No. 648,340. Patented Apr. 24, 1900.

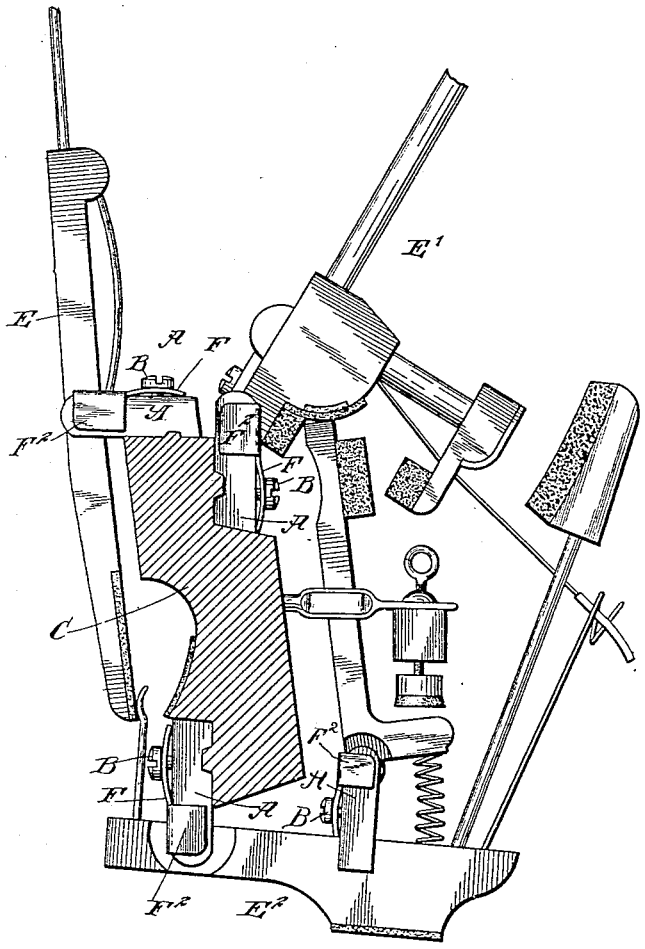
F. C. BILLINGS.

FLANGE SHIELD.

(No Model.) (Application filed Jan. 26, 1900.)

2 Sheets—Sheet 1.

Fig. 1



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No. 648,340.

Patented Apr. 24, 1900.

F. C. BILLINGS.

ELANGE SHIELD.

(No Model.)

(Application filed Jan. 26, 1900.)

2 Sheets—Sheet 2.

Fig. 2

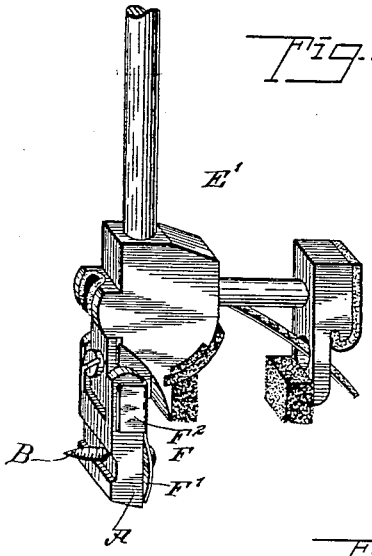


Fig. 3

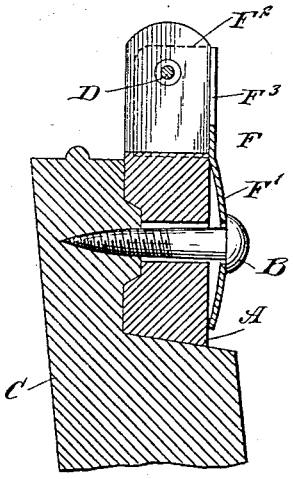


Fig. 4

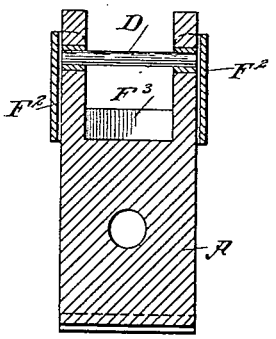
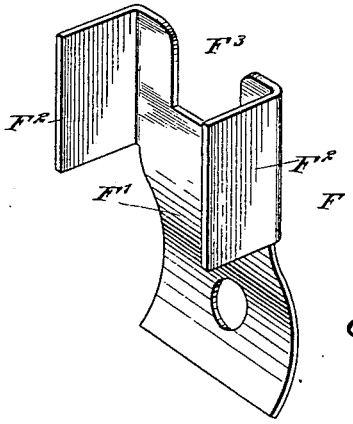


Fig. 5



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UNITED STATES PATENT OFFICE.

FREDERICK C. BILLINGS, OF MACON, MISSOURI, ASSIGNOR TO ROBERT G. KIRSCH, OF SAME PLACE.

FLANGE-SHIELD.

SPECIFICATION forming part of Letters Patent No. 648,340, dated April 24, 1900.

Application filed January 26, 1900. Serial No. 2,864. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK C. BILLINGS, a citizen of the United States, and a resident of Macon, in the county of Macon and State of Missouri, have invented a new and Improved Flange-Shield, of which the following is a full, clear, and exact description.

The invention relates to piano-actions for upright, grand, or square pianos; and its object is to provide a new and improved shield more especially designed for use on the several flanges of a piano-action to prevent the flanges from becoming loose on the rail and to hold the pivot-pins against working out of the flanges and to hold the latter in position on the rail even if a flange should split.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of my invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement as applied to an upright-piano action, the central rail being shown in section. Fig. 2 is a perspective view of the improvement as applied to the hammer-butt flange, the hammer-butt and back-stop being in position on the flange. Fig. 3 is an enlarged transverse section of the improvement as applied on the rail. Fig. 4 is a sectional side elevation of the same with the flange detached, and Fig. 5 is a perspective view of the improvement.

The several flanges A of a piano-action are secured by flange-screws B to the center rail C, the several flanges carrying the pivots for a damper-lever E, the hammer-butt E′, and the jack-rocker E^2, as indicated in Fig. 1. Each of the flanges A is provided with a shield F, made from a single piece of spring metal and having a curved back F′, adapted to rest at its ends on the back of the flange A, as is plainly indicated in the drawings, the head of the flange-screw B resting on the curved portion at the highest point thereof. The shank of the screw B extends through an aperture in the back F′ and then screws in the rail C, so that upon screwing up the flange-screw B the head presses on the spring-back F′, so that the ends thereof press equally on the flange A to firmly hold the flange in position on the rail, and in case the flange-screw should become loose in the rail C then the resiliency of the curved spring-back F′ tends to draw the screw tight by pressing on the head in an outward direction, so that the flange is not liable to become loose on the rail C.

From the back F′ of the shield extend side arms F^2, reaching over the sides of the flange A at the forward or pivot end thereof, the arms F^2 extending over the ends of the pivot-pin D, so that the latter is prevented from moving transversely in its bearings on the flange, and hence it is impossible for the pivot-pin to work out of the flange. The forward or free end of the back F′ is cut out, as at F^3, for the passage of the pivot end of the corresponding swinging part—that is, the damper-lever, the hammer-butt, or the jack-rocker—the cut-out portion giving free access to the moving parts, so that the shield does not interfere with any of the moving parts. Besides the side arms will also prevent dampness, causing binding of the hinge-pins. By the use of the shield the screw B is prevented from denting or otherwise injuring the flange.

From the foregoing it is evident that by the use of the shield described the loosening of the flange on the center rail C is prevented, and the spacing of the swinging parts is not necessary, as the cut-out portion F^3 forms a guide for the swinging part. Furthermore, there is no necessity for adjusting the travel of the hammer or other swinging part, and there is no danger of the pivot-pins dropping out of the flanges, and in case the latter should become split the arms F^2 will tend to hold the split portions of the flange together.

It is understood that the flange-shield can be used under the flange as well as on top and is also used under flanges in square pianos. The shield is to be made in different sizes, according to the sizes of the flanges on which it is to be applied.

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

1. A flange-shield having a curved spring-back for engagement with a flange-screw, and adapted to rest at its ends on the flange, and protecting-arms extending from the sides of the back at the forward end thereof, to extend over the sides of the flange and over the ends of the pivot-pin in the flange, substantially as shown and described.

2. A flange-shield having a curved spring-back for engagement with a flange-screw, and adapted to rest at its ends on the flange, and protecting-arms extending from the sides of the back at the forward end thereof, to extend over the sides of the flange and over the ends of the pivot-pin in the flange, the forward portion of the said spring-back being cut out to give access to the swinging part, as set forth.

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

FREDERICK C. BILLINGS.

Witnesses:

ELMER L. ENGLISH,

W. A. TALDON.