Sept. 4, 1956 A. E. KNIGHT 2,761,345

ACTION FRAME FOR PIANO

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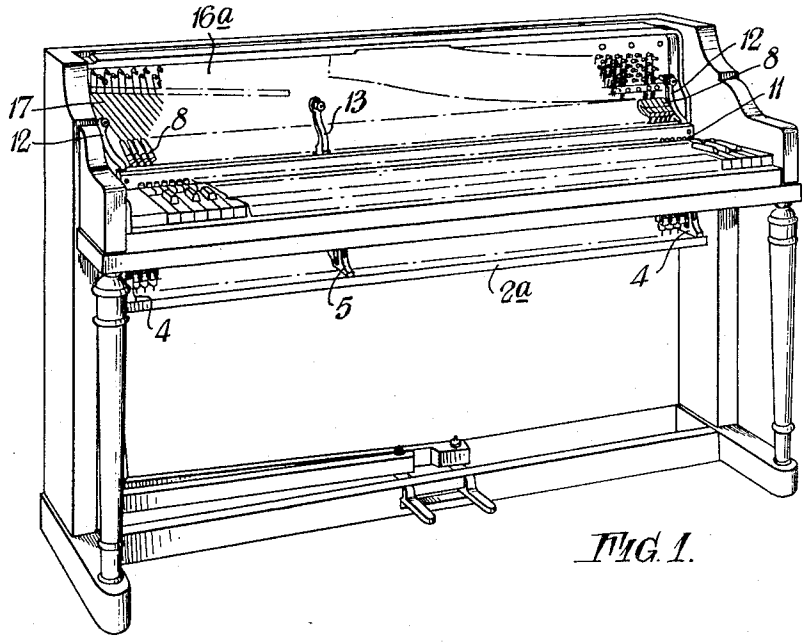


FIG. 1.

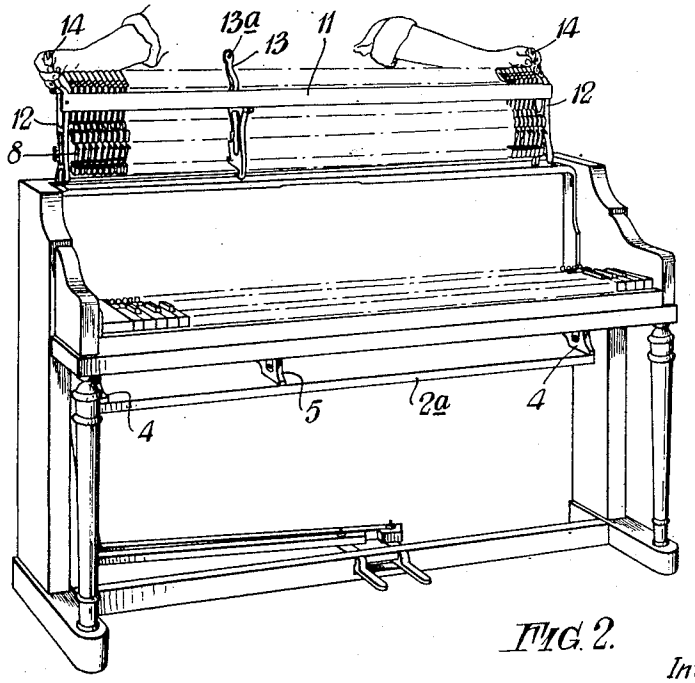


FIG. 2.

Inventor
ALFRED EDWARD KNIGHT
per Worth Wade
Attorney.

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FIG. 3.

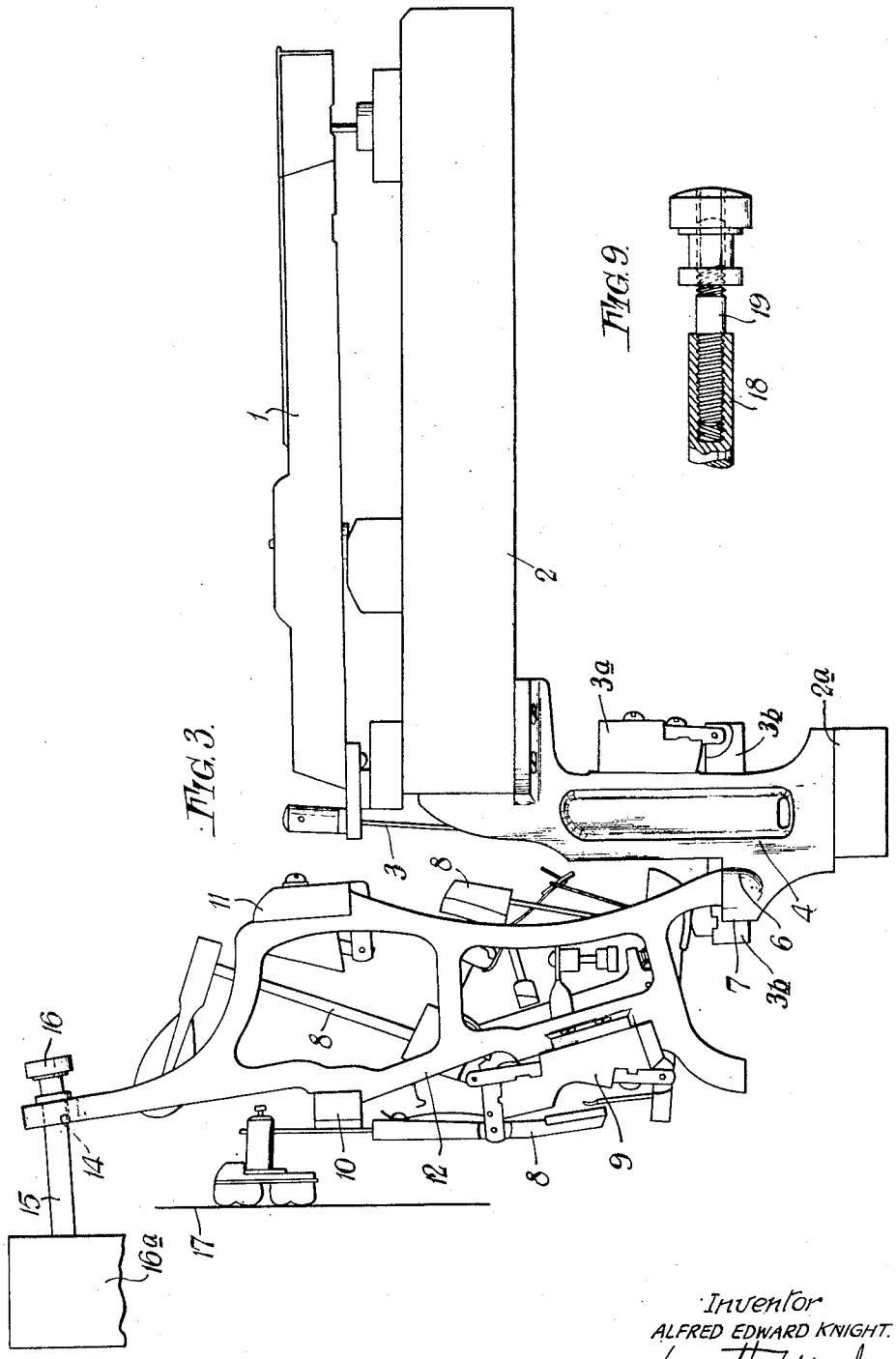


FIG. 9.

Inventor
ALFRED EDWARD KNIGHT.
per Worth Wade
Attorney.

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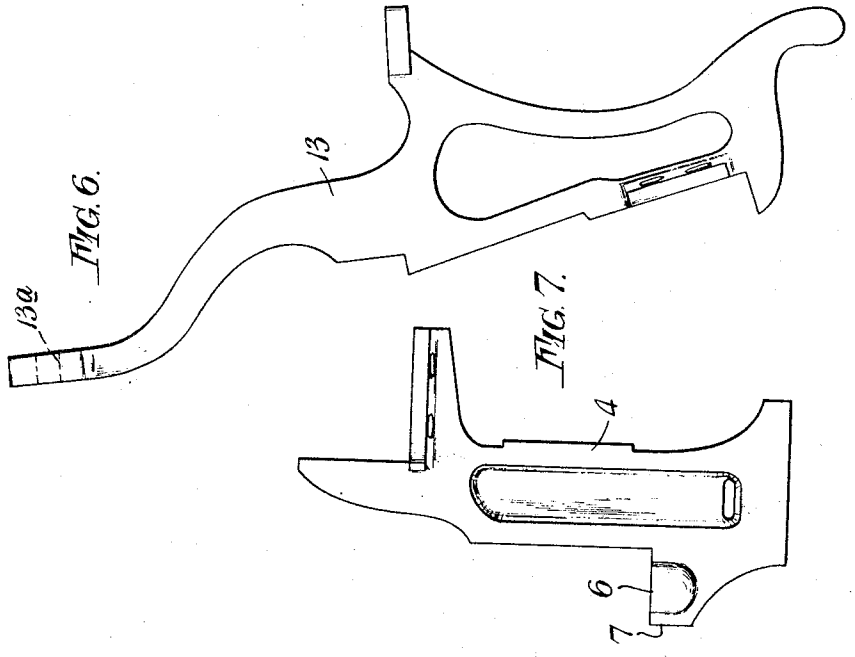


FIG. 6.

FIG. 7.

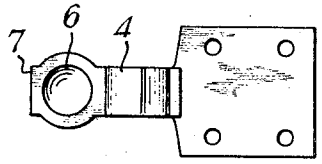
Inventor
ALFRED EDWARD KNIGHT
per Worth Wade
Attorney.

Sept. 4, 1956 A. E. KNIGHT 2,761,345

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FIG. 8.



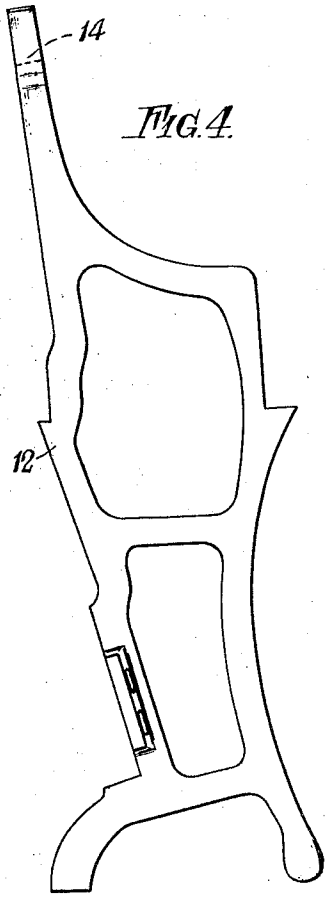


FIG. 4.

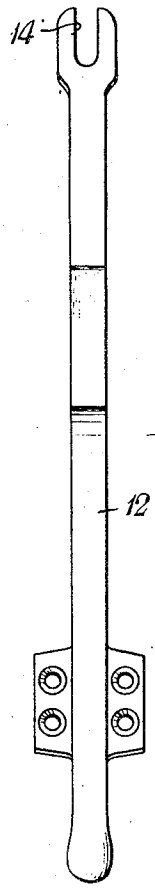


FIG. 5.

Inventor
ALFRED EDWARD KNIGHT.
per Worth Wade
Attorney.

United States Patent Office

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ACTION FRAME FOR PIANO

Alfred Edward Knight, Upper Edmonton, London, England

Application April 9, 1953, Serial No. 347,678

Claims priority, application Great Britain January 6, 1953

3 Claims. (Cl. 84—250)

The invention relates to pianos and like musical keyed instruments of the miniature upright kind and is essentially directed to that type having what is known as under-bed actions, that is to say, in which the actions are located lower in relation to the keyboards than is the case with normal actions in conventional upright pianos.

With miniature pianos it is very desirable to keep the action lower in relation to the keyboard than is the case with the conventional upright piano.

As at present constructed in pianos of this type the keys, key bottom or rail and allied parts prevent ready access to the main action, and the keys, key bottom or rail and allied parts have to be taken out before the said action can be removed. This operation is a tiresome and laborious job involving an appreciable amount of time.

Broadly the invention consists of a construction of piano of the miniature upright kind having an under-bed action, wherein the main action is so mounted and held to position in relation to the keys, key bottom and allied parts that the former can be removed from the piano without the necessity of having first to remove the keys, key bottom and allied parts.

According to the present invention the main action is carried by members so mounted and held to position in relation to the piano frame and to the keys, key bottom or rail and allied parts that the carrying members with the main action thereon can be removed from the piano without first having to remove the keys, key bottom or rail and allied parts, these remaining in their normal positions.

Thus by the invention there is provided a construction in which the main action or action proper can be removed without the necessity of having to first remove the keys, key bottom or rail component and allied parts, so that the main action can be taken away from the piano when any work is to be done on the said action. By removing the main action access to the stringing and sounding-board and other parts is facilitated and this while the keys, key bottom or rail component and allied parts remain in position.

Thus the keys, key bottom or rail and allied parts and the main action are for the purposes of removal of the latter entirely independent of one another.

The accompanying drawings illustrate examples of the carrying into effect of the invention.

In the drawings:

Fig. 1 is a perspective view of a piano showing the action mounted in position.

Fig. 2 is a perspective view of a piano showing the main action removed therefrom.

Fig. 3 is a side elevation showing one action, one standard, one carrying bracket and one key and allied parts.

Fig. 4 is a side elevation of one form of end standard and Fig. 5 an end view thereof.

Fig. 6 is a side elevation of one form of middle standard.

Fig. 7 is a side elevation of one of the carrying brackets

secured to the key bottom or rail, this bracket having a cup into which the lower end of the main action standard seats.

Fig. 8 is a plan thereof.

Fig. 9 is a view of a modified stud and screw device for retaining the mounting brackets in position.

Referring to the drawings, the keys **1** are mounted on the key bottom or rail **2**. Each key has a lifter **3** for the particular striker mechanism of that part of the main action allotted to the key. The lifter **3** is pivoted to a member **3***b* carrying the pad for striking the whippen when a key is actuated. The member **3***b* is pivotally secured to a rail **3***a* attached to the piano frame. Thus when the main action is lifted up and removed from the piano the key rail, lifters, members and allied parts are left in their normal positions within the piano frame.

Secured to the key bottom or rail **2** and seating on and carried by a rail **2***a* are two end carrying brackets **4** and a middle or intermediate carrying bracket **5**. These brackets have cups **6** formed in outriding noses or projections **7**.

The main action **8** is mounted on rails **9**, **10** and **11** which are secured to two end mounting standards **12** and a middle or intermediate mounting standard **13**. These standards are respectively located opposite the brackets **4** and **5** on the key bottom or rail **2**.

The lower ends or toes of the standards **12** and **13** are so shaped as to seat in the cup bearings **6** in the projections or noses **7** of the brackets **4** and **5**.

The upper ends of the standards **12** have open-ended slots **14**. Passing into these slots are shouldered or collar studs or spindles **15**. A nut **16** engages the screwed end of the stud **15** and holds the standard in position.

The studs **15** are secured to the frame **16***a* of the piano on which the strings or wires **17** are mounted.

As shown in Fig. 9 a stud **18** may be bored and provided with an internal thread, with which a milled head screw **19** engages.

In order to provide a sufficient clearance for the dampers when removing the main action the top limb of the middle standard **13** is set back in relation to the top limbs of the end standards **12**.

It is to be noted that the upper end of the standard **13** is holed at **13***a* instead of having open-ended slots. Such a provision serves as an anchorage to prevent the main action dropping down should the end standards for some remote reason become disengaged from the cup bearings.

It will be understood that any suitable number of brackets and standards may be used intermediate of the end brackets and standards. Or in some cases end brackets and co-operating standards may be sufficient.

To remove the main action from the piano and this without having first to remove the keys, key bottom or rail and allied parts, all that is necessary is to disconnect the standards **12** and **13** from the studs. These standards with the main action thereon can then be lifted up and removed away from the piano, as shown in Fig. 2.

It will be apparent that the invention can be variously modified and changed within the scope of the appended claims.

I claim:

1. In a piano or like musical instrument of the under-bed type comprising a frame, a key rail, keys, and an action mounted below the key rail, lifters actuated by the keys, members carrying striking pads and to which the lifters are pivoted, a rail attached to the piano frame and on which said members are pivoted, a set of detachable standards extending below the key rail, rails secured to the standards, on which rails the action is mounted, brackets secured at their upper ends to the key rail and depending below the key rail, footstep bearings on said

brackets supporting said standards, and means for detachably securing the upper ends of said standards to the frame of the piano, whereby on detaching said standards carrying the said action from the frame, these together with the action can be lifted up and removed from the piano leaving the keys, key rail, lifters and allied parts in their normal positions.

2. In a piano or like musical instrument of the underbed type comprising a frame, a key rail, keys, and an action mounted below the key rail, lifters actuated by the keys, members carrying striking pads and to which the lifters are pivoted, a rail attached to the piano frame and on which said members are pivoted, a set of detachable standards extending below the key rail, rails secured to the standards and on which rails the action is mounted, brackets secured at their upper ends to the key rail and depending below the key rail, cup bearings in said brackets in which toes of said standards seat, and means for detachably securing the upper ends of said standards to the frame of the piano, whereby on detaching said standards carrying the action from the frame, these together with the action can be lifted up and removed from the piano leaving the keys, key rail, lifters and allied parts in their normal positions.

3. In a piano or like musical instrument of the underbed type comprising a frame, a key rail, keys, and an action mounted below the key rail, lifters actuated by the keys, members carrying striking pads and to which members the lifters are pivoted, a rail attached to the piano frame and on which said members are pivoted, a set of detachable standards consisting of two end standards and an intermediate standard extending below the key rail, rails secured to the standards and on which the action is mounted, brackets secured at their upper ends to the key rail and depending below the key rail, footstep bearings on said brackets supporting said standards, and means for detachably securing the upper ends of said standards to the frame of the piano, whereby on detaching said standards carrying the said action from the frame, these together with the action can be lifted up and removed from the piano leaving the keys, key rail, lifters and allied parts in their normal positions.

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