

Dec. 6, 1938.

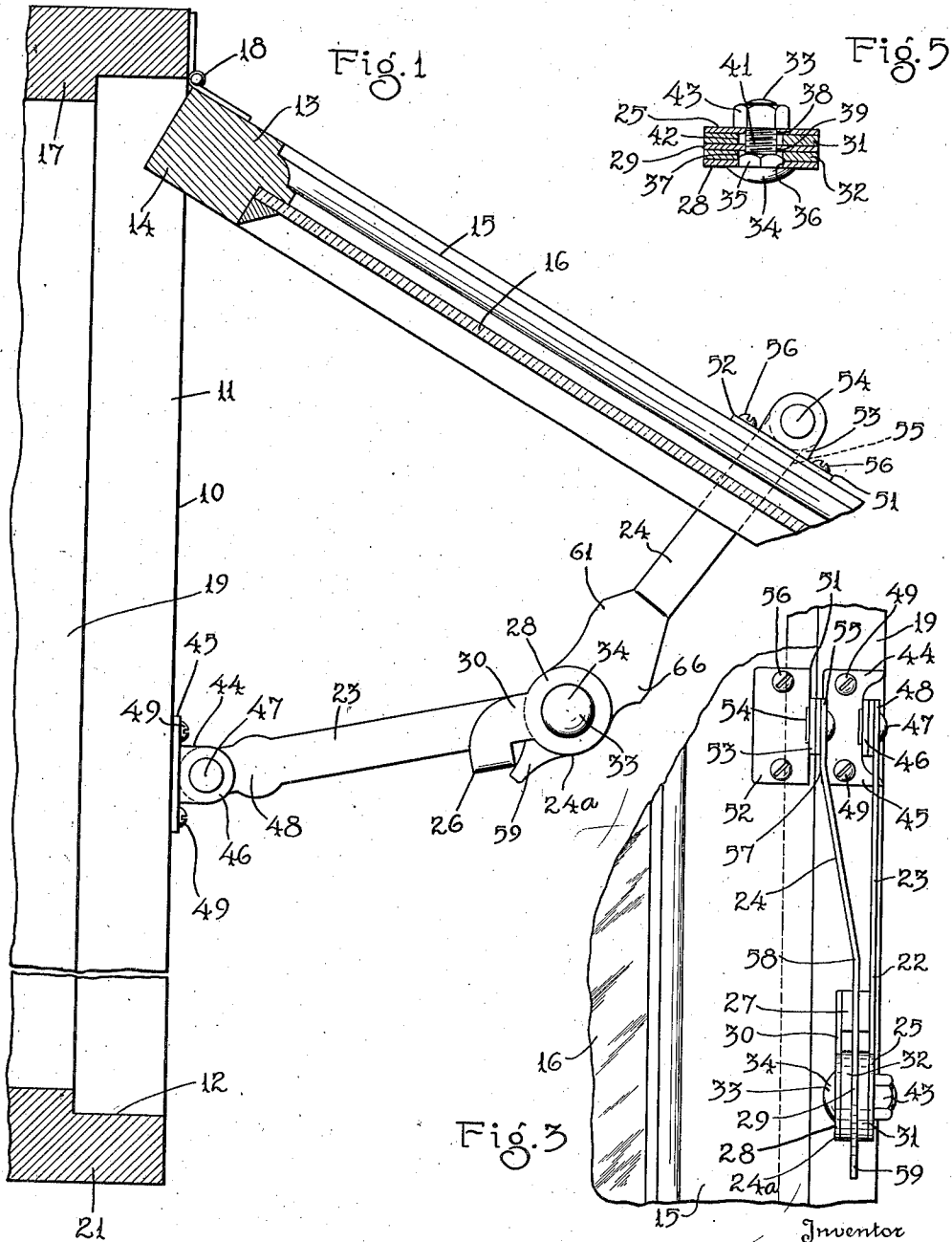
C. O. GOSERUD

2,139,331

SASH FASTENER

Filed May 3, 1937

3 Sheets-Sheet 1



Inventor  
Chester O. Goserud

By *Caswell & Lagaard*  
Attorneys

Dec. 6, 1938.

C. O. GOSERUD

2,139,331

SASH FASTENER

Filed May 3, 1937

3 Sheets-Sheet 2

Fig. 2

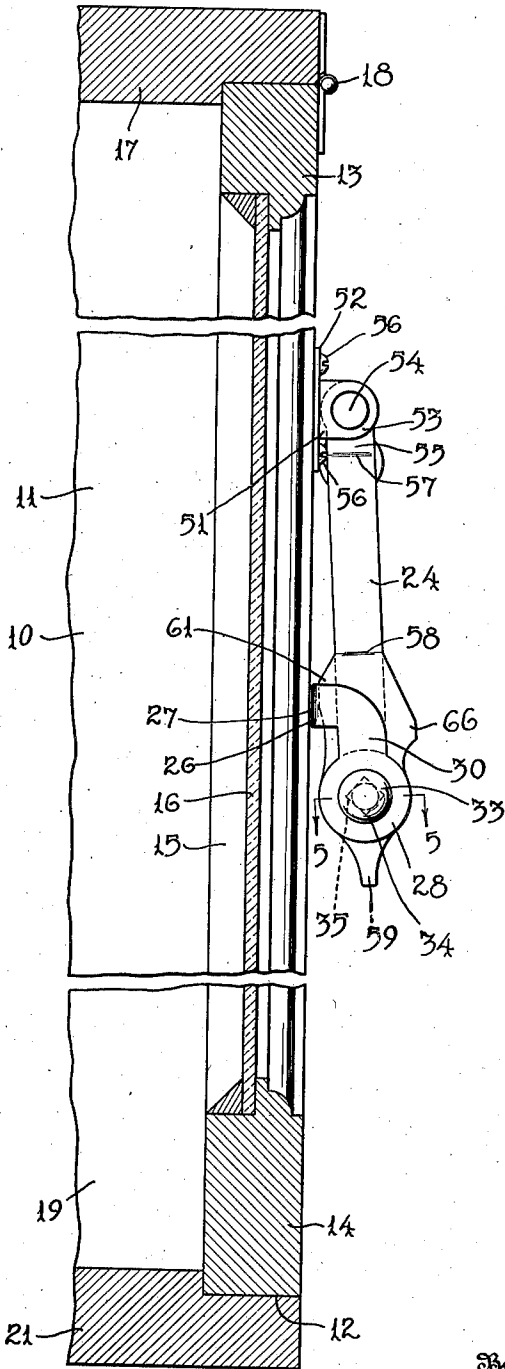
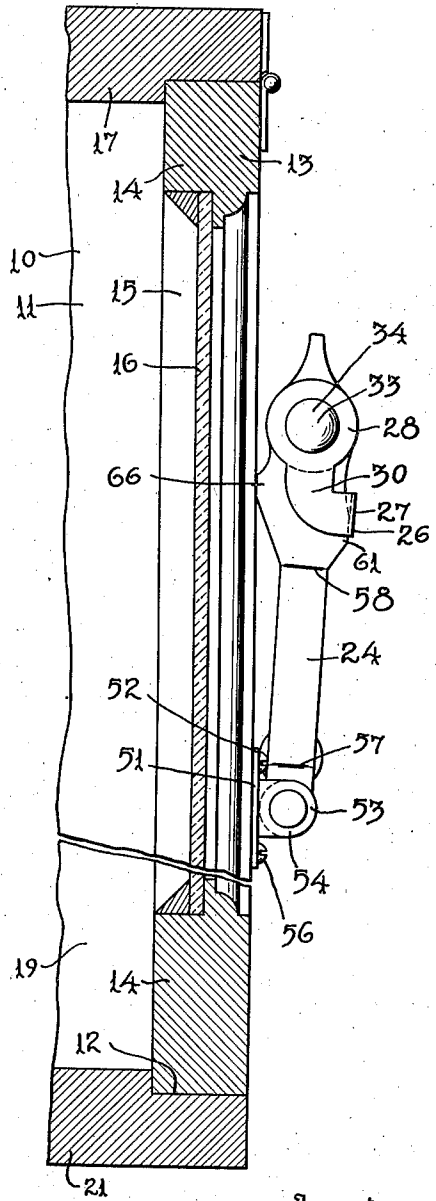


Fig. 4



Inventor

Chester O. Goserud

*Caswell & Legard*

Attorneys



# UNITED STATES PATENT OFFICE

2,139,331

## SASH FASTENER

Chester O. Goserud, St. Paul, Minn.

Application May 3, 1937, Serial No. 140,364

12 Claims. (Cl. 292—263)

My invention relates to sash fasteners and has for an object to provide a sash fastener which can be installed on any type of swinging sash.

Another object of the invention resides in providing a sash fastener which can be used on both inwardly swinging sash and outwardly swinging sash.

An object of the invention resides in providing a sash fastener having jointed arms together with limiting means for limiting the opening and closing of the arms.

Another object of the invention resides in providing limiting means in which the closing of the arms can be limited to a position in which the arms are substantially in alignment or to a position in which the arms are out of alignment.

An object of the invention resides in providing one of the arms with an abutment and the other of the arms with two abutments, both adapted to engage the first abutment and to procure the limitation of movement above referred to.

Another object of the invention resides in providing the second arm with another abutment adapted to engage the abutment of the first arm and to limit the opening of said arms.

Another object of the invention resides in providing a sash fastener in which undesired locking or arrangement of the arms with dead centers is prevented.

A still further object of the invention resides in providing a sash fastener having overlying ears formed on the arms thereof together with a bolt extending through said ears for drawing the ears toward one another and in providing a strap issuing from one of said arms and having a part for engagement with the bolt to assist in preventing unloosening of the same.

Another object of the invention resides in utilizing said strap to limit the movement of the arms.

An object of the invention resides in forming abutments on the other arm adapted to engage said strap for limiting the movement of the arms.

Another object of the invention resides in constructing the arm having the strap from sheet metal and in bending over portions of the metal to form the strap and bolt engaging portion thereof.

A feature of the invention resides in arranging the abutment engaging portion of the strap intermediate the ends of the arm and in providing on the other arm an extension adapted to engage the strap and limiting the opening movement of the arms.

Another object of the invention resides in

providing brackets in the shape of an angle pivoted to the ends of the arms, said brackets being arranged in the same manner and to provide an offset between the arms, causing the brackets to clear one another.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawings:

Fig. 1 is a cross sectional view of a portion of a window frame and an inwardly swinging sash hingedly connected thereto and disposed in open position and illustrating an embodiment of my invention applied to the same.

Fig. 2 is a view similar to Fig. 1 showing the parts in altered position with the sash closed.

Fig. 3 is an elevational view of a portion of the structure shown in Fig. 2.

Fig. 4 is a view similar to Fig. 2 showing the parts in still different relation.

Fig. 5 is a cross sectional view taken on line 5—5 of Fig. 2.

Fig. 6 is a view similar to Fig. 1 of a window frame with an outwardly swinging sash and illustrating my invention applied thereto.

Fig. 7 is a view similar to Fig. 6 showing the arrangement of the parts when the sash is in closed position.

For the purpose of illustrating the application of my invention, I have shown in Fig. 1 a window indicated in its entirety at 10 which comprises a window frame 11 constructed with a header 17, vertical frame members 19 and a sill 21. These frame members have a rabbet 12 which is adapted to receive a window sash 13. The sash 13 is constructed in the ordinary manner with rails 14 and stiles 15 which support a window pane 16 in the customary manner. The sash 13 is hinged to the header 17 of the frame 11 by means of hinges 18 which are attached to the upper rail 14 and the header 17 and which permit of the sash swinging from an open position as shown in Fig. 1 to a closed position as shown in Figs. 2 and 4 in which the sash is received within the rabbet 12 and vice versa.

My invention may utilize either one or two sash fasteners which are attached to the stiles 15 of the sash 13 and to the vertical frame members 19 of the frame 10. However, for the sake of simplicity only one sash fastener has been shown which is indicated in its entirety by the reference numeral 22 and which will be described in detail.

The sash fastener 22 as best shown in Fig. 1

consists of two arms 23 and 24 of substantially equal length which are hingedly connected together by means of a friction joint 24a and are pivoted at their other ends to the frame 11 and sash 13 equal distances from the axes of the hinges 18 in a manner to be presently described. When the sash is closed these arms overlie one another and may be swung jointly from the position shown in Fig. 2 to that shown in Fig. 4 and vice versa. When disposed as shown in Fig. 4, the sash is locked by a construction which will be presently described in detail. When the arms are disposed as illustrated in Fig. 1, the window is held in outwardly adjusted position by the friction joint 24a which will now be described in detail.

The arm 23 is preferably constructed of sheet metal and is provided at the end thereof at which the joint 24a is situated with a circular ear 25. Intermediate the ends of this arm and from one of the edges thereof issues a strap 26 which is constructed with a portion 27 best shown in Fig. 3, which is bent at right angles thereto. From this portion issues angularly another portion 30 which is bent at right angles to the first portion and which is adapted to overlie the arm proper the portions 27 and 28 being integral with arm 30. This portion of the strap is provided at its end with an ear 28 which overlies the ear 25 and which is spaced therefrom as shown in Fig. 5. Arm 24 may also be constructed of sheet metal and is provided with an ear 29 identical with the ears 25 and 28 and disposed between the same. Between these various ears are two friction washers 31 and 32 which may be constructed of fiber or some other similar suitable material. A bolt 33 extends completely through all of the ears 25, 29 and 28 and the two washers 31 and 32. This bolt is constructed with a head 34 and a square shoulder 35 adjacent the said head. Shoulder 35 is received in a square hole 36 in the ear 28 and passes freely through a circular hole 37 in the washer 32 which is of a diameter equal to the diagonal dimension of the hole 36. The two ears 25 and 29 are constructed with circular holes 38 and 39 which are of the same diameter as the threaded shank 41 of said bolt. Washer 31 is also constructed with a hole 42 similar to the hole 37 of washer 32. Bolt 33 includes a nut 43 which is screwed upon the protruding end of the shank 41 thereof and which bears against the ear 25. It will readily be comprehended that the bolt 33 is held from rotation by engagement of the square shoulder 35 with the square hole 36 in ear 28. Since both ears 25 and 28 are integral with arm 23 no turning movement can be imparted to nut 43 by the opening of the arms since the bolt 33 is held from rotation. This prevents unscrewing of the said nut and the pressure on the washers, once the bolt has been adjusted, always remains the same. In this manner a friction joint is provided having uniform resistance to the opening or closing of the sash and which will not vary in effect excepting as wear occurs. It will readily be apparent that any desired degree of friction may be procured by merely adjusting the nut 43 so that compensation for wear may be readily obtained when the occasion demands. By means of the friction joint 24a the sash may be held in any partially open position or the same may be held in fully open position as desired.

For attaching the sash fastener to the window frame 11, a bracket 44 is employed which is constructed of sheet metal and which is bent to

provide a base 45 with a flange 46 extending upwardly therefrom. A rivet 47 passes through this flange and the outer end 48 of arm 23 and pivots the said arm to the bracket. Bracket 44 is secured to the frame member 19 of frame 11 by means of screws 49 which are directly screwed into the face of the said frame member.

The arm 24 is attached to the sash 13 by means of a bracket 51 which is similar to the bracket 44. This bracket is constructed from sheet metal and is bent to provide a base 52 and a flange 53 extending upwardly therefrom. A rivet 54 passes through the flange 53 and the outer end 55 of arm 24 to pivot said arm to the bracket. Bracket 51 is secured to the stile 15 of sash 13 by means of screws 56 which pass through the base 52 and extend into the sash of the stile 15. It will be noted that both of the brackets 51 and 44 are arranged with their bases extending from the flanges in the same direction. This is for the purpose of bringing the joint 24a outwardly of the edge of stile 15 so that the arms may swing to clear the sash when the sash is opened. In order to attach the bracket 51 to the sash, the arm 24 is bent at 57 and 58 to cause the end 55 to become offset from the ear 29 forming a part of the friction joint 24a. It will thus be seen that the bolt 33 clears the sash so that the sash may swing from the position shown in Fig. 2 to that shown in Fig. 1 and vice versa without interference.

If the two arms 23 and 24 were in alignment when the sash is in its fully open position, as shown in Fig. 1, it would be impossible to close the sash without first breaking the joint. To overcome this I construct the ear 29 of arm 24 with an extension or finger 59 which is adapted to engage the portion 27 of strap 26. This finger is so constructed that the arms 23 and 24 when the sash is fully open have such a relation that the same readily fold into closing position when the sash is closed by exerting pressure directly on the sash in the customary manner.

The sash fastener illustrated is adapted to be moved into a position to lock the sash from movement by merely swinging the arms jointly from the position shown in Fig. 2 to that shown in Fig. 4. This is accomplished as follows: In the first instance the two arms are of substantially the same length and the brackets 44 and 51 are so disposed that the axes of the rivets 47 and 54 are substantially in alignment when the sash is in closing position, as shown in Fig. 2. This permits both arms to be swung jointly or in unison about the same axis. To effect locking, a lug 61 is formed on the arm 24 which is adapted to engage the portion 27 of the strap 26 and to limit the closing movement of the two arms to a position in which the arms are in substantial alignment. When the sash fastener is in the position shown in Fig. 4 any movement of the sash outwardly is resisted by the strap 26 and the lug 61 which in effect forms a lock preventing unintentional opening of the sash.

Where the sash fastener is used on an outwardly swinging sash, the locking feature is dispensed with and the fastener merely used for holding the sash in adjusted position. In Figs. 6 and 7 a sash fastener constructed in accordance with my invention has been illustrated in which most of the parts are identical with those previously described. These parts will not be again described and similar reference numerals preceded by the digit "1" will be used to designate the corresponding parts.

In the form of the invention shown in Figs. 6 and 7 the bracket 44 is dispensed with and a mounting 62 used in place thereof. This mounting consists of a plate of sheet metal which is constructed with a raised portion 63 and to which the end 155 of arm 124 is pivoted. A rivet 64 serves for this purpose and passes jointly through the parts 155 and 63. The mounting 62 is attached to the lateral surface of the vertical frame member 119 of frame 111 by means of screws 65. Where the device is to be used in an installation of this type the assembly of the arm 123 with respect to the arm 124 is reversed so that the lug 161 does not come into engagement with the portion 127 of strap 126. However, arm 124 is constructed on the side thereof opposite the lug 161 with another lug 66 which is adapted to engage the portion 127 of strap 126 and which limits closing of the arms 123 and 124 to a position in which said arms are out of alignment. It will be readily apparent that when outward swinging of the sash 113 is initiated that the arm 124 must commence to swing upwardly, since the sash 113 also has an upward component of movement. Were the two arms 123 and 124 in alignment, such movement could not be initiated unless the said arms were manually engaged and swung jointly with the sash. However, by the use of the lug 66 the arms are held out of alignment as shown in Fig. 7, which permits of moving the sash without the necessity of manual swinging of the arms at the same time the sash is opened. The finger 159 the same as in the other form of the invention engages the portion 127 of strap 126 and limits the opening of the arms to the same position as shown in Fig. 1. The finger 159 is made symmetrical so that the same operates in identically the same manner whether the parts are assembled in one manner or the other. It is to be noted that the arm 123 is attached to the sash when installed as shown in Figs. 6 and 7 and to the frame when installed as shown in Fig. 1.

In the installation of my invention with either form of sash the fastener is merely closed as far as the abutments will permit. The same is then inserted at the proper locality where the window and frame adjoin and the parts secured thereto by the screws provided. The device is then ready for operation. It thus will become evident that it is impossible to erroneously install the fastener and once the same has been installed will continue to operate properly.

The advantages of my invention are manifest. By means of the particular construction employed substantially the same fastener may be installed either upon an inwardly opening sash or an outwardly opening sash. The device is practically fool proof both as to installation and operation. With my invention the strap which serves as part of the locking means for the bolt adjustment forms a stop for limiting the movement of the arms. With my invention the fastener is incapable of movement beyond desired extreme positions. In the manufacture of fasteners in accordance with my invention the same dies can be used for both arms, and only a special die required for the mounting attaching the fastener to the inner face of the window frame. My invention is extremely simple in operation and construction and can be built at a nominal cost.

Changes in the specific form of my invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of my invention.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:

I claim:

1. A sash fastener comprising an arm, an ear formed on said arm, a second arm, an ear on said second arm and overlying the ear formed on said first arm, a friction washer between said ears, a strap issuing from said first arm and having an ear adapted to overlie the ear of the second arm, a friction washer between the ear on said strap and the ear on the second arm, a bolt extending through all of said ears and washers and held from rotation relative to the first arm, and a lug on the second arm adapted to engage said strap for limiting the closing movement of said arms to a position in which said arms are in substantially alignment.

2. A sash fastener comprising an arm, an ear formed on said arm, a second arm, an ear formed on said second arm and overlying the ear on said first arm, a bolt extending through said ears for drawing said ears toward one another, brackets for attachment to a pivoted window sash and frame therefor, said brackets being pivoted to said arms at the other ends thereof and at substantially equal distances from said bolt to accommodate joint swinging of said arms when the arms are in substantially closed alignment to effect locking of the sash, a strap issuing from the first named arm, means on said strap for engagement with said bolt to restrain rotation thereof, and a lug on said second arm for engagement with said strap, said lug and strap holding the arms in substantially closed alignment.

3. A sash fastener comprising a pair of jointed arms, a member extending outwardly from one of said arms, lugs on the other of said arms on opposite sides thereof, said lugs being situated different distances from the axis of said arm, one of said lugs being adapted when the arms are assembled in a particular manner to limit closing of said arms to a position in which the arms are in substantial alignment, and the other of said lugs when the arms are assembled in a reverse manner engaging said member and limiting closing of said arms to a position where the arms are out of alignment.

4. A sash fastener comprising a pair of jointed arms, an abutment on one of said arms, two abutments on the other of said arms, one or the other of said last abutments being adapted to be brought into engagement with said first abutment, one of said last abutments limiting closing of said arms to a position in which the arms are in substantial alignment and the other of said last abutments limiting closing of said arms to a position where the arms are out of alignment.

5. A sash fastener comprising a pair of jointed arms, an abutment on one of said arms, two abutments on the other of said arms, one or the other of said last abutments being adapted to be brought into engagement with said first abutment, one of said last abutments limiting closing of said arms to a position in which the arms are in substantial alignment, and the other of said last abutments limiting the opening of said arms to a position where the arms are out of alignment.

6. A sash fastener comprising a pair of jointed arms, a member extending outwardly from one of said arms, intermediate the ends thereof, a lug on the other of said arms, said lug being adapted to engage said member in a manner to limit closing of said arms to a position in which the arms are in substantial alignment, and an

extension on said arm having the lug, said extension being adapted to engage said member in a manner to limit opening of said arms to a position in which the arms are out of alignment.

- 5 7. A sash fastener comprising an arm, an ear formed on said arm, a second arm, an ear formed on said second arm and overlying the ear on said first arm, a bolt extending through said ears for drawing said ears toward one another, a  
10 strap having a portion extending outwardly from said first arm at a locality intermediate the ends thereof and having another portion overlying said arm, means on said second portion for engagement with the bolt to assist in preventing  
15 unintentional loosening of the same, a lug on the second arm adapted to engage the first portion of said strap to limit closing movement of said arms.
- 20 8. A sash fastener comprising an arm, an ear formed on said arm, a second arm, an ear formed on said second arm and overlying the ear on said first arm, a bolt extending through said ears for drawing said ears toward one another, a strap having a portion extending outwardly from said  
25 first arm at a locality intermediate the ends thereof and having another portion overlying said arm, means on said second portion for engagement with the bolt to assist in preventing unintentional loosening of the same, a lug on the  
30 second arm adapted to engage the first portion of said strap to limit closing movement of said arms, and a finger on said ear of said second arm adapted to engage the said portion of said strap to limit opening movement of said arms.
- 35 9. A sash fastener comprising an arm, an ear formed on said arm, a second arm, an ear formed on said second arm and overlying the ear on said first arm, a strap having a portion extending outwardly from said first arm at a locality inter-  
40 mediate the ends thereof and having another portion overlying said arm, an ear on said portion of the strap overlying the ear on said second arm, a bolt extending through said ears for drawing said ears toward one another, means on one of said ears for holding the bolt from rota-  
45 tion, a lug on the second arm adapted to engage the first portion of said strap to limit closing movement of said arms, and a finger on said ear

of said second arm adapted to engage the said portion of said strap to limit opening movement of said arms.

- 5 10. A sash fastener comprising an arm constructed of sheet metal, an ear formed on one end of said arm, a second arm, an ear formed on said second arm and overlying the ear on said first arm, a strap issuing from one edge of said first arm and having a portion bent outwardly therefrom, at right angles thereto, said strap  
10 having another portion issuing angularly from said first portion and bent at right angles thereto to overlie said arm, an ear on said second portion of the strap overlying the ear of said second arm, a bolt extending jointly through all of said  
15 ears for drawing said ears toward one another, means on one of the outer ears for restraining rotation of the bolt, a lug on the second arm adapted to engage the first portion of said strap to limit closing of said arms, and an extension  
20 formed on the ear of said second arm and adapted to engage the same portion of said strap for limiting opening of said arms.

- 25 11. A sash fastener comprising a pair of jointed arms, brackets pivoted to said arms, said brackets being constructed in the form of an angle and each having a base and a flange extending outwardly therefrom, said arms being pivoted to said flanges, said brackets being arranged so that the bases extend from the flanges in the  
30 same direction, said arms being offset a distance not less than the width of the base of one of said brackets to cause said brackets to clear one another and the sash when applied to the sash and  
35 frame of a window and when overlying one another.

- 40 12. A sash fastener comprising a pair of jointed arms, an abutment on one of said arms, two abutments on the other of said arms, one or the other of said last abutments being adapted  
45 to be brought into engagement with said first abutment, one of said last abutments limiting closing of said arms to a position in which the arms are out of alignment, and the other of said last abutments limiting the opening of said arms  
to a position where the arms are out of alignment.

CHESTER O. GOSERUD.