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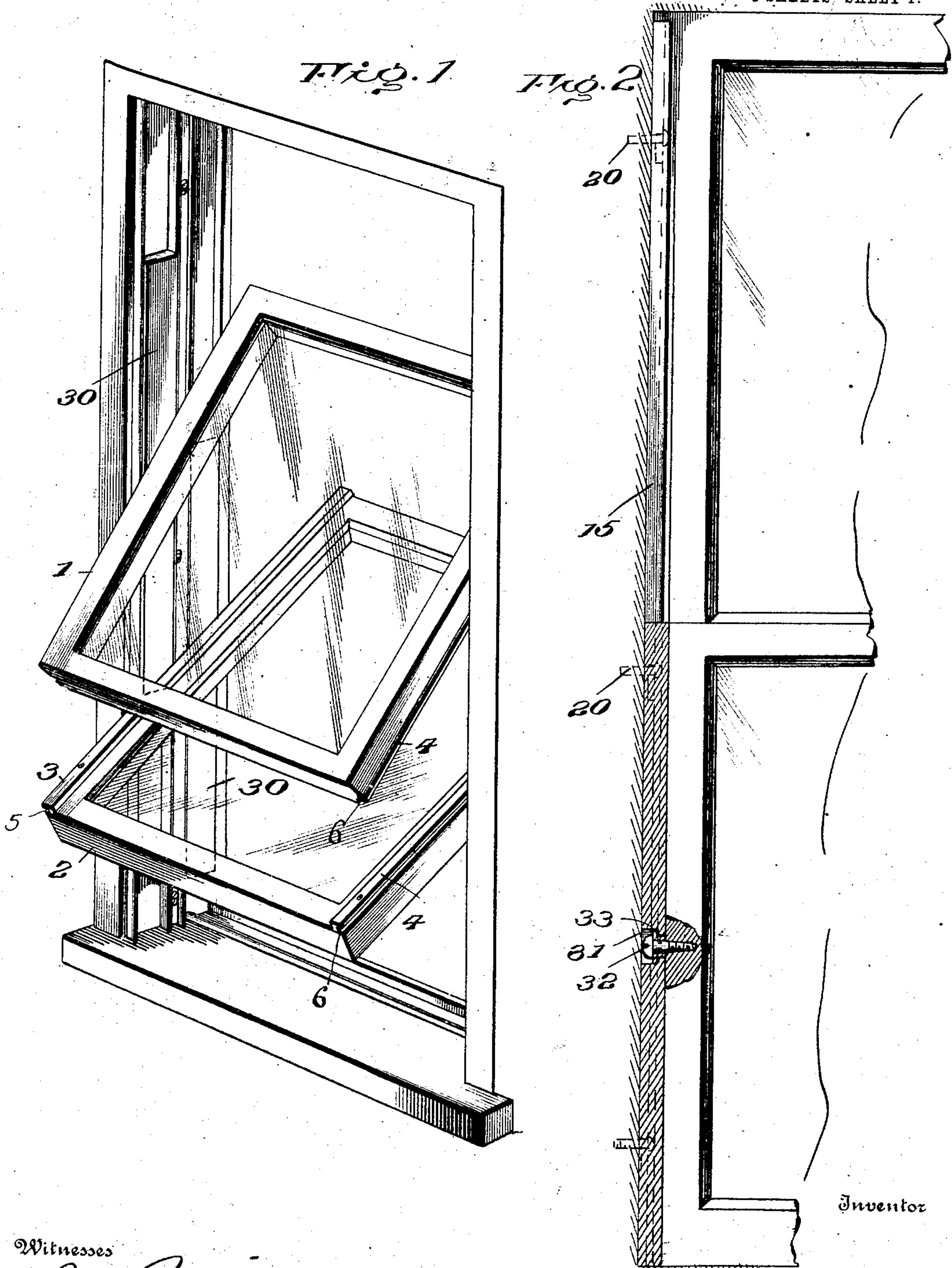
PATENTED JAN. 12, 1904.

O. FROTSCHER.
WINDOW.

APPLICATION FILED JAN. 31, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses

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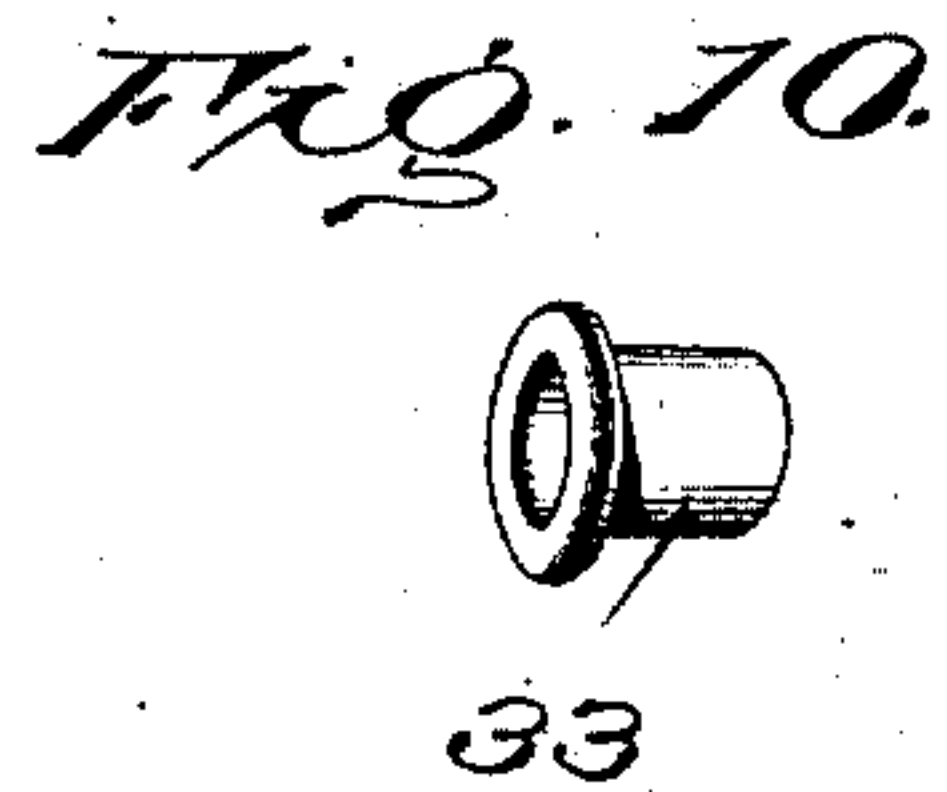
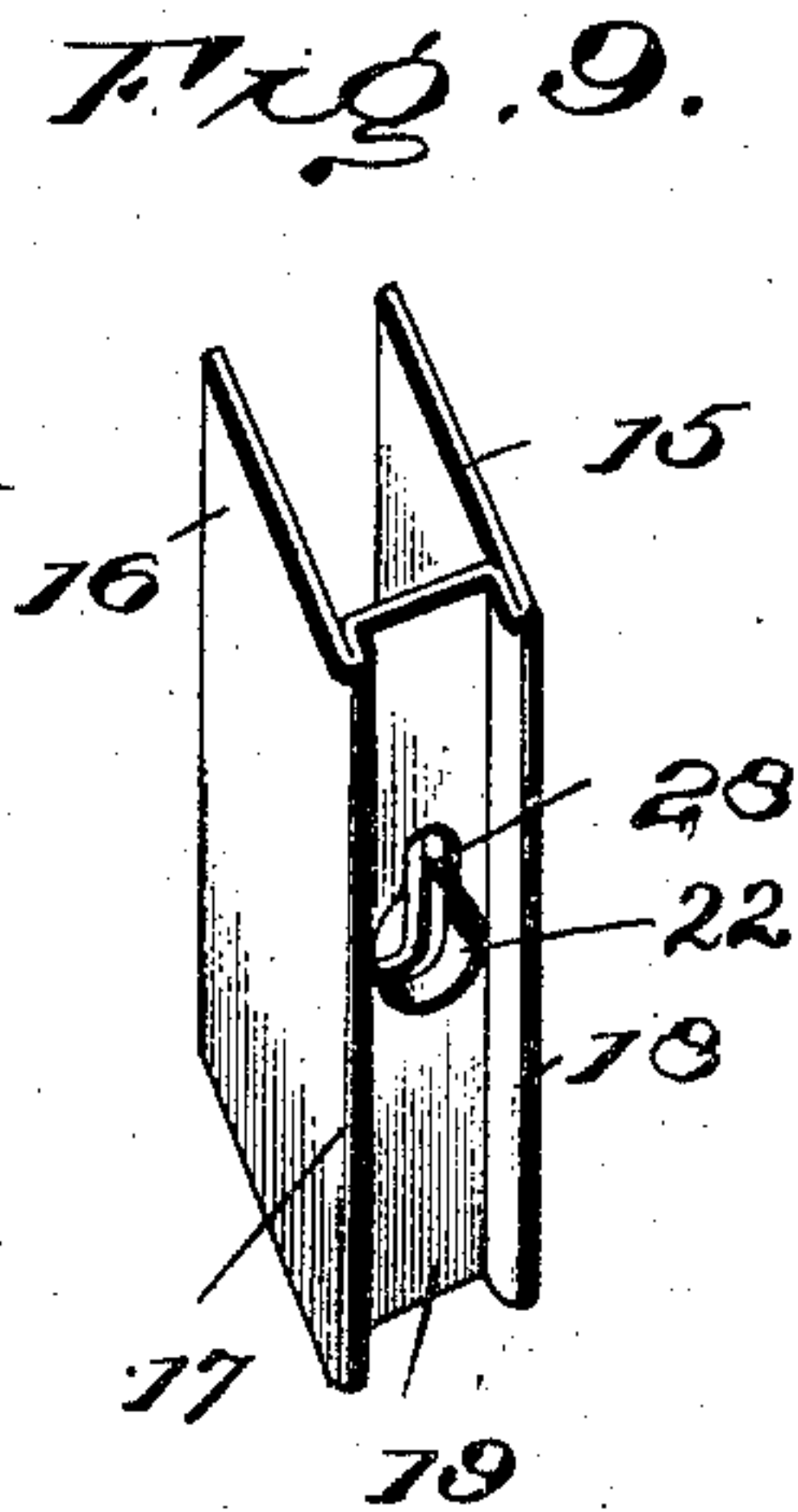
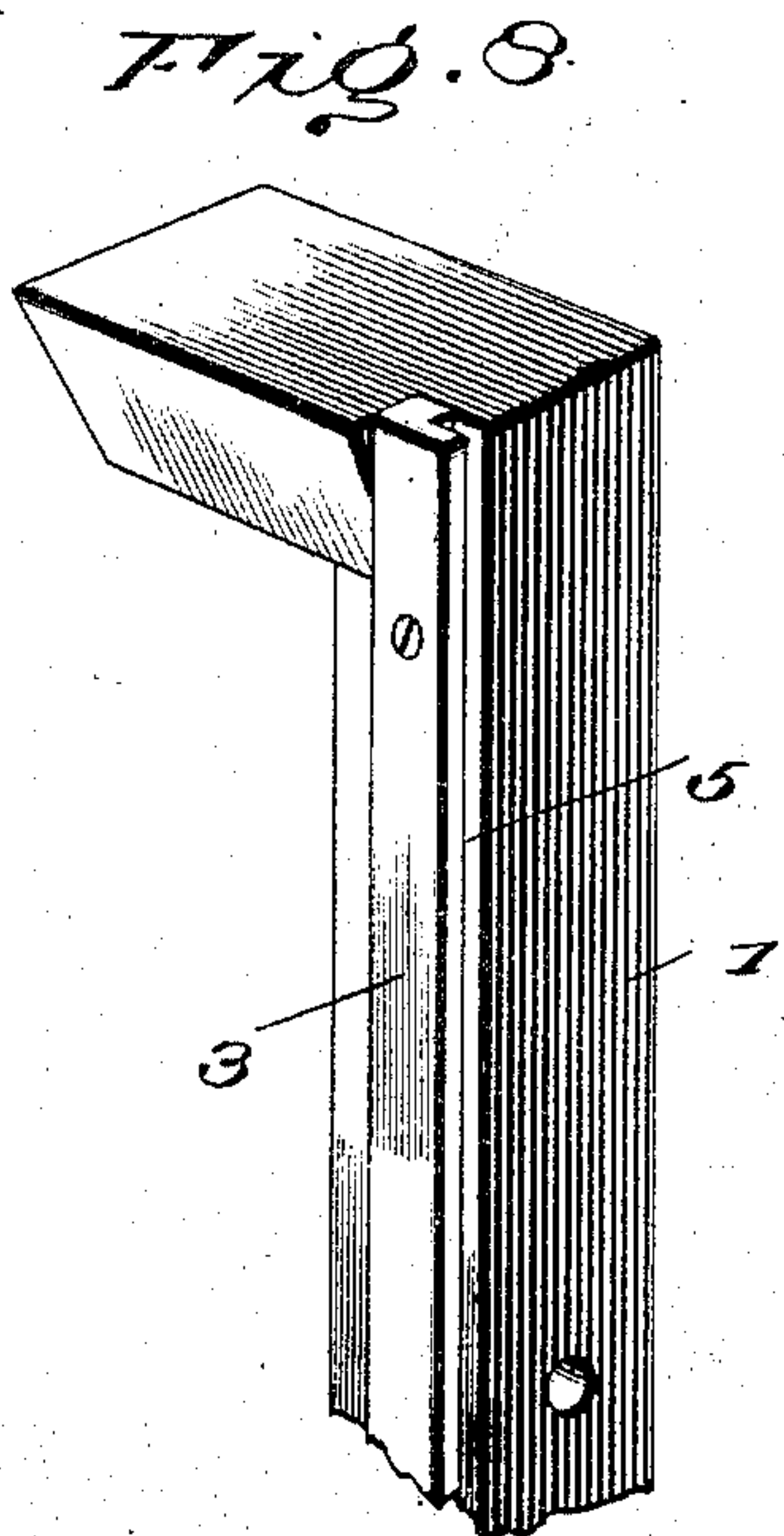
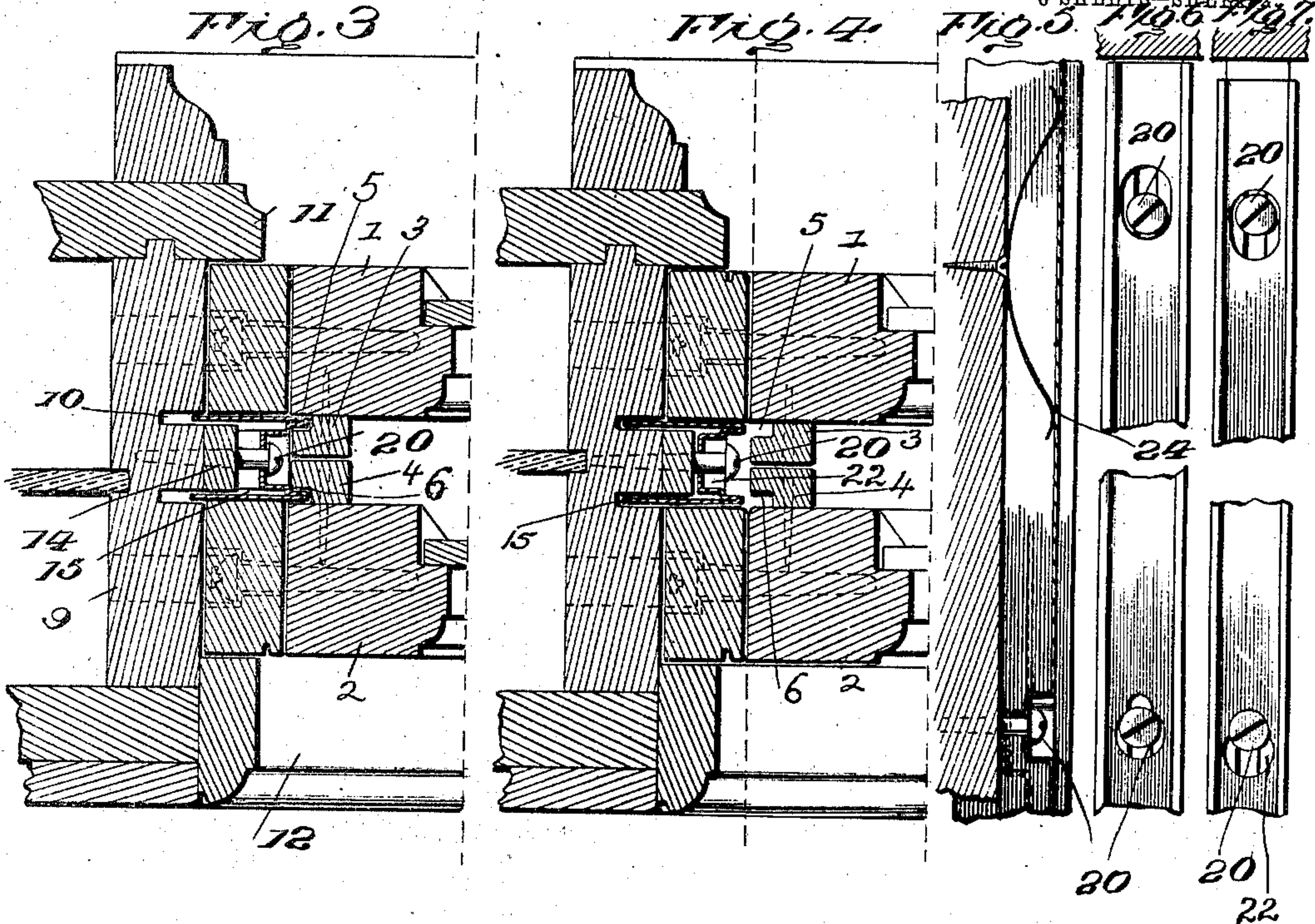
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3 SHEETS—SHEET 2



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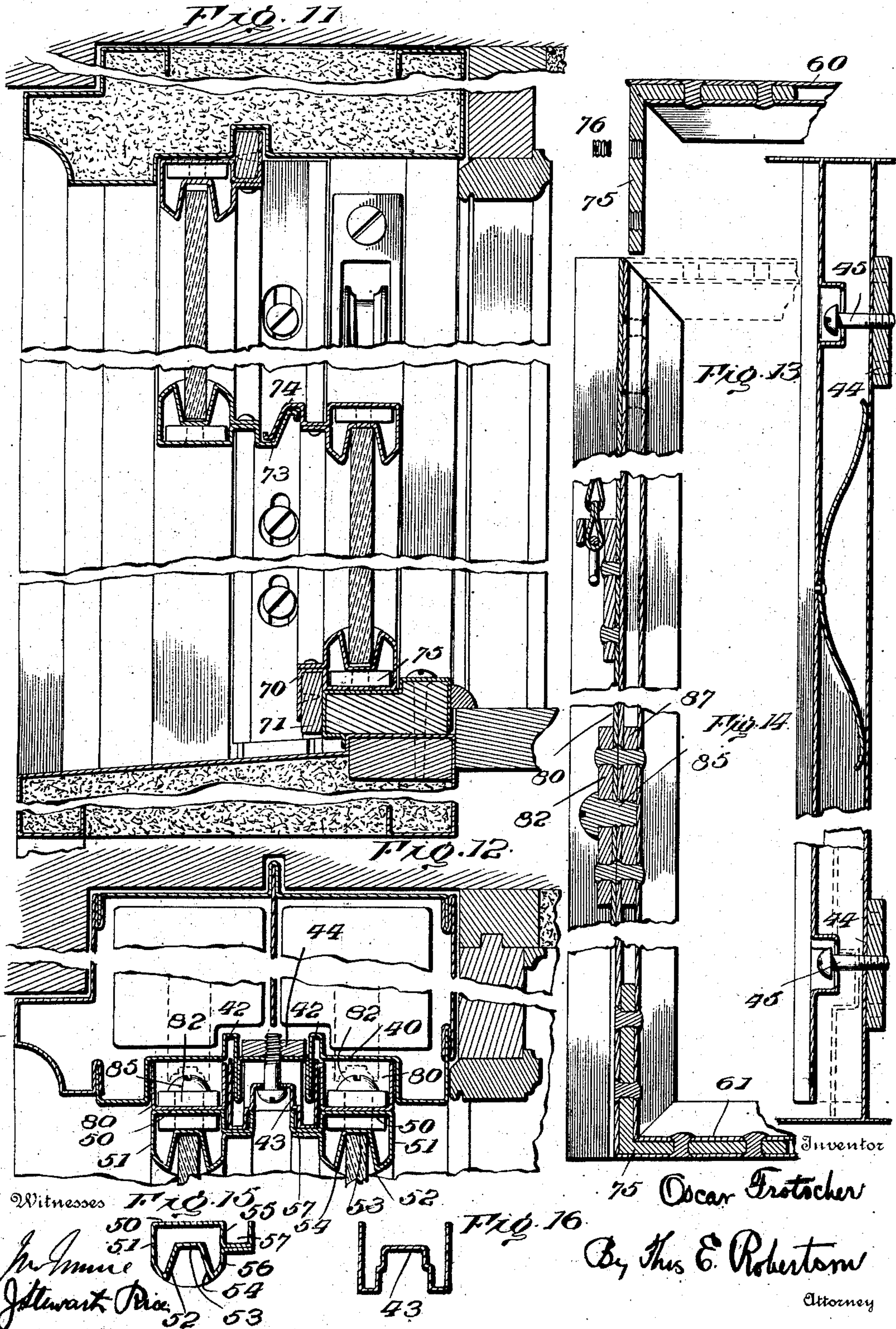
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APPLICATION FILED JAN. 31, 1903.

NO MODEL.

3 SHEETS—SHEET 3.



UNITED STATES PATENT OFFICE.

OSCAR FROTSCHER, OF PHILADELPHIA, PENNSYLVANIA.

WINDOW.

SPECIFICATION forming part of Letters Patent No. 749,608, dated January 12, 1904.

Application filed January 31, 1903. Serial No. 141,325. (No model.)

To all whom it may concern:

Be it known that I, OSCAR FROTSCHER, a citizen of the United States of America, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Windows; of which the following is a specification.

This invention relates to certain new and useful improvements in windows of that class in which the sash are arranged to rotate on horizontally-arranged pivots as well as to slide in the ordinary manner.

One of the objects of my invention is to provide a sash of this character which will be simple in construction and easy in operation and which will be of such a form that it can readily be made at the mills.

A further object of my invention is to provide a parting-bead, which at the same time acts as an effective weather-strip and which is so arranged as to be capable of being placed in inoperative position in order to permit the sash to swing on their horizontal pivots.

Other details of my invention will be more particularly set forth in the description following hereinafter and illustrated in the accompanying drawings and then definitely set forth by the claims at the end hereof.

In the accompanying drawings, which represent the preferable, though not necessary, embodiment of my invention, Figure 1 is a perspective view of a window, showing the parting-bead locked in its inactive position and with the sashes swung on their horizontal pivots. Fig. 2 is a side elevation of the same; partly in section, the sashes being in their vertical positions, but the parting-bead still locked in its inactive position. Figs. 3 and 4 are horizontal sections showing the combined parting-bead and weather-strip, Fig. 3 showing said bead and strip in its active position and Fig. 4 showing it in inactive position. In these figures both sashes are shown at the same level in section. Fig. 5 is a vertical section of part of a frame, showing my combined parting-bead and weather-strip held outward by its spring in full lines and in its inner position in dotted lines. Figs. 6 and 7 are side elevations of the parting-

strips, the first of said figures showing the strip in its normal position and the other in its inactive position. Fig. 8 is a perspective view of a portion of a sash, showing one of the minor features of construction. Fig. 9 is a perspective view of a portion of the combined parting-bead and weather-strip. Fig. 10 is a perspective view of a bearing for the horizontal pivot. Fig. 11 is a vertical section of a window, showing my invention when arranged with metal sash. Fig. 12 is a horizontal section of the same. Fig. 13 is a vertical section of one of the sides and parts of the top and bottom of a metal sash made in accordance with my improvement, showing my method of pivotally mounting the sash, this figure showing the upper section of the sash removed in full lines and in place in dotted lines. Fig. 14 is a similar section of my combined parting-bead and weather-strip when used with a metal construction. Fig. 15 is a detail of one side of the metal sash, and Fig. 16 is a similar detail of my combined parting-bead and weather-strip which coacts with the side of the sash shown in Fig. 15.

Referring now to the details of the drawings by numerals, and more particularly to Figs. 1 to 10, inclusive, the numeral 1 designates the upper, and 2 the lower, sash, which, as represented in these figures, may be made of ordinary construction, but which are preferably provided with longitudinal strips 3 and 4. (Shown in perspective view in Fig. 7.) These strips are preferably formed separately of the sash proper and screwed or otherwise secured thereto and have recesses which leave longitudinal grooves 5 and 6 for a purpose hereinafter disclosed. When a wooden construction is used, I prefer to cut into each stile 9 two longitudinal grooves 10, extending from top to bottom of the stiles, and these grooves may of course be "plowed" in the stile during the construction at the mill. One side of the stile is preferably provided with a closure 11 of any desired form, while the other side may be closed after the sashes are in position by means of the usual "bead" 12. Immediately over that part of each stile between the two grooves 10 is firmly secured a longitudinal strip 14, which I prefer to make separate,

although it is easily seen that it may be made integral, if desired. My combined parting-bead and weather-strip fits over and hides this strip 14 and to a limited extent is capable of sliding thereon, as will be hereinafter described. In its preferable embodiment the combined parting-bead and weather-strip comprises a single piece of metal bent to form two parallel sides 15 and 16, which fit over the strip 14 into the grooves 10. The metal is folded onto itself at each side, forming ribs 17 and 18 of double thickness and strength, and between these doubled portions the metal forms a flat portion 19 of about the width of the aforesaid strips 14. This combined bead and strip is, as seen in Figs. 3 to 7, inclusive, secured to the longitudinal strip 14 by means of two or more screws 20 20, and in order to prevent these screws interfering with the easy working of the sash and also that the beads and strips may be held in inactive positions, as will be described, said screws fit into sunken or depressed portions 22 22, which may be formed integral, if so desired. The screws 20 are not screwed "home," but are left as shown in Fig. 3, and in order to cause the beads and strips to be kept in their normal positions I employ springs of any desired shape. Those shown are flat and designated by the numeral 24. The springs normally hold the combined bead and weather-strip in the position shown in Fig. 3, in which case the parallel sides 15 and 16 enter to a slight extent only into the grooves 10. Hence the grooves are deep enough to permit the combined bead and strip to be pushed against the tension of the springs 24 almost completely therein, as shown in Fig. 4. To provide a construction which permits the combined bead and strip to be held into the position shown in Fig. 4, I form slots 28 (instead of round openings) in the metal above or below the sunken portions 22 22, as seen in Fig. 9. Hence after the combined bead and strip is pushed inward against the springs 24 it may be bodily shoved downward into the position shown in Fig. 7, the combined bead and strip being a trifle shorter than the window-stile to permit this movement, (see Fig. 2,) and now the heads of the two lower screws 20 bear against the flat portions 19 of the combined bead and strip, and thereby hold the same in its inner inactive position. (Shown in Figs. 4 and 7.) I have mentioned that the two lower screws act thus, for the reason that these two only are formed in the way described, the other or top one being formed as shown near the top of Figs. 6 and 7, where the sunken part extends to the full length of the slot. The two lower screws are sufficient to carry out the desired purpose.

I will now refer to Fig. 1, where it will be seen that on each side of the combined bead and strip is situated a sash-slide 30, there being two of these slides for each sash. These

slides may consist of nothing more than a plain strip of wood; but they are provided with a centrally-located countersunk opening or recess 31, in which is situated a pivot 32, (seen best in Fig. 2,) this pivot having a bearing 33 (seen in Fig. 10) and screwing into the sash itself. These sash-slides 30 are of course the same length as their sash and slide up and down with them, and when the sashes are in their normal vertical positions the slides have no movement independent of their sashes; but when the sashes are turned on their pivots, as seen in Fig. 1, the slides move up or down, as the case may be, as the sashes are turned more or less on their pivots. Now by referring to Figs. 3 and 4 it will be seen that when the combined bead and strip is in its normal position the side portions 15 project into the longitudinal grooves 5 and 6, formed between the sash and their strips 3 and 4, and thus prevent the sash from turning on their pivots, although of course the sash are free to move up and down, as usual.

In order to swing the sash, the operator first moves both of the sashes alongside of each other—that is to say, moves the lower sash upward—and then proceeds to push inward and then downward on the combined bead and strip until the screws 20 hold it in the positions shown in Fig. 4. It will now be seen that the doubled edges 17 and 18 are withdrawn from the grooves 5, and consequently the sashes, having nothing to hold them in the same plane with their slides 30, can be swung on their pivots, as seen in Fig. 1.

In addition to the fact that the combined parting beads and strips prevent or enable the sash to swing they act as effective weather-strips, owing to the fact that the sides 15 and 16 enter their grooves 10, and at the same time the doubled edges 17 and 18 enter the grooves 5. Thus the wind or air currents are forced to take a very circuitous path, and I therefore deem this construction of bead and strip of the greatest value.

Although in the ten figures so far described I have described the combined bead and strip as being made of metal in my wooden window, I do not limit all my claims to any particular metal, as said bead and strip can, although not so advantageously, be made of wood, if so desired.

I will now describe Figs. 11 and 14, inclusive, in which I have illustrated my invention in the form in which I prefer to use it when applied to a metallic window. In this form not only the sash but the frame is also formed of metal; but my present invention does not reside in these parts, except in so far as they are adapted for use with my combined parting-bead and weather-strip. One part of the frame (indicated at 40) corresponds to the stile 9 in Fig. 3 and has its metal bent to form grooves 42, similar to the grooves 10 in the aforesaid

wooden stile 9. A combined parting-bead and weather-strip (indicated at 43, see particularly Figs. 12 and 16) is identical with the corresponding part in my wooden window. It is held in position in a slightly-different manner, however, as plates 44 have to be provided in which the screws 45 (see Fig. 14) find a support. In the construction shown in these Figs. 11 to 14 the sashes are also formed of metal and are of the particular configuration shown in Figs. 12 and 15. I do not herein claim anything new in the construction of this sash, except in so far as it coacts with the combined parting-bead and weather-strip 43 just described. Of course it is necessary in making this sash to provide a deep groove or runway 57 for the combined parting-bead and weather-strip to fit into, this groove or runway being particularly shown in Fig. 15, in which it will be seen that it corresponds in every way to the groove 5 shown in Fig. 8. In order to form this groove or runway in the easiest manner, I form the entire sash of sheet metal, and it therefore consists of a flat part 50, a side part 51, two inclined parts and one flat part 52, 53, and 54, forming a seat for the glass, and two parts 55 and 56, opposite to and parallel with the part 51, which form the remainder of the side proper. The two ends of the metal are formed to provide the groove or runway 57 just described. After the parts of the sash are assembled I pivot to each of them on each of their vertical sides slides 80, (see Figs. 12 and 13,) which are equivalent in every way to the slides 30 shown in the first-described form. These metal slides 80 are formed of "channel" metal, and riveted within the channel are reinforcing-strips 82, giving the channel-iron slides sufficient strength and thickness to permit the slides to be pivoted to the sides of the sash by means of the pivots 85, (see Fig. 12,) which pivots pass into their reinforcing blocks or plates 87, (see Figs. 12 and 13,) slipped between the thicknesses of the sides of the sash before the sash is entirely fastened together. Of course it is desirable to form these metal sashes with interlocking meeting-rails 73 and 74, and the bottom of one of the sashes is formed with a flange 70, to which is secured a protecting and filling strip 71. (Seen in Fig. 11.)

From the foregoing description it will be seen that I have invented a metal sash which fulfils all the purposes of the wooden sash described in Figs. 1 to 10, and yet is capable of coacting with my combined parting-bead and weather-strip, and is provided with slides 80, on which the sashes are permitted to swing when said parting-bead and weather-strip is locked in its inactive position.

The description of my drawings has been given with such clear attention to details that it is believed the operation of my window is apparent from such description and that, there-

fore, further description of the operation is unnecessary.

What I claim as new is—

1. In a window and in combination with the frame thereof having a fixed stile or stiles forming its inner sides; a parting-bead projecting from said fixed stile or stiles and longitudinally movable into inactive position; said bead having means normally forcing it into active position; and means for holding said bead in its inactive position when so placed, substantially as described.

2. In a window-frame having a fixed stile or stiles forming the inner sides thereof, and in combination with the sashes; a horizontally and longitudinally movable parting-bead projecting between said sashes from said fixed stile or stiles; window-slides movable on the sides of said parting-bead and having the sashes pivotally connected thereto; the said parting-bead normally projecting beyond said window-slides and preventing the sashes from moving on their pivots and capable of assuming an inactive position when moved backward and longitudinally; and means for holding said bead in its inactive position when so placed whereby said sashes may be turned on their slides; substantially as described.

3. In a window; a parting-bead having openings therein; a device coacting with said openings for holding the bead in inactive position; and projecting portions on said parting-bead acting as weather-strips; substantially as described.

4. In a window; a movable parting-bead formed of sheet metal and having side portions adapted to enter grooves in a window-frame, a portion disposed substantially at right angles to said side portions and connecting the same, and means coacting with said movable bead for holding the same in an inactive position; substantially as described.

5. In a window; a combined parting-bead and weather-strip formed of sheet metal and comprising side portions adapted to enter grooves in a window-frame, a portion disposed substantially at right angles to said side portions, and projecting portions adapted to enter grooves in the sash to act as weather-strips and forming connections between the said side portions and the side portions disposed at right angles thereto; the aforesaid bead being movable in an inactive position; and means for holding the bead in its inactive position; substantially as described.

6. In a window, a parting-bead having countersunk portions and slots therein, a device coacting with said portion for holding the parting-bead in inactive position, and projecting portions on said parting-bead acting as weather-strips; substantially as described.

7. In a window and in combination with the sashes thereof; a parting-bead projecting between said sashes and movable into inactive

position, a spring for holding said parting-bead in its normal position; and a countersunk device for holding said bead in inactive position; substantially as described.

5 8. In a window, a parting-bead formed of sheet metal and having side portions adapted to enter grooves in a window-frame, a portion disposed at right angles to said side portions and countersunk openings therein; substantially as described.

10 9. In a window, a combined parting-bead and weather-strip formed of sheet metal and comprising side portions adapted to enter

grooves in a window-frame, a portion disposed at right angles to said side portions by 15 which the parting-bead may be secured in position, and integral doubled portions adapted to enter grooves in the sashes; substantially as described.

Signed by me at Philadelphia, Pennsylvania, 20 this 22d day of January, 1903.

OSCAR FROTSCHER.

Witnesses:

JOSHUA R. MORGAN,
WM. S. DUNLAP.