The present invention relates generally to musical instruments, and in particular to an improved musical wind instrument. More particularly, the present invention relates to an improved musical instrument of the slide type, providing to the performer thereof a visual indication of the notes being played.

In the operation of wind instruments, the playing of the desired notes is achieved by two different methods, either by means of selectively stopping the holes formed in the wind instrument pipe by the fingers of the player, or by manually operated keys, or by adjusting the effective length of the wind pipe by means of a slide device. Where the particular instrument is operated by stopping selected holes to achieve the desired notes, the pitch and relationship of the individual notes are fixed and independent of the performer. However, the rapid selection and playing of the notes on such instrument require great manual dexterity, calling for long practice and experience. On the other hand, with wind instruments having slide mechanisms for playing the various notes, while they require less manual dexterity for changing from note to note, they are not easy for the beginner to operate to locate the slide mechanism at the exact positions corresponding to the selected notes. Here again, long practice and experience is required in order to achieve even a small degree of accomplishment at performing on this type of instrument.

It is thus a principal object of the present invention to provide an improved musical instrument.

Another object of the present invention is to provide an improved wind type musical instrument.

Still a further object of the present invention is to provide an improved slide type wind instrument.

A further object of the present invention is to provide an improved slide type musical instrument having a note indicating mechanism.

Still a further object of the present invention is to provide an improved slide type wind instrument having note indicating means easily and comfortably viewable by a performer on the instrument.

Another object of the present invention is to provide an improved slide type wind instrument having note indicating means which are characterized by their simplicity, ruggedness and inexpensiveness and which in no way interfere with the easy operation of the instrument slide mechanism.

The above and further objects of the present invention will become apparent from a reading of the following description taken in conjunction with the accompanying drawings, wherein:

Figure 1 is a perspective view of a preferred form of instrument constructed according to and embodying the present invention;

Figure 2 is a longitudinal sectional view thereof; and

Figure 3 is a sectional view taken along line 3—3 in Figure 2.

The present invention broadly contemplates the provision of a musical instrument of the character above set forth comprising a wind pipe having a mouth piece at one end thereof, slidable means for continuously varying the effective length of said wind pipe, movable indicating means positioned on said wind pipe and spaced from said mouthpiece, and means actuating said indicating means in accordance with the effective length of said wind pipe.

In accordance with a preferred embodiment of the present invention, the musical instrument is of the slide whistle type including a longitudinally extending wind pipe having a mouth piece at one end thereof and a piston longitudinally slidably located therein. A rod is fastened to the piston and extends through a co-axial opening in the bushing located at the front end of the pipe opposite the mouth end. Said rod is provided with a finger piece. Engaging the front end of the pipe is a collar member which supports an upwardly projecting transverse plate on which is mounted a longitudinally spaced bracket. A pair of longitudinally spaced holes are formed in the plate and bracket which support and engage a rotatable bushing having a rectangular aperture formed therein.

An indicating hand is mounted on the bushing extending radially thereof, and said hand confronts a face of the plate on which suitable markings appear offering indications of the musical notes corresponding to the relative position of the piston in the pipe. The forward end of the piston rod is provided with an upright arm which supports a rearwardly directed longitudinal twisted bar or strip of rectangular cross-section, which passes through the openings in the plate and in the rotatable bushing. Thus, any movement of the piston is accompanied by a corresponding movement of the twisted bar which, in turn, rotates the bushing and the hand thereon to a position designating the relative location of the piston in the wind pipe. The indications of the plate may be such as to provide the usual sound frequency intervals corresponding to the conventional musical scale.

Reference is now made to the drawings, which illustrate a preferred embodiment of the present invention wherein the numeral 10 generally designates a musical wind instrument of the slide whistle or flute type, including a hollow body member or wind pipe 12 having a mouth piece 14 located at the rear or blowing end thereof and provided with the usual mouth or opening 16. In order to achieve the different musical notes, the effective length of the pipe 12 is varied by means of a longitudinally slideable piston 18 which is located in the pipe 12. A piston rod 20 is provided, the rear end 21 of which engages the piston 18. The front end 23 of piston rod 20 projects through the pipe 12 by way of a longitudinal bore formed in a bushing 22 located at the forward end of the pipe 12. The front end 23 of the piston rod 20 terminates in an upwardly and downwardly directed support member 24, on the lower end of which is mounted rearwardly extending finger piece 26.

The note indicating mechanism includes a vertical upwardly directed plate 28 which is transversely mounted on the forward end of the pipe 12 by means of a collar 30 located at the bottom of the plate 28 and clamping the pipe 12. A bracket 32 spaced rearwardly from plate 28 is positioned on the plate 28 directly above the collar 30 and a pair of longitudinally aligned circular openings 34 are formed in the plate 28 and in the bracket 32, these openings 34, 34 rotatably engaging a hollow tubular follower bushing 36 provided with a rigid insert having a longitudinally extending opening 38 of transverse rectangular cross-section. A radially extending hand or pointer 40 is mounted on the follower bushing 36 and is rotatable therewith. Furthermore, the face of the plate
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28 confronting the pointer 40 is provided with suitable indicia 42 which may be in the form of numbers, letters, notes of the scale or otherwise, as desired, thereby to provide an indication of the effective length of the wind pipe 12, and hence the frequency of the note available, as will be hereinafter set forth.

The pointer 40 is actuated by a spirally twisted bar 44 of rectangular cross-section corresponding to that of the follower opening 38, but slightly smaller as to pass through the follower opening 38. The front end 43 of bar 44 engages the upper part of the support member 24 and extends longitudinally and rearwardly therefrom in a direction parallel to that of the piston rod 20.

A sheet clamping and supporting arrangement is mounted on the plate 26, and includes a clamp plate 46 confronting and hinged to the back face of the plate 28 by means of a pair of rearwardly directed brackets 48 engaged by a pivot 50 which, in turn, is horizontally and transversely supported by a pair of corresponding brackets 52 extending rearwardly of the plate 28. A torsion spring 54 registers with the pivot 50, and is provided with a pair of depending legs 56 which engage the lower edge of the clamp plate 46 and the opposite face of the plate 28 resiliently to urge the upper edges of the respective plates towards each other. Thus, by pressing rearwardly against the lower edge of the clamp plate 46, the clamping mechanism may be opened to receive a card or sheet of music 58. The music sheet is provided with information corresponding to the indicia on the front of the plate 28.

The operation of the improved musical instrument is apparent from the above description. Longitudinal movement of the rod 20 is accompanied by a corresponding movement of the piston 18 resulting in varying the effective length of the wind pipe and the frequency of the available note. The twisted bar 44 moves simultaneously with rod 20 and rotates the follower 36 and pointer 40 to positions in accordance with the desired effective length of the wind pipe 12 and hence the available note. A visual indication of the notes is provided on the plate 28, and by moving the piston rod 20 to a position where the pointer coincides with the corresponding indicia, the desired note may be accurately and simply selected and played.

While there has been described and illustrated a preferred embodiment of the present invention, it is apparent that numerous alterations and omissions may be made without departing from the spirit thereof.

I claim:

1. A slide whistle of the character described comprising a wind pipe having a mouthpiece at one end thereof and an axially bored bushing disposed in the other end thereof, a piston slidably located in said wind pipe, a piston rod engaging said piston and extending through said bushing and terminating in a finger piece, an up-

wardly directed transverse plate mounted on said wind pipe and spaced from and having a front face directed toward said mouthpiece, said plate front face having indicia located thereon, a follower bushing having a non-circular bore and supported above said wind pipe for rotation about an axis parallel to the longitudinal axis of said wind pipe, an indicating element extending transversely from said follower and rotatable therewith and confronting the said front face of said plate, a support mounted on said piston rod and projecting vertically thereof and a twisted bar of non-circular cross section engaging said support and registering with said follower bore whereby movement of said piston rod is accompanied by rotation of said follower and indicator element.

2. A slide whistle in accordance with claim 1, wherein a bracket is mounted on said plate, said bracket and said plate having longitudinally aligned openings formed therein which rotatably engage and support said follower and indicator element.

3. A slide whistle in accordance with claim 1, wherein sheet clamping means are located on the back face of said plate.

4. A slide whistle in accordance with claim 1, wherein said bar and said bushing bore are of rectangular cross section.

5. A slide whistle in accordance with claim 1, wherein said bar is twisted approximately 180° for the length of the full stroke of said piston.

6. A slide whistle of the character described comprising a wind pipe having a mouthpiece at one end thereof, a piston slidably located in said wind pipe, a piston rod engaging said piston and projecting through the other end of said wind pipe, an indicating element mounted on said wind pipe forward of said mouth piece and rotatable about an axis parallel to the longitudinal axis of said wind pipe, said indicating element having an opening formed therein of non-circular transverse cross section, indicator actuating means including a longitudinally extending twisted bar registering with said opening and of a transverse cross section corresponding to said opening and means connecting said twisted bar to said piston rod.

7. A slide whistle in accordance with claim 6, including a bushing mounted on said indicating element, said opening of non-circular cross section being formed in said bushing.

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