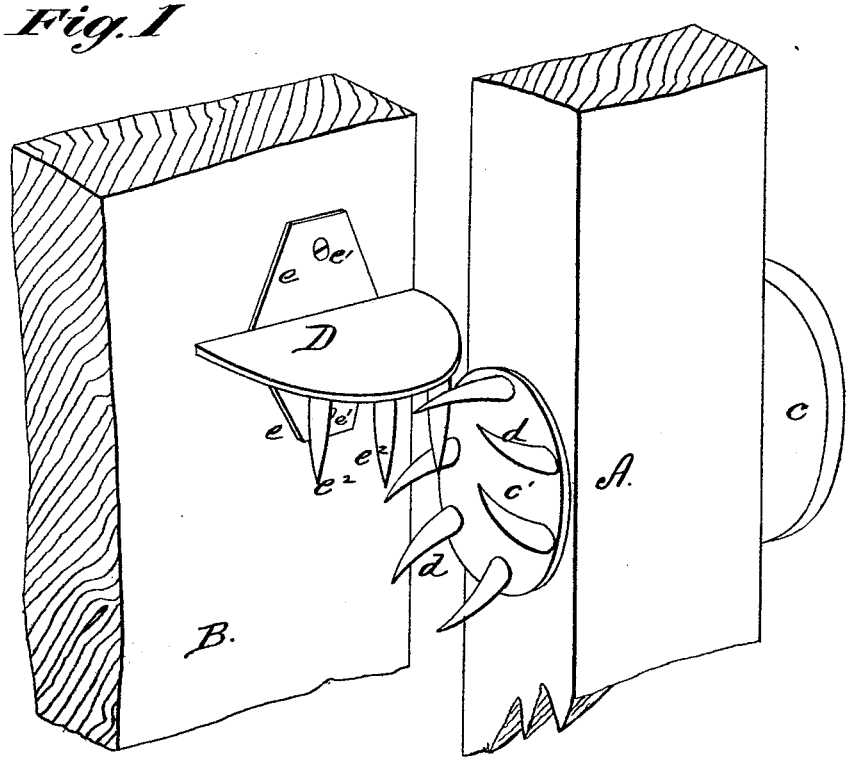
2 Sheets—Sheet 1.

S. W. MERRY.

SHUTTER-WORKER.

No. 183,191. Patented Oct. 10, 1876.

Fig. 1



Witnesses
Jos. P. Connolly
M. Gardner

By

Inventor
Samuel W. Merry
Connolly Bros.
Attorneys

2 Sheets—Sheet 2.

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No. 183,191. Patented Oct. 10, 1876.

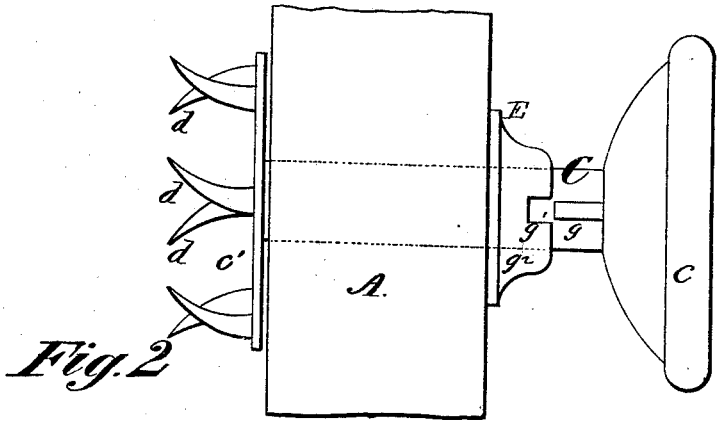

Fig. 2

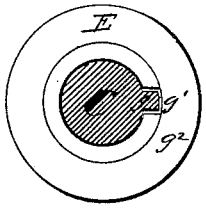

Fig. 3

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UNITED STATES PATENT OFFICE.

SAMUEL W. MERRY, OF QUINCY, ILLINOIS.

IMPROVEMENT IN SHUTTER-WORKERS.

Specification forming part of Letters Patent No. **183,191**, dated October 10, 1876; application filed November 27, 1875.

To all whom it may concern:

Be it known that I, SAMUEL WADE MERRY, of Quincy, in the county of Adams and State of Illinois, have invented certain new and useful Improvements in Shutter-Workers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a perspective view of my invention. Figs. 2 and 3 are detail views.

The invention relates to an improved apparatus for operating hinged shutters; and consists in the devices hereinafter more fully described, being, essentially, of certain disks, one provided with vertical pointed teeth secured to the shutter, the other operated by a shaft extending through the wall adjacent the casing, and provided with tapered prongs, the disks being arranged so that when rotated the prongs and teeth engage, thus operating the shutter.

The object of the invention is to provide a means of controlling the movement of the shutter from within, and to produce a device that, while operating with less friction, is not so apt to become clogged as devices heretofore employed.

Figure 1 is a front elevation of a device embodying the elements of the invention. Fig. 2 is a detached view of the part of same attached to the wall. Fig. 3 is a transverse section through the shaft C at a point adjacent the handle *c*.

In the accompanying drawings, A represents a section of the wall or casing to which the shutter B is hinged. Through the wall A extends the shaft C, terminating in the handle *c*, at the base of which is supplied the feather *g*, which, when the shutter is opened or closed, shall come directly opposite the slot g^1, cut in the collar g^2 of the disk E; and as the shaft C is movable horizontally in the wall, the feather may be forced into or withdrawn from the slot g^1, thereby respectively locking the shutter open or releasing it for movement.

To the end of the shaft C that projects beyond the wall is rigidly secured the disk c', adjacent the periphery of which are secured at their bases the prongs *d*. These prongs are tapered from base to point, are circular in section, and curved or inclined in the direction of the movement of the disk, their under being shorter than their outer curves. They are placed equidistantly upon the disk, and so separated as to permit snow and other clogging matter to pass readily between them.

To the shutter B is secured, by the wings e^1, the plate D, which projects from the surface of the shutter at right angles, and is furnished on its lower surface with the dependent tapering teeth e^2, which are circular in transverse section, placed equidistantly adjacent the edge of the plate D, and depend sufficiently to engage the prongs *d* aforesaid—that is to say, so that the one of the teeth e^2 is always in the space between the adjacent two prongs *d*.

Now, it is obvious that, the shaft C being rotated in one direction—for example, to open the shutter—the inner curve of the prong *d* comes in contact with the tooth e^2, and that the surface of the prong which impinges the tooth will be a surface moving down an inclined plane—that is, down the tapered surface of the tooth—which reduces the friction as the operation advances; and one prong after another engaging the teeth, and only one prong and one tooth ever being engaged simultaneously, it is plain that the shutter will be easily opened, and, when opened, may be locked, as aforesaid.

A contrary movement of the handle closes the shutter by bringing the rear of the prongs in contact with the teeth, and exhibiting the same principle of operating—to wit, two cooperating inclined planes, the motor of one of which is inclined in the direction in which the other is to be moved.

It is plain that the devices heretofore invented, and in which toothed or beveled wheels have been employed, do not exhibit an appli-

cation of the principle of operation above stated, being, moreover, very liable to become clogged by foreign matter.

What I claim as my invention, and desire to secure by Letters Patent, is—

The disk c', secured to a movable shaft, and provided with the curved tapered prongs d, in combination with the bracket D, provided with the dependent teeth e^2, substantially as specified.

In testimony that I claim the foregoing I have hereunto set my hand this 13th day of November, 1875.

SAMUEL WADE MERRY.

Witnesses:
GEO. WOLCOTT,
J. PHIL. BERT.