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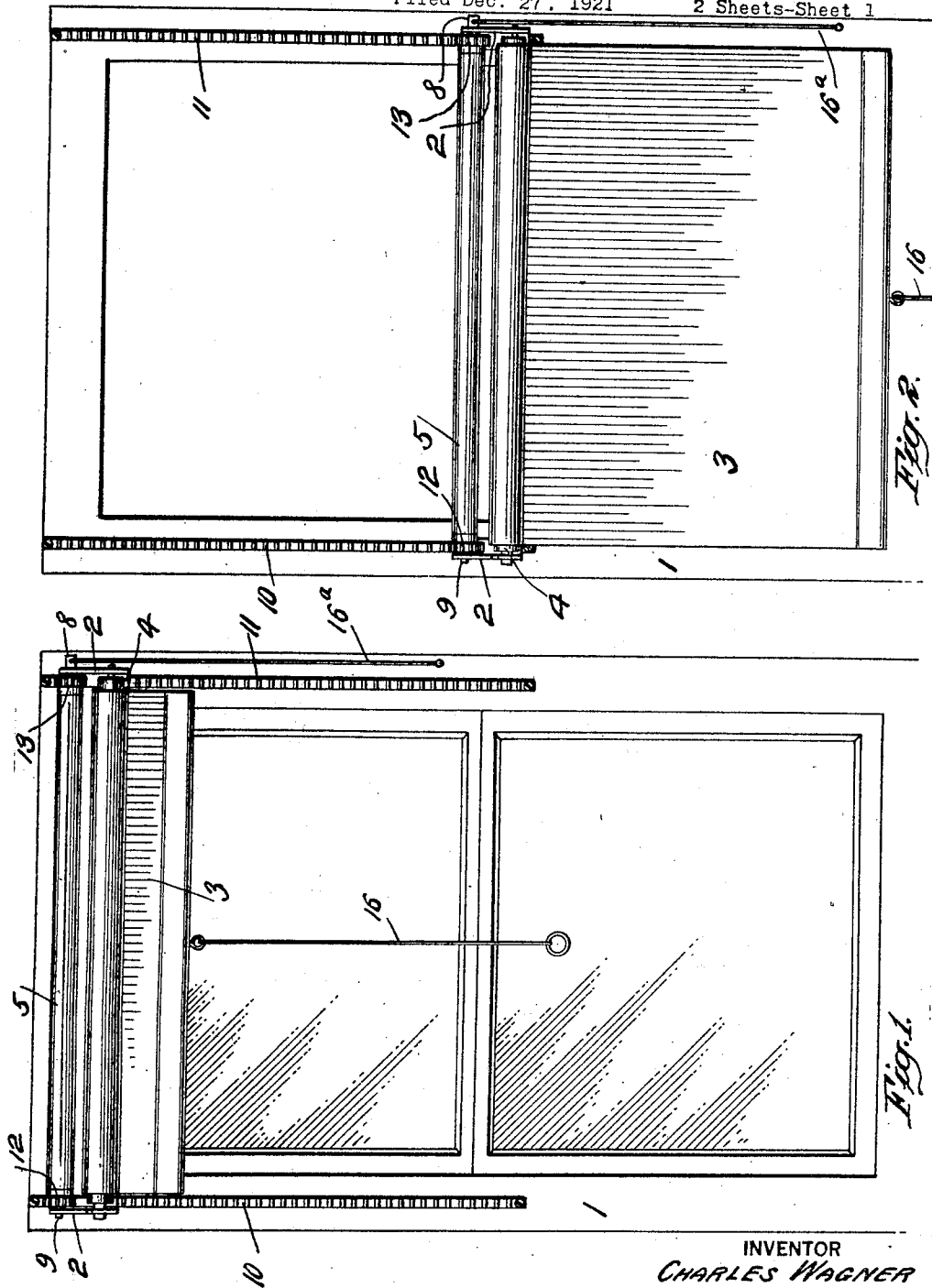
C. WAGNER

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SHADE MANIPULATING DEVICE FOR WINDOWS AND THE LIKE

Filed Dec. 27, 1921

2 Sheets-Sheet 1



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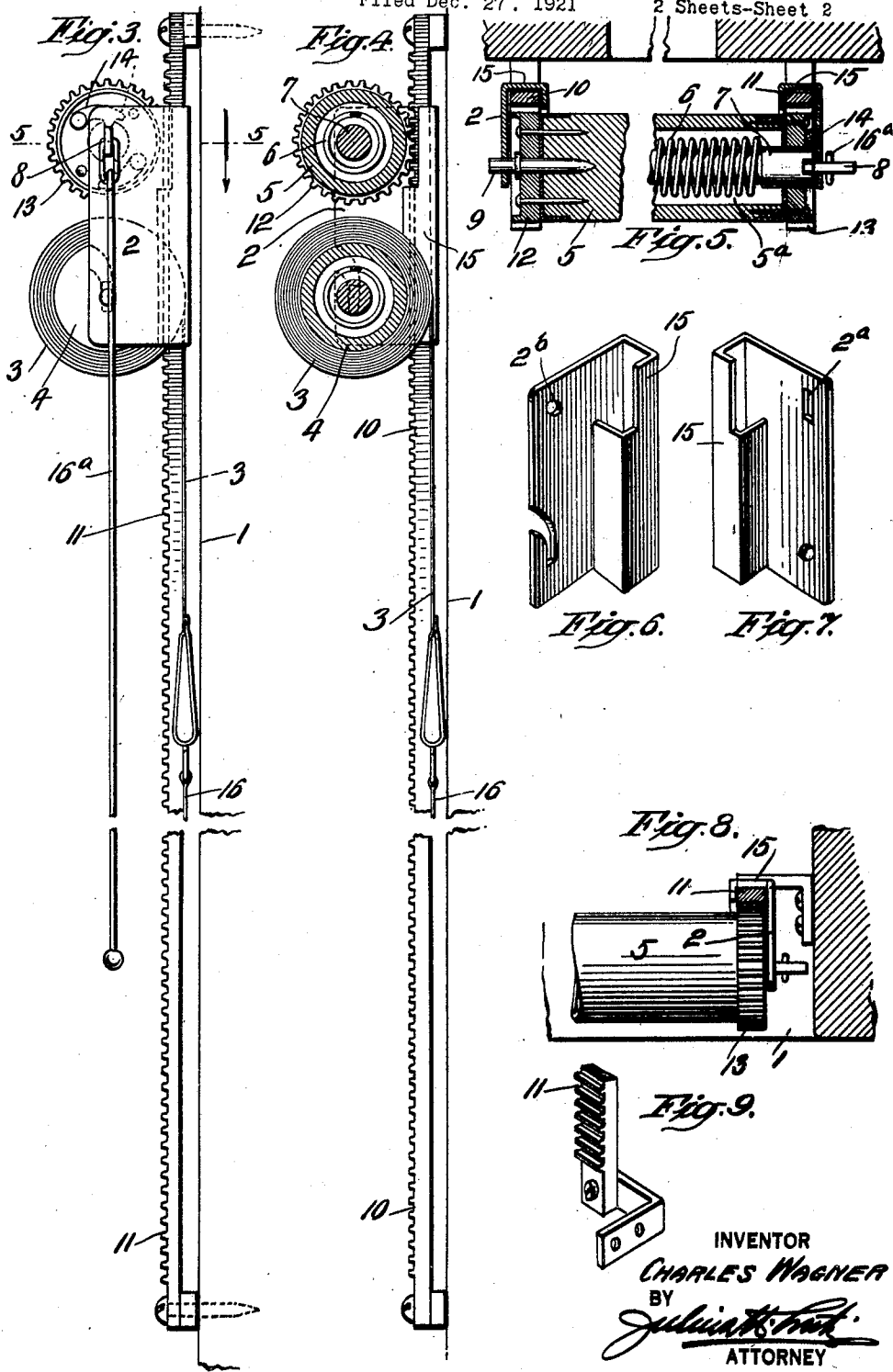
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INVENTOR

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UNITED STATES PATENT OFFICE.

CHARLES WAGNER, OF GRANTWOOD, NEW JERSEY.

SHADE-MANIPULATING DEVICE FOR WINDOWS AND THE LIKE.

Application filed December 27, 1921. Serial No. 524,888.

To all whom it may concern:

Be it known that I, CHARLES WAGNER, a citizen of the United States, and a resident of Grantwood, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Shade-Manipulating Devices for Windows and the like, of which the following is a specification.

10 This invention relates to improvements in shade manipulating devices for windows and the like.

My present invention is an improvement upon the device as shown and described in my former patent application filed November 19th, 1921, Serial No. 516,278, in which I have described and shown an automatically-controlled and slidable shade-roller carrier adapted to be reciprocated longitudinally of the window frame and to be automatically stopped at any desired position thereon, whereby any section of the window may, by the conventional manipulation or mode of operation of shade rollers, be shaded independently of and without affecting the passage of light and air through any other section thereof.

One of the objects of this invention is to simplify the construction shown in said application, to eliminate a multiplicity of parts and particularly to avoid the use of the flexible connecting strips used in my former construction for converting the rotary movement of the roller to the longitudinal movement of the carrier means, and to substitute rigid and durable means for this purpose.

Another object of my invention is to provide means for compelling a positive longitudinal movement and operation of a shade-carrying carrier by a spring-wound shade roller and to produce a strong and rigid construction by the use of a rigid and positively-acting rack-and-gear connection between a spring-wound shade-roller and the window frame.

Another object of my invention is to combine in an operative device slidable carrier means preferably composed of two independent members having a shade-roller

mounted between the same, another spring-rotated roller also mounted in said carrier members, tracks on the window frame preferably comprising toothed racks positioned at opposite sides of the window frame; 55 track-engaging means on said roller on opposite ends thereof preferably comprising pinions for engaging said tracks to convert the rotary movement of the roller into longitudinal movement along the window frame, 60 and means on the carrier members engaging the racks for guiding said carrier members and for retaining the pinions in contact with the racks.

Another object of my invention is to provide a removable pinion for one end of a controlling roller whereby the pinion at that end may be removed to enable the user to cut off a part of the controlling roller to adjust the same to windows of varying 70 widths.

With these and other objects in view, the invention comprises the combination of members and arrangement of parts so combined as to co-act and cooperate with each other in the performance of the functions and the accomplishment of the results herein contemplated, and comprises in one of its adaptations the species or preferred form illustrated in the accompanying drawings, in 80 which:—

Fig. 1 is a front elevation of a window to which my improved shade roller device has been applied with the carrier positioned at the top of the window; 85

Fig. 2 is a similar front elevation of a window with my improved carrier moved half way down the window frame so as to free the upper part of the window;

Fig. 3 is an end or side elevation of a device illustrated in Fig. 2 with the carriage positioned near the top of the window frame; 90

Fig. 4 is a section on the line 4—4 of Fig. 1; 95

Fig. 5 is a section on the line 5—5 of Fig. 3;

Figs. 6 and 7 are perspective views of the slides at opposite sides of the window constituting the carrier members; 100

Fig. 8 is a plan view partly in section of a modified form of my device applied between the sash moldings of the window frame; and

Fig. 9 is a perspective view of the lower end of a rack and a bracket for securing the same between the sash moldings.

Referring now to these drawings, which illustrate a preferred form of my invention, 1 indicates a frame of a window on which is mounted a carrier 2 having automatic movement longitudinally in relation to the window frame and carrying a shade 3 mounted on a roller 4 so as to enable the independent shading by the longitudinal movement of the carrier of a section of the window frame without affecting or interfering with the passage of light and air through other sections thereof. The power for so moving the carrier longitudinally is derived from a spring-rotated roller 5 which, as illustrated, is mounted to have a controlled rotary movement in the carrier 2. Thus the roller 5 which is hollow as at 5^a is provided with the usual spring 6 and winding spindle 7 which has a stem 8 projecting through one end thereof and the other end of the roller is provided with a stub spindle 9. The opposite ends of the roller are mounted in the carrier with the stem 8 of the winding spindle projecting through a square retaining slot 2^a at one end and the spindle 9 about which the roller rotates projecting through a circular opening 2^b at the other side, the arrangement being such as to place the roller 4 in the carrier under the rotating tension of the spring 6.

In my present invention, I provide simple and rigid means for converting the rotary movement of the roller 5 so mounted in the carrier to a longitudinal movement which will cause the carrier to be moved longitudinally of the window frame, and, as illustrated, I provide means for producing a rolling engagement between the roller and the opposite sides of the window frame. Means is provided for making this rolling engagement positive by providing tracks at opposite sides with which the rollers engage, and, in the preferred form illustrated, I provide toothed racks 10 and 11 at opposite sides of the window frame and mount upon the roller 5 pinions 12 and 13 which have a positive meshing engagement with said toothed tracks on the window frame. Obviously, when the roller 5 is wound up it will have rotary movement which is, by the use of the pinions and toothed racks, converted into longitudinal movement along such toothed racks. The rotary movement of the roller is controlled by the usual stopping dogs 14 and it will be obvious that the longitudinal movement of the carrier may by the engagement of these dogs be stopped at any point along its path of travel. The carrier 2 is, as illustrated, provided with a guiding member

15 which preferably extends beneath the track and abuts against the lower face thereof to guide the movement of the carrier and retain the pinions in engagement with the rack on the opposite face thereof.

In the preferred form of my invention illustrated, this member 15 not only abuts against the bottom face but is rolled in tubular form and abuts against opposite sides of the toothed track to retain the same in proper spaced relationship so that the rollers will be held in position therein, and said member also preferably covers the face of the toothed track with the exception of the point at which the pinion engages the same, this covering forming a guard to prevent the shade of the shade roller 4 from being fouled and preventing the rearward movement of the said carrier members.

The operation of the device is in all respects similar to that of the conventional shade roller. The shade roller 4 is manipulated in the usual manner by an operating cord 16, while the longitudinal movement of the slide carrier members along the rack is accomplished by a pull and release of the operating cord 16^a at the side of the window frame, which pulling and releasing are in all respects similar to the manipulation of the ordinary shade roller.

Having described my invention, I claim:—

1. In a shade-manipulating device, the combination with racks at opposite sides of the window frame, of carriers slidable along said rack, a roller extending between the opposite racks, a spring rotated spindle operatively connected at one end with said roller and having its other end non-rotatably connected with said carrier, pinions on the roller having their teeth engaging said rack and one of which has a fixed connection with the roller and a loose connection with the said spindle, and means for coupling and uncoupling said spindle with said last-named pinion.

2. In a shade-manipulating device, the combination with slidable carrier means movable longitudinally of the window frame and having a shade mounted thereon, of racks on opposite sides of the window frame, a carrier-operating roller; pinions fixed on opposite ends of said carrier-operating roller and engaging said racks, a spring-rotated spindle operatively connected at one end with said roller having its opposite end projecting axially through one of said pinions and non-rotatably connected with the carrier, and controlling means mounted on the said pinion for connecting and disconnecting said pinion and roller with said shaft.

3. In a shade-manipulating device, the combination with slidable carrier means movable longitudinally of the window frame and having a shade mounted thereon, of racks on opposite sides of the window frame,

a carrier-operating roller; pinions fixed on opposite ends of said carrier-operating roller and engaging said racks, a spring-rotated spindle having locking notches and being
5 operatively connected at one end with said roller having its opposite end projecting axially through one of said pinions and non-rotatably connected with the carrier, and dogs mounted on the said pinion and engage-
able with and disengageable from said 10 notches.

In witness whereof, I have signed my name to the foregoing specification in the presence of two subscribing witnesses.

CHARLES WAGNER.

Witnesses:

FREDERICK RANDOLPH,
HERMAN L. BRAUN.