

(No Model.)

C. C. FAIRMAN.

SHUTTER WORKER.

No. 343,705.

Patented June 15, 1886.

Fig.1.

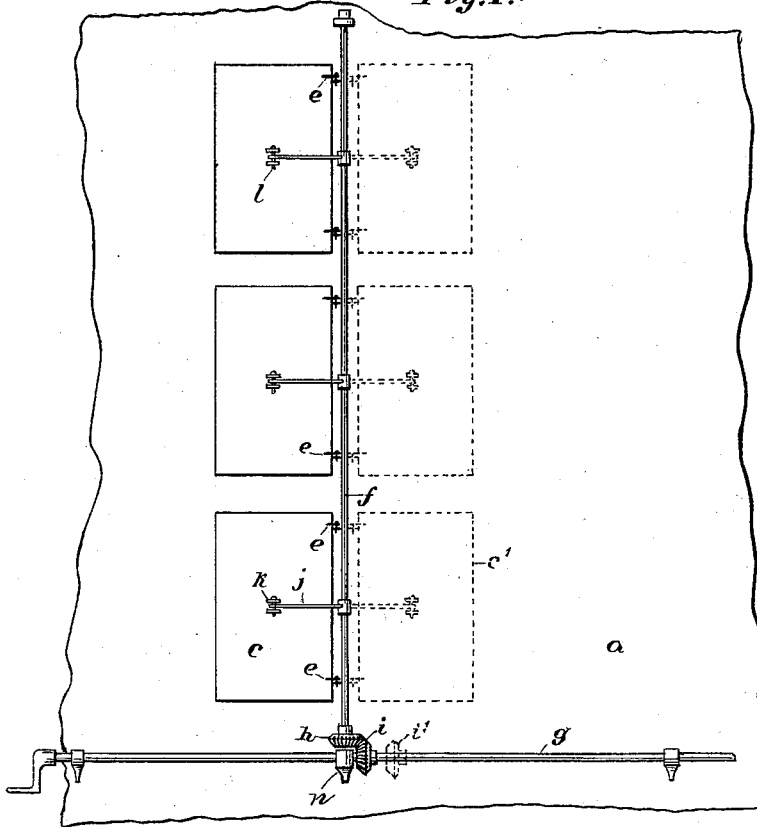


Fig.2.

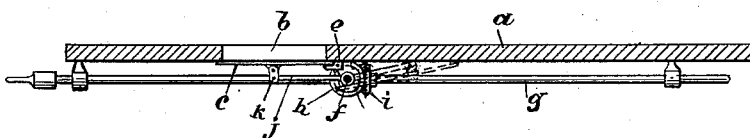


Fig.5.

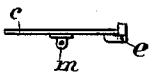


Fig.4. Fig.3.



Witnesses:

*Harry Baur*

Frank W. Hinsdale.

Inventor:

Charles C. Fairman  
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# UNITED STATES PATENT OFFICE.

CHARLES C. FAIRMAN, OF CHICAGO, ILLINOIS.

## SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 343,705, dated June 15, 1886.

Application filed April 10, 1886. Serial No. 198,453. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES C. FAIRMAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Shutter-Workers, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 shows a side elevation of a fragment of a wall or side of a building in which are shown a set of three windows provided with shutters and the mechanism to work them according to my invention. The shutters *c* are shown closed in full outline and open in dotted outline. Fig. 2 shows Fig. 1 in plan view cut by a horizontal plane through one of the windows above the arm *j*. Fig. 3 shows the arm *j* in plan view. Fig. 4 shows a plan view of the link *k*. Fig. 5 shows a plan view of the shutter with its hinge *e* and lug *m*.

Like letters refer to like parts.

The object of my invention is to provide means to work the iron or fire-proof shutters from the ground on the outside or inside of the building, so that they may be opened or closed, as the circumstances may require, in case of fire.

To attain said end, I construct my device as follows, namely: As close to the wall and hinges of the shutters as circumstances will permit I attach a vertical shaft, *f*, which rests and turns in a step, *n*, which step also forms a bearing for the horizontal shaft *g*. To the lower end of the shaft *f* is attached a bevel-wheel, *h*, which meshes with a bevel-wheel, *i*, on the horizontal shaft *g*. Said wheel *i* and

shaft *g* are provided with the usual groove and feather, (not shown,) whereby the wheel *i* can be moved into the position *i'* away from the wheel *h*. By this means any vertical set of shutters may be made stationary, while all the rest of the vertical sets of shutters may be operated by turning the shaft *g*. The shaft *g* is here shown arranged to be turned by a removable crank, which may be attached at either of its ends. To the shaft *f* are attached arms *j*, which turn with it. To the outer ends of said arms *j* are attached short links *k*, having a hole at each end through which pins *l* pass into the arms *j* and lugs *m*, respectively, and thus connect the shaft *f* with the shutter *c*.

Through the construction here shown it is plain that any set of shutters on the side of a building may be opened for the purpose of access to extinguish fire within, and that all the shutters on the side of a building may be opened or closed simultaneously. The shaft *f* may also be arranged to turn by a lever independent of the gear or horizontal shaft.

What I claim is—

1. In combination with a shutter, *c*, the shafts *f* and *g*, provided with gearing *h i*, arms *j*, and links *k*, substantially as specified.

2. In combination with the shutters *c*, having lugs *m*, and hinged at one of their edges, the shaft *f*, provided with arms *j*, links *k*, and step *n*, the hinges of the shutter and shaft being so placed as to swing the shutter away from the window, substantially as specified.

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Witnesses:

WM. ZIMMERMAN,  
HULDAH FISCHER.