

1,248,547.

Patented Dec. 4, 1917.
3 SHEETS--SHEET 1.

Fig. 1.

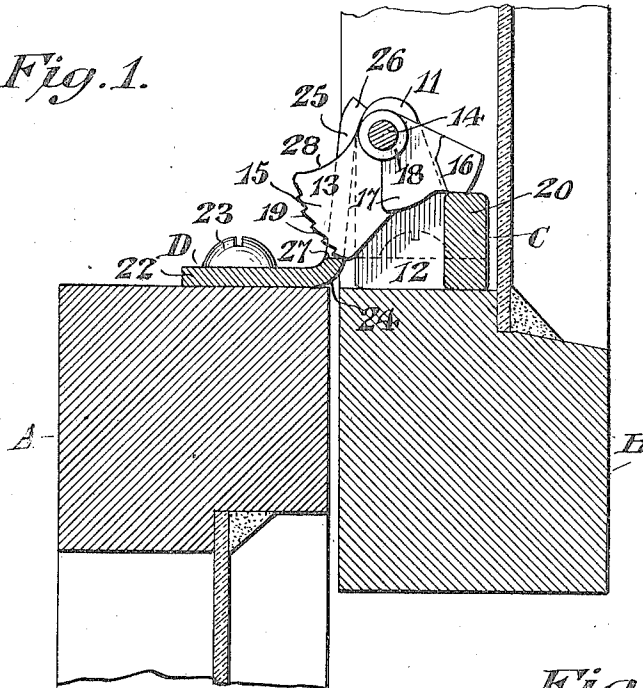


Fig. 2.

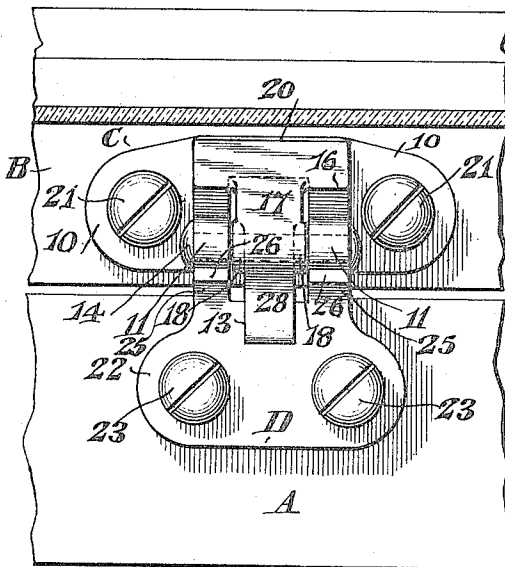
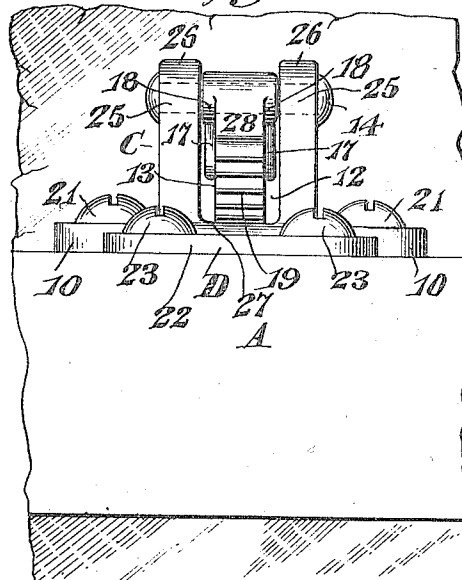


Fig. 3.



WITNESSES

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3 SHEETS—SHEET 2.

Fig. 4.

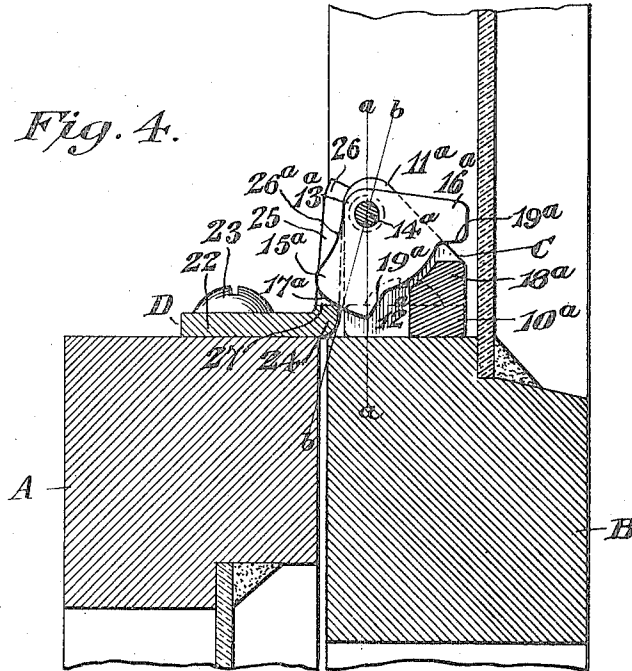


Fig. 5.

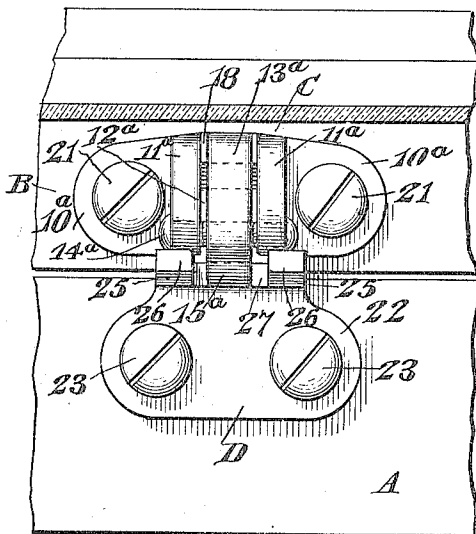
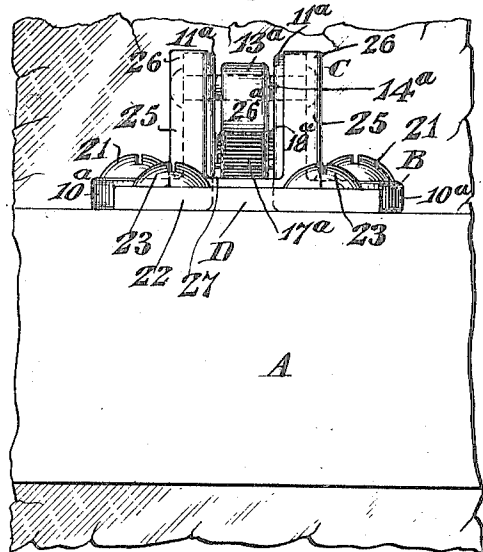


Fig. 6.



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 3 SHEETS—SHEET 3.

Fig. 7.

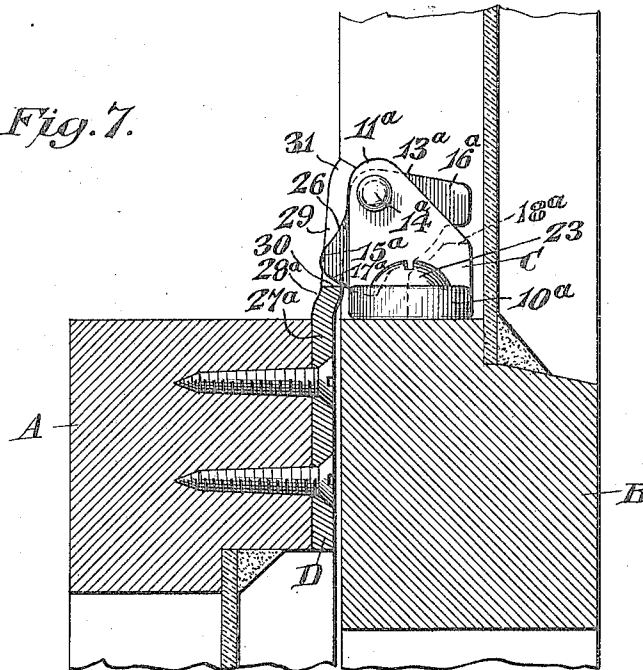


Fig. 8.

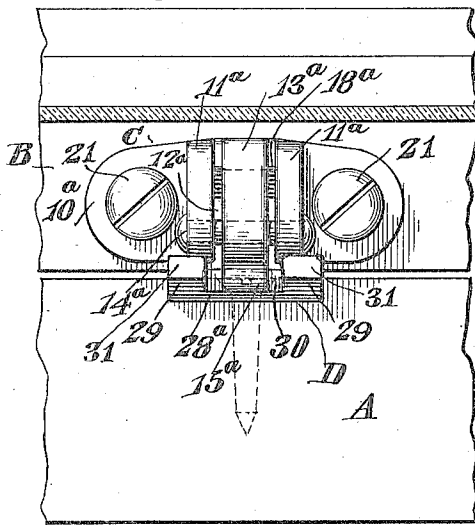
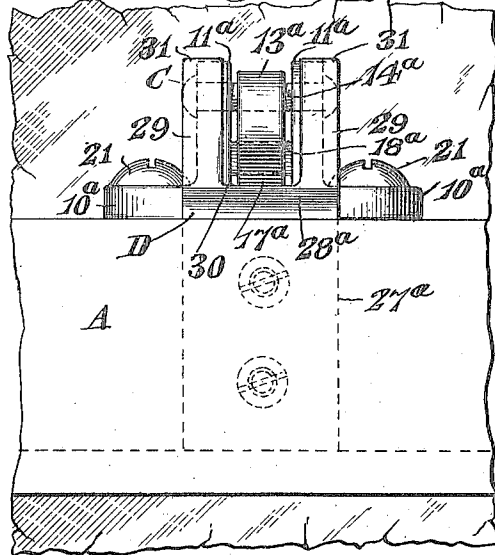


Fig. 9.



WITNESSES

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UNITED STATES PATENT OFFICE.

ALTON GILLON RAY, OF PITTSBURGH, PENNSYLVANIA.

WINDOW-LOCK.

1,248,547.

Specification of Letters Patent.

Patented Dec. 4, 1917.

Application filed June 28, 1917. Serial No. 177,612.

To all whom it may concern:

Be it known, that I, ALTON GILLON RAY, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Window-Lock, of which the following is a specification.

The invention relates to a window lock, and more particularly to the class of automatic sash fasteners.

The primary object of the invention is the provision of a lock or fastener of this character, wherein on the closing of the window sashes, it will automatically operate to insure the secure fastening of said sashes, without possibility of being maliciously tampered with from the outside for the freeing of said sashes, and firmly holds the sashes against rattling and secure, should the same not be closed completely.

Another object of the invention is the provision of a lock or fastener of this character, wherein the construction thereof is novel in form to relieve all shock caused when quickly closing the sashes, and the range of movement of the latch insures a smooth and positive operation, with a wedging action, which tends to move the sashes apart, thus jamming the same against the outer guide strips of the window casing, thereby affording a storm-proof window, the latch being effective for locking action within a certain vertical range to render the lock or fastener adjustable, without minimizing its security.

A further object of the invention is the provision of a lock or fastener of this character, which is simple in construction, permitting quick and easy locking of the sashes, strong, durable, thoroughly reliable, and efficient in its operation, and inexpensive in manufacture and installation.

With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts, as will be hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereunto appended.

In the accompanying drawings:

Figure 1 is an enlarged fragmentary vertical sectional view, through upper and lower window sashes, showing the lock

constructed in accordance with the invention applied, the latch base and stop being in section.

Fig. 2 is a top plan view of the lock.

Fig. 3 is a side elevation, looking from the inside of the window.

Fig. 4 is a view similar to Fig. 1, showing a slight modification of the invention.

Fig. 5 is a top plan view thereof.

Fig. 6 is a side elevation, looking from the inside of the window.

Fig. 7 is a view similar to Fig. 1, showing a modified form of stop.

Fig. 8 is a top plan view.

Fig. 9 is a side elevation, looking from the inside of the window.

Similar reference characters designate like parts throughout the several figures.

Referring to the drawings in detail, A and B designate the inner and outer meeting rails, respectively, of the lower and upper sashes of a window, which are of the ordinary well known construction, and have applied thereto the lock or fastener hereinafter fully described.

The lock or fastener comprises a latch device C, which is carried by the upper sash, and a stop device D, which is mounted upon the lower sash, and these devices coact for the firm and positive fastening of the sashes closed. The latch device C includes a bracket formed with a base 10, which is provided intermediate its ends with upstanding spaced parallel ears 11, which are of the required height, the base between the ears and for substantially one-half of its width is cut away at 12, to afford a clearance space to avoid interference with the movement of a gravity latch 13, swingingly supported between the ears 11 upon a pivot 14, which is mounted in the ears 11 elevated above the plane of the base 10 and in close proximity to the vertical plane of the front edge of said base, the latch 13 being of substantially triangular shape, forming at one free corner a latching lobe 15, and at the other free corner a combined weight and stop lobe 16, the latter being disposed transversely of the latch body 13, which is formed with the wider portion 17, with respect to the latching lobe 15, for increasing the weight of the latch 13 on its side with respect to the pivot 14 opposite the lobe 15, the

combined stop and weight lobe 16 being designed to serve as a counter-weight to assist in the proper rotation of the latch.

The latch at opposite side faces thereof concentrically of the pivot 14 are formed with bosses 18, which prevent excessive lateral movement of the latch 13 between the ears 11 of the bracket, which ears are properly spaced for the free movement of said latch 13, the ears being cut away to accommodate the combined stop and weight lobe 16 upon said latch, as will be clearly obvious in Fig. 1 of the drawings.

The latching lobe 15 is formed with a curved stepped or notched locking surface 19, which affords a maximum range of vertical locking action. The steps of the surface 19 increase in distance from the center of the pivot 14, as the latch approaches its limit of rotary movement to assure security in the use of the lock.

Formed on the base 10 at the uncut portion thereof between the ears 11 is an upstanding wall 20 which coacts with the combined stop and weight lobe 16 of the latch 13 to limit the rotation of the same and thereby restrict the range of movement thereof.

The base 10 of the latch device C is secured by means of screws 21 upon the outer meeting rail B at the top surface thereof spaced from the inner meeting face of the same for the coaction of the latch with the stop device D hereinafter fully described.

The stop device D comprises a base plate 22, which is preferably fastened by means of screws 23 upon the top face of the inner meeting rail A at the point of the latch device C and is formed at its edge next to the meeting faces of said rails A and B with a bight 24 designed, when the meeting rails A and B are in the position shown in Fig. 1 of the drawings, to overlap the joint of the meeting faces thereof. Rising from the bight 24 at substantially right angles to the base plate 22 is a bifurcated extension providing spaced guard wings 25 formed with curved extremities 26 conforming to the formation of the ears 11 to match and contact therewith, the wings 25 being effected for forcing the sashes apart when closed, as shown in Fig. 1 of the drawings.

The bifurcation in the extension providing the wings 25 at its closed end constitutes a keeper edge 27, with which engages the locking surface 19 of the lobe 15 of the gravity latch 13, while the guard wings 25 project upwardly on opposite sides of said latch to constrict the gap or space between the ears 11 and serve to avoid the possibility of the insertion of an implement between the meeting rails A and B at either side of the latch 13 for the malicious tampering therewith. The bight 24 also prevents an implement from engaging with the latch 13

at the point of mounting of the lock or fastener upon the sashes of the window.

The latch 13 between the locking surface 19 at the forward edge and the pivot corner thereof is formed with a concaved surface 28, the radius of which is tangent to the bosses 18 and the locking surface 19 of the latch, and this surface is adapted for the engagement of the finger of an operator therewith to release the latch 13 when in locking position, as shown in Fig. 1 of the drawings. The concaved surface 28 also renders it impossible for the malicious operation of the latch outside of the window.

The latch 13 has a tendency at all times, when the sashes are closed, to wedge more tightly against the stop device D, and there is a constant tendency to push the sashes A and B apart and against the outer guide strip therefor in the window casing, so as to completely block the space between the outer guide strips and the sashes and thus prevent rattling of the sashes, and also insure the window storm-proof.

The particular formation of the locking surface 19 of the latching lobe 15 increases the vertical range within which the lock will be effective and locks rigidly. Therefore, with this latter advantage, the lock is capable of adjustment without reducing or minimizing its security.

The invention is easily manually operated for the unlocking of the sashes. The action of the latch 13 is in one direction and will gravitate to locking position with the stop device, for positively locking the sashes when closed, or such sashes will be securely fastened in event that the same are not completely closed.

The curved contour 28 of the latch 13 relieves all shock caused by the sudden or quick closing of the window sashes and assures the smooth operation of the latch.

In Figs. 4, 5 and 6 there is shown a slight modification of the invention, only in the latch device, wherein the bracket comprises the base 10^a, which is formed intermediate its ends with the spaced vertical ears 11^a, the base between the ears being cut away at 12^a to form a clearance for the movement of the gravity latch 13^a swingingly supported between the ears 11^a upon a pivot 14^a, which is mounted in the ears 11^a elevated above the plane of the base 10^a, the latch being of substantially triangular shape forming a latch lobe 15^a and a stop lobe 16^a, the latching lobe being of greater size than the stop lobe, and is formed with a slightly rounded locking surface 17^a, while said lobe 15^a, by reason of its relatively increased size, causes the gravitation of the latch 13^a in one direction within the operating range of the same.

Formed on the base 10^a at the uncut portion thereof between the ears 11^a is an up-

standing enlargement or wall 18^a, with which coact the inner edges 19^a of the respective lobes 15^a and 16^a of the latch 13^a to limit the rotation of said latch, and there-
 5 by restrict the range of movement thereof.

The latch 13^a, between the locking surface 17^a at the forward edge and the pivot corner thereof, is formed with a concaved face 26^a, which is adapted for engagement of the
 10 finger of an operator to release the latch 13^a when in locking position, as shown in Fig. 4 of the drawings, and this curved surface also renders it impossible for the malicious oper-
 15 ating of the latch without the window.

The latch 13^a has an operating action similar to the latch 13 hereinbefore described, but is devoid of the stepped or notched locking surface 19 on said latch 13. Now the latch 13^a, owing to the angle of incident be-
 20 tween the vertical imaginary line *a—a* and the line of stress *b—b* constantly has a tendency to push the sashes A and B apart and against the outer guide strips in the window casing. The action of the stop upon the ears
 25 11^a of the bracket of the latch lock or fastener positively separates the meeting rails A and B when the sashes are closed to jam the latter within the window casing, the ap-
 30 proximate degree of separation of the meeting rails being shown in Fig. 4 of the draw-
 35 ings.

In Figs. 7, 8 and 9, there is shown a slight modification of the stop device, wherein the same is formed with a flat plate 27^a, which is
 35 secured upon the meeting face of the inner meeting rail A, and is formed at the point of the top edge of said rail with an outwardly
 40 disposed bight 28^a, from which rises a bifurcated extension forming the spaced vertical guide wings 29, and the keeper edge 30
 45 formed by the bifurcation therebetween, and with this keeper edge 30 engages the gravity latch of the latch-device hereinbefore de-
 50 scribed. The wings 29 are formed with curved extremities 31 which coact with the ears 11^a of the bracket for the latch 13^a to
 55 separate the sashes A and B, so as to move the same apart for jamming them in the window casing to render the window storm-
 60 proof and to avoid rattling of the sashes.

The bight 28^a offsets the guard wings 29 to bring the same in slightly overlapped relation to the joint between the meeting faces of the meeting rails A and B, so that the grav-
 65 ity latch 13^a of the lock or fastener cannot be tampered with from the outside of the win-
 70 dow, as hereinbefore set forth.

The plate 27^a of the stop device is preferably inset in the meeting edge of the meet-
 75 ing rail A, so that the same will be flush at its outer face with said meeting face of the rail, and thereby avoid any interference of the sashes when opening and closing the
 80 same.

From the foregoing, it is thought that the

construction and manner of operation of the invention will be clearly understood, and, therefore, a more extended explanation has been omitted.

What is claimed is:—

1. The combination with a window sash lock having a bracket with upstanding por-
 75 tions, of a stop comprising a base having a bifurcated extension forming wings coinci-
 80 dent with said portions to contact therewith when the sashes are closed for forcing said
 85 sashes apart, and a latch supported for move-
 90 ment between the upstanding portions for engagement with the base between the wings.

2. The combination with a window sash lock having a bracket with upstanding por-
 80 tions, of a stop comprising a base having a bifurcated extension forming wings coinci-
 85 dent with said portions to contact therewith when the sashes are closed for forcing said
 90 sashes apart, curved terminals on the wings, and a latch swingingly mounted between the
 95 portions and automatically engaging the base between said wings.

3. The combination with a window sash lock having a bracket with upstanding por-
 90 tions, of a stop comprising a base having a bifurcated extension forming wings coinci-
 95 dent with said portions to contact therewith when the sashes are closed for forcing
 100 said sashes apart, curved terminals on the wings, the point of juncture of the extension
 105 with the base being formed with a bight to offset said extension relative to the base and
 110 means in the bracket for locking engagement
 115 with the stop.

4. The combination with a window sash lock having a bracket with upstanding por-
 105 tions, of a stop comprising a base having a bifurcated extension forming wings coinci-
 110 dent with said portions to contact therewith when the sashes are closed for forcing said
 115 sashes apart, curved terminals on the wings, the point of juncture of the extension with
 120 the base being formed with a bight to offset said extension relative to the base, and a
 125 gravity latching member swingingly sup-
 130 ported in the bracket and engageable in the bight between the wings.

5. The combination with a stop, of a latch-
 115 ing device comprising a bracket formed with a base having spaced parallel upstanding
 120 ears, a wall rising from the base between the ears at the rearmost portions thereof, a sub-
 125 stantially triangular shaped latching mem-
 130 ber pivoted between the ears and having a latching lobe formed with a curved locking
 135 surface at one side of the pivot to engage with the stop and also having a stop lobe at
 140 the other side of the pivot for contact with
 145 the wall to limit the swinging movement of the latching member, the radius of the lock-
 150 ing surface gradually increasing in distance between the initial engaging end to the rear
 155 end from the center of its axis of movement.

6. The combination with a stop, of a latching device comprising a bracket formed with a base having spaced parallel upstanding ears, a wall rising from the base between the ears at the rearmost portions thereof, a substantially triangular shaped latching member pivoted between the ears and having a latching lobe formed with a curved locking surface at one side of the pivot to engage with the stop and also having a stop lobe at the other side of the pivot for contact with the wall to limit the swinging movement of the latching member, the radius of the locking surface gradually increasing in distance between the initial engaging end to the rear end from the center of its axis of movement, and teeth on the locking surface forming steps.

7. In a lock for mounting upon the meeting rails of sliding window sashes, a latch device having a bracket and a swinging gravity latch supported thereby, and a stop for engagement by said latch and having fixed wings for contact with the bracket to move the sashes apart on the engagement of the latch with the stop.

8. In a lock for mounting upon the meeting rails of sliding window sashes, a latch device having a bracket and a swinging gravity latch supported thereby, a stop for engagement by said latch and having fixed wings for contact with the bracket to move the sashes apart on the engagement of the latch with the stop, and a lobe on the latch at one side of its axis of movement for coaction with the bracket to limit the swinging movement of said latch and also having a curvilinear toothed surface on the opposite side of its axis for engaging the stop.

9. In a window lock, the combination with a latching device adapted to be mounted upon the meeting rail of the upper sash, and having a pivoted gravity latch, of a stop device comprising a base adapted to be secured to the meeting rail of the lower sash and having a bifurcated extension forming spaced guard wings for the latch device, and offset toward the latter to lie over the joint between the meeting rails, and for wedging engagement of the gravity latch therebetween.

10. In a window sash lock, the combination of a stop formed with a base adapted to be secured to the meeting rail of the lower sash and having a bifurcated end forming guard wings, a bracket adapted to be secured to the meeting rail of the upper sash, and having spaced ears, a gravity latch pivoted between the ears and having spaced lobes of variable sizes with respect to each other,

the larger lobe being formed with a curvilinear surface for wedging engagement with the base of the stop between the guard wings.

11. In a window sash lock, the combination with a stop formed with a base adapted to be secured to the meeting rail of the lower sash and having a bifurcated end forming guard wings, a bracket adapted to be secured to the meeting rail of the upper sash, and having spaced ears, a gravity latch pivoted between the ears and having spaced concentric lobes of various sizes with respect to each other, the larger lobe being formed with a curvilinear surface for wedging engagement with the base of the stop between the guard wings, the guard wings being offset with relation to the base in the direction of the bracket.

12. In a window sash lock, the combination of a stop formed with a base adapted to be secured to the meeting rail of the lower sash and having a bifurcated end forming guard wings, a bracket adapted to be secured to the meeting rail of the upper sash, and having spaced ears, a gravity latch pivoted between the ears and having spaced concentric lobes of various sizes with respect to each other, the larger lobe being formed with a curvilinear surface for wedging engagement with the base of the stop between the guard wings, the guard wings being offset with relation to the base in the direction of the bracket, and an enlargement between the ears for engagement by the lobes to limit the range of movement of the latch.

13. A device of the character described, comprising a latch bracket, a gravity latch mounted in the bracket, and a stop having wings for frictional action upon the bracket to automatically spread said bracket and stop apart on engagement of the latch with said stop.

14. A device of the character described, comprising a latch bracket, a gravity latch mounted in the bracket, a stop having wings for frictional action upon the bracket to automatically spread said bracket and stop apart on engagement of the latch with said stop, and an extension on the stop to close the space between the latter and bracket.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ALTON GILLON RAY.

Witnesses:

GEO. D. PETERS,
H. K. BOYD.