No. 880,350. PATENTED FEB. 25, 1908.

G. P. BALCH.

SLIDING DOOR OR SASH.

APPLICATION FILED SEPT. 19, 1906.

2 SHEETS—SHEET 1.

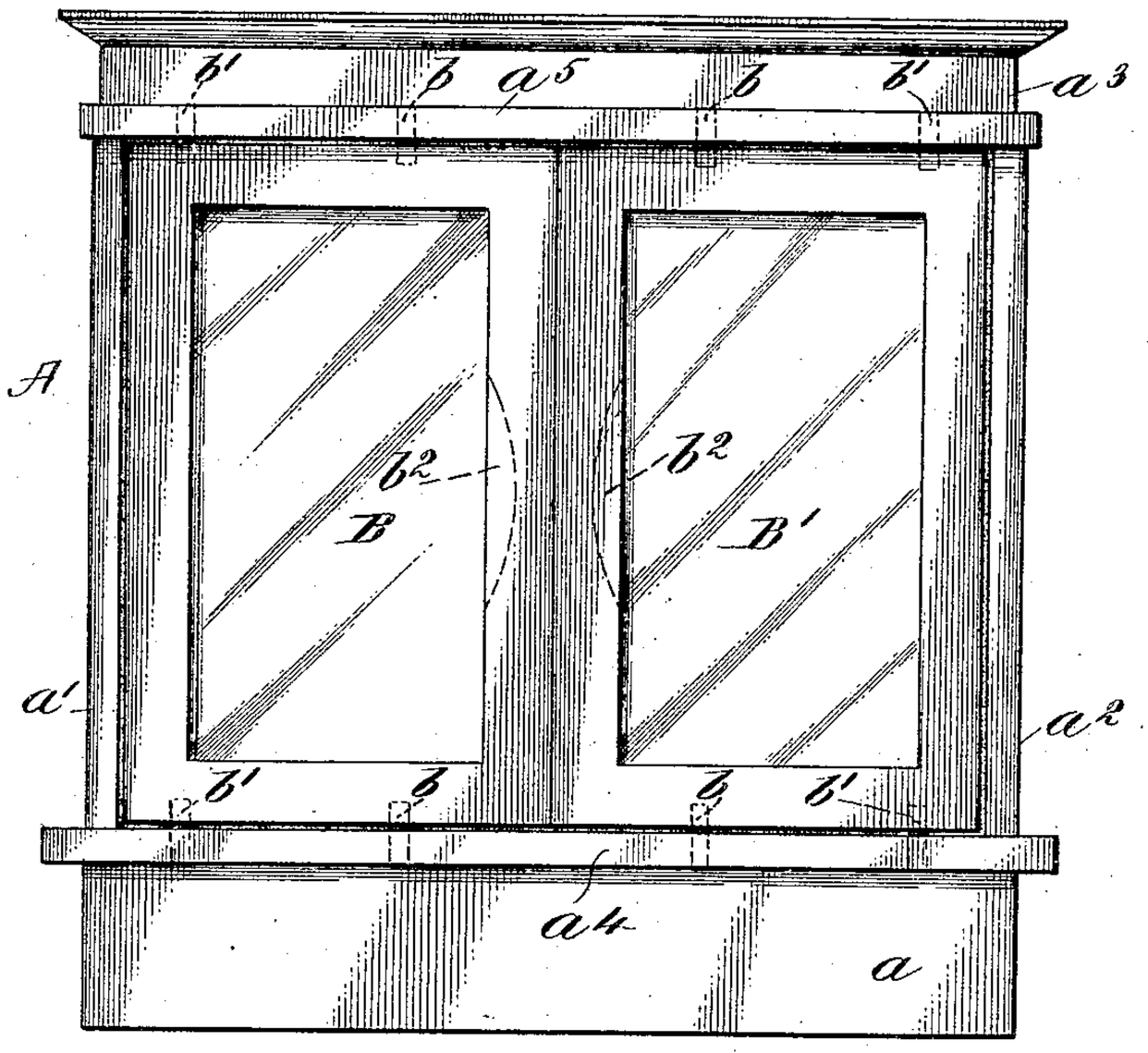

Fig. 1.

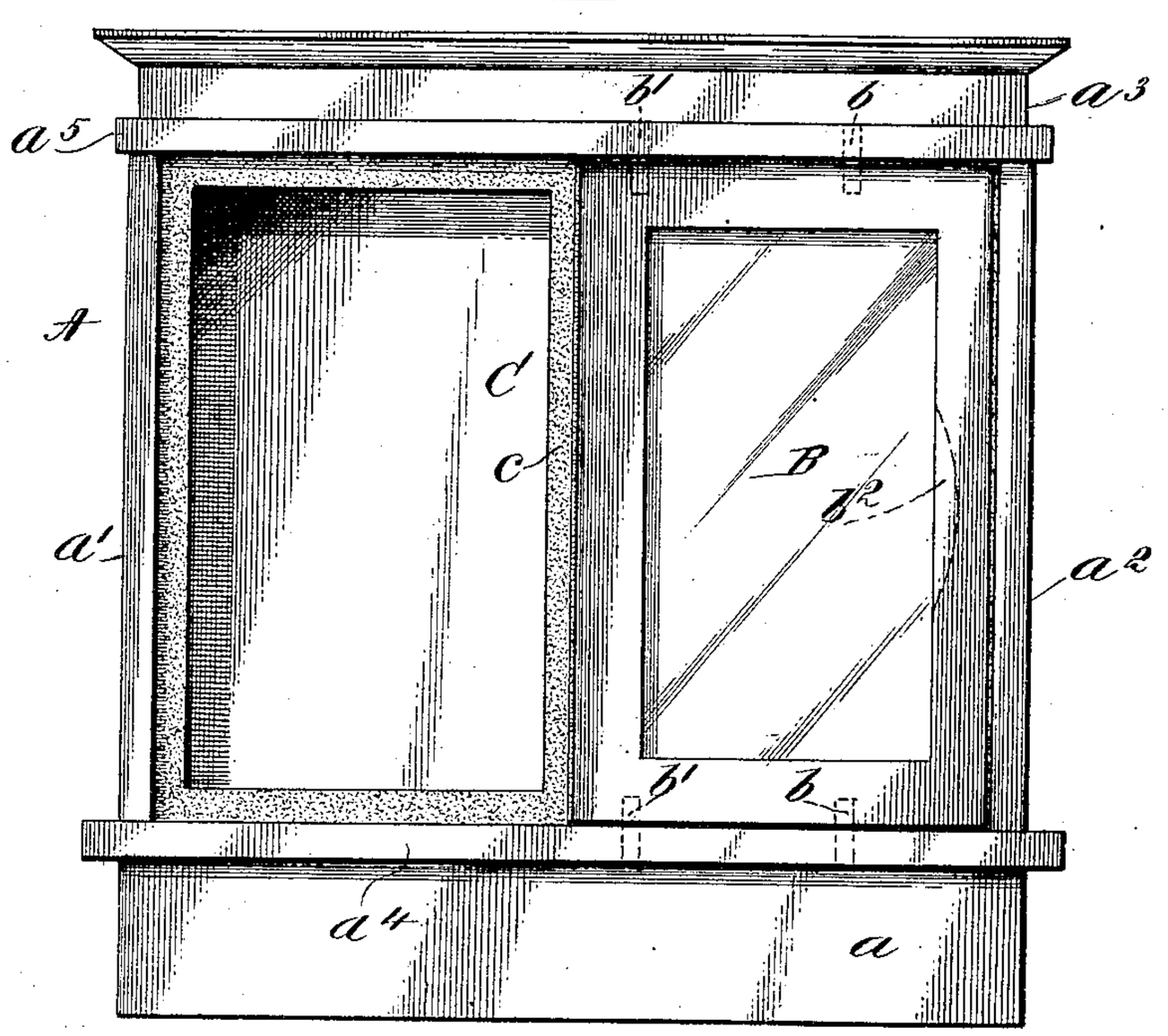

Fig. 2.

WITNESSES

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M. V. Foley.

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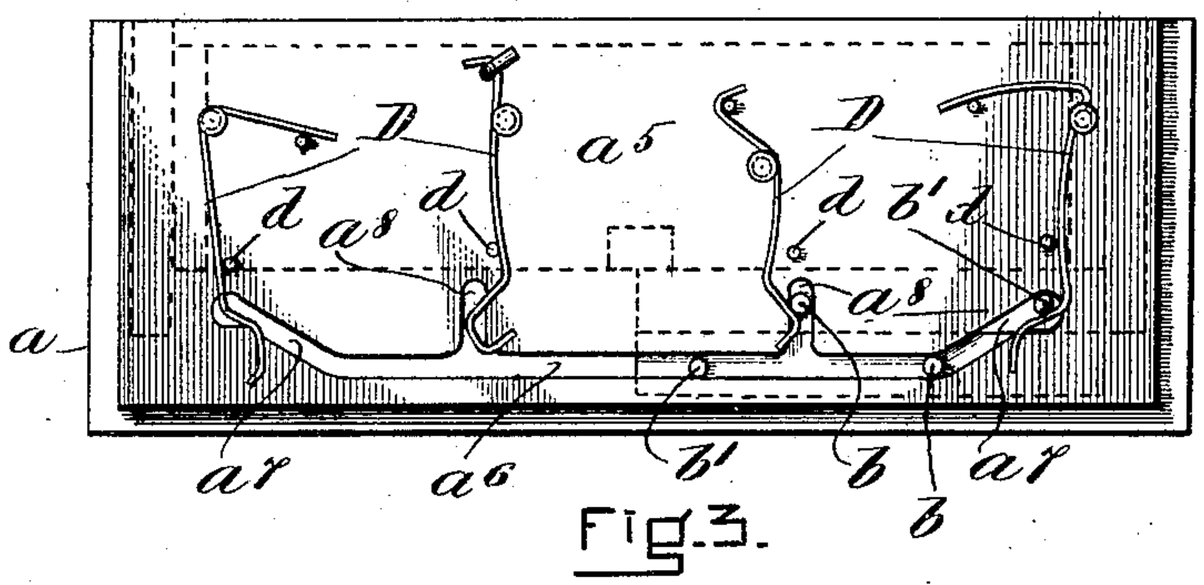

Fig. 3.

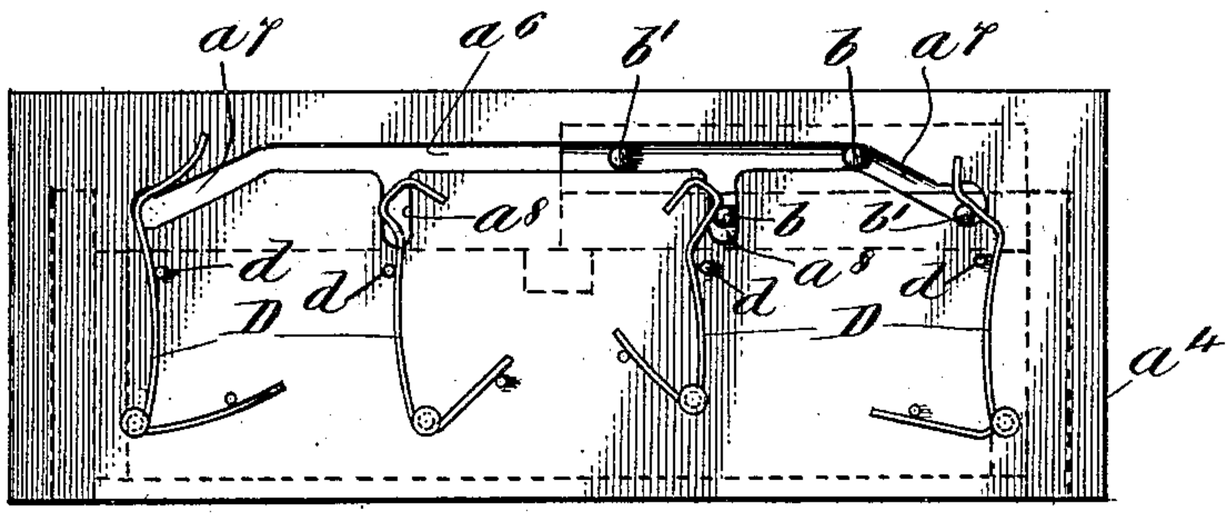

Fig. 4.

WITNESSES.

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UNITED STATES PATENT OFFICE.

GEORGE P. BALCH, OF LYNN, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO JOHN S. BALCH, OF LYNN, MASSACHUSETTS.

SLIDING DOOR OR SASH.

No. 880,350. Specification of Letters Patent. Patented Feb. 25, 1908.

Application filed September 19, 1906. Serial No. 335,327.

To all whom it may concern:

Be it known that I, GEORGE P. BALCH, of Lynn, in the county of Essex and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Sliding Doors or Sashes, of which the following is a specification.

My invention relates essentially to an improved means by which doors or sashes which lie when closed in the same plane may be made to slide by one another when said doors or sashes are opened, the object of my invention being to provide a simple means by which one door or sash may be brought forward and slid by the other door or sash adjacent to it.

I have shown in the drawings my invention as embodied in a simple form of case or closet in which—

Figure 1 shows the case in front elevation with the doors or sashes closed. Fig. 2 shows the same with one of the sashes open. Fig. 3 is a cross section taken on the line 3—3 of Fig. 2, and Fig. 4 is a section taken on the line 4—4 of Fig. 2.

Referring to the drawings:—A represents the case.

a is the base of the case, a^1, a^2 the sides, and a^3 the head.

B, B^1 are the respective doors or sashes closing in front of the case. In Fig. 1 the doors or sashes are shown in a closed position, the essential feature to be noted being that when thus closed they lie in one plane, or, in other words, their faces are flush with one another.

With reference now to the means for accomplishing the sliding opening and closing of the doors or sashes there is first to be noted the boards or plates a^4, a^5 at the ends thereof. In the case shown the board or plate a^4 at the bottom of the doors or sashes and upon which they rest is built on to the base portion *a* of the case while the board or plate a^5 at the top of the doors or sashes is supported by the sides of the case and surmounted by the head a^3. These boards or plates act as a slotted frame between which the doors or sashes are contained, and it is by means of slots or ways formed in this frame in which run pins *b*, b^1 affixed to and extending from the respective ends of the doors or sashes that their opening or closing is accomplished. These slots or ways which are cut in the plates or boards a^4, a^5, or frame containing the doors or sashes are substantially alike in their formation or arrangement for both boards or plates as may be seen by reference to Figs. 3 and 4. Each board or plate has in it a slot a^6 which extends in front of and by the plane occupied by the doors or sashes when in a closed position. Offset from this slot at either end thereof and extending outwardly in reverse directions towards the outer stiles of the doors or sashes are inclined slots a^7, a^7, or those having an obtuse angular relationship to the slots a^6, and which slots a^7, a^7 are inclined back to extend into the plane occupied by the doors or sashes when closed. I prefer that these inclined slots shall enter the plane occupied by the doors or sashes when closed at a point in or relatively near the plane occupied by the outer stiles of the doors or sashes when closed as aforesaid. There are also offset from each of the slots a^6 at right angles thereto the slots or ways a^8, a^8. These slots like the inclined slots a^7, a^7, extend to and into the plane occupied by the doors or sashes when closed. I prefer also that they shall enter the plane occupied by the doors or sashes when closed at a point as near the inner stiles of the doors or sashes when closed as possible, at the same time so far removed therefrom or from the inner edge of the sash that the pins which are adapted to be contained in these slots will not interfere with the proper opening of the doors or sashes as will be hereinafter explained.

Now the disposition of the pins *b*, b^1 affixed to and extending from the doors or sashes are such relatively to the offset slots or ways before mentioned that the pins will be contained therein when the doors or sashes are in a closed position. Upon grasping one door or sash or the other at the point of its inner stile, which may be done by a finger receiving slot b^2 cut in the edge of the stile (see Fig. 1), the inner portion of the door or sash may be drawn out in the direction of the main slots a^6 so as to avoid an abutting edge as that of the other door or sash. This operation is permitted because the pins *b* at the ends of the doors or sashes contained in the perpendicular offset slots or ways a^8 will slip directly into the main slots a^6. The door or sash may then be drawn to the right or left, depending upon the door or sash drawn out, and made to slide by the other door or sash, the pins *b* at the ends of

the door or sash running in the main slots a^6 and the pins b^1 being gradually drawn out into the same from the inclined slots a^7 in which they are contained when both pins will run in the main slots and the door or sash drawn to a fully open position.

The closing of the door or sash is accomplished simply by a reverse movement. The pins b^1 on the ends of the doors or sashes will first enter the inclined slots or ways a^7 which will direct the outer portion of the door or sash into a proper closed position, then by pressing inwardly the forward portion of the door or sash it also will be made to properly close, the pins b at the ends of the door or sash entering the offset slots or ways a^8 in which they are adapted to be contained.

As may be seen by reference to Fig. 2 the doors or sashes close against a series of flange forming strips or backing C fixed to the inside of the case around the edges of the doors or sashes when in a closed position. For the purpose of keeping the doors or sashes closed in a position snug up against the strips or backing before mentioned, I have arranged upon the outside of the respective boards or plates a^4, a^5 holding devices or springs comprising bent pieces of wire D which engage with the pins b^1 fixed to the doors and projecting through the slots in the boards aforesaid. These wires are held in a normally engaging position by means of pins d driven into the boards a^4 and a^5 and the wires are arranged to yield to the pins as they enter the offset slots or ways and to yieldingly bear against said pins when the doors or sashes are closed, thereby holding them closed under tension. The opening of the doors or sashes is accomplished as before explained against the yielding tensional resistance of the holding wires.

The manner of closing the sashes and holding them closed make them practically dust proof for every part of the door or sash is held snug up against the strip or backing against which it is adapted to bear when closed.

For the purpose of making the doors and sashes even more secure against dust I prefer to cover the strips or backing, and also the edges of the doors or sashes with felt c, or some other fibrous dust excluding material.

What I claim as my invention is:—

1. The combination with doors or sashes flush with one another when in a closed position, of a frame between which the doors or sashes are interposed, members affixed to the ends of said doors or sashes and contained in slots or ways formed in said frame, said slots comprising main slots or ways formed in said frame at opposite ends of the doors or sashes extending on lines outside the plane occupied by the doors or sashes when closed and parallelly therewith and slots offset therefrom arranged whereby the inside portions of either of said doors or sashes may be moved in the direction of said main slots to avoid an abutting edge, and said door or sash have clearance to slide in said main slot by the members affixed thereto.

2. The combination of doors or sashes flush with one another when in a closed position, of a frame between which the doors or sashes are interposed, members affixed to the ends of the doors or sashes and contained to run in slots or ways a^6, a^7 and a^8 formed in said frame, said slots a^6 comprising slots formed in said frame at the opposite ends of the doors or sashes and extending on lines outside the plane of said doors or sashes when closed and parallelly therewith, said slots a^7 comprising slots perpendicularly offset from the main slots a^6, and the slots a^8 comprising slots offset at an angular inclination with respect thereto and in which offset slots a^7, a^8 the members affixed to the doors or sashes are adapted to be contained when the sashes are in a closed position.

3. The combination with doors or sashes flush with one another when in a closed position, of a frame between which the sashes are interposed, slots or ways formed in said frame and extending in a direction in front of and by said doors or sashes when in a closed position, slots or ways offset from said slots or ways aforesaid extending in a direction towards and into the plane of the doors or sashes when in a closed position, members affixed to the doors or sashes adapted to be contained and run in said slots aforesaid, whereby said doors may assume a closed position or be drawn forward to slide by one another, and yielding members affixed to said frame between which the doors or sashes are interposed for holding said doors or sashes in a closed position.

GEORGE P. BALCH.

Witnesses:
JOHN E. R. HAYES,
M. D. NEWMAN.