To all whom it may concern:

Be it known that I, FREDERICK CHRISTOPHER BILLINGS, a citizen of the United States, and resident of Milwaukee, Milwaukee county, Wisconsin, have invented certain new and useful Improvements in Piano-Flange-Attaching Bars, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to a piano flange attaching bar, my object being to provide a simple inexpensive bar which may be readily attached to the rails or brackets of piano actions, and which bar provides a slot for the free movement of the flanges for the full length of the rail, thus permitting the flanges to be readily adjusted and accurately spaced.

To the above purposes, my invention consists in certain novel features of construction and arrangement of parts, which will be hereinafter more fully set forth, pointed out in the claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of a piano rail to which my improved bar is attached; Fig. 2 is a perspective view of the lower portion of the bar, and which portion is rigidly fixed to the rail; Fig. 3 is a perspective view of the upper portion of the bar; Fig. 4 is a perspective view of one of the sliding blocks used in connection with my improved bar, and to which blocks are secured the flanges; Fig. 5 is a perspective view of an angle bar which may be used in connection with the principal member of the bar; Fig. 6 is an elevation of a portion of the bar in position on a rail, and showing a flange clamped on the bar; Fig. 7 is a vertical section taken on the line 7—7 of Fig. 6.

Referring by numerals to the accompanying drawings:—1 designates the ordinary wood rail, which is in general use in upright piano actions, and formed in the front face of said rail, adjacent the top thereof, is a longitudinally extending groove 2.

3 designates the lower member of the continuous bar, which is constructed of metal in the form of an elongated plate or bar, and provided in its front face, adjacent its upper end, with a continuous groove 4. Formed through this bar, below the groove 4, are the horizontally disposed apertures 5, which receive screws 6, thus rigidly attaching the bar 3 to the rail 1. When the bar 3 is in proper position on the rail 1, its upper edge extends slightly above the lower portion of the groove 2.

Arranged against the face of the rail 1, immediately above the rail 2, and held by screws 29, or similar fastening devices, is the upper member 7 of the bar, which is constructed of metal equal in thickness to the thickness of the bar 3, and of such width as that its lower portion extends below the top of the groove 2. Flange carrying blocks 8 are arranged to slide through the groove 2 and through the space between the bars 3 and 7; and formed integral with the top and bottom of the rear side of each block are the flanges 9, which engage against the rear sides of the bars 3 and 7, immediately in front of the groove 2. Each block is provided with a horizontally disposed screw threaded aperture 10, which receives the flange attaching screw 11; and when said screw is tightened, the block and flange are rigidly clamped upon the bars 3 and 7. The groove 4 is adapted to receive a narrow metal strip 12 when certain forms of flanges are clamped to the attaching bar, (see Fig. 7) and where certain other flanges are clamped to the bar, this strip is dispensed with, and lugs or projections on the flange engage in said groove 4.

In Fig. 5 I have illustrated an angle bar adapted to fit over one of the upper corners of a rail for the purpose of receiving the damper flanges of the piano action, and which angle bar takes the place of the bar 7.

The parts 3 and 7 combine to form a continuous flange, between which are arranged the flange carrying blocks, and when the flange attaching screws are tightened, the various parts are very rigidly united with a vise-like grip; and by such construction the flanges can be very easily and quickly spaced for different scales, and the construction of the bar is such that any flange now upon the market can be attached thereto.

The flange shown in position on the attaching bar in Figs. 6 and 7 is constructed of...
two parts, which are clamped together to hold the pivot pin on which the hammer butt, or other part of the action, operates; the lower portion of said flange being slotted to receive the attaching screw 11.

The inner face of the flange is slotted horizontally to receive the strip 12.

I claim:

1. The combination with the rail of a piano action, of a pair of continuous bars arranged on the rail, between which bars is formed a space, a series of blocks adjustably held between the bars, and means whereby the blocks and bars are rigidly united.

2. The combination with the rail of a piano action, in which rail is formed a continuous groove, of a pair of continuous metal bars arranged on the face of the rail, with their adjacent edges extending over the groove in the rail, a series of blocks adjustably held between the bars, and means whereby the blocks and bars are rigidly united.

3. The combination with the rail of a piano action, in which rail is formed a continuous groove, of a pair of continuous metal bars arranged on the face of the rail, with their adjacent edges extending over the groove in the rail, a series of flange carrying blocks adjustably held between the bars, flanges carried by the blocks, attaching screws passing through the flanges into the blocks, and which attaching screws rigidly unite the flanges, blocks, and pair of bars.

4. The combination with a pair of flange attaching bars, in the face of one of which is formed a continuous groove, of a flange arranged on the faces of the bars, in the rear face of which flange is formed a slot coinciding with the groove in one of the bars, and a metal strip inserted in the coinciding slot and groove.

5. A continuous piano flange attaching means, comprising a pair of continuous metal bars, a series of blocks arranged between the bars, and flanges arranged on the front faces of the pair of bars, which flanges are connected to the blocks.

6. A continuous piano flange attaching means, comprising a pair of continuous metal bars, a series of blocks arranged between the bars, flanges arranged on the front faces of the pair of bars, which flanges are connected to the blocks, there being coinciding grooves formed in the adjacent faces of one of the bars and the flanges, and a strip located in said coinciding groove.

7. A piano flange attaching means, comprising a pair of continuous bars adapted to be positioned on the rail of a piano action, means whereby said bars are rigidly connected to the rail, a series of blocks arranged between the bars, and flanges arranged on the front faces of the bars, and which flanges are fixed to the blocks.

8. The combination with the rail of a piano action, in which rail is formed a continuous groove, of a pair of continuous metal bars arranged on the face of the rail adjacent the groove therein, and means whereby both bars are rigidly fixed to the rail.

In testimony whereof, I have signed my name to this specification, in presence of two subscribing witnesses.

FREDERICK CHRISTOPHER BILLINGS.

Witnesses:

Geo. E. BALLHORN,

MAMIE E. HUGHES.