T. CRANE.
Screen-Door

No. 215,439. Patented May 20, 1879.

Fig 1.

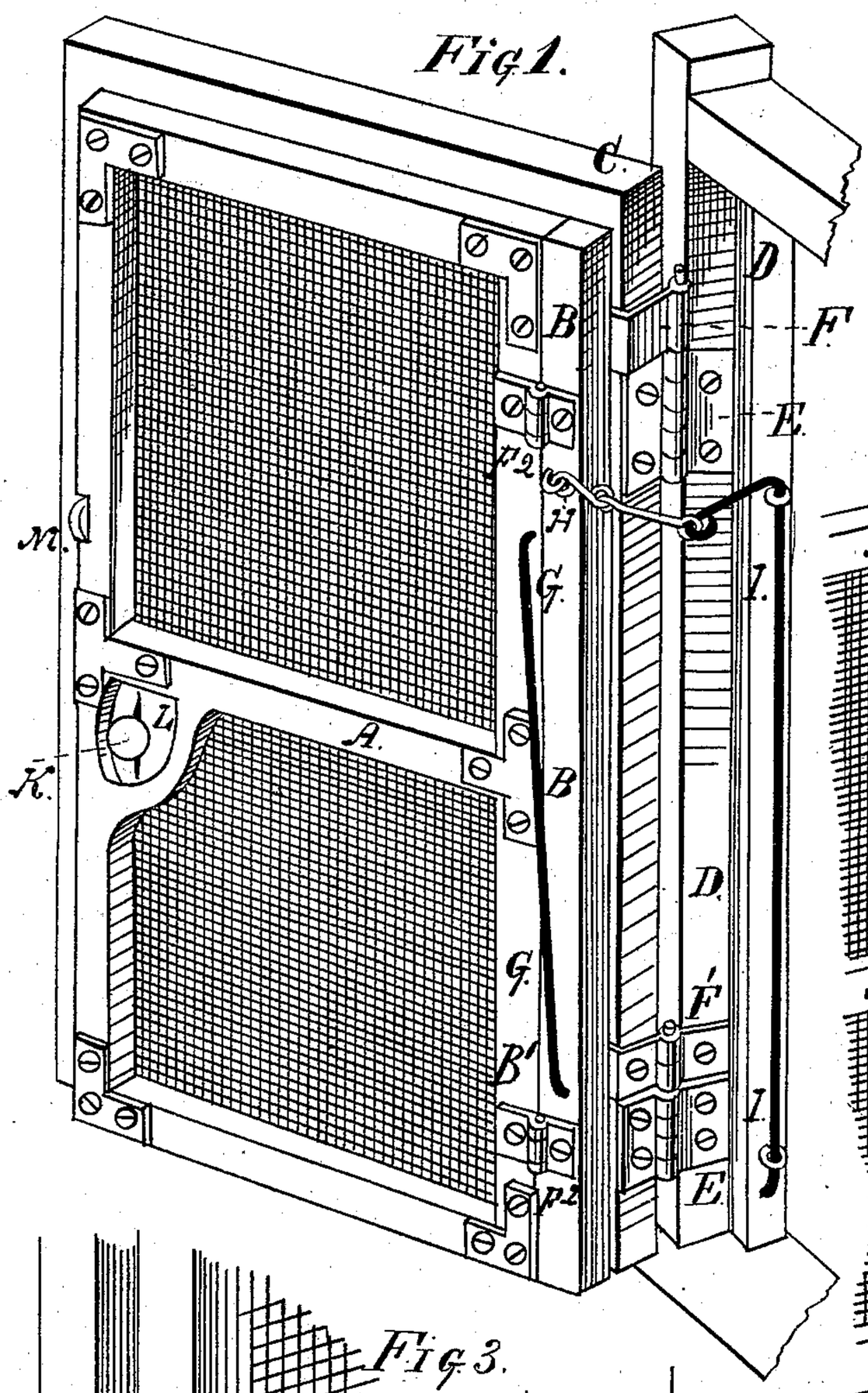


Fig 2.

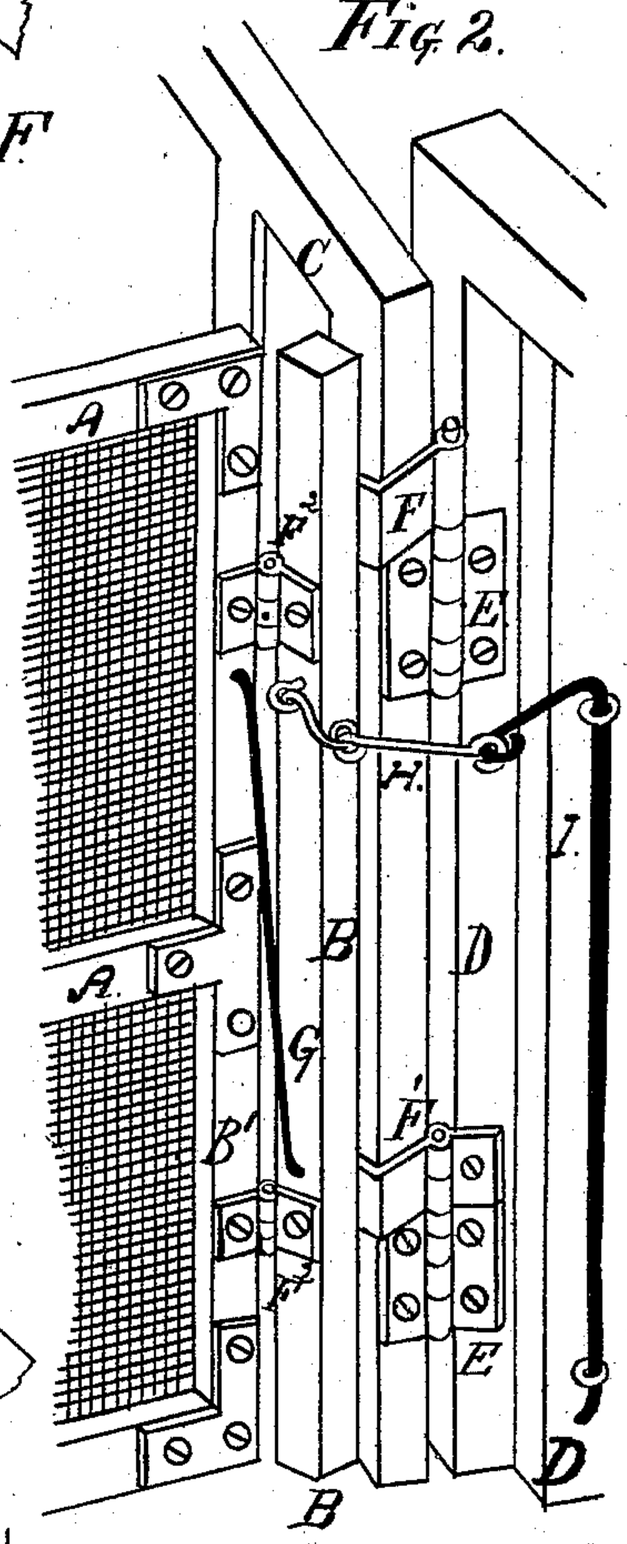


Fig 3.

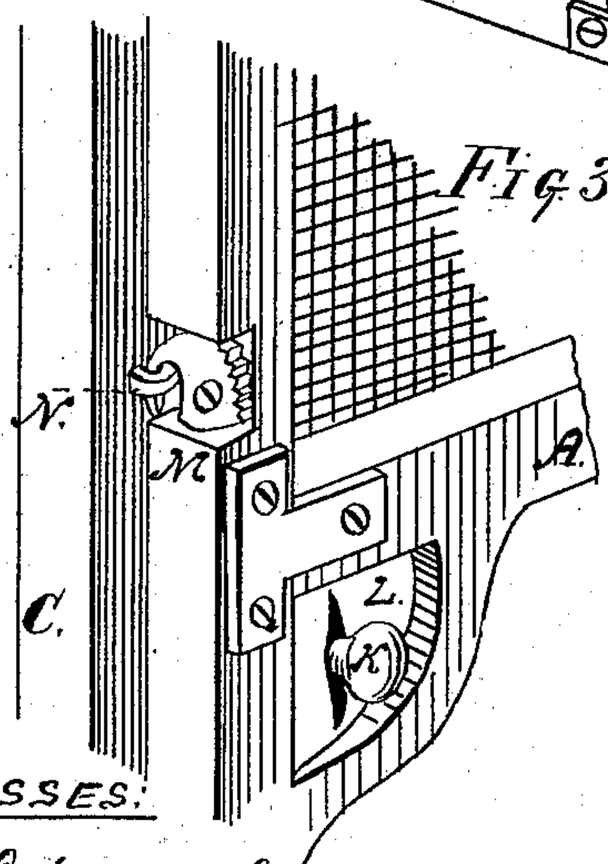
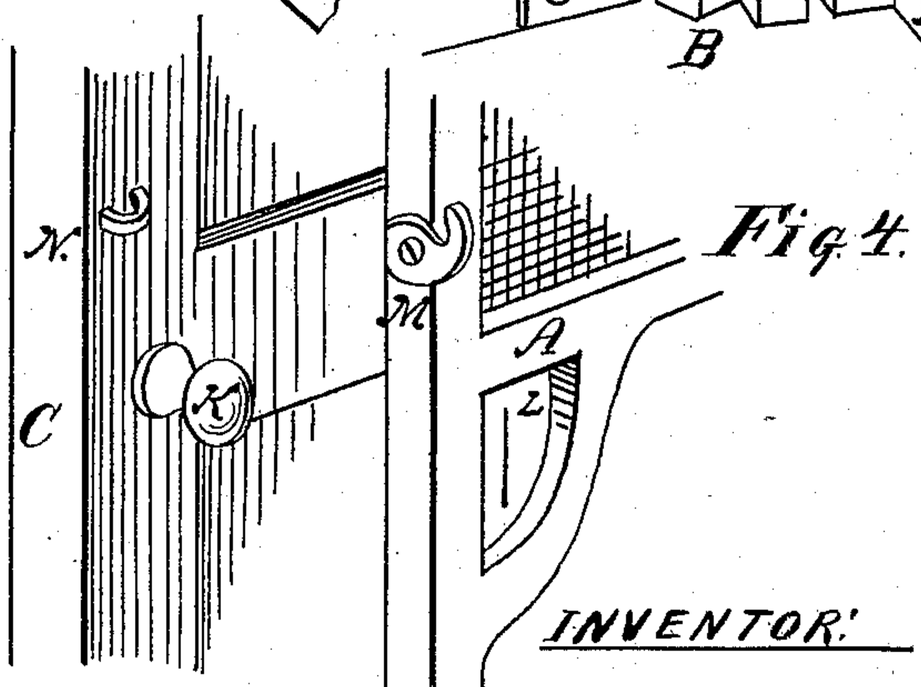


Fig 4.



WITNESSES:

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UNITED STATES PATENT OFFICE

THOMAS CRANE, OF FORT ATKINSON, WISCONSIN.

IMPROVEMENT IN SCREEN-DOORS.

Specification forming part of Letters Patent No. **215,439**, dated May 20, 1879; application filed November 30, 1878.

To all whom it may concern:

Be it known that I, THOMAS CRANE, of the city of Fort Atkinson, in the State of Wisconsin, have invented a Screen-Door, of which the following is a specification.

Heretofore such doors have been made to swing in the opposite way from the solid door, being hinged to the opposite edge of the door-frame. This method is objectionable for the following reasons: First, in many places there is no room for a door to swing in the opposite direction from the other door, but when space will admit the screen-door occupies the same amount of space, swinging in one direction, that the other does in the opposite direction; second, the inconvenience of opening the one before getting at the other to operate the lock or latch; third, when opened, and while opening the second, the annoyance of its closing upon one's heels.

The object of my invention is to combine a screen-door with a common door, C, so the two will operate together as one when the screen is not wanted for use; also, when the screen is desired to be used, to have it operate independently of the door, and swing in the same direction or both ways, as may be desired, the manner and purpose of which I now proceed to describe in detail.

Figure 1 is a perspective sectional view of the door-frame D, with the screen-door A and door C combined, both being hung to door-frame D, the door C by means of hinges E E, and screen-door A by means of hinges F F^1, the spindle of each being in a perpendicular line, shown more fully in Fig. 2. The hinges F and F^1, it will be observed, are not alike, F being composed of only one piece, which is combined with and turns upon the spindle of hinge E, while hinge F^1 is constructed in the usual manner, and works independently of hinge E.

Bar B is hung to door-frame D by hinges F and F^1, while the opposite side is hinged to bar B′ of screen-frame A by hinges F^2. The spring G is composed of a steel rod turned to a right angle at each end, the lower end being driven into bar B, and the opposite end into bar B′. The spring I is also composed of a steel rod turned to a right angle at each end. The lower end is driven into door-frame D, and is held in position by staples placed near the angle at the end, as shown in Figs. 1 and 2. The upper end of spring I is looped to form an eye for the reception of one of links H, while the opposite end of links H is inserted into a staple driven into bar B, Figs. 1 and 2. The spring I closes the screen-door when opened in the direction of door C, while spring G closes it when opened in the opposite direction.

Fig. 2 represents the screen-door hinges partially turned; but when not desired to swing both ways the bar B may be dispensed with by making the screen-frame large enough to fill the space within the door-frame D, and hang it with hinges F or F^1.

Fig. 3 is a perspective sectional view of screen-door A and door C hooked together by means of hook M and staple N. L is a thin rubber fabric tacked upon frame A, covering an opening in the frame prepared for the reception of knob K, which is thrust sufficiently through a slit in the rubber, to be operated from the outside, while the doors remain hooked together, as in Figs. 1 and 3.

Fig. 4 is also a perspective sectional view of the same, showing screen-door A released from door C, to be used separate while leaving door C open.

When the screen-door is released and the knob is withdrawn the slit in the rubber L closes as in Fig. 4. I also adapt it to door and bell handles.

The purpose of this elastic slit or aperture is not to fasten the doors together, but to permit the doors A and C to come close together to allow the knob, latch, or bell-handles to protrude sufficient to be operated outside of the screen-door, and when withdrawn to close the aperture, by which means a screen-door may swing in the same direction and in conjunction with another door, and not interfere with the operation of lock, latch, or bell.

The screen-hinge F, I use in combination with hinges in common use, having loose spindles, by inserting longer ones, sufficient to pass through both. Indoors having hinges with tight spindles, I use hinge F^1 for screen-door hanging. The bars which compose the screen-door frame A are not framed together as usual, but are merely fitted nicely to each other, being cut square off, and then held in position by iron

plates secured by screws, as in Figs. 1 and 2, thus making it cheaper and more easily fitting the doors. I tack the screen-cloth on the side of frame A nearest the door C.

I do not claim the elastic device L as my invention, it having been used for curtain-fastenings in patent of J. C. Fish, October 13, 1868, No. 83,056, and others; but

What I do claim, and desire to secure by Letters Patent, is—

1. In screen-doors, the combination of doors A and C, hinged to frame D, door A being provided with a passage for knob K of door C, out of which it protrudes sufficiently to enable one to operate the doors conjointly from the outside, substantially as described.

2. The door A, having a hinge device, F and F^1, arranged to turn upon the same line of axis with the door C, substantially as described, for the purpose specified.

3. The combined arrangement of doors A and C, hinges F and E, bar B, and hinges F^2, substantially as described, for the purpose specified.

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Witnesses:

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