

C. D. TABOR.

SASH CENTER.

APPLICATION FILED JULY 25, 1907.

908,046.

Patented Dec. 29, 1908.

2 SHEETS—SHEET 1.

Fig. 1.

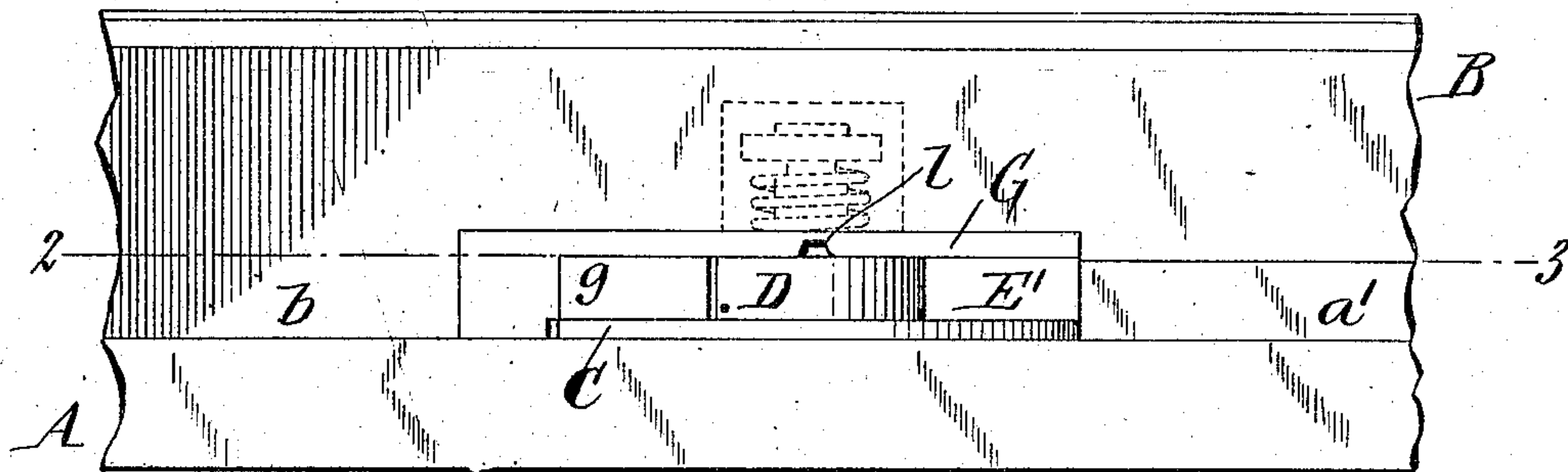


Fig. 2.

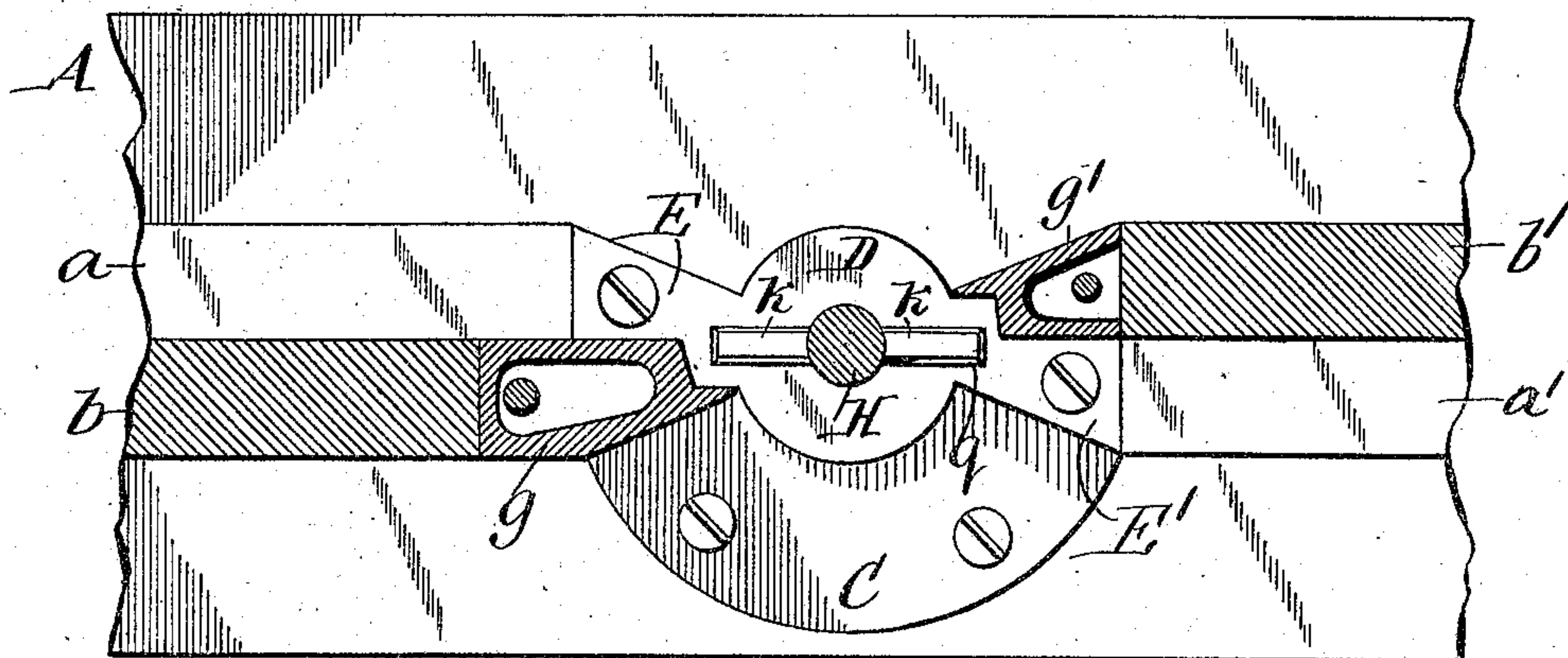
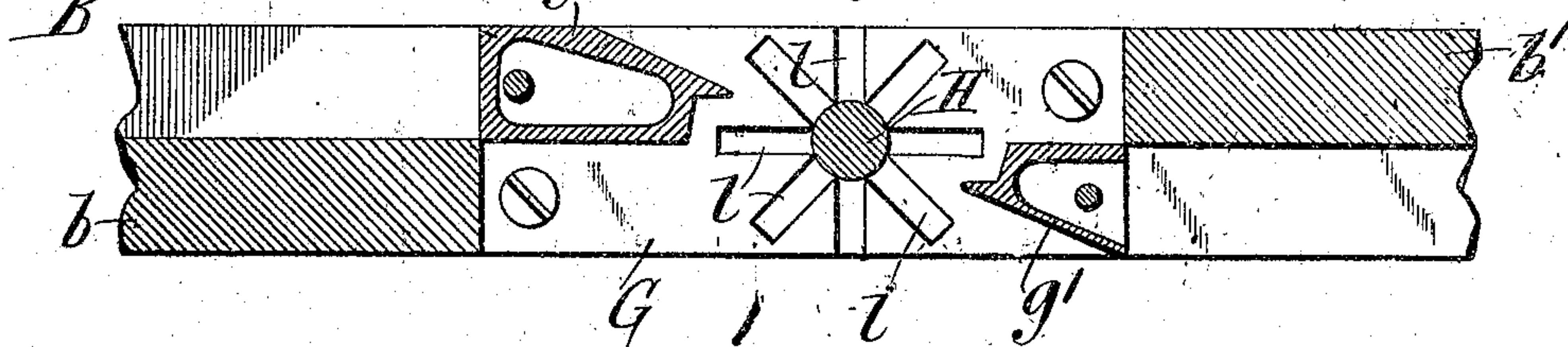


Fig. 3.



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# UNITED STATES PATENT OFFICE.

CLINTON D. TABOR, OF NEW DORP, NEW YORK, ASSIGNOR TO TABOR SASH COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION OF NEW YORK.

## SASH-CENTER.

No. 908,046.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed July 25, 1907. Serial No. 385,426.

*To all whom it may concern:*

Be it known that I, CLINTON D. TABOR, a citizen of the United States, and resident of New Dorp, in the county of Richmond and State of New York, have invented a new and useful Improvement in Sash-Centers, of which the following is a specification.

This invention relates to a sash center or pivot fixture for pivotally connecting a vertically or horizontally swinging sash with its frame.

The object of this invention is the production of a simple and durable fixture of this character which will be unaffected by slight warping or relative displacement of the sash and frame, which will reliably hold the sash in a more or less open position and which effectually prevents the weather from driving through the joint between the sash and frame when the sash is closed.

In the accompanying drawings consisting of two sheets: Figure 1 is a fragmentary side elevation of my improved sash center applied to a sash and frame in position to permit of swinging the same horizontally into an open or closed position. Figs. 2 and 3 are horizontal sections taken in line 2—3, Fig. 1, and looking in opposite directions. Fig. 4 is a vertical longitudinal section of the sash center and the adjacent parts of the sash and frame to which the same is applied. Figs. 5 and 6 are fragmentary vertical cross sections taken in the correspondingly numbered lines in Fig. 4. Figs. 7, 8, 9 and 10 are detached perspective views of different parts of the sash center.

Similar letters of reference indicate corresponding parts throughout the several views.

A represents the horizontal sill of the window frame and  $a, a^1$  the stops which are arranged lengthwise on its upper side but out of line and separated at their opposing ends by an intervening space.

B represents the lower horizontal bar of the window sash which is arranged above the sill and provided on its underside with stops  $b, b^1$  which are arranged out of line and separated at their opposing ends by an intervening space. In the closed position of the sash its stops  $b, b^1$  bear against the corresponding frame stops  $a, a^1$  and form a closure in the joint between the same.

In the spaces between the stops of the sash and frame is arranged the sash center which

pivotally connects the sash and frame and which is constructed as follows:—

C represents a base plate secured to the frame sill in the space between its stops and provided centrally with a cylindrical hollow boss D which has its axis arranged vertically and two stop lugs E,  $E^1$  extending from diametrically opposite sides of the hollow boss to the adjacent ends of the frame stops  $a, a^1$  so as to bridge the gap between the same. In its upper side the hollow boss is provided with a diametrical slot or elongated opening consisting of an enlarged circular central portion F and reduced or narrow end portions  $f$  and arranged on opposite sides of the central portion F.

Secured to the underside of the sash bar B between the opposing ends of its stops is a base plate G which is provided at opposite ends with stop lugs  $g, g^1$ . These lugs engage at their outer ends with the sides of the respective sash stops and form extensions of the latter while their inner ends extend close to or bear against diametrically opposite sides of the periphery of the hollow boss of the frame plate, as shown in Fig. 2.

H represents a pivot pin extending through the central part F of the opening in the hollow boss and a cylindrical pivot opening  $i$  in the central part of the sash plate G and terminating at its lower end within the hollow bars while its upper end terminates within a recess  $j$  formed in the sash behind the sash plate.

On opposite sides of the lower end of the pivot pin and within the hollow boss are arranged the two detent or locking teeth  $k, k^1$  of a detent device whereby the sash is held in a closed or more or less open position. These teeth project outwardly through the reduced end portions  $f$  of the opening in the hollow boss and into engagement with one or another pair of radial recesses or notches  $l$  formed in an annular row on the opposing surface of the sash plate around the pivot opening  $i$  thereof. The detent teeth are yieldingly held in engagement with the notches of the sash plate by a spring  $m$  surrounding the upper end of the pivot pin and bearing at one end against the back of the sash plate while its other end bears against a shoulder on the pivot pin. This shoulder is preferably formed by means of a collar N which is detachably secured to the pivot pin



by means of an elongated head *n* on the pivot pin engaging with the collar on opposite sides of a slot *o* therein. The collar is passed over the head while the same is lengthwise in line with the slot *o* and when the collar clears the head *n* the parts are turned relatively to each other so that the ends of the head engage the collar on opposite longitudinal sides of its slot. The collar may be held in place solely by the pressure of the spring *m* against the same but it is preferable to form seats *p* in the collar on opposite sides of its slot which receive the ends of the head *n* and prevent accidental separation of these parts.

Upon turning the sash the same is centered by the pivot pin and also by the lugs of the sash plate engaging with opposite sides of the cylindrical boss on the frame plate. While thus turning the sash the detent teeth snap successively into different pairs of the notches *l* and when the sash is released the same is yieldingly held in position by the tension of the spring *m* holding the teeth *k* in the respective notches *l*. The teeth are able to wedge or crowd themselves out of one pair of the notches preparatory to engaging another pair by tapering or rounding the faces of said teeth, as shown at *q*, Figs. 2, 6 and 9.

In order to prevent the pivot pin and its detent teeth from being wholly withdrawn from the hollow boss, a stop device is provided which preferably consists of lips or shoulders *r* arranged on opposite sides of the detent teeth and pivot pin within the hollow boss and adapted to limit the separation of these parts by engagement with the underside of the top of the boss on opposite sides of the narrow end parts *f* of the slot in said boss.

When the sash center is applied the stop lips or shoulder *r* are separated a considerable distance from the top of the hollow boss, as shown in Figs. 1 and 5, so that the pressure of the spring *m* is not exerted against the frame plate, leaving the sash and frame free to shift toward and from each other when warping.

It will thus be seen that in my improved sash center the parts are all permanently connected and cannot become separated while carried in stock by dealers or while being handled previous to installation, thereby preventing loss of parts.

By engaging the stop lugs of the sash plate with the cylindrical boss of the frame plate, the wear and strain upon the pivot pin is relieved, thus retaining the sash more reliably in position.

If the sash or frame should warp and draw apart this is permitted without straining the sash frame or sash center inasmuch as the detent teeth and pivot pin are free to slide outwardly in the hollow boss and adjust themselves to any such variations. Further-

more, if the sash and frame do separate slightly the stop lugs of the sash and frame plate still overlap each other thus forming a closure between the parts of the sash center and preventing the formation of a gap between the same which would permit the weather to drive through.

In practice a sash center of this kind is applied to the top and bottom of a window in which the sash turns horizontally.

Although the drawings show my improved sash center applied to a horizontally swinging sash it is obvious that the same may be applied to horizontally opposite sides of a window in which the sash turns in a vertical plane. It is also obvious that the sash center can be applied to the window reversely of that shown in the drawings, viz: the plate carrying the hollow boss may be attached to the sash and the recess for the reception of the spring and the pivot pin may be formed in the frame.

I claim as my invention:

1. A sash center comprising two plates adapted to be secured respectively to the sash and frame, one of said plates having a pivot opening and an annular row of notches on its face around said opening, and the other plate having a slot provided with an enlarged circular portion and a narrow portion at the side of the circular portion, a pivot pin arranged in the pivot opening of the notched plate and the circular part of the slotted plate and having a shoulder, a detent tooth arranged on said pin and projecting through the narrow part of said slot into engagement with said notches, and a spring interposed between the notched plate and the shoulder on the pivot pin and operating to hold said tooth yieldingly in engagement with said notches, substantially as set forth.

2. A sash center comprising two plates adapted to be secured respectively to the sash and frame, one of said plates having a pivot opening and an annular row of notches on its face around said opening, and the other plate having a slot provided with an enlarged circular central portion and narrow portions on opposite sides of the central portion, a pivot pin arranged in the pivot opening of the notched plate and the circular part of the slot in the other plate and having a shoulder, detent teeth arranged on opposite sides of the pivot pin and projecting through the narrow portions of said slot into engagement with said notches, and a spring interposed between said notched plate and the shoulder on the pivot pin and operating to yieldingly hold said detent teeth in engagement with said notches, substantially as set forth.

3. A sash center comprising two plates adapted to be attached respectively to a sash and frame, one of said plates having a pivot opening and an annular row of notches around said opening, a pivot pin journaled



in said pivot opening of one plate but held against turning on the other plate, a tooth arranged on the pivot pin and engaging with said notches, a spring surrounding the pivot pin and bearing at one end against said notched plate, and a collar bearing against the opposite end of said spring and having a slot which receives said pin, and an elongated head arranged on said pin and bearing against said collar on opposite sides of its slot, substantially as set forth.

4. A sash center comprising two plates adapted to be attached respectively to a sash and frame, one of said plates having a pivot opening and an annular row of notches around said opening a pivot pin journaled in said pivot opening of one plate but held against turning on the other plate, a tooth arranged on the pivot pin and engaging with said notches, a spring surrounding the pivot pin and bearing at one end against said notched plate, and a collar bearing against the opposite end of said spring and having a slot which receives said pin, and an elongated head arranged on said pin and engaging with seats formed on said collar on opposite sides of its slot, substantially as set forth.

5. A sash center comprising two plates adapted to be attached respectively to a sash and frame, one of said plates having a pivot opening and an annular row of notches around said opening, a pivot pin journaled in said pivot opening of one plate but held against turning on the other plate and having a shoulder, a tooth arranged on the pivot pin and engaging with said notches, a spring surrounding the pivot pin and bearing at its opposite ends against the notched plate and the shoulder on said pin, and a stop carried by the pivot pin in rear of the plate in which the pin does not turn and normally separated from the back of said plate, substantially as set forth.

6. A sash center comprising two plates adapted to be attached to a sash and frame, one of said plates having a pivot opening and an annular row of notches around said opening and the other plate having a hollow boss and a slot in the top of said boss composed of an enlarged circular central part and a narrow part on one side of said central part, a pivot pin arranged in said pivot opening and the enlarged central part of said slot and projecting into said boss, a detent tooth arranged on the pivot pin within said boss projecting through the narrow part of said slot, and a

spring operating to hold said tooth yieldingly in engagement with said notches, substantially as set forth.

7. A sash center comprising two plates adapted to be attached to a sash and frame, one of said plates having a pivot opening and an annular row of notches around said opening and the other plate having a hollow boss and a slot in the top of said boss composed of an enlarged circular central part and a narrow part on one side of said central part, a pivot pin arranged in said pivot opening and the enlarged central part of said slot and projecting into said boss, a detent tooth arranged on the pivot pin within said boss projecting through the narrow part of said slot, a spring operating to hold said tooth yieldingly in engagement with said notches, and a stop arranged on the pivot pin and normally separated from the back side of the top of said hollow boss, substantially as set forth.

8. A sash center comprising two plates adapted to be attached to the sash and frame, one of said plates having a hollow cylindrical boss, stop lugs on diametrically opposite sides of said boss and a slot in the top of said boss having an enlarged circular central portion and reduced end portions on opposite sides of the central portion and the other plate having a pivot opening, an annular row of notches around said opening and stop lugs adapted to engage with diametrically opposite sides of the periphery of said boss and to engage with the sides of the stop lugs adjacent to the boss, a pivot pin passing through said pivot opening and the circular part of said slot and projecting into the hollow boss, detent teeth arranged on diametrically opposite sides of the pivot pin within the hollow boss and projecting through the narrow parts of said slot into engagement with said notches, a spring surrounding the pivot pin between the back of the notched plate and a collar or shoulder on the pivot pin and operating to hold the detent teeth yieldingly in engagement with said notches, and stop lips arranged on the pivot pin and detent teeth within the hollow boss and adapted to engage with the underside of the top of said boss, substantially as set forth.

Witness my hand this 19th day of July, 1907.

CLINTON D. TABOR.

Witnesses:

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GEORGE SWEZEY.