

(No Model.)

E. M. KEMP.

EXTENSION FRAME FOR WINDOW SCREENS, &c.

No. 576,760.

Patented Feb. 9, 1897.

Fig. 1.

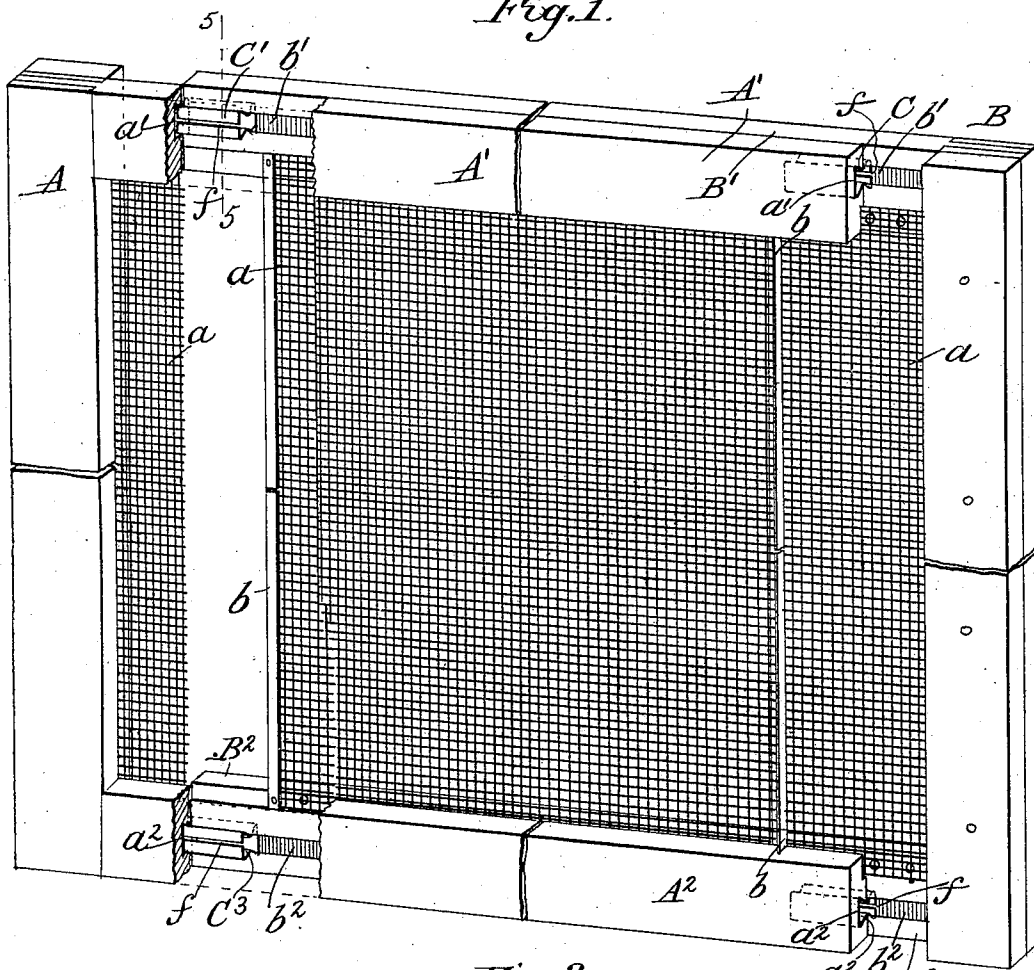


Fig. 2.

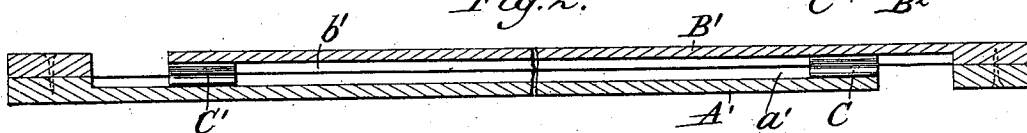


Fig. 4.

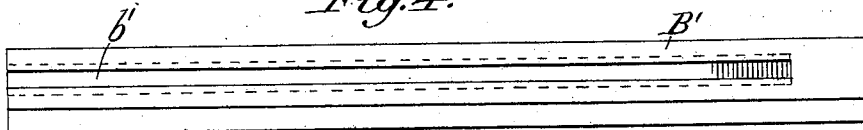


Fig. 5.

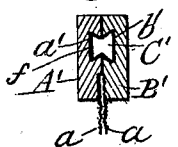
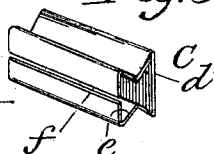


Fig. 3.



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UNITED STATES PATENT OFFICE.

EDWARD M. KEMP, OF RHINELANDER, WISCONSIN.

EXTENSION-FRAME FOR WINDOW-SCREENS, &c.

SPECIFICATION forming part of Letters Patent No. 576,760, dated February 9, 1897.

Application filed October 23, 1896. Serial No. 609,778. (No model.)

To all whom it may concern:

Be it known that I, EDWARD M. KEMP, a citizen of the United States, residing at Rhinelander, in the county of Oneida and State of Wisconsin, have invented certain new and useful Improvements in Extension-Frames for Window-Screens and other Articles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to extensible frames for window-screens and other articles and structures of carpentry, cabinet-making, &c.; and it consists, chiefly, in a dovetailed tongue or connecting-piece of sheet metal, which is slotted to allow contraction and expansion with the woodwork of the frame and is fastened to one frame-section while entering a groove of the other and allowing the said sections to slide endwise over each other in either direction.

The said invention also consists in the combination of two frame-sections correspondingly grooved longitudinally in the faces presented to each other with dovetailed expansible and contractible tongues fastened to the inner end of each frame-section and freely entering the opposite groove in the other section in order that said sections may be moved endwise over each other for contracting or extending the screen, all substantially as herein-after more particularly set forth and claimed.

In the accompanying drawings, Figure 1 represents a perspective view of an extensible screen embodying my invention. Fig. 2 represents a horizontal longitudinal section taken just above the two upper tongues. Fig. 3 represents an enlarged detail perspective view of one of the slotted tongues; and Fig. 4 represents in front elevation one of the sliding bars of the frame, showing its groove and tongue.

A and B represent two rectangular frame-sections adapted to slide over each other, as is usual in extensible window-screens and similar articles, each section being covered with screen-wire *a* and braced at the inner end by an upright metal bar *b*, to which the corresponding edge of the screen-wire is in each instance attached.

The upper bar *A'* of section A has a dove-

tailed groove *a'* extending its whole length, and a corresponding groove *b'* is in the opposed face of the upper bar *B'* of section B. A doubly-dovetailed tongue or tenon *C* is fastened in the inner end of groove *a'* and slides in the groove *b'*, and a corresponding tongue or tenon *C'* is fastened in the inner end of groove *b'* and slides in groove *a'*. The lower bars *A² B²* in like manner are provided with grooves *a² b²* and tenons or tongues *C² C³*, arranged and operating as above. Each of these tongues or tenons is formed from a sheet or plate which is bent on itself and pressed in at the sides, giving it approximately an hourglass shape in cross-section, except that its faces are flat where presented against the sliding bars of the frame. It thus consists of two reversely-flaring dovetails, the larger of which, *d*, fits tightly into the groove of one sliding rail, no further fastening being generally necessary, while the other dovetail, *e*, which is smaller, fits in the corresponding groove of the opposite bar tightly enough to prevent the accidental separation of the said bars, but not so tightly as to prevent their endwise sliding, the interlocking tongues and grooves operating in the usual manner.

It is of course important that the fit of the dovetails *e* in the grooves should be always the same, notwithstanding the swelling of the woodwork of the frame by moisture or its contraction in dry weather or any changes that may be caused by heat or cold. A very valuable feature of my invention consists in compensating for all changes of the size of the groove which may thus be produced by allowing the dovetail *e* of each tongue or tenon to yield when the groove contracts and spread again as the groove widens. To this end the proximate edges of the blank are left normally slightly apart, forming a slot or opening *f* in the crown or sliding face of the said dovetail. When the wood of the opposite bar presses on the tenon in contracting the groove, these edges are forced toward each other. When the opposite action takes place, the metal of the tenon or tongue has resiliency enough to move the said edges apart again, spreading the said dovetail *e*.

Of course the effect would be the same if these slotted tongues or tenons were used

with other than wooden bars having different expansibility under high temperature from that of the said tenons, but the need is most greatly felt in wooden frames exposed to the alternation of moist and dry weather, as commonly happens with window-screens.

The tongues or tenons are easily fitted in and may be removed at will for cleaning, repairing, or other purposes, although they will hold their position against ordinary accidental causes of dislodgment.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A device for holding two parts together in sliding contact consisting of a dovetailed tongue or tenon consisting of a single piece of elastic metal slotted to allow compression and expansion substantially as set forth.

2. A pair of grooved sliding bars, in combination with slotted compressible and expansible tenons of sheet metal, one of said tenons being attached to each one of said bars, and making sliding engagement with the groove of the other bar, so as to hold the said bars together, while permitting their endwise motion over each other without impediment, substantially as set forth.

3. A frame consisting of two sections adapted to slide over each other, and having longitudinal grooves in the faces of the bars which are in contact, in combination with detachable tongues or tenons of resilient metal forming double dovetails slotted in one end or face, this slotted end of each tongue or tenon sliding in the opposite groove of one

section while the other end is fast to the other section substantially as set forth.

4. A screen-frame consisting of two sections, movable longitudinally over each other for extension and contraction, and having longitudinal dovetail grooves formed in the proximate faces of their upper and lower rails, in combination with sheet-metal tongues or tenons, each having the form of a double dovetail, the end of one dovetail being slotted, in order that it may adapt itself to changes in the groove in which it slides, while the other dovetail is fixed in the opposite frame-section substantially as set forth.

5. An extensible frame consisting of two sections having grooved sliding rails, in combination with sheet-metal tongues or tenons, each of which consists of two reversely-flaring parts of unequal width, one of said parts being slotted, and each section being provided with a pair of these tongues or tenons, fitted by their unslotted parts detachably but firmly into the grooves of the said section, while their slotted parts fit into grooves of the opposite section and adjust themselves to the contraction and expansion thereof, but permit the endwise motion of the said sections substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD M. KEMP.

Witnesses:

C. F. GARDINIER,
H. R. WEESNER.