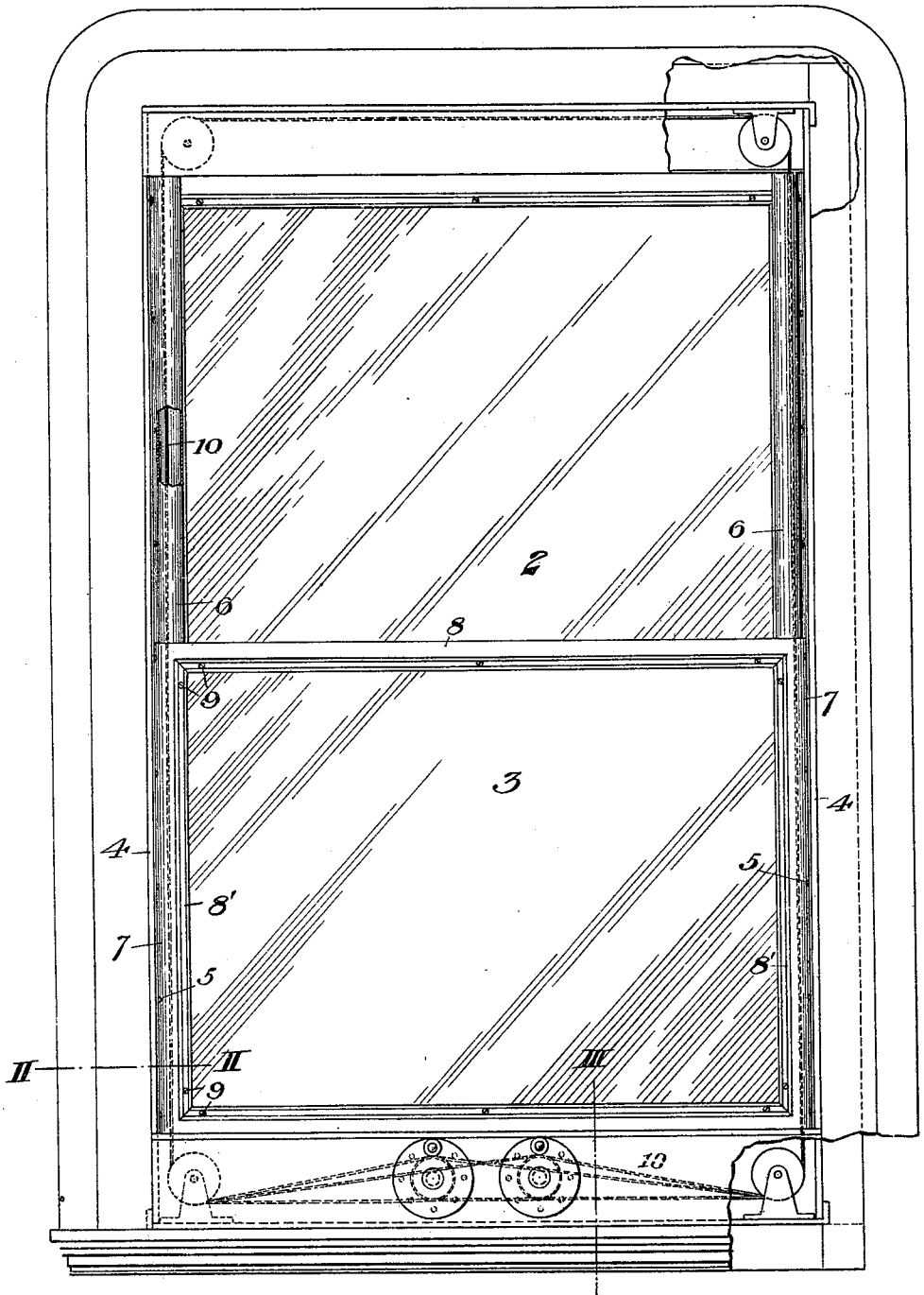
No. 631,529. Patented Aug. 22, 1899.

C. McSHERRY.

METAL WINDOW SASH AND FRAME.

(Application filed Nov. 14, 1898.)

(No Model.) 3 Sheets—Sheet 1.



WITNESSES

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Fig. 1.

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Fig. 3.

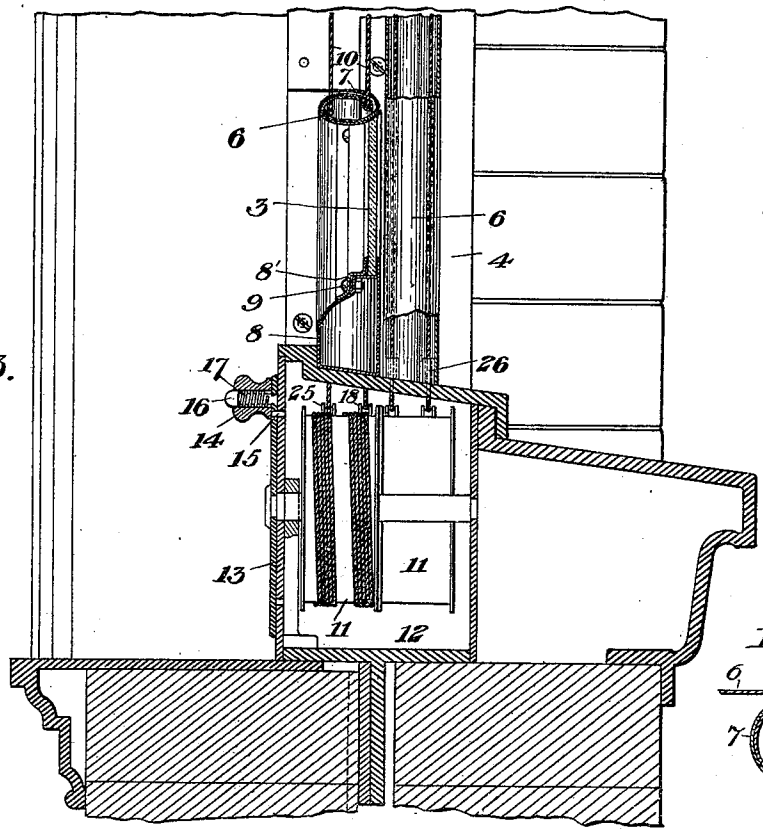


Fig. 6.

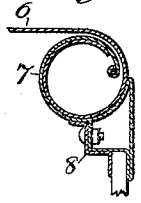
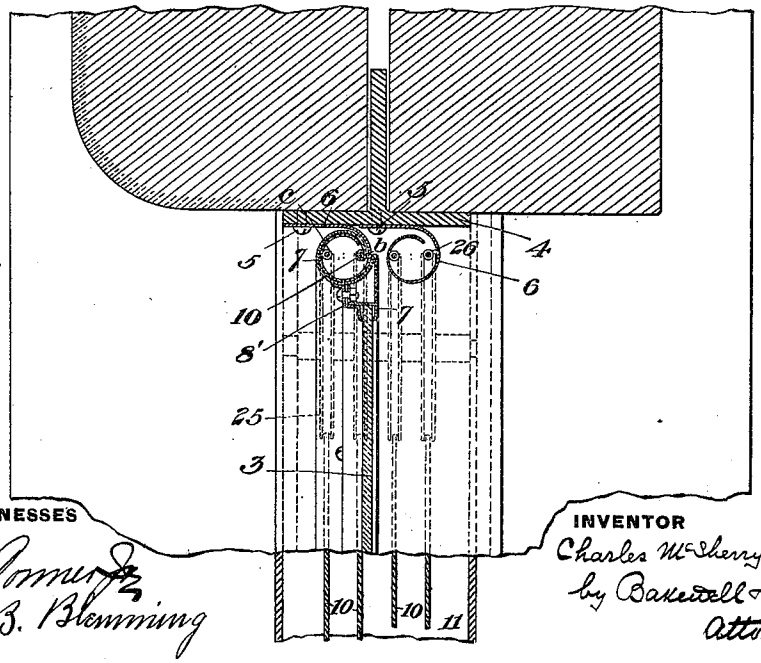


Fig. 2.



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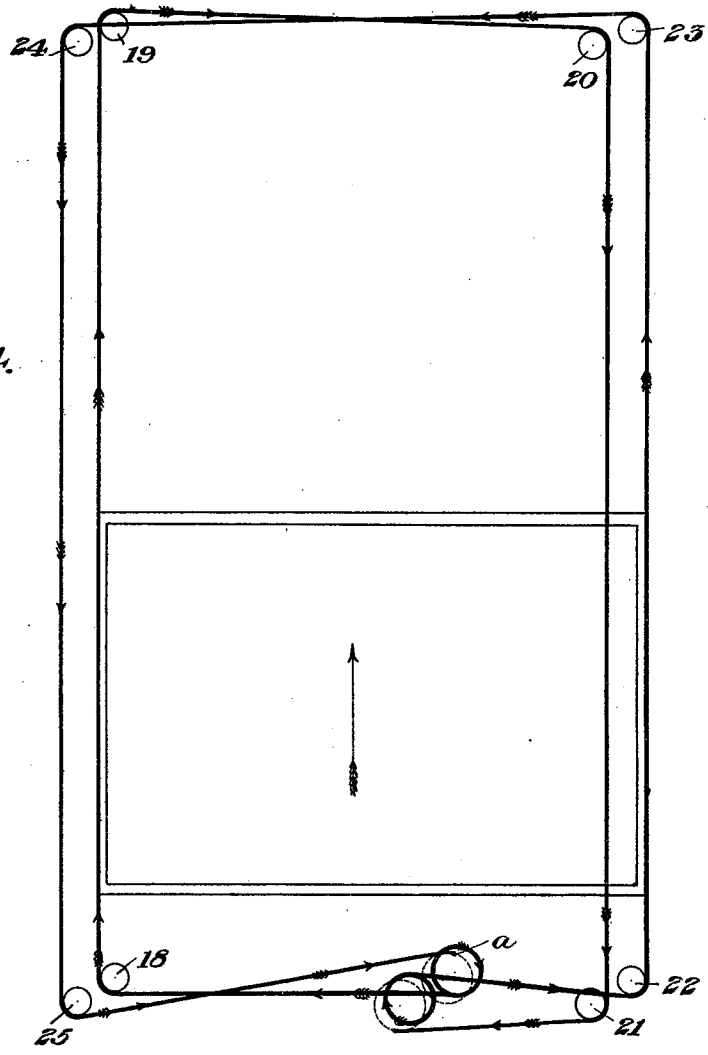
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Fig. 4.



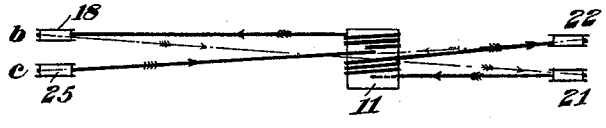


Fig. 5.

WITNESSES

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UNITED STATES PATENT OFFICE.

CHARLES McSHERRY, OF PITTSBURG, PENNSYLVANIA.

METAL WINDOW SASH AND FRAME.

SPECIFICATION forming part of Letters Patent No. 631,529, dated August 22, 1899.

Application filed November 14, 1898. Serial No. 696,345. (No model.)

To all whom it may concern:

Be it known that I, CHARLES McSHERRY, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Metal Window Sashes and Frames, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front elevation, partly broken away, looking at the interior of a window constructed in accordance with my invention. Fig. 2 is a broken cross-section on the line II II of Fig. 1. Fig. 3 is a vertical section on the line III III of Fig. 1. Figs. 4 and 5 are diagrammatic views illustrating the manner of placing the cords and their pulleys for operating one of the sashes, and Fig. 6 is an enlarged cross-section of the interlocking frame and sash.

My invention relates to window sashes and frames, and more especially those used in fireproof buildings, and is designed to improve the connection between the sashes and the guides so as to make these joints substantially dust-proof and to reduce the space occupied by the sash and the frame, as well as to improve the arrangement and connections of the operating-cords and remove them from view.

In the drawings, 2 represents the upper and 3 the lower sash of a window, and 4 4 the side frames. Secured to each of these side frames by screws 5 or other suitable means are two guides 6 6, one for the upper sash and the other for the lower sash, which guides are bent in such a way as to form slotted openings, into which suitably-shaped strips upon the edges of the sash will project. I have shown these strips as bent into spiral form and the strips 7 at the side edges of the sash 8 as bent into curved form and projecting into the interior of the guide-strips; but it is evident that other suitable guides may be devised for attaining this same result. The strips upon the window thus interlock with the guides to form a substantially dust-proof joint and to guide the sashes in their vertical movements.

The glass is clamped between the strips 7 of the sashes and a separable strip 8′, which is secured to the sash by screws 9 or other suitable means.

It will be noticed that the side members, as well as the top and bottom members, of the window-frame are formed of ordinary commercial T-iron, the projecting web of which fits in the brickwork and is securely held thereby, these T-irons being suitably tied together at their meeting ends.

To the end portion of each projecting strip 7 of each sash is secured one member of a continuous cord 10, the end portion of the metal preferably being crimped to the cord. The end portions of both members of this cord pass to and are wound about different portions of a drum 11, supported upon suitable bearings in the hollow subsill 12 of the window-frame. The forwardly-projecting end of the drum-shaft is provided with a disk 13, having a handle 14, provided with a forwardly-projecting pin 15, arranged to enter any one of the circular series of holes in the cover-plate of the subsill. The handle slides upon a central pin 16 and is normally forced forwardly by a spring 17, contained therein. The sash may thus be locked in any adjusted position, as the winding-drum is prevented from rotation by the pin upon the handle entering one of the holes, thus doing away with the necessity for any additional sash-lock.

Referring to the diagrammatic views, the cord 10, starting at the point *a* upon the winding-drum, passes under the pulley 18, thence upwardly and over the top pulley 19, this portion passing up near the inner part of the guide, as shown at *b* in Fig. 2. From the pulley 19 it extends across the top of the window-frame and outwardly to a pulley 20 and thence downwardly in line with the outer portion of the guide at a point opposite that shown at *c* in Fig. 2 to a lower outer pulley 21 and thence back to the same winding-drum, at the inner portion thereof, and is wrapped about this drum several times, sufficient to give a length of rope thereon equal to the travel of the sash. Thence it extends from the under side of the drum to a pulley 22, upwardly to the pulley 23, this branch being directly opposite the point marked *b* in Fig. 2. Thence it extends outwardly and across the top of the window to an outer upper pulley 24

and thence down to the sash at point *c* (shown in Fig. 2) and down to a pulley 25 and thence back to the drum, around which it is again wrapped a sufficient number of times to give a length equal to the travel of the sash. In each series of wrappings upon the drum the cord is cut so as to allow its ends to be moved past each other to give the desired tension, these cut ends then being secured to the drum. The arrows of Fig. 4 indicate the movement of the cord in raising the sash whether the upper or lower sash. Figs. 4 and 5 show only one sash with its cords to avoid confusion of parts.

The lower ends of the curved sheet-metal guides are preferably provided with upwardly-projecting nipples 26, through which the cords pass, thus preventing any water which may enter the guide from contacting with the cables.

The top member of the window-frame is made hollow to receive the upper pulleys 19, 20, 23, and 24, which are mounted upon suitable bearings therein.

The advantages of my invention will be apparent to those skilled in the art. A practically dust-proof joint is provided between the sash and the frame, and the sash is guided in its movements by this connection. A simple and efficient frame for the window is provided, which may be cheaply made and securely held in place. The use of the cord for each sash, with means for locking the drum, gives a simple and efficient means for raising and lowering the sashes and for locking them in any adjusted position. The operating mechanism is concealed and a neat and attractive appearance afforded.

Many changes may be made in the form and arrangement of the parts without departing from my invention, since

I claim—

1. In a window, the combination with a side frame and the sash, of a guide secured to one of said members, said guide being curved or bent to form an inclosed slotted channel, and a projecting bent or curved strip secured to the other member and entering the slotted channel to interlock therewith; substantially as described.

2. The combination with a side frame, having a spirally-bent guide, of a sash having a curved projecting strip entering the interior of the spiral; substantially as described.

3. The combination with a frame, having a guide formed with a slotted chamber, of a sash having a strip entering the chamber, and a cord fixed to the strip and moving within the said chamber; substantially as described.

4. The combination with a sash, of a cord extending from a winding-drum, and passing over pulleys within the four corners of the frame, and means for locking the drum in any adjusted position; substantially as described.

5. The combination with a sash, of a cord having its members secured thereto, said cord passing over pulleys within the four corners of the window-frame, and having portions wrapped upon a drum, said portions being of length sufficient to allow the proper movement of the sash, and means for locking the drum in any adjusted position; substantially as described.

6. A window-frame having a member consisting of a rolled T-shaped iron, with the centrally-located base secured in the wall; substantially as described.

7. A window-frame having side members formed of T-irons, tubular slotted guides secured thereto, and sashes having projecting side strips entering the slotted guides; substantially as described.

In testimony whereof I have hereunto set my hand.

CHARLES McSHERRY.

Witnesses:

L. A. CONNER, Jr.,

G. I. HOLDSHIP.