

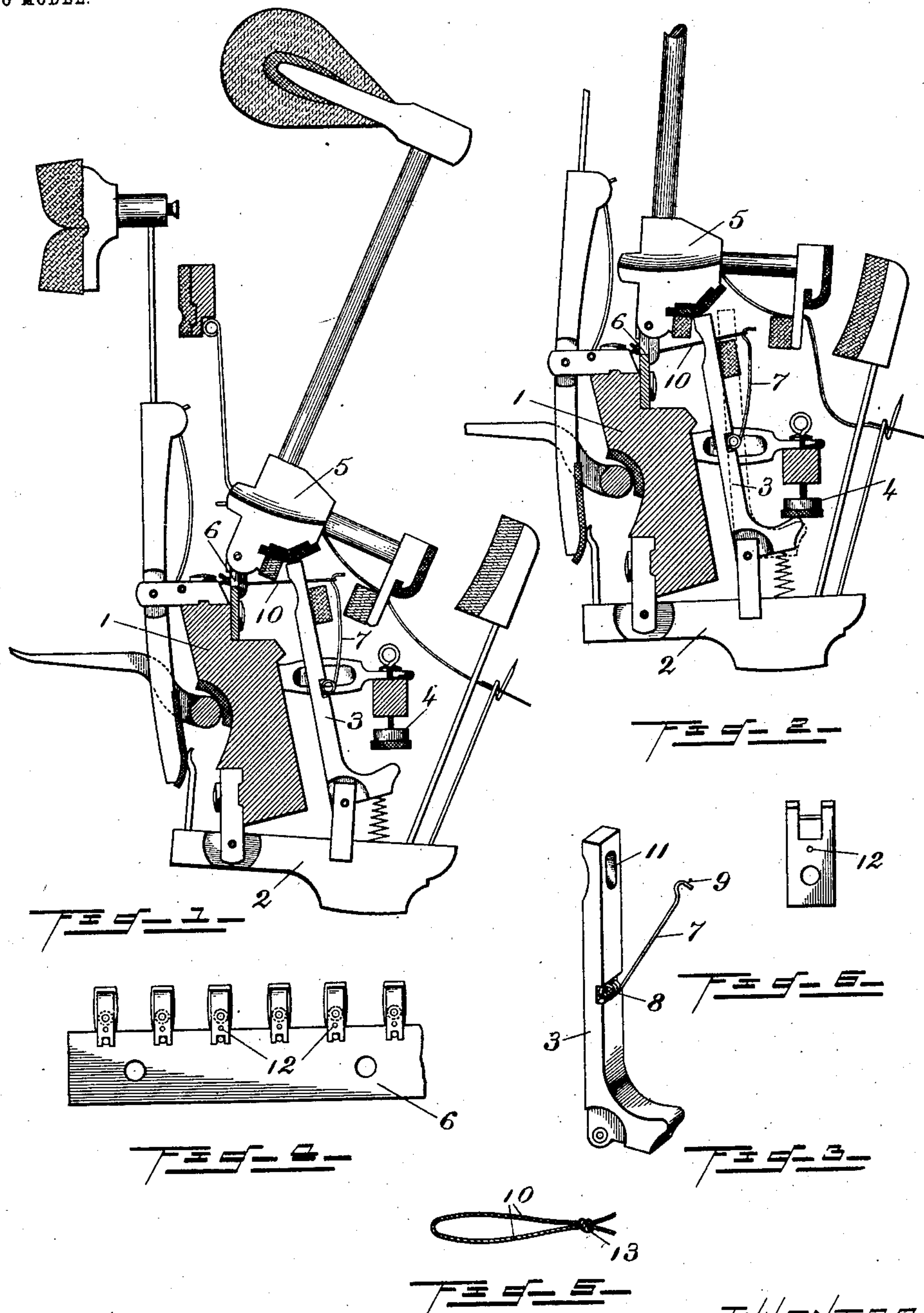
No. 737,565.

PATENTED SEPT. 1, 1903.

A. A. BARTHELMES.  
PIANO ACTION.

APPLICATION FILED SEPT. 27, 1902.

NO MODEL.



WITNESSES

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# UNITED STATES PATENT OFFICE.

ALEXANDER AUGUST BARTHELMES, OF TORONTO, CANADA.

## PIANO-ACTION.

SPECIFICATION forming part of Letters Patent No. 737,565, dated September 1, 1903.

Application filed September 27, 1902. Serial No. 125,025. (No model.)

*To all whom it may concern:*

Be it known that I, ALEXANDER AUGUST BARTHELMES, of the city of Toronto, in the county of York and Province of Ontario, Canada, have invented certain new and useful Improvements in Piano-Actions; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention is applicable to piano-actions of the type known as "upright" actions, and relates particularly to improvements in the manner of incorporating the rapid repeating qualities of the grand piano, which is simple, effective, and more efficient in use than those previously devised.

The essential features of this invention are the independent flexible connections or loops and the manner of making the same fast to the action. Heretofore the flexible connection has been made permanently fast to some portion of the action or to some form of an additional support or secondary rail, in which event should the flexible connection fail or break the same can only be replaced in the first instance by renewing a portion of the action of which the same is an integral part and in the latter instance by stripping a considerable portion of the action to allow of the loop being made fast.

To such ends my invention consists in the construction and combination of parts, as hereinafter particularly described and claimed, reference being had to the accompanying drawings, in which similar figures of reference refer to like parts throughout.

Figure 1 is a vertical sectional view through a piano-action in which is embodied the mechanism for attaining the rapid repeating effect. Fig. 2 is a similar view showing the position the parts assume when the key is partially released after being depressed, in which position the jack is in readiness for another stroke, and illustrated in dotted lines is the position the jack would assume heretofore when operating rapidly without the mechanism for attaining the rapid repeating effect. Fig. 3 is a detail view of the jack, showing the jack-spring and opening in the jack through which operates the flexible connection. Fig. 4 is a view in detail of a portion

of the metal flange upon which operates the hammer-butts and showing the perforations therein for the reception of the flexible connections. Fig. 5 is a view of the independent flexible loop for connecting the jack-spring with the flange, and Fig. 6 is a view of a wooden flange adapted for the reception of the flexible loop.

To illustrate the present invention, in the drawings is represented an ordinary standard action having embodied my improved mechanism for attaining the rapid repeating effect of which the parts directly contiguous with said improvement are hereinafter enumerated, namely: 1 designates the main rail; 2, the wippen, on which are carried the jack 3, the regulating-button 4, the hammer-butt 5, and flange 6, such parts being of the usual construction and arrangement.

In carrying out the present invention I dispense with the use of any additional feature, such as an auxiliary or supplemental rail, and, furthermore, in the construction of the action no material change is made, this being a decided advantage, costing less to equip than various expedients that have been devised for a similar purpose.

The essential features comprise a jack-spring 7, terminating at one end in a coil 8, wherein it is made fast to the jack 3 in the usual manner in a recess provided for the purpose, while the upper or opposite end of the spring is bent to form a hook 9, with which is connected one end of the flexible loop 10, said flexible loop or connection adapted to operate freely and unobstructed through the opening 11 in the jack and made fast at its opposite end in the flange 6.

In the flange 6 or the projections thereof, upon which are pivoted the hammer-butts, are small apertures 12, coinciding with the openings 11 and in line with the jack-springs 7, of sufficient diameter to admit the flexible loop 10, so that it can be inserted and drawn through until the knot 13 tied therein is reached, which owing to the increase in size and the limited diameter of the opening 12 is prevented from drawing out through the same.

The advantages arising from this construction and arrangement are that the flexible loop can be removed and replaced when

broken or otherwise injured independently and without disturbing the action, which is a desideratum. Further, such construction makes it possible to employ either the metal  
5 or wooden flange and secure the flexible loop therein and not depart from the spirit of the invention.

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

1. In a piano-action, a flexible connection comprising a loop having a knot formed therein, a jack-spring carried on the jack, and a flange on the action-rail perforated for the re-  
15 ception of the loop of said flexible connection, substantially as and for the purpose set forth.

2. In a piano-action, a flexible connection comprising a loop having the ends united in the form of a knot, a flange perforated for the reception of the loop of said flexible connec- 20  
tion, said loop removably held in said flange and secured therein by the terminal knot, and a spring mounted on the jack and adapted to engage the free end of said loop, substantially  
as and for the purpose set forth. 25

Signed at Toronto this 9th day of July, 1902.

ALEXANDER AUGUST BARTHELMES.

Witnesses:

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