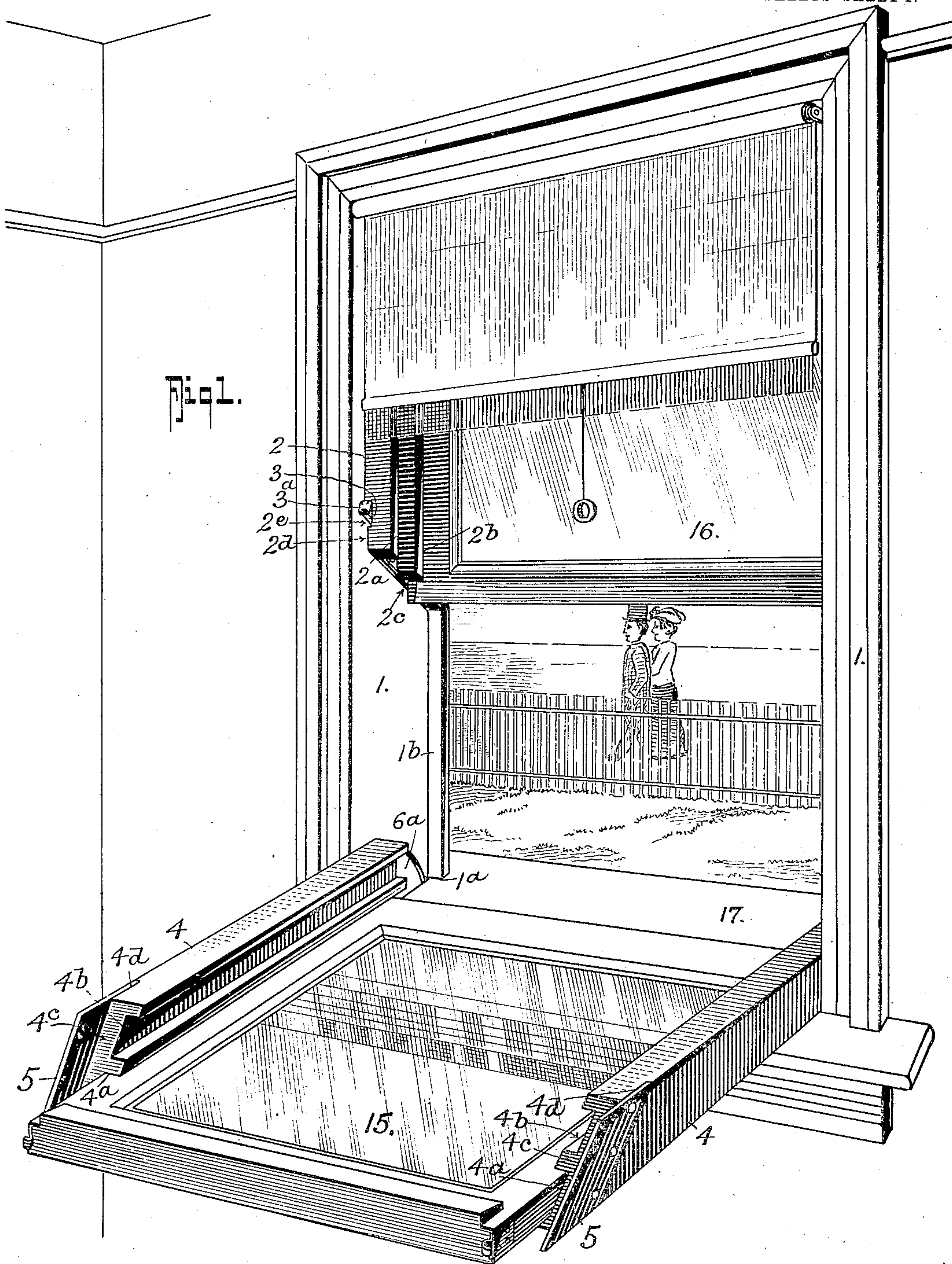


998,018.

F. T. LIPPINCOTT.
WINDOW CONSTRUCTION.
APPLICATION FILED OCT. 22, 1909.

Patented July 18, 1911.

2 SHEETS—SHEET 1.



WITNESSES:

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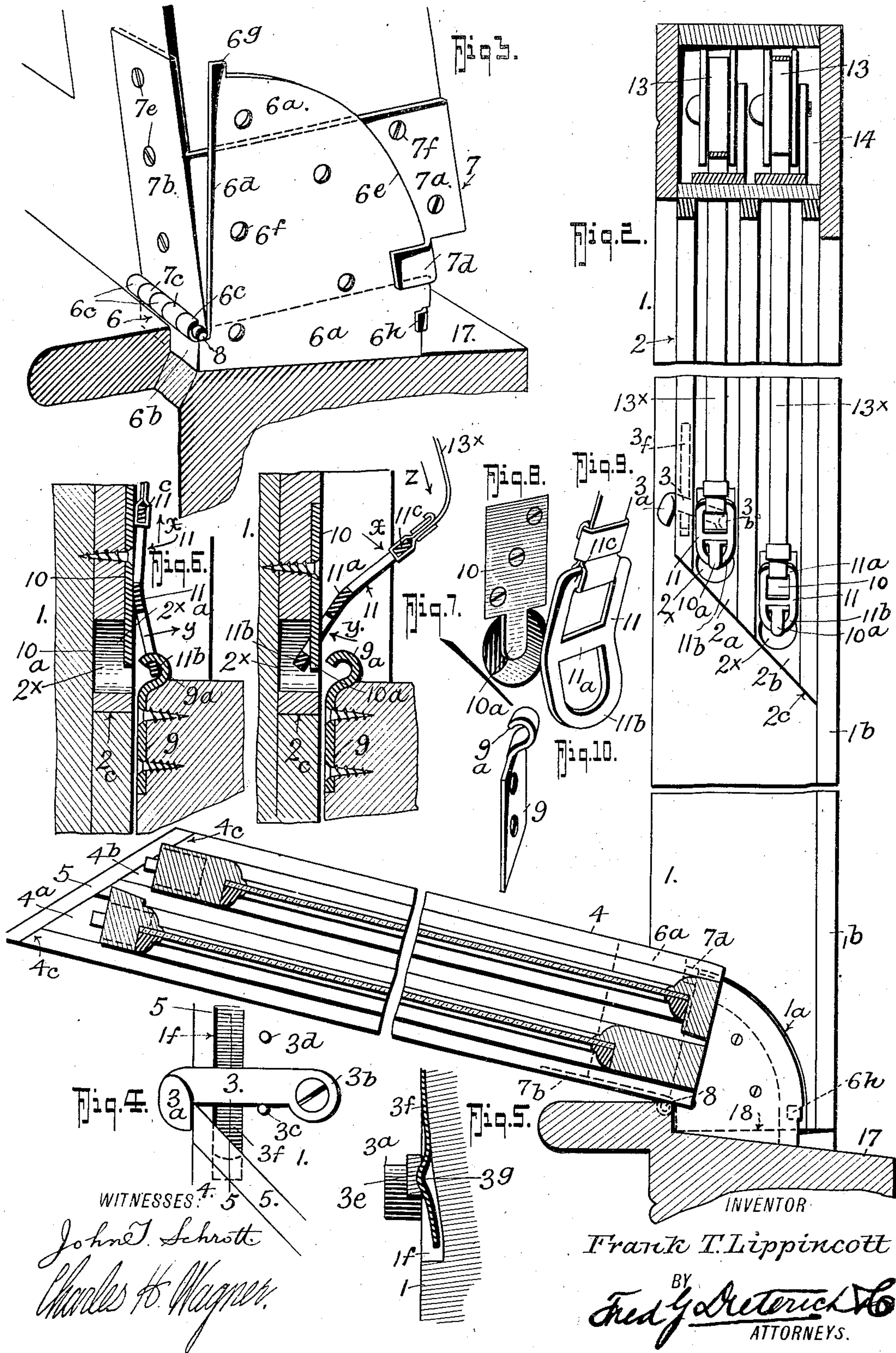
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2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

FRANK T. LIPPINCOTT, OF NEWARK, OHIO.

WINDOW CONSTRUCTION.

998,018.

Specification of Letters Patent. Patented July 18, 1911.

Application filed October 22, 1909. Serial No. 524,073.

To all whom it may concern:

Be it known that I, FRANK T. LIPPINCOTT, residing at Newark, in the county of Licking and State of Ohio, have invented certain new and useful Improvements in Window Construction, of which the following is a specification.

My invention relates to certain new and useful improvements in window constructions, and it primarily has for its object to provide a window frame of such character that the window may be readily removed for cleaning, or for other purposes, and in carrying out my invention I provide the window frame with a hinged or swinging section in which the windows may be dropped and swung out of the casing to project into the room and permit the removal of the window sashes from the frame.

I am aware that prior to my invention attempts have been made to construct a window of the general type stated, but the great difficulty found in practice has been to produce a construction wherein the movable window frame sections will be suitably braced when swung out to prevent dropping the sashes and loosening the swinging parts. In the constructions which have come to my attention another serious objection is present in that no suitable provision is made for protecting the swinging window section by an outside weather strip to prevent rain or moisture from entering between the swinging sections and the frame of the casing proper. Furthermore, provision has not been made to prevent rotting of the sill engaging part of the swinging frame sections. It is therefore another object of my invention to produce a window of the general type stated, so constructed that the swinging sections will be as rigidly held as possible in their positions when swung out, and protected from the weather when in position.

My invention also has for its object to provide a means for holding the swinging sections into alinement with the fixed frame sections when the parts are in their normal position, and for quickly releasing the swinging section when it is desired to remove the sashes.

My invention also includes an improved means for quickly and automatically releasing the sash cords from the sashes and simultaneously securing the ends of said sash cords to the window frame in a position

where they may be quickly and effectively reconnected with the sash when desired.

In its more detailed nature, my invention includes those novel details of construction, combination and arrangement of parts, all of which will be first fully described, then be specifically pointed out in the appended claim, and illustrated in the accompanying drawings, in which:—

Figure 1, is a perspective view of a window embodying my invention. Fig. 2, is a central vertical cross section thereof. Fig. 3, is an enlarged detail perspective view of one of the connecting brackets between a swinging section of the frame and the window frame casing. Fig. 4, is a detail side elevation of the latch devices for holding the movable or swinging sections in their normal positions. Fig. 5, is a section on the line 5—5 of Fig. 4. Figs. 6 and 7, are detail sectional views showing the manner of connecting and disconnecting the sash cord from the sash. Figs. 8, 9 and 10, are detail perspective views of the fixed frame carried plate, the connecting link with the sash cord and the fixed window carried plate which coöperate as indicated in Figs. 6 and 7.

Referring now to the accompanying drawings, in which like letters and numerals of reference indicate like parts in all of the figures it will be noticed that the window casing 1 may be of any approved construction, and is provided with fixed side frame sections 2 having parallel grooves 2^a—2^b for the inner and outer sashes 15—16 respectively. The fixed side sections 2 have their lower ends 2^c cut off on an approximately 45° bevel and where such ends abut the casing 1, they are cut away as at 2^d, to be slightly spaced from said casing 1, and are further cut away at 2^e to receive the latch 3. The latch 3 it will be noticed, has a head 3^a to engage the end plate 5 of the swinging frame sections 4 and the latch 3 is pivoted at 3^b and its movement is limited by stops 3^c—3^d, as clearly shown in Fig. 4. A leaf spring 3^e in a cut-away portion 1^f in the casing 1, engages the latch 3 to hold it in its latching position, see Fig. 4. The latch 3 may have its spring engaging surface indented as at 3^e to coöperate with a loop or projected portion 3^f of the spring 3^e to hold the latch 3 in its latching position.

The swinging frame sections 4 (there

being one at each side of the window) are practically duplicates of the fixed sections 2, they having the window grooves 4^a—4^b to register with those 2^a—2^b of the sections 2, and the sections 4 have their upper ends beveled at 4^c to contact the ends 2^c of the sections 2, when in their normal position. In order to hold the sections 4 and 2 in proper alinement to make a continuous uninterrupted groove 2^a—4^a, or 2^b—4^b, as the case may be, from the top to the bottom of the window, when the parts are in their normal position, I provide a plate 5 secured in the countersunk portion 4^d of the frame sections 4, which plate enters the cut-away portions 2^d of the sides 2 when the sash is in its normal position and the latch 3 has its head 3^a to engage the plate 5 and lock the sections 2 and 4 together when the sections 2 and 4 are in alinement. The lower edges of the sections 4 are square cut to leave a space between said lower edges and the sill 17, as shown by dotted lines 18 in Fig. 2, to prevent water and moisture rotting said lower edges.

The casing 1, where it joins the sill is countersunk to receive the hinge plate 6^a and it is further countersunk at 1^a to permit movement of the clip 7^d of the hinge plate 7^a hereinafter again referred to. The hinge plate 6^a is of circular arc form having a vertical edge 6^d and a front portion 6^b held in a plane at right angles to the plate 6^a, the portion 6^b having curled hinge ears 6^c, through which and through similar ears 7^c of the front plate 7^b of the hinge section 7, the hinge pin 8 passes. The hinge section 6 has its plate 6^a secured in the countersunk portion of the casing 1 by screws that pass through apertures 6^f in the plate. The plate 6^a at its upper end has a stop 6^e and near its lower end has a second stop 6^h to limit the movement of the hinge section 7 by having its clip 7^d engage said stops at the limit of movement of the hinge section in either direction. The hinge section 7 comprises the side plate 7^a which is secured to the sides of the window sash by screws 7ⁱ that pass through the plate 7^a as shown in Fig. 3, the plate 7^a abutting the plate 6^a of the other hinge section 6 and having a part cut-away and bent to form a clip 7^d to securely hold the sections 6^a—7^a in contact. The hinge section 7 also includes a front plate 7^b that is secured in a countersunk portion of the window sash at the front and held in place by screws 7^e, as shown in Fig. 3, of the drawings. Thus it will be seen a very rigid hinge connection is provided for the sashes between the windows and frame to prevent lateral movement of the swinging frame sections toward one another to drop the sashes when positioned as shown in Fig. 1 and by projecting the plates 7^a—6^a in contact with one another and holding them in

contact by the clip 7^b the strain is largely removed from the hinge connection 6^c—7^c—8.

Any suitable sash balancing means may be provided to balance or sustain the weight of the sashes, although I have shown in the drawings a spring drum sash balance means 13 mounted in the chamber 14 at the top of the window casing 1 from which the sash cords or ribbons 13^x pass down over suitable pulleys (not shown) into the grooves 2^a—2^b. I have not shown the pulleys and the details of construction of the sash balancing means 13, as such *per se* form no part of my present invention.

The sash cords or ribbons 13^x at their free ends are secured to double eye members 11, one end 11^c of which joins with the sash cord or ribbon 13^x and the other end 11^b is adapted to connect with the sash. The double eye member has a central brace portion 11^a and is bent along the line of its brace member so that the two eye portions 11^c—11^b will lie in different planes.

Hook plates 9 are secured to the sides of the window sash by screws or other suitable means, and the plates 9 have hooks 9^a opening outward to the window frame. Secured in the grooves 2^a—2^b at any suitable location, preferably at the position indicated in the drawings, are tongue plates 10 which are countersunk into the frame and lie flush, the tongue plates 10 having downwardly directed tongues 10^a which project into alinement with a hole 2^x, which may be bored or otherwise provided in the frame sections 2 to receive the eye 11^b of the double eye member 11 to retain the sash cord in a definite position while the cords are being removed.

The manner of connecting the sash ribbon or cord with the sash and with the tongue plate or fixed cord sustaining member forms one of the essential features of my invention, as by its use rapid connection and disconnection between the sash cord and sash may be made and at the same time the sash cord or ribbon can be automatically shifted from connection with the sash into connection with the fixed holder, or vice versa, as conditions may require. The construction of this part of my invention is best disclosed in Figs. 6 to 10 inclusive, by reference to which it will be noticed that when the parts are in their normal position, as shown in Fig. 6, the tension on the sash cord 13^x is directed in the direction of the arrow *x* in Fig. 6, and by reason of the eye portions 11^b—11^c lying in different planes and bent at the bridge 11^a, the bridge serves as a fulcrum, causing the double eye member 11 to act as a lever, as it were, to move the eye member 11^b in the direction of the arrow *y* in Fig. 6 when connected with the hook 9^a.

In order to disconnect the sash cord from

the sash; the sash is moved until the hook 9^a is opposite the hole 2^x and tongue 10^a, as shown in Figs. 6 and 7. The operator then grasps the sash cord or ribbon 13^x adjacent to the eye member 11^c, or he grasps the upper end of the eye member 11^c and pulls downward on the sash cord or ribbon in the direction of the arrow *z* in Fig. 7, and inwardly in the direction of the arrow *x* in Fig. 7, which causes the eye member 11^b to move in the direction of the arrow *y* in Fig. 7 and automatically and simultaneously disconnect the eye member 11^b from the hook 9^a and move it into the hole 2^x into engagement with the tongue 10^a to hold in that position until it is again ready to connect the sash cord with the sash when the movements just described are reversed. Thus it will be seen that with one action the sash cord is disconnected from the sash and connected with the fixed holder on the frame to be in position for reconnection with the sash whenever desired. Furthermore by constructing the member 11, as shown and described, the tension on the sash cord 13^x when the parts are positioned, as shown in Fig. 6, one at each side of the sash (it being understood, of course, that the invention is applied to each side of the sash) will serve to hold the sash centered in the frame and reduce considerably the friction of the sides of the sashes in the grooves, as shown in Fig. 6, thus making it easy to raise and lower the sashes and prevent chattering of the window sash in the grooves, during the action of raising and lowering.

Any suitable locking means may be provided for locking the sashes in their various positions and as such means form no part of my present invention illustration and detailed description thereof is thought to be unnecessary in this specification.

In operation the latch 3 is elevated when it is desired to swing the sections 4 to the position shown in Fig. 2, and the sash cords or ribbons 12 are disconnected from the sashes after the sashes have been pocketed or moved into the sections 4, after which said sections are swung to the position shown in Fig. 4, when the window sashes may be bodily removed for cleaning or other purposes.

A weather strip 1^b is provided on the outside of the casing 1 to prevent moisture en-

tering between the contacting faces of the sections 2 and 4 and the casing 1, and as before stated, by providing the spaces between the lower ends of the sections 4 and the sill 17, as indicated by the dotted lines 18, when the parts 4 and 2 are in alignment, rotting of said lower ends and the sill is prevented.

In the application I make no claim to the specific form of latch devices for holding the movable section of the window frame in position, nor do I make any claim to the specific form of sash cord connecting mechanism shown and described, as such form the subject-matters of two divisional applications.

From the foregoing description taken in connection with the accompanying drawings it is thought the complete construction, operation and advantages of my invention will be readily understood by those skilled in the art to which the invention appertains.

What I claim is:

In a window construction a frame including a sill and side strips, the upper surface of said sill being inclined to the horizontal, said side strips having their ends adjacent to the sill cut to lie in a horizontal plane and thereby providing a space between said lower ends and said sill; sash receiving members, means for hingedly mounting said sash receiving members in said frame to be hinged adjacent to said sill, said side strips having arc grooves the center of curvature of which is at said hinging means, plates countersunk into said side strips and projecting over said arc grooves, fingers carried by said sash receiving members to project into said arc grooves and engage the face of said plates where they project over the respective arc grooves, and stops carried by said plates to engage said fingers and limit the movement of said sash receiving members on their hinging means, said arc grooves extending to the bottom edge of said side strips to communicate with the space between the sill and the bottom edges of said side strips, and having their other ends terminating within the side strips.

FRANK T. LIPPINCOTT.

Witnesses:

WYNONA M. JENKINS,
EDWARD KIBLER.