

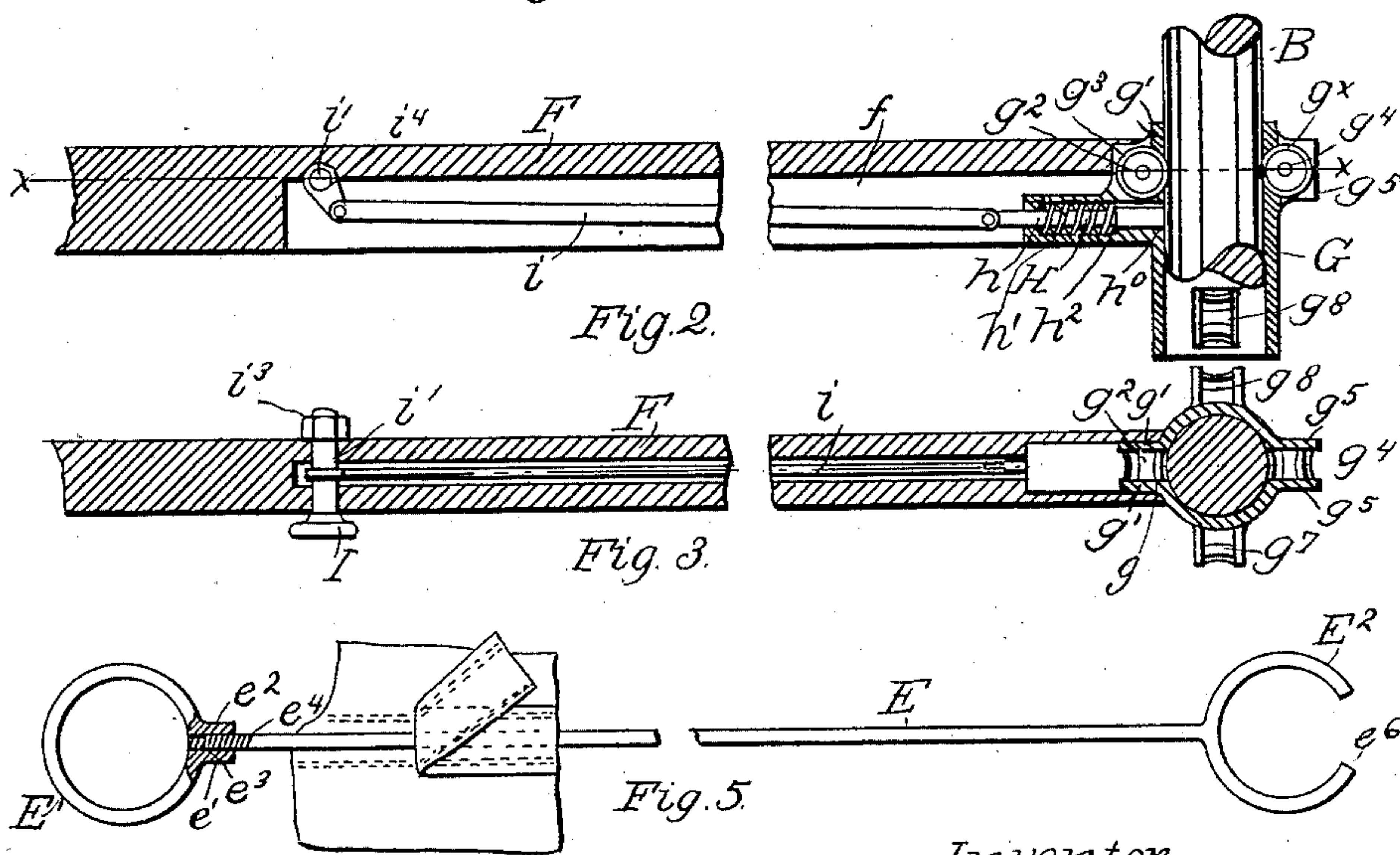
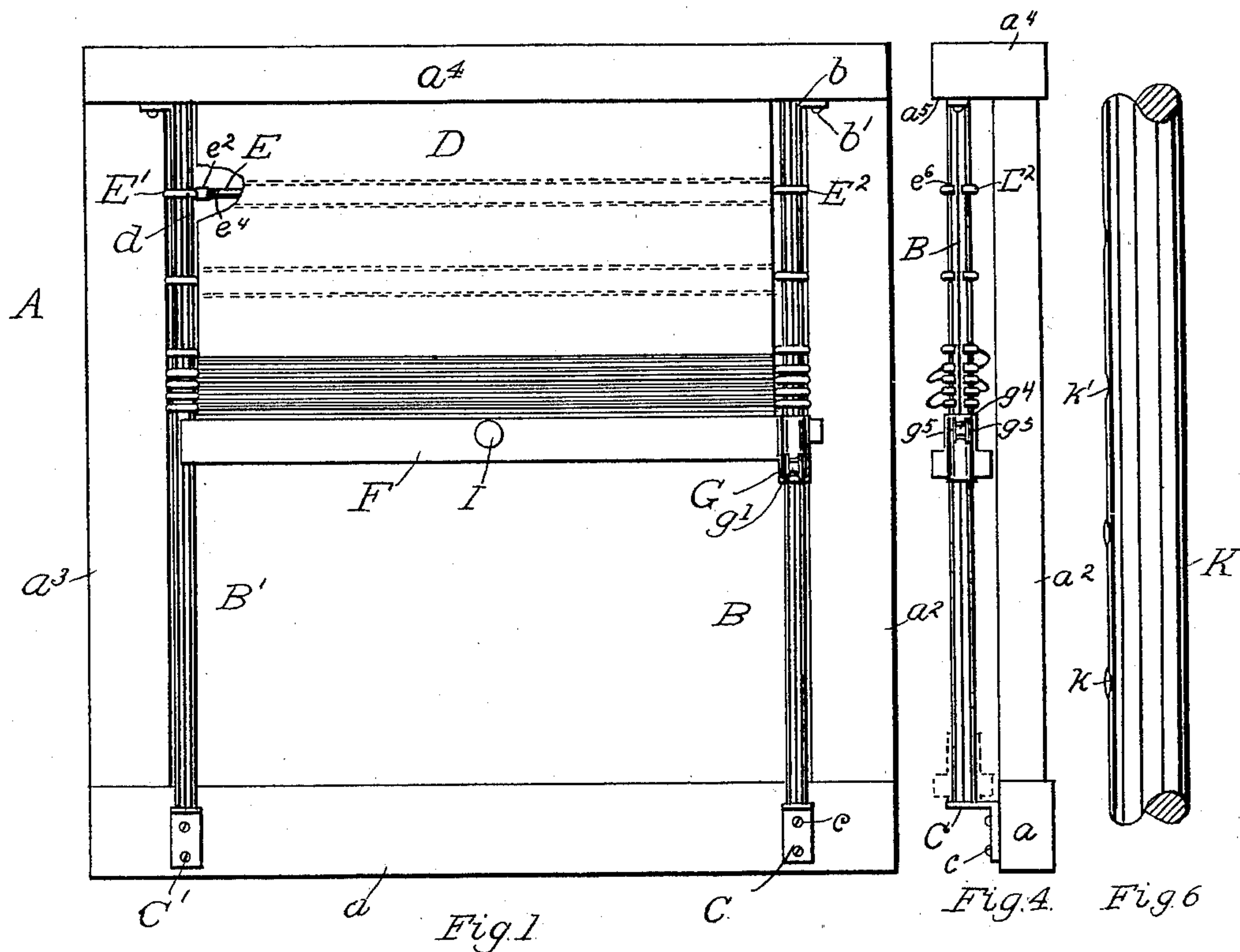
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R. ANDLAUER.
FOLDING CURTAIN.

(Application filed Oct. 9, 1897.)

(No Model)



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FOLDING CURTAIN.

SPECIFICATION forming part of Letters Patent No. 612,985, dated October 25, 1898.

Application filed October 9, 1897. Serial No. 654,713. (No model.)

To all whom it may concern:

Be it known that I, RAYMOND ANDLAUER, a citizen of the United States, residing at Kansas City, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Folding Curtains; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

The objects of my invention are, first, to prevent the buckling of the guide-strip with the guide-rods in folding curtains; second, to prevent the frictional wear of the guide-sleeve upon the rod, and, third, to enable the convenient attachment of the folding-wires to the curtain.

My invention consists in the novel construction and combination of parts, such as will first be fully described, and specifically pointed out in the claims.

In the drawings, Figure 1 is an inner view in elevation of a window-frame of a car, showing the improved folding curtain applied thereto. Fig. 2 is a detail broken view of one of the guide-rods and of the guide-sleeve and curtain-folding bar connected with the folding curtain, shown in vertical section. Fig. 3 is a horizontal sectional view of the curtain-folding bar and guide-sleeve, taken upon the line $x x$ of Fig. 2. Fig. 4 is an end elevation of the window-frame, showing one of the guide-rods and its connections with the frame. Fig. 5 is a plan view of one of the curtain-folding wires, showing the detachable portions and also a portion of the curtain and the pocket for the wire. Fig. 6 is an enlarged detail view of the guide-rod, showing alternate means for holding the curtain-folding bar at different elevations.

Similar letters of reference indicate corresponding parts in all the figures.

Referring to the drawings, A represents the window-frame, of which a is the window-sill, and a^2 one side, and a^3 the other side, of the frame.

a^4 is the transverse plate connected with the upper ends of the sides $a^2 a^3$. The said plate a^4 on the inner side of the frame is ex-

tended beyond the line of the inner edge of the respective sides $a^2 a^3$ a considerable distance, as at a^5 , for the attachment of the guide-rods, hereinafter described, and afford space for the folds of the curtain.

B represents one of the vertical guide-rods, upon the side and upper end portion of which is a lug b , which is secured by the screw b' to the under side of the plate a^4 at a point a short distance outwardly from the inner edge of the side a^2 of the frame A in the direction of the outer edge of the plate a^4 . The other end of the rod B extends downwardly below the line of the upper edge of the sill a of the window-frame and is stepped in a bracket C, secured by the screws c to the inner side and lower edge of the sill a , the said rod being arranged at a corresponding distance outwardly from the sill a as described from the inner edge of the side of the frame at the upper end of said rod. B' is the other guide-rod, which is the same as rod B, and is secured to the under side portion of plate a^4 at the same described distance from the inner edge of the side a^3 of the window-frame as described of rod B and is stepped in a bracket C', secured to the inner side and lower edge of the sill a at the same described distance from said sill as described of the lower end of rod B.

D represents the folding curtain, the cloth of which curtain extends in width from rod B to rod B' and in length from the plate a^4 to the sill a .

E is the folding-wire to the curtain, which wire extends in a single piece the full width of the curtain from rod B to rod B'. Said wire is secured to the curtain by a separate narrow strip of cloth e , extended over the wire and secured to the curtain on both sides of said wire, so as to form a pocket for the wire. On one end of wire E is a ring E', which extends around the rod B'. On the outer side portion of ring E' is an extension e^2 , which is perforated in the line of direction of the diameter of rod B' and screw-threaded at e^3 , in which screw-threaded perforation is inserted the threaded end e^4 of the wire E. Upon the other end of wire E is a yielding ring E², which is connected rigidly with the wire E and partially broken at e^6 , so as to be removed from the rod B when required.

Other folding-wires E are connected with the curtain D and the guide-rods B B' in precisely the same manner as described of the one wire E, these wires being arranged in series from one end of the curtain to the other at the same described distance apart one from another and so far as to permit a fold in the cloth of the curtain D to be made between adjacent wires corresponding to the width of the extended portion a^5 of the plate a^4 at the top of the window-frame A. The upper end of curtain D is connected with the under side portion of the plate a^4 . With the lower end portion of said curtain is connected a horizontal strip or bar F, which extends in length from the inner side of rod B to the inner side of rod B'.

On the rod B is a sleeve G, of considerable length. In one side of sleeve G, near the upper end, is a slot g , and upon the outer side portion of said sleeve on both sides of said slot are fixed lugs $g' g'$. In the slot g is a roller g^2 , journaled in the lugs $g' g'$, extending around the periphery of which roller is a rubber strip g^3 , which bears on the inner side of rod B. In the sleeve G, directly opposite slot g , is a slot g^x , in which is a roller g^4 , arranged between lugs $g^5 g^5$ on the outside of the sleeves, as described of the roller g^2 . In the lower part of the sleeve G and in a position at right angles to the slots $g g^x$ is a slot g^7 upon one side and a slot g^8 upon the other side of said sleeve, in each one of which slots is arranged a roller with an elastic bearing-surface and journaled in precisely the same manner as described of the roller g^2 in slot g .

In the under side portion of the bar F and extending from the end portion near rod B in the direction of rod B' a distance a little over one-half the described length is a slot f . Directly beneath the lugs $g' g'$ in sleeve G is an opening h^0 , extending around which opening is a socket plate or case H and secured to the outer side of said sleeve, which socket-plate extends within the slot f of bar F and is secured fixedly to said bar. In case H is a plunger h . In the outer end of the case H is an opening of sufficient size to admit the plunger h . Around the plunger h is a spring h' , one end of which spring bears upon the inner side of the case H at its outer end and the other end connected with a pivot h^2 in said plunger. With the outer end of the plunger h is pivotally connected one end of a rod i .

Through the bar F at a point equidistant from both ends is inserted a pin i' , which passes through the slot f and is screw-threaded and provided with a nut i^3 upon one end and a disk I at the other end. Upon the pin i' is a crank-arm i^4 , which is pivotally connected with the other end of rod i to that connected with plunger h .

In the operation of the curtain a partial rotation is given the disk I, which draws the plunger from contact with the inner side of rod B and the bar F moved upwardly toward the plate a^4 . The parts of the curtain D

which are between separate wires E fold inwardly, the first fold upon bar F and the others in succession, one upon another, all the wires in the curtain being brought together when the bar F reaches its highest position in the window-frame, at which point the disk I is released and the curtain held in place. In the described movement of the curtain the tendency of the bar F to buckle and bind at opposite ends on the guides is prevented by the yielding inner sides of the socket G. The yielding surface of the rollers $g^2 g^4 g^7 g^8$ thereby permits a sudden movement of the sleeve G at an angle to and upon the guide-rod B without friction and at the same time supports the weight of the curtain and curtain-folding wires. In this manner I am enabled to successfully support and control the movements of the curtain from one side only of the window-frame.

In order to cause a resistance of the movement downwardly of the bar F more than is given by the frictional contact of the plunger h with rod B, I may use slight projections k , as seen upon the rod K in Fig. 6, or the depressions k' , as seen upon said rod, so as to lock the bar in any desired position. In order to remove the wires E from the guide-rods B B', one end of the wire having the broken ring E^2 is raised in position and the parts of the ring spread so as to be disengaged from rod B. The wire E is then unscrewed from ring E' . In this manner the rings may be readily detached from the curtain without disturbing the guide-rods B B' and retained upon strip F. When the curtain D is lowered in position, the position of brackets C C' being below the level of the window-sill, the socket G at its lower end extends beneath the upper surface of the sill, so that the bar F will in its lowest position rest upon brackets C C'. The rods B B' may be placed in the recesses in the sides of window-frames and connected with the frames of dwelling-houses, wagons, or vehicles of all kinds without any essential changes in construction, thus furnishing an efficient curtain without the inconvenience of weights or spring-rollers for raising or lowering the curtain in position.

Having fully described my invention, what I now claim as new, and desire to secure by Letters Patent, is—

1. The combination with a window-frame, of a folding curtain, guide-rods upon both sides of said curtain connected with the window-frame, wires upon said curtain at suitable distances from each other, sliding connections upon said guide-rods connected with the ends of said wires, a strip or bar between said guide-rods connected with the lower end portion of said curtain, a sleeve upon one of said guide-rods connected with said bar, anti-friction-rollers in said sleeve, and a catch on said sleeve, normally held in contact with the said guide-rod.

2. The combination with a window-frame, of a folding curtain, guide-rods upon both

sides of said curtain, connected with the said window-frame, means for folding the parts of the curtain together, a strip or bar between said guide-rods, having a longitudinal slot, 5 a sleeve upon one of said guide-rods, connected with said slotted bar and a case upon the side of said sleeve extending within the slot in said bar, a self-acting plunger in said case, a pin extending through the said bar, 10 having an arm, and a rod pivotally connected with said arm and also with said plunger.

3. The combination with a window-frame, of a folding curtain, guide-rods upon both sides of said curtain connected with the win- 15 dow-frame, curtain-folding wires upon said curtain, and rings upon said guide-rods de-

tachably connected with the ends of said curtain-folding wires, as set forth.

4. The combination with a window-frame, of a folding curtain, guide-rods upon both 20 sides of said curtain, connected with the window-frame, curtain-folding wires having screw-threads at one end upon said curtain, rings upon one rod, each ring having a screw-threaded extension, adapted to receive the 25 screw-threaded end of said wires, and broken elastic rings upon the other guide-rod connected rigidly with the other end of said wires.

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