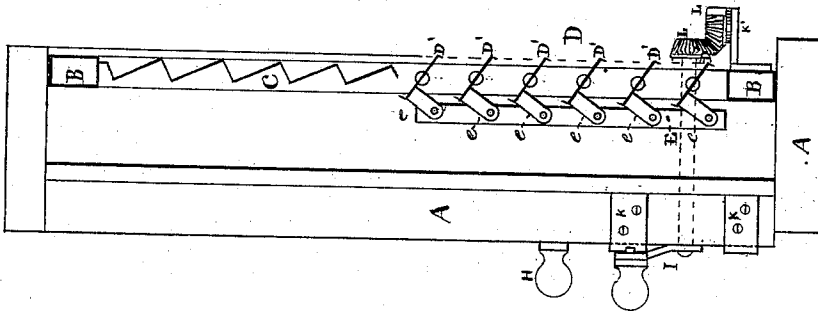


G. CAMPBELL.
SHUTTERS.

No. 178,232.

Patented June 6, 1876.



Witnesses

William Gill
R. H. Hawks

Inventor

George Campbell

UNITED STATES PATENT OFFICE.

GEORGE CAMPBELL, OF TORONTO, CANADA, ASSIGNOR OF ONE-THIRD HIS
RIGHT TO THOMAS MCKAY, OF SAME PLACE.

IMPROVEMENT IN SHUTTERS.

Specification forming part of Letters Patent No. **178,232**, dated June 6, 1876; application filed
August 12, 1875.

To all whom it may concern:

Be it known that I, GEORGE CAMPBELL, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, blacksmith, have invented new and useful Improvements on Window or Door Shutters; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to a window or door shutter, which shall be fire and weather proof. It is constructed of metal, a cross-section of the frame being of the form of a rectangular tube, riveted at the corners, and filled with wood at the ends, whereon the hinges are screwed. The upper half of the shutter is made of a corrugated sheet, representing fixed slats, made to the proper form by suitable machinery therefor. The lower half of the shutter is made of separate movable slats, each of them formed of one piece of sheet metal, a lug or crank being formed on each of them at the one end, which is hinged on a connecting-rod, having a rack attached thereto, and operated by a pinion, by means of a handle and spring inside of and without raising the window for this purpose.

In the accompanying drawing the same letters of reference indicate the same parts.

The figure is a vertical section, showing portions of window-frame A, shutter-frame B, corrugated portion thereof C, portion with movable slats D, and connecting-rod E, attached to each of the slats D' by means of the cranks or lugs e; showing also a crank-handle, I, with gear-wheels L L, and springs K K, and a handle, H, for operating the slats D', by means of a rack and pinion connected with the rod E.

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

A movable metal shutter, with sash B, constructed as shown and described, the frame thereof being tubular, and having a portion of its interior space fitted with corrugated sheets, representing fixed slats C, and the remaining portion of the said interior space fitted with movable flanged slats D, as also shown and described, and operated as set forth.

GEORGE CAMPBELL.

Witnesses:

WILLIAM GILL,
H. F. PRANBLES.