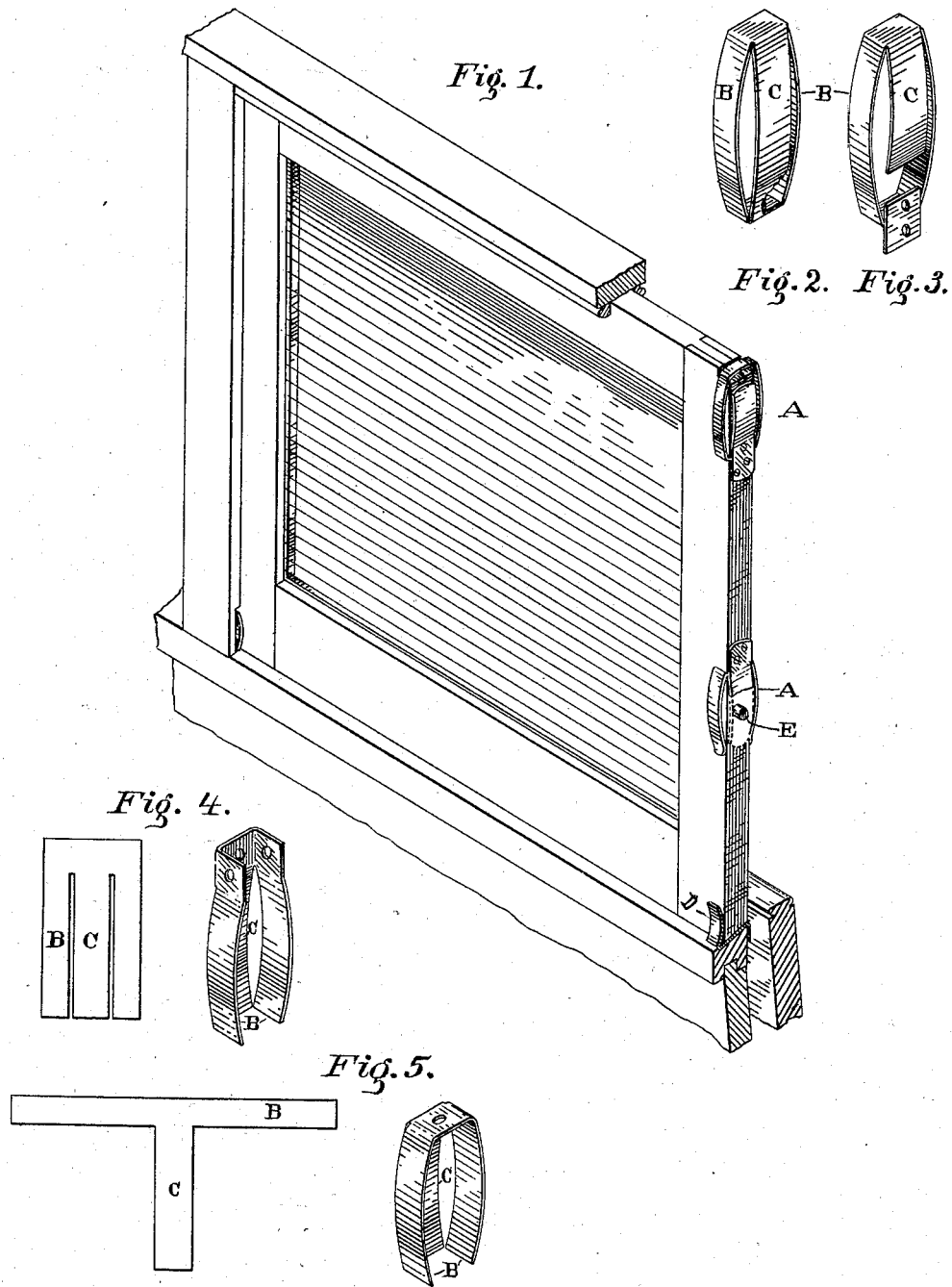


(No Model.)

F. P. STONE.
SASH TIGHTENER.

No. 263,240.

Patented Aug. 22, 1882.



WITNESSES

Wm A. Skunkle.
Chauncey N. Dutton.

INVENTOR

Frank P. Stone

By his Attorneys

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UNITED STATES PATENT OFFICE.

FRANK P. STONE, OF CHICAGO, ILLINOIS.

SASH-TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 263,240, dated August 22, 1882.

Application filed December 21, 1881. (No model.)

To all whom it may concern:

Be it known that I, FRANK P. STONE, of Chicago, in the county of Cook and State of Illinois, have invented an Improved Anti-Rattling Sash-Spring, of which the following is a specification.

In the accompanying drawings, illustrating my invention, Figure 1 is perspective view of a window sash and frame with my springs applied. Figs. 2 and 3 are elevations of my springs. Fig. 4 is a group showing a blank and a spring formed from it, and Fig. 5 is another group showing a blank and a spring formed from it.

It will be obvious from Figs. 2, 3, 4, and 5 how the springs are formed without further description.

The object of my invention is to prevent the noisy rattling of the window-sash of cars, coaches, or dwellings, due to bad fitting and wind or motion.

To accomplish this object I construct a triple spring, A, of any suitable spring metal, to be applied to the upper and lower ends of the sash, as illustrated, so that the curved side springs, B B, will operate against the sash-frame upon opposite sides of the sash and the curved end spring, C, will operate against the end of the sash-frame. When four of these triple springs are applied to the sash near its four corners they serve as a cushion, bearing about equally against the sash-frame and forming the points of contact or slides of the sash within the frame and facilitating its raising and lowering. These triple springs are

capable of some modifications of form. For example, all three of the spring parts may be joined together at their ends, as illustrated in Fig. 2, or they may be joined together only at one end, as illustrated in Figs. 4 and 5. In some cases I find it convenient to apply only two of these triple springs at the upper end of the sash and to apply an ordinary spring, D, at the lower end; and, again, in some instances two of these triple springs having the form in which only one end of the springs is secured together, as shown in Figs. 1 and 4, may be applied near the middle of the sash and answer very well. When I form triple springs of this latter kind connected only at one end I may form them of a single piece of metal slitted in two places and folded at the base, as illustrated in Fig. 4. Should inferior spring metal be employed in the manufacture of these triple springs, elastic pads or cushions E, of rubber or any other suitable material, may be placed underneath the springs to aid their resilient action.

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

The triple anti-rattling sash-spring above described, composed of three curved springs combined, one to rest upon the edge and one upon either face of the sash, as set forth.

FRANK P. STONE.

Witnesses:

CALVIN STONE,
FRED. K. STONE.