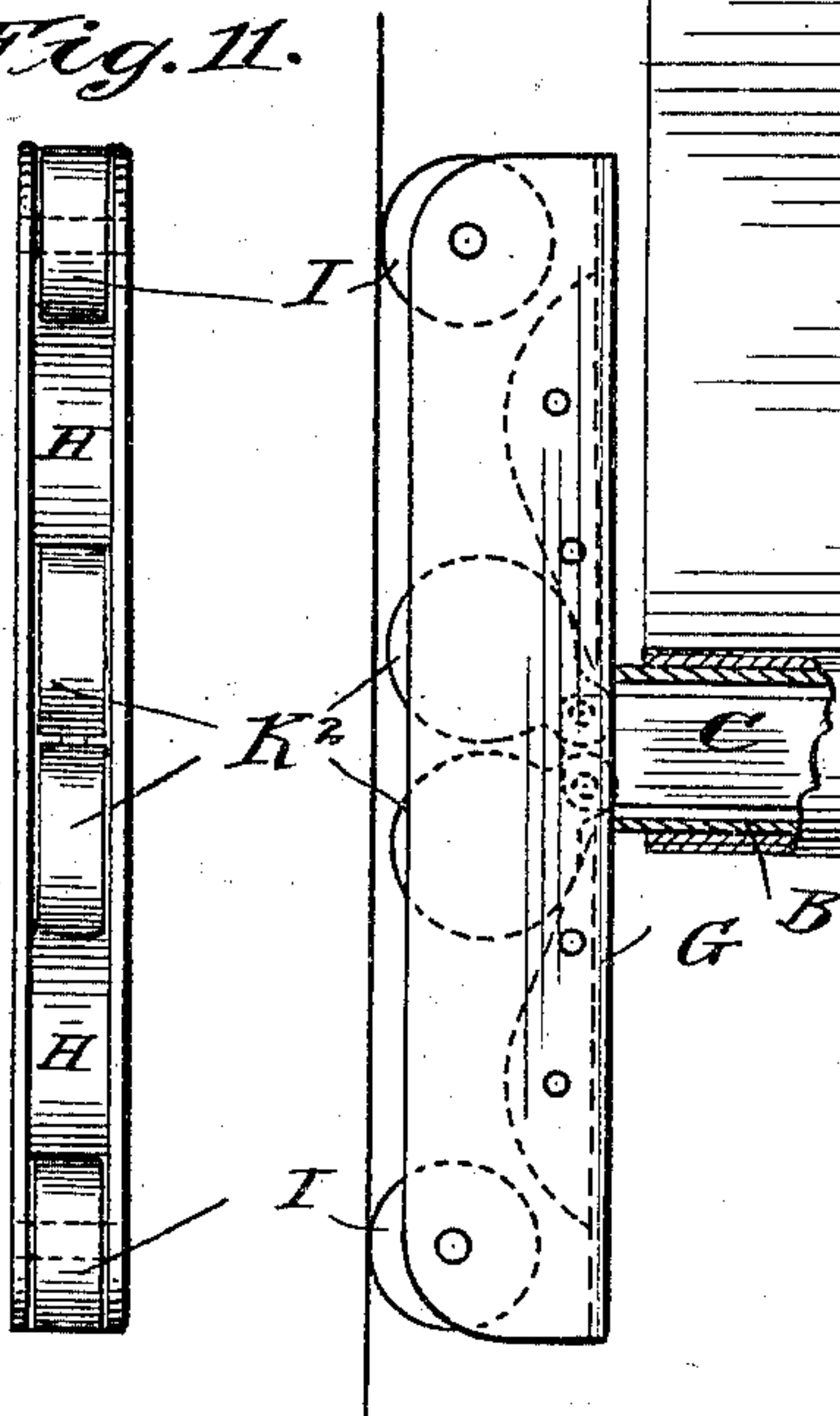


Fig. 11.



Witnesses,
J. D. Mann,
S. N. Pond.

Inventor,
Henry H. Forsyth,
By *Offield, Jacob & Linticum*
Atty's.

UNITED STATES PATENT OFFICE.

HENRY H. FORSYTH, OF CHICAGO, ILLINOIS.

SHADE-HOLDING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 725,063, dated April 14, 1903.

Application filed August 29, 1902. Serial No. 121,422. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. FORSYTH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Shade-Holding Mechanism, of which the following is a specification.

My invention relates to a device for frictionally retaining a shade or curtain in any desired position against the tendency of its actuating means to withdraw the same by rolling it up on the usual roller or otherwise.

More particularly the invention relates to that class of shade-holding devices in which the shade is mounted upon a spring-actuated retracting device, such as a roller, at one end and is provided with friction devices at its other end normally held in contact with the bottoms of the grooves of the window-frame by outwardly-forcing springs.

My invention has for its object to improve and advance the art of shade-holding mechanism of this type through the production of a shade-holding device characterized by simplicity of parts, ease of manipulation, and a quicker-acting and more effective normal frictional hold upon the base of the grooves of the frame.

The novel principle of my invention resides in the employment of a spring-actuated rolling wedge which when in action is advanced, primarily, by reason of a rolling engagement at substantially opposite points on its periphery with an inclined plane on the usual friction-shoe head or housing and the bottom of the groove of the window-frame or other shade-holder in which the friction devices act, this rolling contact serving to automatically crowd the wedge between the surfaces named. In the simpler form of my invention I employ but one of said rolling wedges on each side of the shade, and in another form of the invention I employ a pair of such rolling wedges on each side of the shade. In both cases the wedges preferably have a pivotal connection to a spring-impelled actuating-rod lying within the usual hollow shade-stick and serving to retract the wedges when it is desired to adjust the shade.

My invention in the best mechanical em-

bodiments thereof which I have hitherto devised is illustrated in the accompanying drawings, wherein—

Figure 1 is a broken elevation of the left-hand end of the lower margin of a shade or curtain with the holding device applied thereto, the latter appearing in side elevation and in holding position. Fig. 2 is a similar detail illustrating the relative position of the parts in retracted position. Fig. 3 is a vertical edge view of the hollow head and its contained parts in the relative positions occupied in Fig. 2. Fig. 4 is a view generally similar to Figs. 1 and 2, illustrating a modified pivotal connection between the wedge-block and its actuating-rod. Fig. 5 is a vertical edge elevation of the hollow head and its contained parts when constructed and positioned as shown in Fig. 4. Fig. 6 is a view similar to Fig. 1, illustrating a modification wherein but a single inclined plane is used. Fig. 7 is a detail similar to Fig. 6, but showing the holding devices in retracted position. Fig. 8 is a vertical edge view of the hollow head and its contained parts as they appear in Fig. 7; and Figs. 9, 10, and 11 are views of another modification corresponding, respectively, with Figs. 6, 7, and 8.

Referring to the drawings, A designates the shade; B, the usual transverse tubular shade-stick secured to and carried by the lower end of the shade; C, one of the endwise-sliding brake-actuating rods housed within the shade-stick B; D, the impelling-spring therefor, abutting at its opposite ends fixed collars or stops E and F, fast on the rod C and in the shade-stick B, respectively.

Within the outer end of the shade-stick B telescopes the tubular stem *g* of a hollow head or housing, (indicated as an entirety by G.) This head consists, preferably, of a flat metal casing having an inner or bottom wall and parallel side walls and of a thickness to slide freely in the groove of the window or other frame. Within this head and secured to the inner or bottom wall thereof, on either side of the stem *g*, are a pair of symmetrical inversely-disposed inclined planes H, and in the walls of the head, at either end thereof, are mounted a pair of rollers I, which rollers are de-

signed, when the shade is being adjusted, to ride over and upon the bases of the grooves in the window-frame.

K designates a rolling wedge-block, which is preferably in the form of a flat circular disk of a width to fit loosely between the side walls of the head or housing G and provided on its periphery with a lug or ear *k*, by which it is pivoted to and upon the outer end of the actuating-rod C. The head or housing G is normally pressed outwardly relatively to the shade by means of a spring L, interposed between the inner end of the stem *g* and a fixed stop-collar M within the shade-stick B. The actuating-rods C, of which it will be understood there are a pair in each shade, are provided at their inner meeting ends with pendants N, whereby they are retracted by the thumb and forefinger of the operator.

The operation of the mechanism is as follows: When the actuating-rods C are retracted, as by pressing together the pendants N, the wedge-blocks K on the outer ends thereof are drawn inwardly away from the bottom of the groove of the frame, as shown in Figs. 2 and 3, thus allowing the spring L to assert itself and force the head G outwardly, with the rollers I in rolling contact with the base of the groove, whereupon the shade may be readily raised or lowered to the desired position. When this is done, upon releasing the pendants N the actuating-rods C instantly carry the wedge-blocks K outwardly, in which movement said wedge-blocks roll over the inner narrow end of the lower inclined plane H until the opposite edge of the wedge-block fits the base of the groove, whereupon it will be evident that the force of the shade-actuating spring or weight will tend to crowd the rolling wedge-block between the straight and inclined planes by which it is confined, thereby pressing back the head G and effecting a friction lock between the shade and its frame. It will be observed that in the last-described operation the spring D serves only the function of thrusting the wedge-block outwardly into a rolling contact with the base of the groove, while the subsequent wedge action takes place independently of the action of the spring D and in opposition to the action of the spring L.

In the above-described operation only one of the inclined planes H coöperates with the wedge-block K; but the provision of a pair of wedge-blocks permits the head or housing to be applied either end up or permits the shade-roller to be located either at the top or bottom of the window or other frame.

In Figs. 4 and 5 I have shown a slight modification of the wedge-disk and its manner of connection to its actuating-rod. In this form a plain circular disk K' is pivoted centrally in one end of a link O, the opposite end of which link is pivoted to the adjacent end of the actuating-rod C. The action of this form of connection is substantially the same as

that described in connection with Figs. 1, 2, and 3.

In Figs. 6 and 7 I have illustrated a somewhat simpler and more elemental form of the invention, the variation from the form already described consisting in omitting the upper inclined plane and substituting therefor an inclined partition P, which coöperates with the inclined plane H in confining the wedge-disk at the inward limit of its retracted movement and also serves to guide the wedge-disk into proper contact with the wall of the groove under the action of spring D and rod C.

In Figs. 9, 10, and 11 I have illustrated a form of my invention generally similar to that already described in connection with Figs. 1, 2, and 3, but employing a pair of rolling wedge-blocks K¹ K², both pivoted to the end of the actuating-rod C. In this case the action of the lower block of the pair is exactly the same as that already described; but owing to the peculiar pivotal relation between these wedge-blocks and their actuating-rod it will be obvious that the crowding or wedging of the lower block between its inclined plane and the wall of the groove will, through its linked connection with the upper wedge-block, at the same time tend to force the latter between the upper inclined plane and the wall of the groove. Aside from this action the wedge-blocks thus pivoted constitute, in effect, twin members of a toggle, and the force of the spring D applied at the knuckle thereof tends to roll both disks tightly between their respective inclined planes and the base of the groove. This form of my invention therefore effects a doubly-secure frictional grip between the curtain-heads and the grooves of the frame.

I am aware that prior to my invention friction brake-shoes have been employed in shade-holding devices of this character wherein the brake-shoe is in the nature of a cam directly pivoted in and to the head and having only a partial rotating movement upon its pivot when serving as a brake, but no rolling movement upon its periphery upon an inclined plane in the head, and consequently having no wedge-like action between the head and the base of the groove in which it operates. My invention is therefore radically distinguished in principle from all such devices, and believing myself to be the first to employ a rolling wedge block or disk whose efficiency results from its confinement between an inclined plane in or on its housing and a wall of the groove I do not limit myself to the specific form of rolling wedge-block herein shown, although I believe the form I have shown and described to be the best form that can be employed for this purpose.

I claim—

1. In a shade-holding mechanism, a combination with a head having formed thereon an inclined plane and adapted to be mounted in the side of the shade, of a wedge-disk carried

thereby and adapted to be crowded by rolling contact between said inclined plane and the wall of an adjacent frame, and means for retracting said wedge-disk, substantially as described.

2. In a shade-holding mechanism, the combination with a hollow head having formed therein an inclined plane and adapted to be mounted in the side of a shade and to reciprocate in the groove of an adjacent frame, of a wedge-disk located in the chamber of said head and adapted to be crowded by rolling contact between said inclined plane and a wall of said groove, and means for retracting said wedge-disk, substantially as described.

3. In a shade-holding mechanism, the combination with a hollow head having formed therein an inclined plane and adapted to be mounted in the side of a shade and to reciprocate in the groove of an adjacent frame, of a wedge-disk located in the chamber of said head and adapted to be crowded by rolling contact between said inclined plane and the bottom of said groove, a spring-impelled actuating-rod normally facilitating the movement of said disk to operative position, and means on said rod for retracting said disk to idle position, substantially as described.

4. In a shade-holding mechanism, the combination with the hollow shade-stick, and a hollow head mounted in each end thereof and adapted to reciprocate in the groove of an adjacent frame, said head having formed therein a pair of inversely-disposed inclined planes,

of a wedge-disk located in the chamber of said head, a spring-impelled actuating-rod housed in said shade-stick and pivotally connected at its outer end to said wedge-disk between said inclined planes, and means for retracting said rod, substantially as described.

5. In a shade-holding mechanism, the combination with the hollow shade-stick, and a hollow head mounted in each end thereof and adapted to reciprocate in the groove of an adjacent frame, said head having formed therein a pair of inversely-disposed inclined planes, of a pair of wedge-disks located in edgewise-opposed relation in the chamber of said head, a spring-impelled actuating-rod housed in said shade-stick and pivotally connected at its outer end to both of said wedge-disks, and means for retracting said rod, substantially as described.

6. In a shade-holding mechanism, the combination with a head having formed thereon an inclined plane and adapted to be mounted in the side of the shade, of a wedge-disk carried thereby and adapted to be crowded by rolling contact between said inclined plane and the wall of an adjacent frame, means for retracting said wedge-disk, and rollers mounted in the ends of said head and contacting the base of the groove when the wedge-disk is retracted, substantially as described.

HENRY H. FORSYTH.

Witnesses:

SAMUEL N. POND,

FREDERICK C. GOODWIN.