J. J. McDOWELL.

SHUTTER.

APPLICATION FILED FEB. 24, 1915.

1,198,939.

Patented Sept. 19, 1916.

Fig. 1.

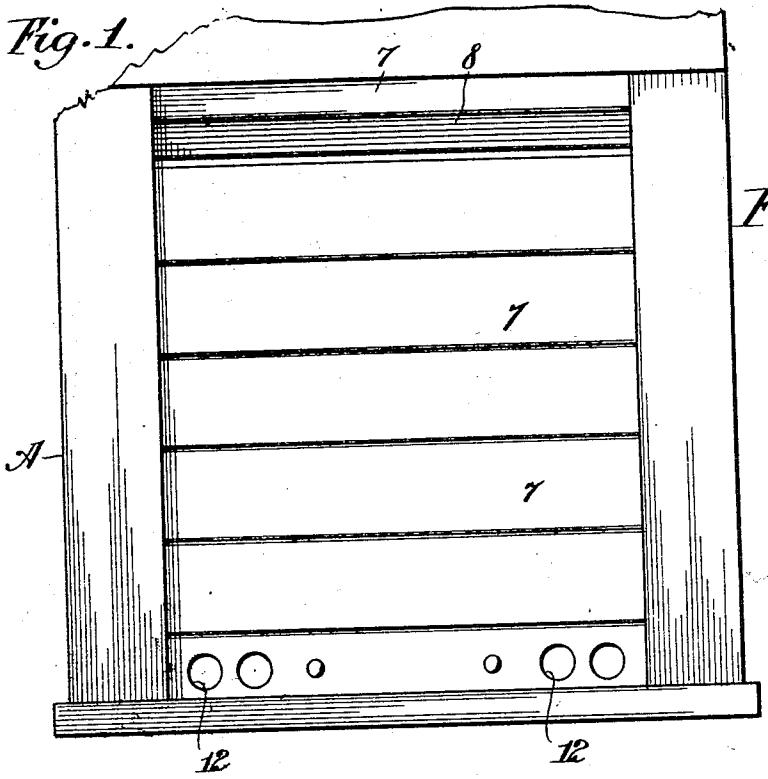


Fig. 2.

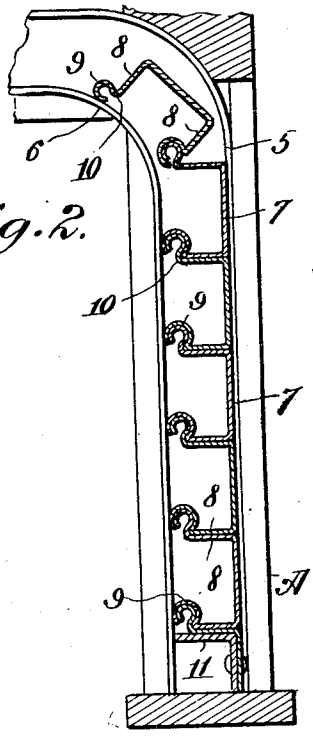


Fig. 3.

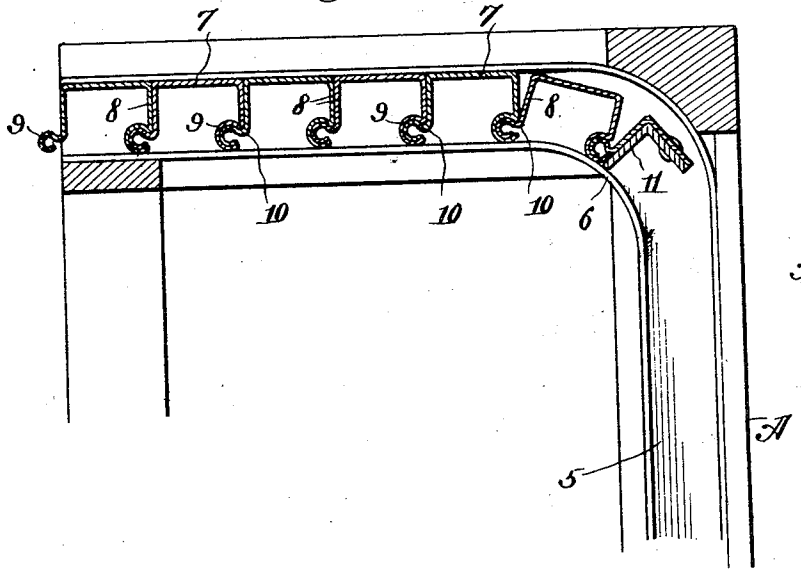
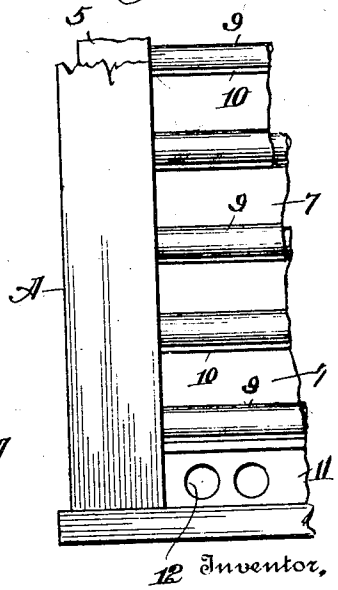


Fig. 4.



Inventor,

John J. McDowell.

Witnesses:

C. Feinle, Jr.,

F. O. Tarter.

By Victor J. Evans,

Attorney.

UNITED STATES PATENT OFFICE.

JOHN J. McDOWELL, OF BOSTON, MASSACHUSETTS.

SHUTTER.

1,198,939. Specification of Letters Patent. Patented Sept. 19, 1916.

Application filed February 24, 1915. Serial No. 10,357.

To all whom it may concern:

Be it known that I, JOHN J. McDOWELL, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Shutters, of which the following is a specification.

The invention relates to shutters, and more particularly to the class of sliding flexible shutters.

The primary object of the invention is the provision of a shutter of this character wherein the sections thereof to render it flexible during sliding movement are connected in a novel manner so as to distribute the strain on the respective connections between the sections to avoid possibility of the separation of the sections during the continued use of the shutter.

Another object of the invention is the provision of a shutter of this character wherein the connections between the sections of the shutter are tubiform and interfit each other to allow free flexibility of the sections for the sliding of the shutter in a groove way for the opening and closing thereof, and when the shutter is opened it will be swung upwardly overhead in an elevated position so as to be out of the way when in this position.

A still further object of the invention is the provision of a shutter of this character which can be moved to opened or closed position with despatch and without any inconvenience to the operator.

A still further object of the invention is the provision of a shutter of this character which is simple in construction, strong, durable, capable of being made completely from metal, reliable and efficient in its operation, and inexpensive in manufacture and installation.

With these and other objects in view, the invention consists in the construction, combination and arrangement of parts as will be hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claim hereunto appended.

In the drawing: Figure 1 is a front elevation of a frame for the shutter, showing the same constructed in accordance with the invention in closed position. Fig. 2 is a vertical transverse sectional view through the shutter. Fig. 3 is a similar view showing the shutter raised. Fig. 4 is a view looking toward the inner side of the shutter when closed.

Similar reference characters indicate corresponding parts throughout the several views in the drawing.

Referring to the drawing in detail, A designates a frame, which may constitute a window frame, door frame, or other like structure, and has fitted in opposite vertical sides or stiles thereof channeled rails 5 which extend vertically to a point above the frame A, at which point there is provided a curvature 6 for the horizontal extension of the said rails so that the shutter will be guided in the rails 5 to opened and closed position, and when in open position will be disposed horizontally in an elevated plane overhead, while in closed position it will be disposed vertically to close the frame, the shutter being hereinafter fully described.

The shutter comprises a plurality of slat-like sections 7, each preferably made from sheet metal, and are bent at their longitudinal edges at right angles to form in-turned flanges 8, the same being also bent at their free edges to form tubiform open sleeves 9 which have their centers disposed directly over the points of the bights 10 at the juncture of the sleeves with the said flanges 8 so that on the interfitting of the sleeves of sections adjacent to each other any strain exerted thereon from without directly against the slat sections 7 will be resisted by a binding action at the bights 10, and likewise on the angular disposition of one section 7 relative to the other the strain will be distributed at the central point of the interfitted sleeves 9 therebetween. The sleeves 9 when interfitted with each other loosely connect the slat sections 7 of the shutter to render the same readily flexible so that it may follow the course of the slots in the guide rails 5 during opening and closing movement of the shutter without undue friction and with despatch.

The openings in the sleeves 9 are at the lowermost points thereof so that the uppermost portions of the sleeves serve as shields to prevent water from collecting in the sleeves, and in this manner the shutter is rendered water-proof.

The lowermost slat section 7 of the shutter has its lower edge straight, and riveted to the inner face of this section is an angle iron 11 for reinforcing the same, the iron

and the said section being provided with holes 12 to serve as hand holds for permitting the raising and lowering of the shutter, as will be clearly apparent.

From the foregoing description, taken in connection with the accompanying drawing, the construction and manner of operation of the device will be clearly understood, and therefore a more extended explanation has been omitted.

What is claimed is:—

A device of the class described consisting of a plurality of channel-shaped metallic sections, one side of each of said channel-shaped sections being curved upwardly and rearwardly and then curved forwardly to provide an integral lateral tubiform sleeve and the other side thereof being peculiarly curved upwardly and rearwardly and then curved forwardly so as to provide a tubiform bight of a diameter to snugly receive the tubiform sleeve of an adjacent section in a manner to permit the sides carrying said interfitting bight and sleeve to contact in concentric relation, the sleeve and bight of each of said sections extending in the same direction and when joined adapted to permit a relative pivotal movement of either section and to cause either section to be supported by the other, and an angle iron having one side secured against that side of one of the end sections formed with the sleeve.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN J. McDOWELL.

Witnesses:
F. W. PARKER,
BENNETT S. JONES.