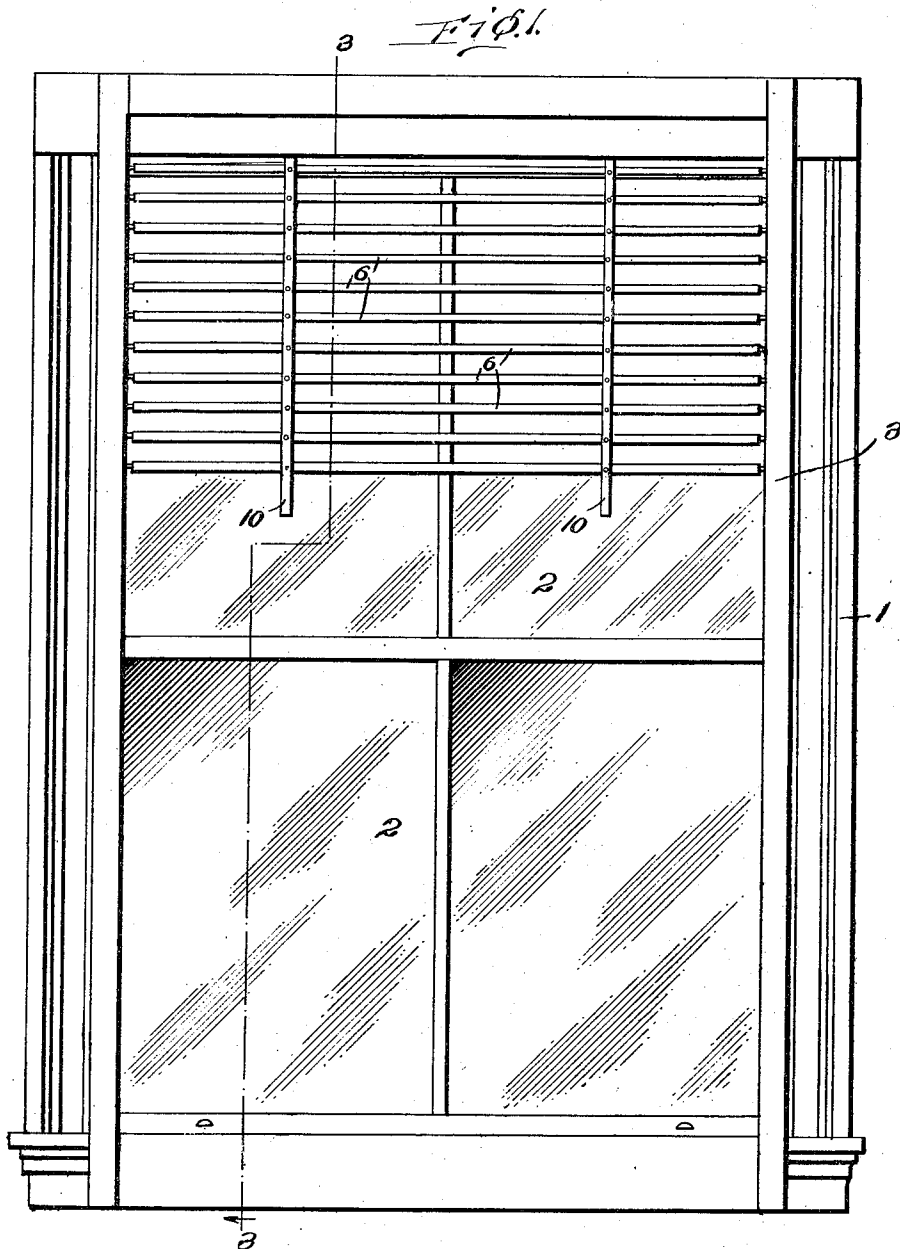


T. McINTOSH.
WINDOW BLIND.
APPLICATION FILED SEPT. 27, 1910.

1,013,417.

Patented Jan. 2, 1912.

3 SHEETS—SHEET 1.



Witnesses

J. M. Fowler Jr.
R. D. Krenkel

Inventor

Thomas McIntosh,

By

Joshua R. Potts.

Attorneys

T. McINTOSH.
WINDOW BLIND.

APPLICATION FILED SEPT. 27, 1910.

1,013,417.

Patented Jan. 2, 1912.

3 SHEETS-SHEET 2.

Fig. 2.

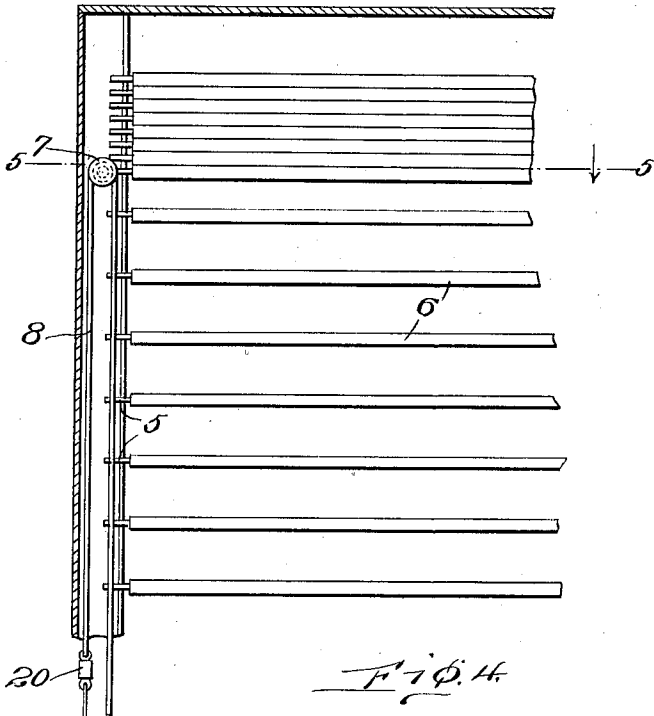


Fig. 4.

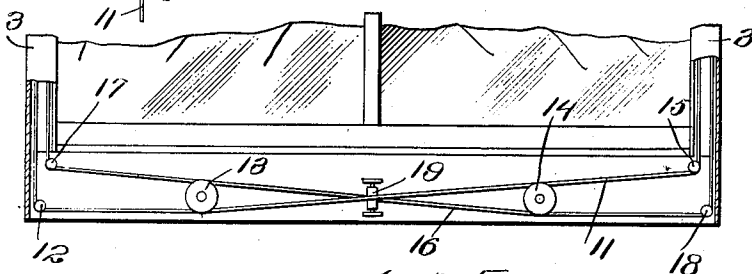


Fig. 5.

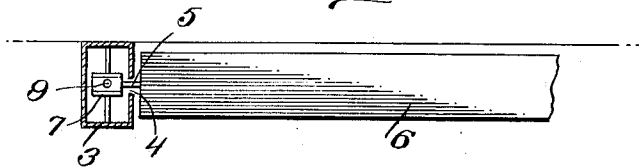
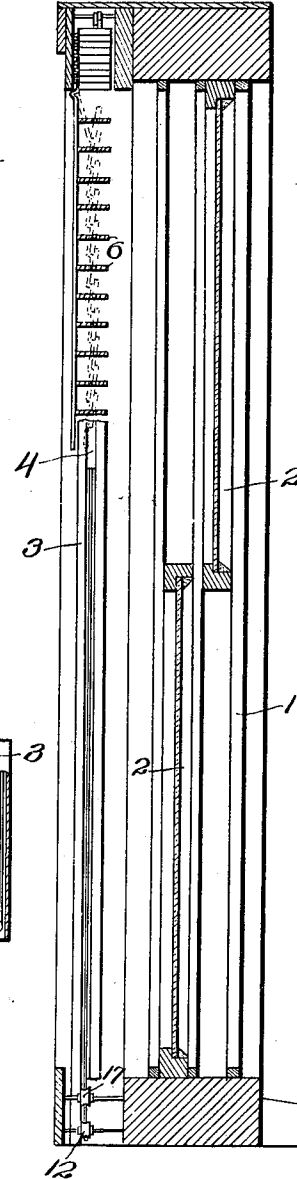


Fig. 3.



Witnesses

J. M. Fowler Jr.
R. H. Krenkel.

Inventor

Thomas McIntosh.

By

Joshua R. H. T. O. H.

Attorneys

T. McINTOSH.
WINDOW BLIND.

APPLICATION FILED SEPT. 27, 1910.

1,013,417.

Patented Jan. 2, 1912.

3 SHEETS—SHEET 3.

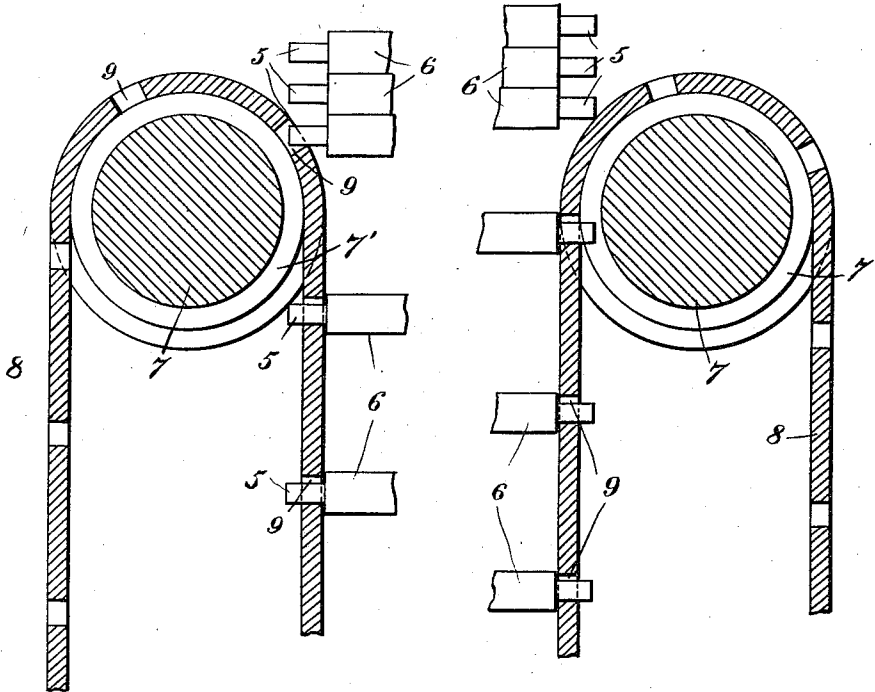


Fig. 6.

Fig. 7.

Witnesses

W. S. Austin

R. A. Krenkel

Inventor
Thomas McIntosh

By

Joshua B. Pott

Attorney

UNITED STATES PATENT OFFICE.

THOMAS McINTOSH, OF JENKINTOWN, PENNSYLVANIA.

WINDOW-BLIND.

1,013,417.

Specification of Letters Patent.

Patented Jan. 2, 1912.

Application filed September 27, 1910. Serial No. 584,089.

To all whom it may concern:

Be it known that I, THOMAS McINTOSH, a subject of the King of Great Britain, residing at Jenkintown, in the county of Montgomery and State of Pennsylvania, have invented certain new and useful Improvements in Window-Blinds, of which the following is a specification.

My invention relates to improvements in window blinds, the object of the invention being to provide an improved blind comprising a series of slats with improved means for holding the slats apart, permitting them pivotal movement so as to exclude the light, and constructed to pile the slats in the upper portion of a frame or casement.

A further object is to provide improved means for raising and lowering the slat supporting mechanism, and improved mounting for the blind which may be attached to any ordinary window frame.

With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings: Figure 1, is a view in front elevation illustrating my improvements attached to a window frame. Fig. 2, is a fragmentary view partly in section and partly in elevation. Fig. 3, is a view in vertical cross section on the line 3—3 of Fig. 1. Fig. 4, is a sectional elevation of the lower portion of the construction. Fig. 5, is a view in section on the line 5—5 of Fig. 2. Fig. 6 is a detailed view upon an enlarged scale illustrating a trunnion of a slat leaving an aperture in one of the tapes as it passes over a roller, and Fig. 7 is a similar view illustrating the manner of supporting the slats in the upper portion of the frame.

1, represents a window frame, 2, 2, the sashes supported therein, and 3 the frame of my improved blind. The frame 3 is secured to the window frame 1 in any approved manner, and its vertical side members are hollow, and their inner walls are provided with longitudinal slots 4, through which project the trunnions 5 at the ends of slats 6.

In the upper portion of the side members of frame 3, pulleys 7 are mounted and over these pulleys tapes 8 are mounted to run. These tapes are provided with openings 9,

said openings arranged in a longitudinal series an equal distance apart, and adapted to receive trunnions 5 of slats 6, so as to move the slats vertically when the tapes 8 are moved.

It will be noted that the upper cross member of the frame 3 is located above the plane of pulleys 7, and constitutes a housing for the slats, which are piled therein as they are conveyed upward by the tapes 8, the lowermost slat in the pile in the housing serving to support those above, and as each successive slat is moved upward by the one below, the tapes 8 move so as to free the trunnions of the slats from the tapes. It should be understood that the trunnions 5 are of less diameter than the thickness of the slats 6 so that when they are piled up in the top of the case there is considerable space between the several trunnions. This is clearly shown in Figs. 2, 6 and 7 of the drawings. As the tapes move upwardly they of course carry the slats upwardly and as the tapes pass over the top of the rollers 7 the successive portions thereof evidently move outwardly from the line of the vertical portion or slats supporting portion, and in so doing the portion containing the aperture 9 is moved away from the slats thereby withdrawing the apertured portion of the tape from the trunnion. This action is clearly shown in Fig. 6. The trunnions project slightly through the tape if desired and the rollers 7 are grooved as at 7' to accommodate the projecting ends. The slats piled up in the top of the case rest on the tape as shown in Fig. 7. In lowering the slats the apertures 9 in passing over the rollers move toward the trunnions and the trunnions of the lowermost slat drop into the first aperture as shown in Fig. 6. This first slat is then carried downwardly by the tape and the next slat in order rests upon the tapes as shown in Fig. 7. As soon as the next apertures in the tapes reach the ends of these trunnions, said trunnions drop into said apertures as above explained. The apertures 9 are of sufficient size to permit ready withdrawal and insertion of the trunnions but must not be too large as the upper edge wall of the aperture must pass between the lowermost trunnion and the one directly above.

The Figs. 6 and 7 are diagrams only, their sole purpose being to illustrate the coöperation of the slat trunnions and the tapes. It

will be noted that in these views the frame 3 has been omitted, showing the ends of the slats extended substantially to the tapes instead of stopping at said frame as illustrated in the other figures of the drawings.

The slats 6 are all connected by flexible strips 10, which compel them to pivot simultaneously allowing the slats to be turned at an angle so as to exclude the light.

To move the blind up and down, it is simply necessary to grasp any of the slats, and move the blind in either direction, as the ends of the respective tapes 8 are connected and compelled to operate in unison as will now be explained.

One end of one tape 8 is connected by a cord 11 with the opposite end of the other tape, and is passed over pulleys 12, 13, 14, and 15, as shown most clearly in Fig. 4. The other ends of the tapes 8 are connected by a cord 16, which is passed over pulleys 17, 13, 14, and 18. The cords at a central portion of the base of the frame cross each other, and to prevent undue wear on the cords, a roller 19 is supported in a vertical position and takes up this wear.

To balance the weight of the slats, suitable weights 20 are provided so that the blind will remain at any position of adjustment and render the movement of the blind an easy one.

Various slight changes might be made in the general form and arrangement of parts described without departing from my invention, and hence I do not limit myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claims.

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

1. A blind comprising two tapes, each having a longitudinal series of openings therein, slats, trunnions on the ends of the slats located in the openings in the tapes, pulleys supporting said tapes whereby when said tapes are moved over the pulleys, they disengage themselves from the trunnions of the slats, the lowermost slat of the pile thus disengaged supporting the others, substantially as described.

2. In a blind, the combination with a frame, the upper portion of said frame constituting a housing, of pulleys supported in the side members of the frame at the base of the housing, tapes passed over said pulleys and having in each a longitudinal series of openings, slats, trunnions on the ends of the slats, located in the openings in the tapes

and adapted to be released from engagement with the tapes when the latter pass over the pulleys piling the slats in the housing, and means for moving said tapes simultaneously, substantially as described.

3. In a blind, the combination with a frame, the upper portion of said frame constituting a housing, of pulleys supported in the side members of the frame, at the base of the housing, tapes passed over said pulleys and having in each a longitudinal series of openings, slats, trunnions on the ends of the slats, located in the openings in the tapes and adapted to be released from engagement with the tapes when the latter pass over the pulleys piling the slats in the housing, and crossed flexible connecting devices connecting the opposite ends of the respective tapes, substantially as described.

4. In a blind, the combination with a frame, the upper portion of said frame constituting a housing, of pulleys supported in the side members of the frame, at the base of the housing, tapes passed over said pulleys and having in each a longitudinal series of openings, slats, trunnions on the ends of the slats, located in the openings in the tapes and adapted to be released from engagement with the tapes when the latter pass over the pulleys piling the slats in the housing, crossed flexible connecting devices connecting the opposite ends of the respective tapes, pulleys over which said flexible connecting devices are passed, and a roller located between the connecting devices at the point of crossing, substantially as described.

5. In a blind, the combination with a frame, the upper portion of said frame constituting a housing, of pulleys supported in the side members of the frame, at the base of the housing, tapes passed over said pulleys and having in each a longitudinal series of openings, slats, trunnions on the ends of the slats, located in the openings in the tapes and adapted to be released from engagement with the tapes when the latter pass over the pulleys piling the slats in the housing, crossed flexible connecting devices connecting the opposite ends of the respective tapes, and flexible strips connecting all of said slats, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses:

THOMAS McINTOSH.

Witnesses:

C. E. POTTS,

R. H. KRENKEL.