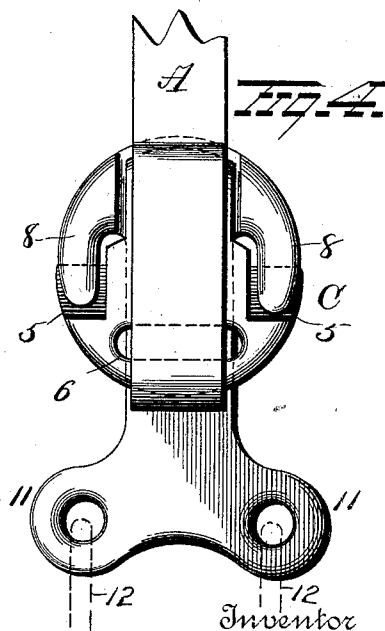
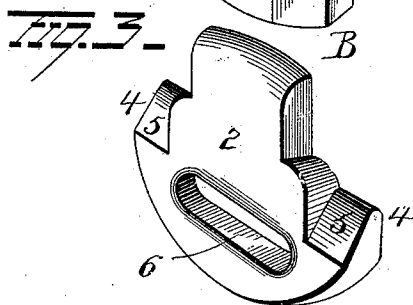
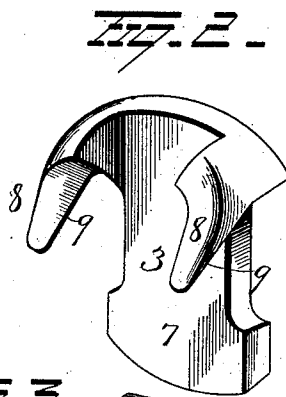
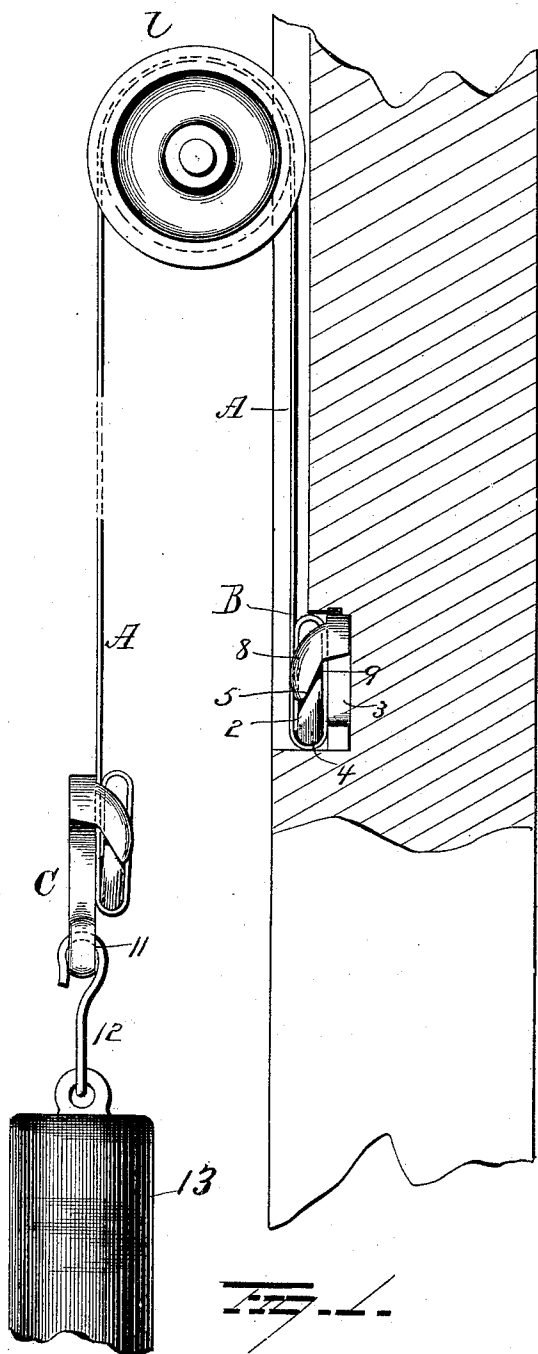


(No Model.)

F. S. CLARKSON.  
SASH BALANCE.

No. 463,285.

Patented Nov. 17, 1891.



Witnesses  
*G. A. Thompson*  
*C. F. Downing*

Inventor  
*Frank S. Clarkson*  
By *R. A. Symons*  
Attorney

# UNITED STATES PATENT OFFICE.

FRANK S. CLARKSON, OF BALTIMORE, MARYLAND, ASSIGNOR OF THREE-  
FOURTHS TO FRANK B. SLOAN, OF SAME PLACE.

## SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 463,285, dated November 17, 1891.

Application filed June 2, 1891. Serial No. 394,851. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK S. CLARKSON, of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Sash-Balances; 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.

My invention relates to an improvement in sash-balances; and it consists in certain novel features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a sectional view through a sash and window-frame, showing my improved balance in position; and Figs. 2, 3, and 4 are views in detail of various parts of the device.

A represents the usual ribbon or cable to which the sash and weight are attached. This ribbon may be made of steel or any metal used for this purpose. When constructed of steel, it is preferably galvanized. The ribbon is applied in the usual way to the sash and sash-frame, passing over a pulley 1 and being attached at its ends.

The locking-heads B and C constitute an essential element of my present invention, and hence they will be described in this connection, and as they are, with slight modifications, the same at both ends, it will be sufficient to describe one in detail and afterward refer to the differences in the other. Head B is composed of a key 2 and a key-seat 3. The former consists of a block of metal around which one end of the ribbon is folded. At opposite sides this key is furnished with ears 4 4, having inclining surfaces 5 5. The key may also be provided with a transverse slot 6, if desired, through which the ribbon might pass if found expedient.

The key-seat 3 consists of a flat shank 7, upon the sides of which the ears 8 8 are secured or integrally formed. These ears are separated apart just sufficiently to receive the key between them, and their inner surfaces 9 9 are inclined like the surfaces 5 5 of the key, only reversely, so as to fit the latter. The key-seat and ribbon are assembled by slip-

ping the key into a loop formed in the end of the ribbon or by bending the end of the ribbon around it, and then by sliding the key into the key-seat until the reversely-inclined surfaces 5 5 and 9 9 ride upon each other as far as possible. The tighter these parts are forced together the tighter they bind the ribbon, and the inclining surfaces are so shaped that application of weight at both ends always tends to draw the key and key-seat tighter, so that no possibility remains of their becoming disassembled. It will be observed that the head has no perforations and is not secured in place by screws or similar means; but it is simply sunk into a hole formed for it in the edge of the sash. The head C differs in this respect, merely—namely, that the shank of the key-seat is made a little longer, and projections 11 11 are formed on its edges and provided with holes for the passage of the hook 12, which carries the weight 13. The holes in projections 11 may, if desired, be omitted. This particular mode of attaching the weight, as well as other features of the invention, could be varied, the main idea being to form the heads so that they will embrace the ends of the ribbon rightly and prevent the possibility of the ends slipping from them, and I may also add that it is not absolutely necessary that the loops should be formed in the ends of the ribbon, as it is probable that they would be held sufficiently tight without being bent around the key. However, I prefer that the loop should be formed, as that will insure against the possibility of the parts becoming accidentally displaced.

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

1. A sash-balance consisting of a ribbon or cable and heads connected with the ribbon or cable, said heads composed of sections constructed to interlock at their side edges and at points outside of the side edges of the ribbon or cable, substantially as set forth.

2. In a sash-balance, heads composed of sections flat in their centers to receive a ribbon or cable between them and provided at their edges with ears having reversely-inclined inner surfaces adapted to ride upon

each other as the sections are forced together, whereby the flat portions are made to approach each other more closely, substantially as set forth.

- 5 3. The combination, with a ribbon or cable, of a head composed of interlocking sections, one section adapted to have one end of the ribbon or cable wrapped around it, the sides of this section whereon the ribbon or cable

is wrapped being approximately parallel, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

FRANK S. CLARKSON.

Witnesses:

TH. KELL BRADFORD,  
A. W. BRADFORD.