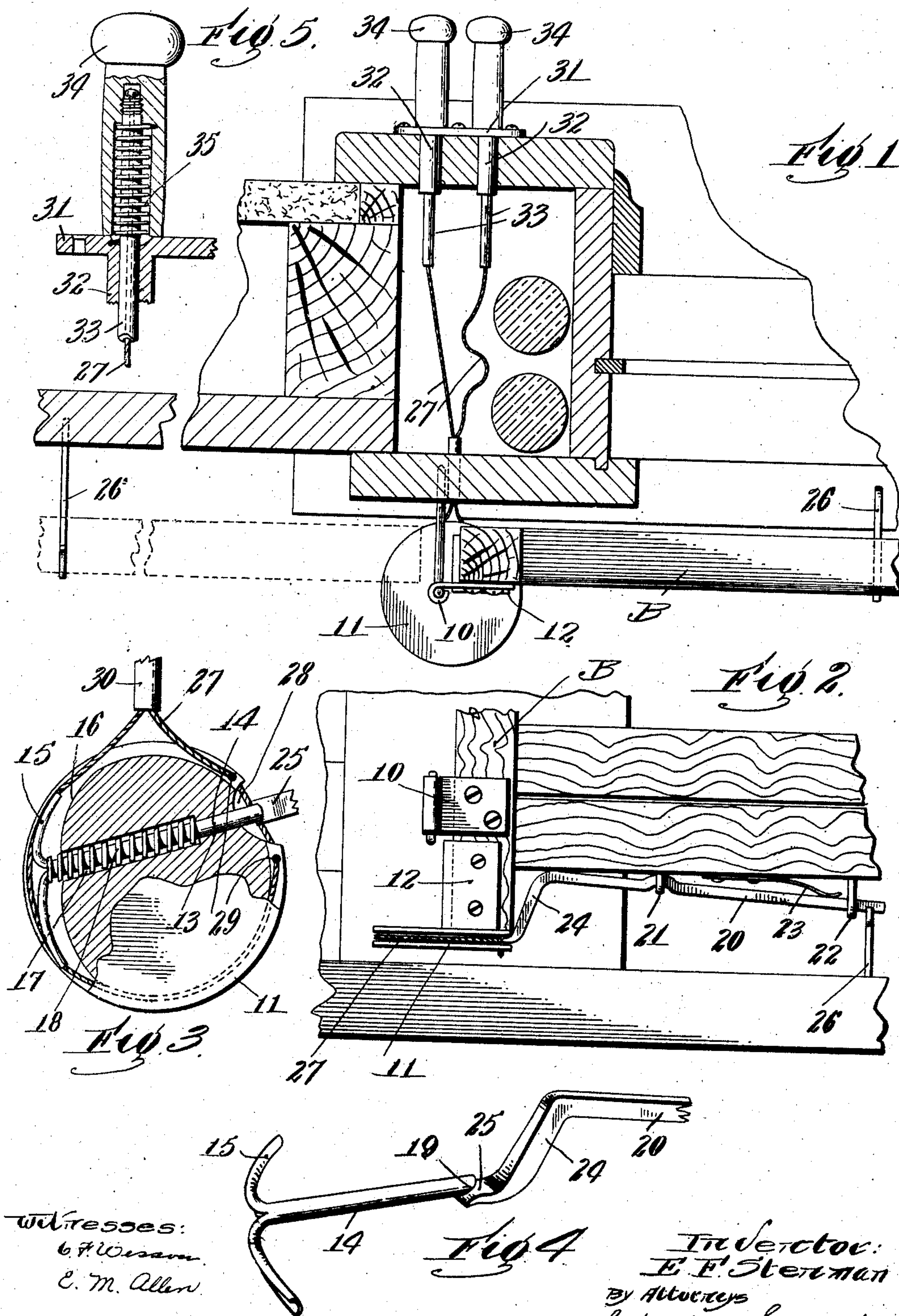


No. 846,520.

PATENTED MAR. 12, 1907.

E. F. STENMAN.  
SHUTTER OPERATOR.  
APPLICATION FILED MAR. 6, 1906.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

ELIS F. STENMAN, OF WORCESTER, MASSACHUSETTS.

## SHUTTER-OPERATOR.

No. 846,520.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed March 6, 1906. Serial No. 304,602.

*To all whom it may concern:*

Be it known that I, ELIS F. STENMAN, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Means for Operating Shutters, of which the following is a specification.

The object of this invention is to provide a means for operating shutters in a simple and accurate manner.

The invention has been particularly designed for use in connection with a blind, so that the same can be opened or closed from the inside of the building and so that the blind will be locked in its opened or closed position.

The device is illustrated in the accompanying sheet of drawings, referring to which—

Figure 1 is a plan view illustrating the application of my invention or improvement to an ordinary blind. Fig. 2 is a partial front elevation thereof. Fig. 3 is a plan view, partly in section, illustrating the operating mechanism. Fig. 4 is a perspective view illustrating the latch-operating mechanism; and Fig. 5 is a sectional plan view, on an enlarged scale, illustrating one of the operating-handles.

The invention will best be understood by a detailed description of the device shown in the drawing.

Referring to the drawing and in detail, B designates a blind which is pivoted or hung in the usual way by hinges 10. Secured to the bottom of the inside upright of the blind is a grooved wheel 11, which has an extending piece or arm 12, by which the wheel may be fastened to the blind, so that the center of the grooved wheel will come in line with the center or turning line of the hinges. A hole 13 is bored through the grooved wheel, as shown in Fig. 3, and fitted in this hole is an operating-arm 14. The end of the operating-arm is shaped so as to form a shoe 15, which practically coincides with the groove in the wheel. The wheel 11 is cut away at 16, so that the shoe can move in toward the center of the wheel. The hole 13 is counter-bored, as at 17, and fitting in this counter-bore is a spring 18, which bears on the bottom of the counterbore and on the shoe 15, so as normally to force the shoe outward. The end of the operating-arm 14 is chamfered or tapered off, as at 19. A latch 20 is pivoted to the bottom of the blind by means of

a strong staple 21. A guiding-staple 22 is provided for the locking end of the latch, and a spring 23 is secured to the bottom of the blind to keep the locking end of the latch normally forced away from the bottom of the blind. The other end of the latch is extended downwardly, as at 24, and is provided with a cam or tapered face 25, which is engaged by the tapered end 19 of the operating-arm 14. The ordinary catches 26 are driven into the side of the building, so that the latch 20 can cooperate therewith to lock the blind in its opened or closed position.

A flexible means, preferably a cord or wire rope, is trained around the grooved wheel 11. The grooved wheel is cut away, as at 28, and is provided with holes 29 29, so that the wire rope can be led under the projecting end of the operating-arm 14. The holes 29 29 also serve as a means for tying the wire rope to the grooved wheel, the wire rope being soldered or otherwise secured to the grooved wheel between the holes 29 29, if desired. A tube 30 is fitted into the side of the building and preferably into the window-casing, and the ends of the wire rope are led through this tube. Operating means are provided for the ends of the wire rope. This means consists of a fixture 31, which is fastened by screws to the inside of the window-casing. This fixture has two tubes 32 32, which extend in through the window-casing. The ends of the wire rope are fitted in small pipes 33 33, which are fitted into the tubes 32 32. Handles 34 34 are secured to the ends of the pipes 33 33. Springs 35 35 are arranged between the fixture 31 and the handles 34 34, so as to pull the handles normally against the fixture.

The blind is shown in its closed position in Fig. 1. When it is desired to open the blind, the left-hand handle 34 is pulled outwardly from the window-casing. This will put the wire rope 27 under tension, and as the wire rope is held to the grooved wheel 11 by the holes 29 29 and as the blind is supposed to be locked in its closed position by the latch 20 the pull on the rope will bear on the shoe 15 and will crowd the operating-arm 14 toward the latch 20, which will depress the downward extension of the latch 24 and will lift the locking end of the latch clear of the catch. So soon as the latch is released from its catch the tension on the rope will turn the blind around on its hinges and will open the



same. This movement will continue so long as the left-hand handle 34 is pulled and until the blind reaches its opened position, and the latch 20 engages the left-hand catch 26, so that the blind will be locked in its opened position. This opening movement will turn the grooved wheel 11 around, so that the shoe 15 will now come under the strand or end of the rope extending from the right-hand handle 34. When it is desired to close the blind, the right-hand handle will be pulled, which will unlock the latch and swing the blind to its closed position in substantially the manner described in connection with the opening of the blind. Thus it will be seen that a pull on one end or strand of the rope first releases the latch and then swings the blind around to the desired position and that this movement of the blind will bring the shoe of the operating-arm in such position that when the other end is pulled for the opposite movement of the blind the latch will be released. Thus the shutter can be unlatched and opened or unlatched and closed in a convenient way from the inside of the building.

The device herein shown and described may be greatly varied by a skilled mechanic without departing from the scope of my invention as expressed in the claims.

Having thus fully described my invention, what I desire to secure by Letters Patent is—

1. The combination of a hinged shutter, a latch carried thereby, a wheel movable with the pivoted shutter, flexible means for operating said wheel, and a connection from the flexible means for operating the latch.

2. The combination of a hinged shutter, a latch carried thereby, a wheel movable with the pivoted shutter, flexible means secured to said wheel and having two ends extending from said wheel, and a connection in said wheel for operating the latch.

3. The combination of a hinged shutter, a latch carried thereby, catches for holding the shutter open or closed, a grooved wheel movable with the pivoted shutter, flexible means secured to said wheel and having two ends extending therefrom, and an operating-arm arranged in said grooved wheel in position for engaging said flexible means and for operating the latch.

4. The combination of a pivoted shutter, a latch carried thereby, catches for holding the shutter open or closed, a grooved wheel secured to the shutter, a flexible cord or rope secured to the grooved wheel, an arm arranged in said grooved wheel and engaging the latch, said arm being provided with a shoe which is engaged by the flexible cord or rope; whereby as said shutter is opened or closed, the engagement between said shoe and said rope will change relatively to the point of the rope which is secured to the wheel.

5. The combination of a pivoted shutter, a latch secured thereto, catches for holding the shutter open or closed, a grooved wheel secured to the shutter, a flexible cord or rope secured to the grooved wheel, an operating-arm fitted to slide in the grooved wheel, a spring normally pushing the arm in one direction, said operating-arm having a shoe which said rope engages, the end of the operating-arm engaging the latch, means for conducting the ends of said rope inside of the building, operating-handles on the ends of said rope, and springs for keeping the handles normally in retracted position.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ELIS F. STENMAN.

Witnesses:

LOUIS W. SOUTHGATE,  
E. M. ALLEN.