

No. 799,344.

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C. A. LAMBERT.
PIANO ACTION FLANGE.
APPLICATION FILED APR. 29, 1905.

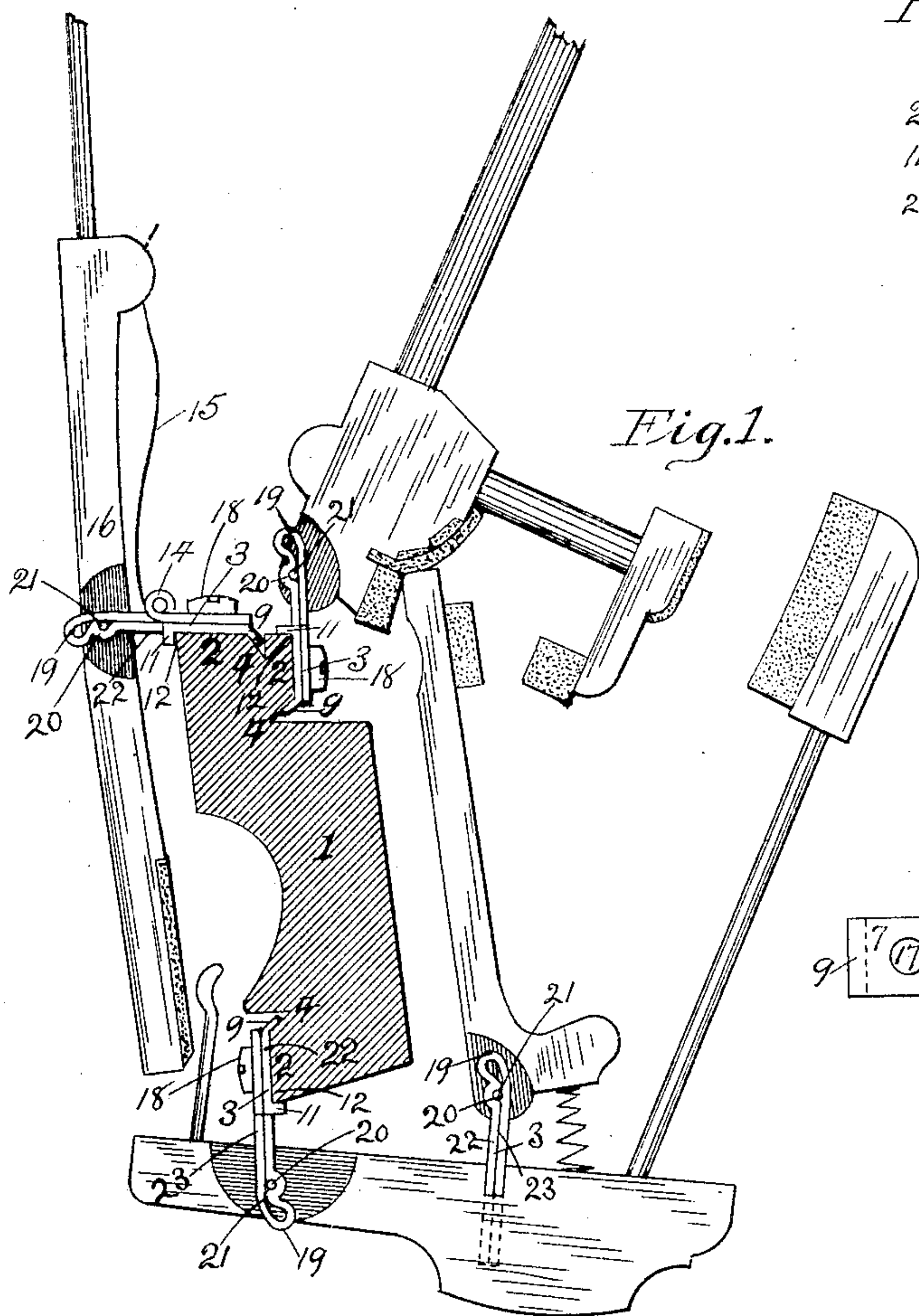


Fig. 2.

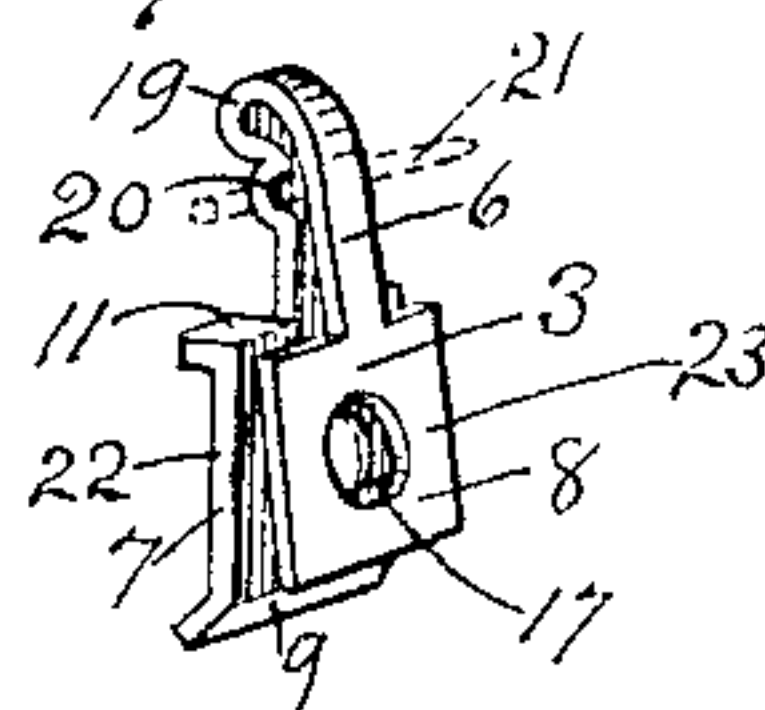


Fig. 3.

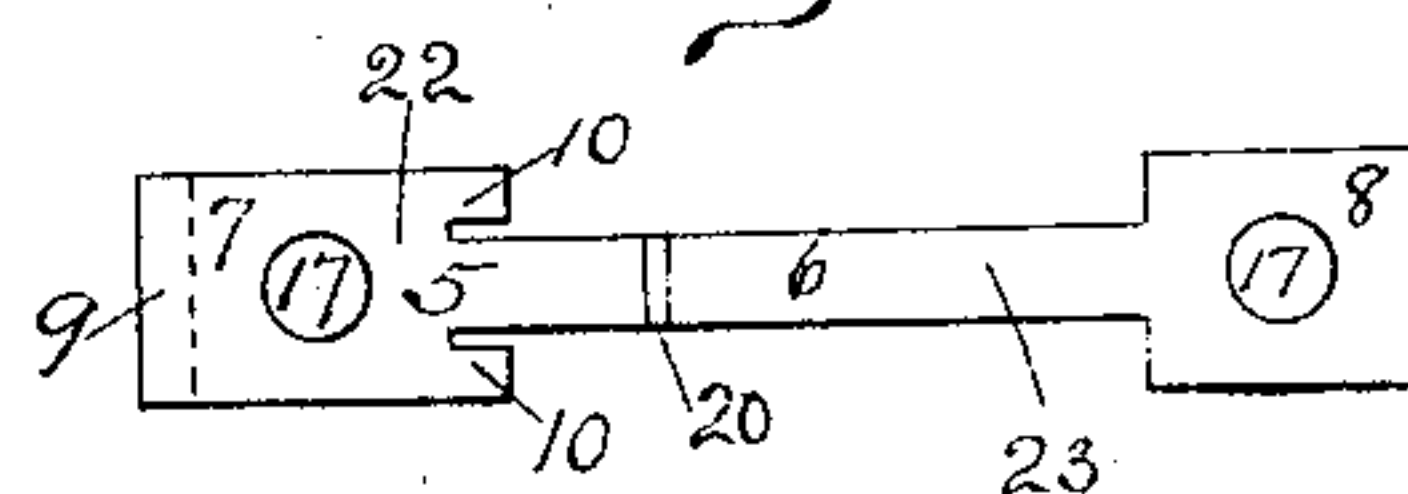
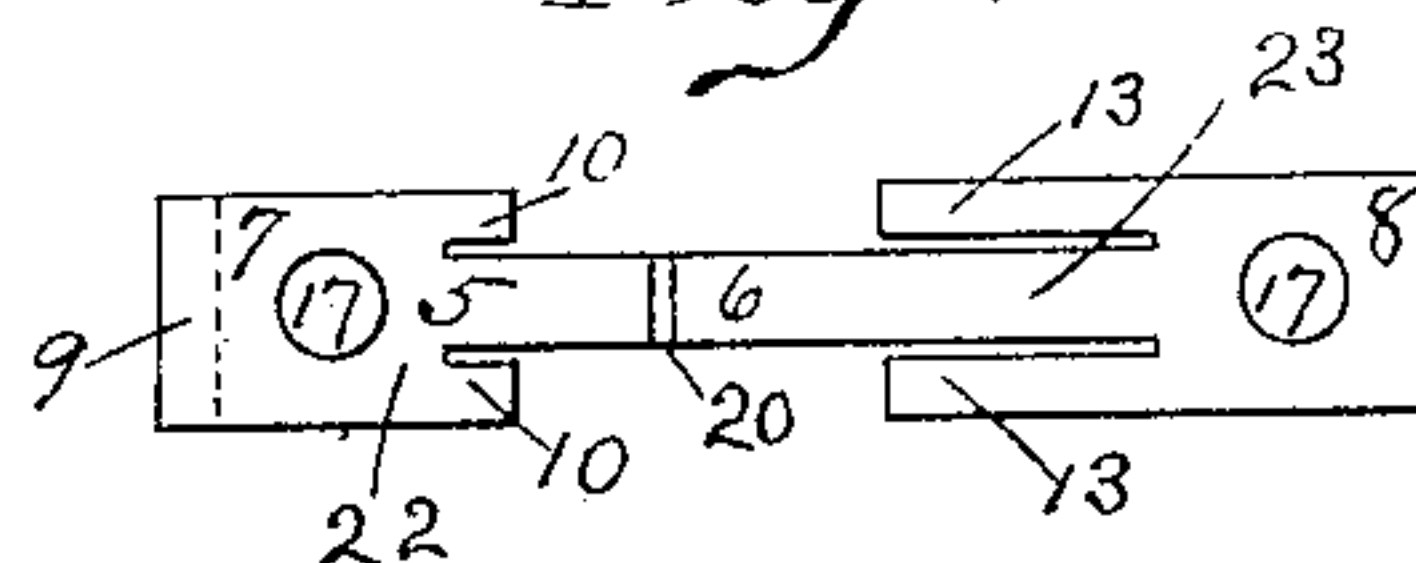


Fig. 4.



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PIANO-ACTION FLANGE.

No. 799,344.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CLAYTON A. LAMBERT, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Piano-Action Flanges, of which the following is a full and clear description.

My invention relates to the flanges used in said actions which form the pivotal bearings for the various moving parts and by which said moving parts are secured to the action-rails; and the object of my invention is to provide for this purpose a metal flange adapted to clamp the center-pins and hold the parts of the action in position, and at the same time provide for the expansion and contraction of the wood rails due to climatic influences, as will be hereinafter described.

Referring to the drawings, Figure 1 shows a section of a piano-action in which my improved flanges are applied. Fig. 2 is a perspective view showing one form of my flange. Figs. 3 and 4 show the blanks as stamped from the sheet metal from which my flanges are formed.

Similar numerals of reference indicate corresponding parts.

The hammer-rail 1 is of the usual form and construction except that the bearing-faces 2 for the flange 3 are each provided with a V-shaped groove 4, extending longitudinally, which receives the foot-bearing of the flange. The flange 3 consists of a plate 5, of spring brass or other metal, having a narrow middle portion 6 and broad end portions 7 and 8.

The extremity of the end portion 7 is bent laterally at an obtuse angle to form a foot-bearing 9, which rests in the groove 4 of the action-rail. The end portion 7 is also provided with a short extension 10, extending toward the center of the blank on each side of the middle portion 6, which is bent laterally at right angles to form shoulders 11, which rest on the edge 12 of the bearing-face 2.

In some instances the end portion 8 is provided with long extensions 13, extending toward the center and parallel with the middle portion 6 to form loops 14, to which the damper-springs 15 are attached when the flanges are applied to the damper-levers 16. The broad end portions of the plate are also provided with openings 17 for the screws 18, whereby the flange is attached to the action-rail.

To form the flange, the plate 5 is bent or doubled upon itself, the end portions becoming opposing members. Adjacent to the angle of the bend 19 a bearing 20 for the center-pin 21 is formed in one of the opposing members, which thus becomes a bearing member 22, while the opposite member is a clamping member 23.

It will be seen that either member may become the bearing member by having the bearing 20 formed therein. I find, however, that it is preferable to have the bearing in the member which is held in direct contact with the action-rail, as shown in the drawings.

The extensions 10 are bent laterally at right angles to form shoulders 11, which rest on the edge 12 of the bearing-face 2 of the action-rail, while the foot-bearing 9 is bent at an obtuse angle and rests in the groove 4 of the action-rail. The flange thus becomes self-seating in its position, the shoulders 11 being rigidly held in close contact with the edge 12 of the bearing-face when the foot-bearing 9 is forced into the groove 4 by the flange-screw 18.

In the application of the flange to the rail the two members are deflected by the center-pin 21, which rests in the bearing 20. By turning the flange-screw 18 the members are brought together, which causes the clamping member 23 to hold the pin in its bearing, while at the same time the flange is held securely to the rail, all displacement of the flange as the screw is tightened being effectively prevented by the shoulders 11 and the foot-bearing 9.

In practice the flange may be modified to suit the requirements, while at the same time the spirit of the invention is maintained.

I find it best in most instances to bend that portion of the flange above the bearing 20 containing the angle of the bend 19 to one side in order to provide more room on the opposite side for the moving parts of the action. In applying the flange to the dampers the extensions 13 are bent to form loops 14, to which the damper-springs 15 are attached. When the flanges are applied to other parts of the action, the loops 14 are omitted.

In placing the bearing 20 adjacent to the bend 19 I am able to form said bearing before the flange is bent, which insures greater certainty in the true alinement of the bearing and greater regularity in the flanges, also

the additional advantage that center-pins of various sizes may be used to suit the varying conditions of the bushed center-pin holes. A large or small pin may be used in the same flange or large or small center-pins substituted without in any way affecting its efficiency.

Having described my invention, what I desire to secure by Letters Patent is—

1. The combination with an action-rail of a flange comprising a metal blank bent upon itself to form opposing members, one of said members having a bearing formed therein adjacent to the bend, adapted to receive a center-pin; and the opposed member acting as a clamping member upon said bearing member; said flange being provided with means for attachment to said action-rail, substantially as described.

2. The combination with an action-rail of a flange comprising a metal blank bent upon itself to form opposing members, one of said members having a bearing formed therein adjacent to the bend adapted to receive a center-pin, and the opposite member acting as a clamping member upon said bearing member; said flange having opposed openings in the end portion of the two members for an attaching-screw, substantially as described.

3. The combination with an action-rail of a flange comprising a metal blank, bent upon itself to form opposing members, one of said members having a bearing formed therein adjacent to the bend adapted to receive a center-pin, and the opposite member acting as a clamping member upon said bearing member; that portion of said flange containing the angle of the bend, being bent to one side; said flange having opposed openings in the end portion of the two members for an attaching-screw, substantially as described.

4. The combination with an action-rail of a flange comprising a metal blank, having a narrow middle portion and broad end portions, bent upon itself to form opposing members, one of said members having a bearing formed in the narrow portion thereof adjacent to the bend, adapted to receive a center-pin, and the opposite member acting as a clamping member upon said bearing member; the broad ends of the opposing members having openings therein for an attaching-screw, substantially as described.

5. The combination with an action-rail, hav-

ing a longitudinal V-shaped groove therein, of a flange comprising a metal blank, having a narrow middle portion and broad end portions, bent upon itself to form opposing members; one of said members having a bearing formed therein adjacent to the bend, adapted to receive a center-pin, and the opposite member acting as a clamping member upon said bearing member; said bearing member having the free end of the broad portion thereof bent laterally at an obtuse angle to form a foot-bearing to rest in said groove in said action-rail; the opposite end of said broad portion having an extension on each side of said narrow portion, bent laterally at right angles to form shoulders which rest on the edge of the flange-bearing face of said action-rail; said flange having opposed openings in the broad portion of the two members for an attaching-screw, which clamps the members and secures the flange upon its seat on the action-rail, substantially as described.

6. The combination with an action-rail 1, having a longitudinal V-shaped groove 4 therein, of a flange 3 comprising a metal blank 5, having a narrow middle portion 6 and broad end portions 7 and 8 bent upon itself to form opposing members 22 and 23; the member 22 having a bearing 20 formed therein adjacent to the bend 19, adapted to receive a center-pin 21, and the member 23 acting as a clamping member upon the bearing member; said bearing member 22 having the free end of the broad portion 7 thereof bent laterally at an obtuse angle to form a foot-bearing 9 to rest in the groove 4 in said action-rail; the opposite end of said broad portion 7 having an extension 10 on each side of said narrow portion bent laterally at right angles to form shoulders 11, which rest upon the edge of the bearing-face 2; said clamping members 23 having an extension from the broad portion 8 thereof on each side of the narrow portion 6 to form loops 14 adapted to hold a damper-spring, said flange having opposed openings 17 in the end portion of the two members 22 and 23 for an attaching-screw 18, which clamps the two members and secures them in position on said action-rail, substantially as described.

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Witnesses:

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