

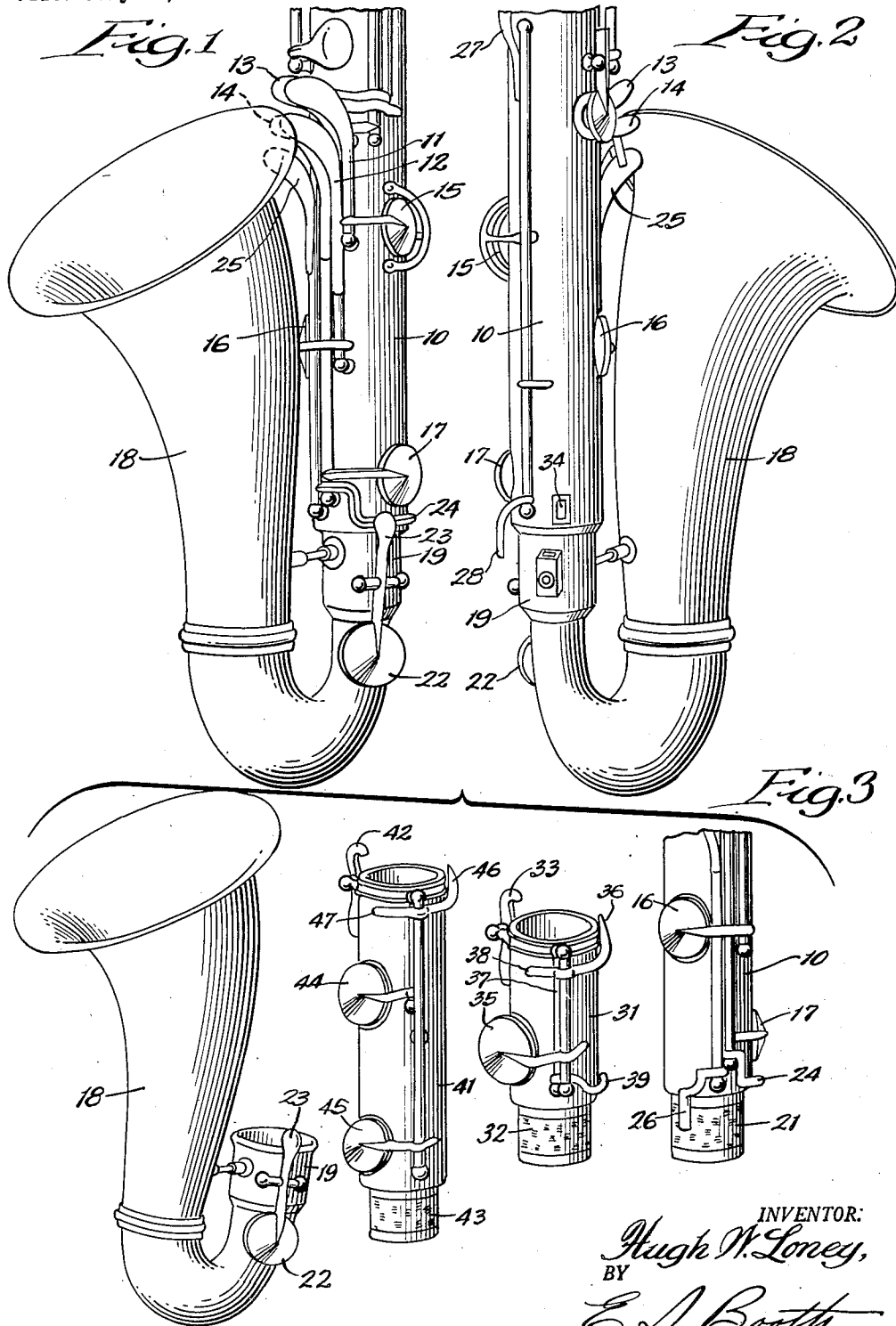
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H. W. LONEY
BASS CLARINET

2,649,829

Filed July 28, 1951

2 Sheets-Sheet 1



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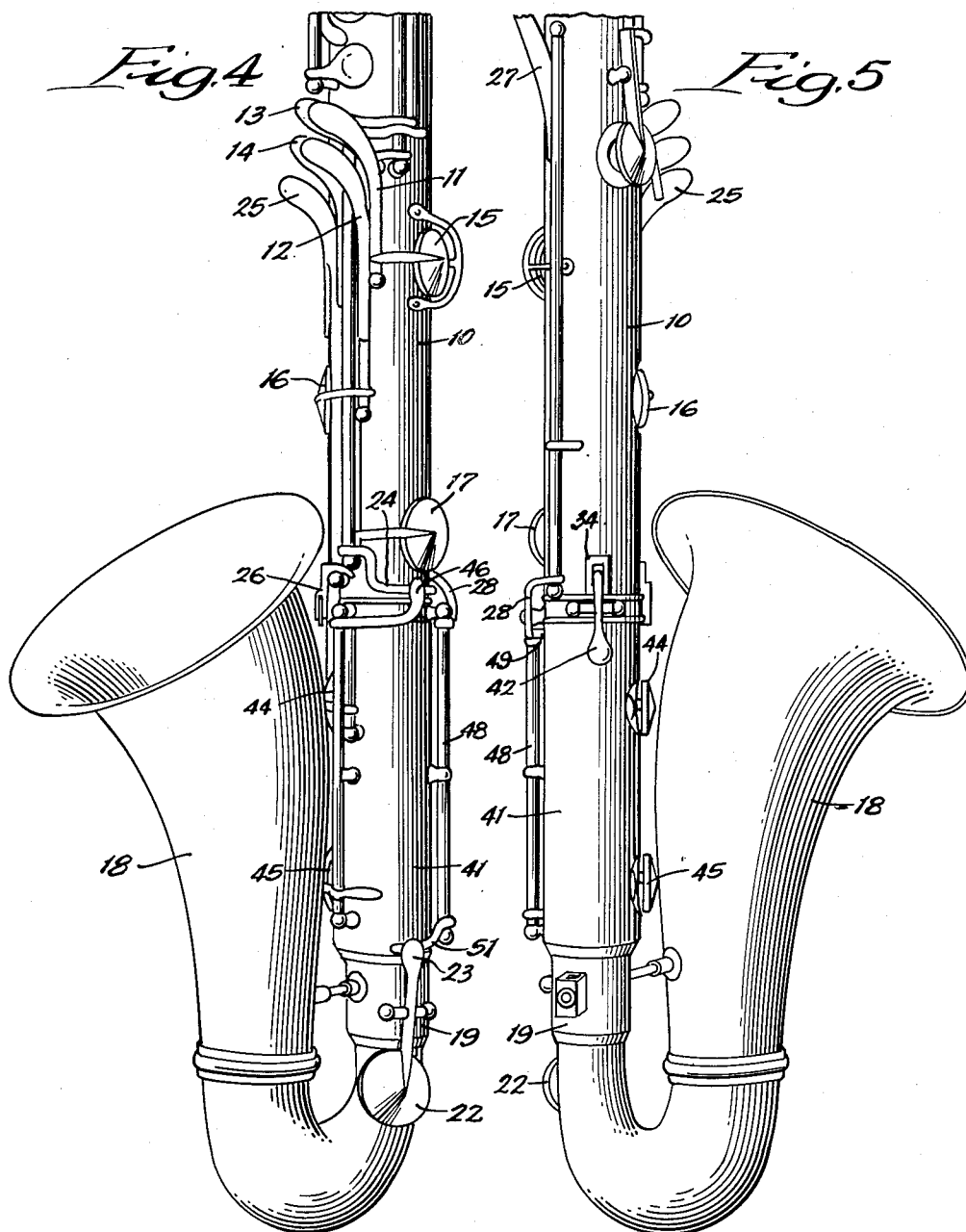
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BASS CLARINET

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5 Claims. (Cl. 84—382)

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This invention relates to bass clarinets, and more particularly to a bass clarinet capable of being played as a conventional instrument or as a concert instrument able to reach low D (D₂) or concert C₂.

Bass clarinets as conventionally constructed are capable of reaching low E or E₂. Many bass clarinet parts, such as in chamber music, are written to require the playing of low E flat or in many cases low D or concert C₂. It has heretofore been necessary to have completely separate bass clarinets constructed to go lower than the conventional low E for playing chamber music or other types of compositions scored for lower notes. Since bass clarinets are relatively expensive and are also quite large, it is desirable to provide a single instrument capable of handling all types of bass clarinet scores.

It is accordingly one of the objects of the present invention to provide a bass clarinet which can be played as a conventional instrument or which can easily be converted to play notes down to low E flat or low D.

Another object is to provide a bass clarinet which can easily and quickly be converted to play below the usual range by inserting an extra joint or joints between the lower branch of the instrument and the bell.

According to one feature of the invention, conventional bass clarinets can easily be altered to extend their range simply by adding one or two spatulas to the lower branch of the instrument and providing an extra joint or joints to fit between the lower branch and the bell.

The above and other objects and advantages of the invention will be more readily apparent when read in connection with the accompanying drawing, in which

Figure 1 is an elevation of the lower end portion of a conventional bass clarinet, altered according to the present invention;

Figure 2 is a similar view with the clarinet turned through approximately 180°;

Figure 3 is a disassembled view showing the clarinet bell, a portion of the lower branch and extra joint sections for use therewith; and

Figures 4 and 5 are views similar to Figures 1 and 2 respectively showing an extra joint assembly in the instrument for playing down to low D.

The clarinet as shown comprises a lower branch 10 which may correspond exactly to the lower branch of a conventional bass clarinet with certain additions as described hereinafter. The lower branch carries a number of keys in-

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cluding four finger spatulas 11, 12, 13, and 14, which are arranged close together in the usual manner to be selectively engaged by the little finger of the player's right hand. As shown, the spatula 11 controls a key 15 on the lower branch and the spatula 12 controls a similar key 16 on the lower branch, further toward its lower end than the key 15. The spatula 13 controls a key 17 toward the extreme lower end of the branch. All of these keys are normally open and are adapted to be closed when the corresponding spatulas are engaged and depressed by the player.

The lower joint is adapted to receive a bell 18 which terminates in an enlarged cup-shaped socket 19 to fit over a reduced end 21 at the lower end of the lower branch. The lower branch has a cylindrical bore therethrough as in the conventional bass clarinet construction and when it is assembled with the bell, the opening through the bell adjacent to the enlarged socket 19 forms a substantially smooth continuation of the bore. The bell carries on the enlarged socket 19 a key 22 which is adapted to close a tone hole opening in the bell. For this purpose, the key terminates in an operating finger 23 which is adapted to overlie a cam end 24 when the bell is assembled on the lower branch. The cam end 24 is connected to the spatula 14 to be swung outward from the lower branch when the spatula is depressed thereby to rock the key 22 to its closed position. The instrument as so far described is a purely conventional bass clarinet.

According to the present invention, an additional finger spatula 25 is provided on the lower branch lying closely adjacent to the spatulas 11 to 14. The spatula 25 is connected to an operating cam 26 which projects slightly beyond the lower end of the lower branch as best seen in Figure 3. Additionally, a thumb operated spatula 27 may be mounted on the rear side of the lower branch substantially opposite to the spatulas 11 to 14 and 25 to be operated by the thumb of the player. This spatula terminates in a cam end 28 which projects beyond the end of the lower branch on the side thereof opposite to the cam ends 24 and 26.

For carrying the range of the instrument to low E flat, an extra joint 31 as shown in Figure 3 may be provided. This joint is formed with a bore of the same size as the bore in the lower branch 10 and has in its upper end a socket to receive the reduced end 21 of the lower branch. At its lower end the extra joint 31 is formed with

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a reduced end 32 to fit into the socket 19. To hold the extra joint securely in place on the lower branch a pivoted latch member 33 may be provided thereon to engage in a socket 34 in the lower joint in the manner best seen in Figure 5. This not only holds the extra joint securely on the lower branch, but accurately fixes the angular relationship therebetween. The extra joint is formed with a tone hole opening adapted to be closed by a key 35 which terminates in an operating finger 36 at the upper end of the extra joint. When the extra joint is assembled on the lower branch, the finger 36 will overlie the cam end 24 so that when the spatula 14 is depressed, the key 35 will close the tone hole opening in the extra joint.

Underlying the key 35, the extra joint carries a shaft 37 which terminates at its upper end in an operating finger 38 and at its lower end in a cam end 39. With the extra joint assembled on the lower branch, the operating finger 38 will underlie the cam end 26 of the spatula 25 so that when this spatula is depressed, the shaft 37 will be rocked in a direction to move the cam end 39 away from the extra joint. The cam end 39 underlies the operating finger 23 to close the key 22, upon depression of the spatula 25.

To carry the range of the instrument still lower down to low D or concert C₂, a second extra joint 41 as shown in Figures 3, 4, and 5, is provided. The joint 41 is formed at its upper end with a socket to receive the reduced end 21 of the lower branch and has a pivoted latch 42 thereon to hold the extra joint assembled in proper angular relationship on the lower branch. At its lower end the extra joint 41 terminates in a reduced extension 43 to fit into a socket 43 on the bell.

The joint 41 carries two keys 44 and 45 which are adapted to close normally open tone holes when they are depressed. The key 44 terminates in an operating finger 46 which overlies the cam end 24 when the parts are assembled as shown in Figure 4. Thus, when the spatula 14 is depressed, the key 44 will be closed. The key 45 terminates in a similar operating finger 47 which underlies the cam end 26 when the parts are assembled so that when the spatula 25 is depressed the key 45 will be closed.

On the opposite side to the keys 44 and 45, the extra joint 41 carries a shaft 48 which terminates at its upper end in an operating finger 49 underlying the cam end 26. At its lower end the shaft 48 terminates in a cam end 51 which underlies the operating finger 23 of the key 22. Thus, when the spatula 27 is depressed the cam end 28 will move toward the body of the instrument and will move with it the operating finger 49. This rocks the shaft 48 in a direction to move the cam end 51 away from the body of the instrument to close the key 22. When this key is closed with the extra joint 41 in place the instrument will play low D or concert C₂.

It will be seen that the instrument can easily be changed from a conventional bass clarinet of conventional length and construction in every way to a concert instrument, simply by adding the spatulas 25 and 27 and providing an extra joint such as 31 or 41. When it is desired to carry the range only to low E flat, the spatula 27 may be omitted and the joint 31 only may be used. However, when the range is to go to concert C₂, both of the spatulas 25 and 27 must be provided and the extra joint 41 must be used. These changes or additions, however, are rela-

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tively simple and inexpensive ones and enable the player to utilize a conventional bass clarinet for any type of playing without the necessity of having several different instruments. Thus, by carrying one instrument with one or two very short extra joints, the bass clarinet player is equipped to handle any type of music.

Since the upper part of the longer joint 41 is substantially the same as the short joint 31, it will be apparent that the longer joint 41 could be made in two pieces. The upper piece only could be used to carry the pitch to low E flat and the lower piece with the key 45 thereon could be added to carry the pitch to concert C₂.

While the invention has been shown and described in connection with one particular instrument, it will be apparent that various changes might be made in the construction and it is not intended to limit the scope of the invention to the exact structure shown, nor otherwise than by the terms of the appended claims.

What is claimed is:

1. In a bass clarinet including a lower branch having thereon a finger spatula terminating in a cam end adjacent to the lower end of the branch and a bell formed to fit on the lower end of the branch and having a key thereon terminating in an operating finger to engage the cam end when the bell is fitted on the branch, the improvement which comprises an extra spatula on the branch terminating in a second cam end adjacent to the lower end of the branch, an extra joint formed to fit between the lower end of the branch and the bell, a key on the extra joint terminating in an operating finger to engage the first named cam end whereby the key will be operated by the first named spatula, and a shaft on the extra joint terminating at one end in an operating finger to engage the second cam end and at its other end in a cam to engage the first named operating finger.

2. In a bass clarinet including a lower branch having thereon a finger spatula terminating in a cam end adjacent to the lower end of the branch and a bell formed to fit on the lower end of the branch and having a key thereon terminating in an operating finger to engage the cam end when the bell is fitted on the branch, the improvement which comprises a first extra spatula on the branch terminating in a second cam end adjacent the lower end of the branch, a second extra spatula on the branch terminating in a third cam end adjacent the lower end of the branch, an extra joint formed to fit between the lower end of the branch and the bell, a pair of keys on the extra joint terminating in operating fingers to engage the first and second cam ends respectively, and a shaft on the extra joint terminating at one end in an operating finger to engage the third cam end and at its other end in a cam to engage the first named operating finger.

3. In a bass clarinet including a lower branch having thereon a finger spatula terminating in a cam end adjacent to the lower end of the branch and a bell formed to fit on the lower end of the branch and having a key thereon terminating in an operating finger to engage the cam end when the bell is fitted on the branch, the improvement which comprises a first extra finger spatula on the branch adjacent to the first named finger spatula and terminating in a second cam end adjacent to the lower end of the branch, a second extra spatula on the branch opposite to the first named spatulas to be operated by the player's

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thumb and terminating in a third cam end adjacent to the lower end of the branch, an extra joint to fit between the branch and the bell, a pair of keys on the extra joint terminating in operating fingers to engage the first and second cam ends respectively, and a shaft on the extra joint terminating at one end in an operating finger to engage the third cam end and at its other end in a cam to engage the first named operating finger.

4. In a bass clarinet including a lower branch having thereon a finger spatula terminating in a cam end adjacent to the lower end of the branch and a bell formed to fit on the lower end of the branch and having a key thereon terminating in an operating finger to engage the cam end when the bell is fitted on the branch, the improvement which comprises an extra finger spatula on the branch adjacent to the first named finger spatula and terminating in a second cam end adjacent to the lower end of the branch, an extra joint formed to fit between the bell and the branch, a key on the extra joint terminating in an operating finger to engage the first named cam end, and a shaft on the extra joint terminating at one end in an operating finger to engage the second cam end and at its other end in a cam to engage the first named operating finger.

5. In a bass clarinet including a lower branch having thereon a finger spatula terminating in a cam end adjacent to the lower end of the branch and a bell formed to fit on the lower end of the branch and having a key thereon terminating in

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an operating finger to engage the cam end when the bell is fitted on the branch, the improvement which comprises an extra spatula on the branch terminating in a second cam end adjacent to the lower end of the branch, an extra joint formed to fit between the lower end of the branch and the bell, a key on the extra joint terminating in an operating finger to engage the first named cam end, a shaft on the extra joint terminating at one end in an operating finger to engage the second cam end and at its other end in a cam to engage the first named operating finger, and a latch mechanism to hold the branch and the extra joint together in proper angular alignment including a socket on the periphery of one of them and a spring finger pivoted on the other of them and having its end shaped to fit into the socket.

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