No. 877,425. PATENTED JAN. 21, 1908.

A. HOLMES.

WINDOW SHADE FIXTURE.

APPLICATION FILED FEB. 20, 1907.

Fig. 1.

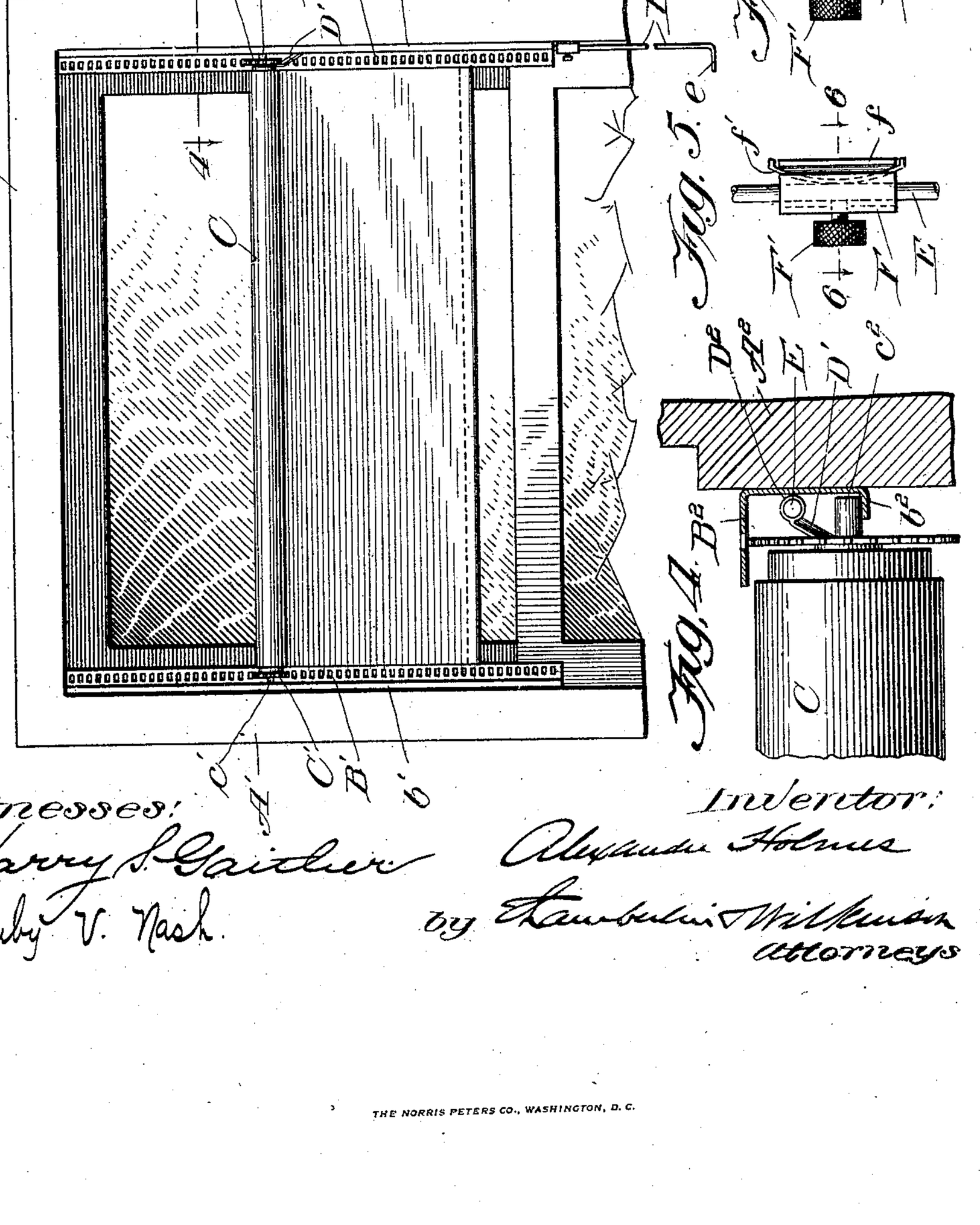

Fig. 2.

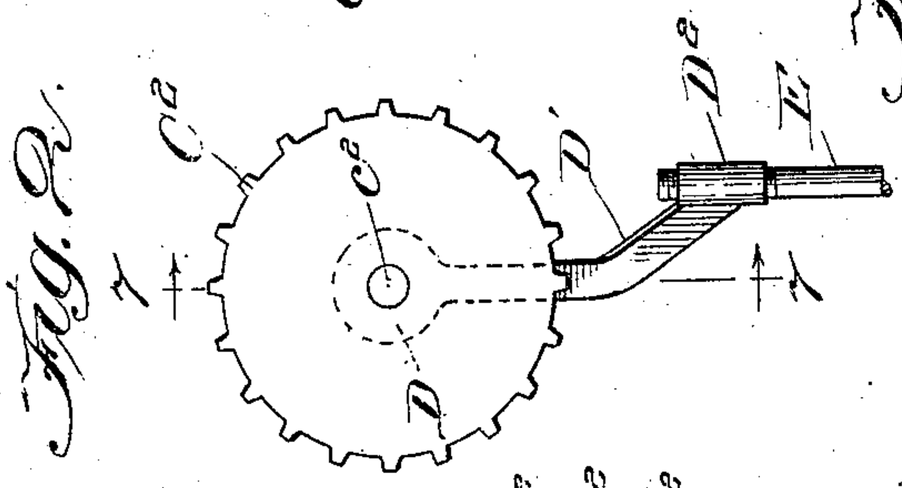

Fig. 3.

Fig. 4.

Fig. 5.

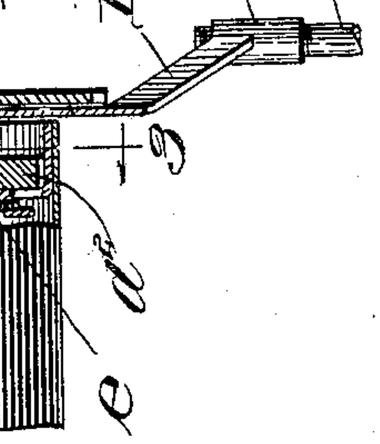

Fig. 6.

Witnesses:
Harry S. Gaither
Ruby V. Nash.

Inventor:
Alexander Holmes
by Lambert & Williamson
Attorneys

UNITED STATES PATENT OFFICE.

ALEXANDER HOLMES, OF EUREKA, CALIFORNIA.

WINDOW-SHADE FIXTURE.

No. 877,425. Specification of Letters Patent. Patented Jan. 21, 1908.

Application filed February 20, 1907. Serial No. 358,473.

To all whom it may concern:

Be it known that I, ALEXANDER HOLMES, citizen of the United States, residing at Eureka, county of Humboldt, State of California, have invented a certain new and useful Improvement in Window-Shade Fixtures, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates in general to window shades and more particularly to shades the rollers of which are adjustable vertically with respect to the windows.

It is frequently desirable that light should be admitted through the upper part of a window and excluded from the lower part thereof, or that light should be merely excluded from the window intermediate of its top and bottom. Various supporting means for window shade rollers have heretofore been devised for vertically adjusting the position of a shade roller relatively to the window for the purpose of admitting any required amount of light through the window whether above or below the shade roller. In such shade fixtures devised prior to my invention for raising and lowering spring actuated shade rollers it has been necessary to provide vertically movable frames for supporting the shade rollers in addition to the usual supporting journals of the rollers.

The primary object of my invention is to provide a window shade fixture for vertically adjusting the shade roller relatively to the window, which will be simple in construction, inexpensive in manufacture and efficient in use.

A further object of my invention is to provide an improved clamping device for retaining a vertically adjustable window shade roller in any adjusted position desired.

A still further object of my invention is to provide a vertically adjustable window shade fixture which will require no supporting frame in addition to a central shaft upon which the roller is rotatably mounted and between which and the roller the usual spring is interposed.

My invention may be generally described as comprising a supporting rod upon which a shade roller is rotatably mounted, a spring surrounding the rod and connected at its opposite ends to the rod and to the roller, gravity pawls carried by one end of the roller, a block loosely surrounding one end of said rod, and having a notch in the top thereof with which said pawls coöperate, a rod depending from and fixed to said block by means of which an upward or downward pull may be exerted upon said rod and the rod thereby raised or lowered by the rotation thereof through the engagement of said gears with said racks, and an adjustable clutch through which said rod passes for retaining the same in any adjusted position according to the desired height of the shade roller.

My invention will be more fully described hereinafter with reference to the accompanying drawing in which the same is illustrated as embodied in a convenient and practical form, and in which

Figure 1 is a front elevational view of a window showing my invention applied thereto; Fig. 2 an end elevational view of the roller removed from the window casing; Fig. 3 a sectional view on line 3—3 Fig. 7; Fig. 4 a sectional view on line 4—4 Fig. 1; Fig. 5 an enlarged elevational view of the rod clutch; Fig. 6 a sectional view on line 6—6 Fig. 5; and Fig. 7 an enlarged elevational view of one end of the roller, a part thereof being shown in section.

Similar reference characters are used to designate similar parts in the several figures of the drawing.

Reference character A indicates a window frame of any ordinary or usual construction comprising vertical side frames A′ and A².

B′ and B² designate racks secured to the side frames of the casing by any suitable fastening devices. The racks are preferably made of sheet metal bent as indicated in Fig. 4 so as to provide a central portion which is secured to the vertical side frames of the window casing from which the racks extend inwardly from the inner edges thereof, and from which flanges *b′* and *b²* respectively extend inwardly from the front edges.

C designates a window shade secured upon a spring roller which may be rotated to unwind or wind up the shade. A rod extends concentrically through the shade roller upon which the roller is rotatably supported.

C′ and C² designate gears fixed upon the ends *c′* and *c²* of the roller supporting rod, such gears adapted to engage the racks B′

and B^2. The gears may be fixed upon the ends of the rod so as to rotate therewith in any suitable manner, as by providing holes in the centers of the gears of a size to fit tightly upon the ends of the rod. The ends of the rod lie within and are guided by the flanges b' and b^2 retaining the gears in engagement with the racks.

e indicates the usual motor spring for winding a shade upon a roller which is connected at one end to the rod within the roller and at its other end with the inner surface of one end cap G of the roller.

d' and d^2 designate gravity pawls secured to the outer surface of the end cap G of the roller.

D indicates a block loosely surrounding the roller supporting rod adjacent the end cap G of the roller, such block being provided with a recess d in the top thereof with which the pawls d' and d^2 coöperate to prevent the spring from rotating the roller with respect to its supporting rod.

A bracket D′ is secured to the block D and is provided with an interiorly screw-threaded sleeve D^2 in which is secured the upper end of a rod E by means of which an upward or downward pull is exerted upon the roller supporting rod. The raising or lowering rod E extends through a clamping device such as illustrated in detail in Figs. 5 and 6. The clamping device F comprises a leaf spring f' which bears upon one side of the rod E while a set screw F′ engages the opposite side of the rod E. The clamping device may be secured to the window casing at any desired point by means of fastening devices extending through a flange f.

The manner of applying my improvement to a window and the operation thereof are as follows: The gears C′ and C^2 are engaged with the bottom notches in the respective racks B′ and B^2 and the shade roller moved upwardly by rotating the same. The upper end of the raising and lowering rod E is then connected with the sleeve D^2, such rod having been first passed through the clamping device F. When it is desired to raise the shade roller the clamp screw F′ is disengaged from the rod E whereupon either an upward or downward pressure applied to the rod will exert an upward or downward pull upon the roller supporting rod through the medium of the block D. The pull exerted upon the roller supporting rod effects an upward or downward movement of the shade roller through the engagement of the gears C′ and C^2 with the respective racks B′ and B^2. When the roller has been raised or lowered to the desired position the clamp screws F′ is engaged with the rod E thereby clamping the rod against the spring f'. The spring f' serves to prevent the weight of the shade roller from too rapidly lowering the roller when the clamp screw is disengaged. The spring f' might in fact be used to retain the shade roller at the desired height through frictional contact with the rod E without the use of the clamp screw.

When the shade roller has been adjusted to the desired height in the manner described, the shade may be rolled upon or unrolled from the roller in the usual manner. The roller is locked against rotation by the engagement with either of the gravity pawls with the notch in the raising and lowering block D.

From the foregoing description it will be observed that I have invented an improved shade roller fixture by means of which the shade may be located at any desired height with respect to the window and in which no supporting frame for the shade roller is required, the rod upon which the roller is rotatably mounted serving to adjustably support the roller upon the window casing. It will be further observed that by providing the notch with which the gravity pawls coöperate in the non-rotating block it is unnecessary to provide a plurality of notches in the rotating roller supporting rod. It will be further observed that in my improved shade roller fixture the roller is retained at any desired height by a simple and efficient clamping device which prevents any danger of the shade roller falling from the weight thereof.

While I have described more or less precisely the details of construction, I do not wish to be understood as limiting myself thereto, as I contemplate changes in form, the proportion of parts, and the substitution of equivalents, as circumstances may suggest or render expedient without departing from the spirit of my invention.

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

1. The combination with a window shade roller, of a rod around which said roller is rotatably supported, a spring surrounding said rod within said roller and connected at its opposite ends to said rod and to said roller respectively, gravity pawls carried by said roller, gears fixed upon the ends of said rod, racks fixed to the window casing, and engaged by said gears, a block loosely surrounding said rod and having a notch in the top thereof with which said pawls coöperate, and means for exerting an upward or downward pull upon said block whereby said rod is rotated through the engagement of said gears with said racks, and the shade roller thereby raised or lowered.

2. The combination with a window shade roller, of a rod around which said roller is rotatably supported, a spring surrounding said rod within said roller and connected at its opposite ends to said rod and to said roller respectively, gravity pawls carried by

said roller, gears fixed upon the ends of said rods, racks fixed to the window casing, and engaged by said gears, a block loosely surrounding said rod and having a notch in the top thereof with which said pawls coöperate, and a raising and lowering rod depending from and fixed to said block by means of which the height of the shade is varied.

3. The combination with a window shade roller, of a rod around which said roller is rotatably supported, a spring surrounding said rod within said roller and connected at its opposite ends to said rod and to said roller respectively, gravity pawls carried by said roller, gears fixed upon the ends of said rods, racks fixed to the window casing, and engaged by said gears, a block loosely surrounding said rod and having a notch in the top thereof with which said pawls coöperate, a raising and lowering rod depending from and fixed to said block, and an adjustable clamp engaging said raising and lowering rod to retain the shade roller at the desired height.

4. The combination with a window shade roller, of a rod around which said roller is rotatably supported, a spring surrounding said rod within said roller and connected at its opposite ends to said rod and to said roller respectively, gravity pawls carried by said roller, gears fixed upon the ends of said rods, racks fixed to the window casing, and engaged by said gears, a block loosely surrounding said rod and having a notch in the top thereof with which said pawls coöperate, a raising and lowering rod depending from and secured to said block, an adjustable clamp engaging said raising and lowering rod, said clamp comprising a spring and a set screw between which said rod is frictionally locked.

In testimony whereof, I sign this specification in the presence of two witnesses.

ALEXANDER HOLMES.

Witnesses:
GEO. L. WILKINSON,
RUBY V. NASH.