

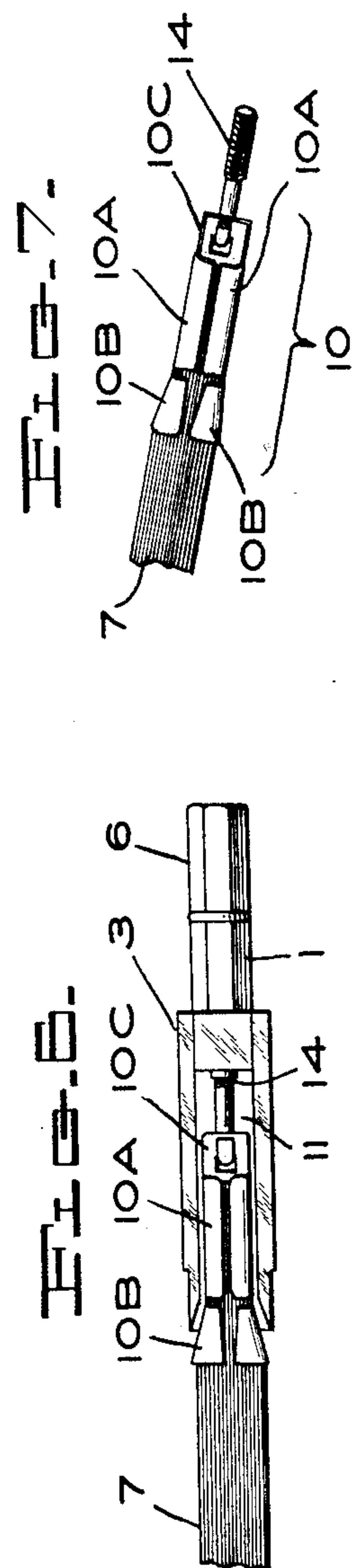
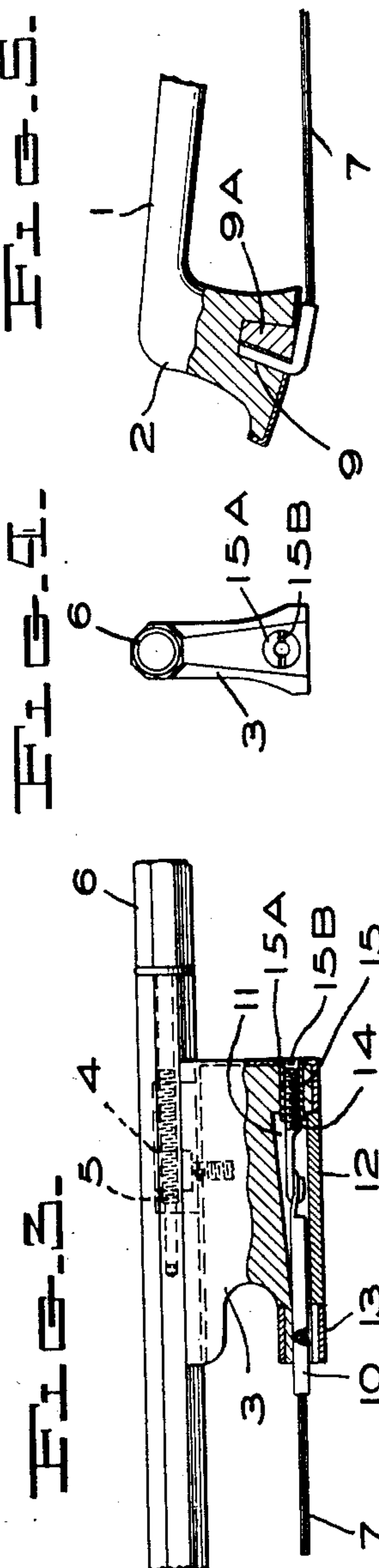
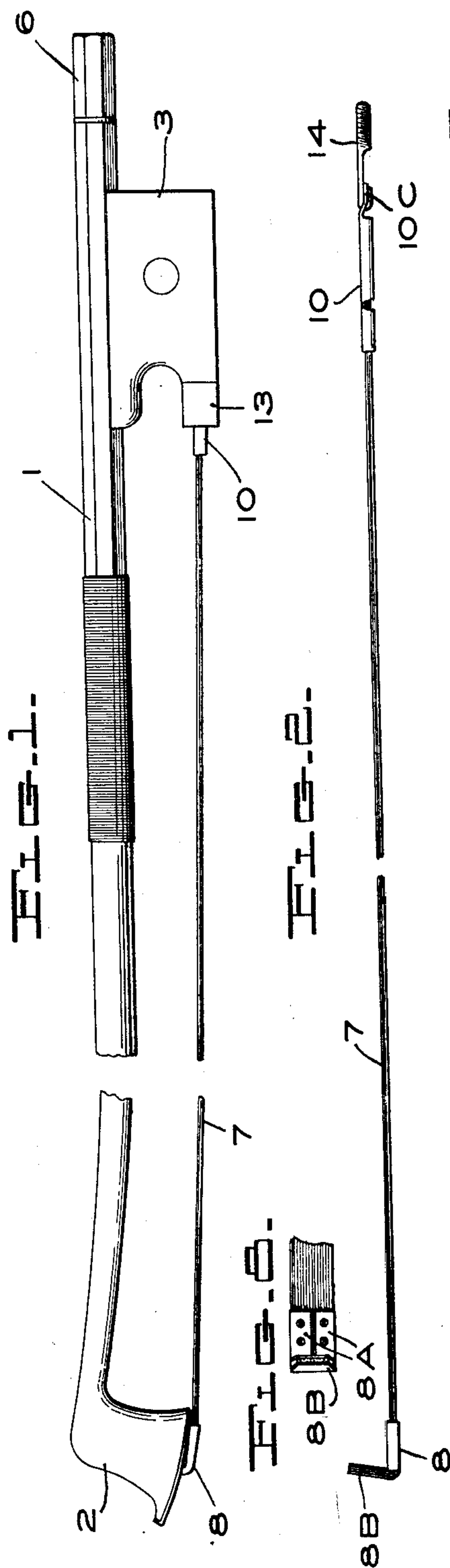
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MUSICAL INSTRUMENT BOW

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## MUSICAL INSTRUMENT BOW

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6 Claims. (Cl. 84-282)

1

This invention relates to bows used in playing stringed musical instruments and more especially to bows having a plurality of genuine hair or hair like strands of plastic, or metallic material, or a combination of them, and mounted as a unit for replaceable attachment between the fixed head and the adjustable frog of the bow.

One object of my invention is to provide a new and improved bow for musical instruments of the indicated type.

Another object is to provide a strand unit for bows which may be quickly and easily mounted and readily replaced on a bow.

A further object is to simplify the construction and attachment of a strand unit so that no special skill is needed in its replacement on the bow.

Still another object is to so construct the strand unit that any type of suitable hair like material may be used in its make up.

A further object is to provide a novel method and means for mounting the ends of the strand in a manner which will insure perfect alignment of the individual hairs and thus prevent uneven tension in the strand.

With these and other objects in view, which will become more readily apparent from the detailed description of an illustrative and practical embodiment of the bow construction illustrated in the accompanying drawing, my invention comprises features of construction and arrangement of the various elements of my novel bow and its replaceable strand unit as will be more particularly pointed out in the claims.

In the drawings:

Figure 1 is a side elevational view of a bow for musical instruments embodying my invention.

Fig. 2 is a detailed side elevational view of the replaceable strand unit used in the bow illustrated in Figure 1.

Fig. 3 is an enlarged side elevational view of the rear end of the bow, the frog thereof being partly illustrated in section to illustrate the mounting of the strand unit in the frog.

Fig. 4 is an enlarged elevational view of the rear end of the bow.

Fig. 5 is an enlarged side elevational view of the front end of the bow with a portion thereof shown in section to illustrate the mounting of the strand unit in the head of the bow.

Fig. 6 is a bottom plan view of the frog illustrated in Fig. 3 with its cover portion removed therefrom.

Fig. 7 is a detail perspective view of the rear end of the replaceable strand unit.

Fig. 8 is a plan view of the top end of the replaceable strand unit.

2

It will be helpful to an understanding of my invention to first briefly consider some of the more important aspects and features thereof, so that these may be kept in mind during the subsequent reading of the description of the practical and illustrative embodiment shown in the accompanying drawing. Accordingly, it is noted that the replaceable strand unit and its mounting on the head and frog of the bow is extremely simple in construction so as to enable anyone to replace the strands of the bow and have the hairs of the strand in perfect alignment. In this way the need for professional skill to perform this operation is entirely eliminated. The hairs or hair like strands of the replaceable unit are banded and held together near their outer ends by a clamp which firmly holds them parallel to one another in a band like arrangement and their extreme outer ends are bent and held between a pair of anchoring plates which form part of the clamp and are adapted for insertion into the head of the bow for a simple, quick and easy attachment thereto.

The inner ends of the hairs or hair like strands of the replaceable strand unit are banded and held together in the same band like arrangement by an elongated clamp which is adapted to be inserted and held in the frog of the bow so as to keep the strands in their parallel arrangement and in alignment with the bow proper.

The clamp which enters the frog has an extension to which is connected a threaded spindle for engagement into a threaded sleeve which is rotatably mounted in the end of the frog so that rotation of this sleeve in one direction will cause the strands to be adjustably connected to the frog. Rotation of the sleeve in the opposite direction will of course release the strands from the frog and in this way the simple operation of this threaded sleeve in conjunction with the insertion and withdrawal of the clamped and bent ends of the strands in the head of the bow, is all that is required in the replacement on the bow of one strand unit for another.

Referring now more particularly to the figures of the drawings in which like reference numerals indicate like parts, the musical instrument bow comprises the flexible rod or stick 1 which carries at the outer end the fixed head 2 and at the inner end the adjustable frog 3. The latter is mounted to slide on the rod 1 and is provided with a threaded lug 4 which projects into a hollow portion of the rod for threaded engagement with the spindle 5. Rotation of this spindle by means of the knob 6 at the end of the rod 1 will thus operate to move the frog 3 in or out on the



3

rod in order to loosen or tighten the strands of the bow, as will hereinafter appear.

The strands 7 used for the bow may be of horse or other natural hair, plastic fibre, fine metal wire or a combination of them which are arranged and aligned to form a soft bandlike bundle of the proper thickness. The outer ends of this bundle are suitably clamped in place on the flat back of the metal bracket 8 by means of its foldable sides 8<sup>A</sup>. The outer end of this bracket is bent so as to provide an angular hooked end 8<sup>B</sup> thereon. This hooked end has tapered sides to permit its ready insertion into the cavity 9 in the head 2 of the bow. The front wall of this cavity is slightly inclined rearwardly, and in conjunction with the wedge block 9<sup>A</sup> in the cavity, provides an inclined anchoring slot in which the hooked end 8<sup>B</sup> of the bracket 8 will be firmly held in the head 2 by the tension of the strands 7.

The inner ends of the band like bundle of strands 7 are fastened to the elongated clamp 10 which has a flat back and bendable sides 10<sup>A</sup> and 10<sup>B</sup> that are adapted to be folded and forced over the ends of the strands 7 to clamp them in place against the flat back of the clamp. The sides 10<sup>A</sup>, when folded over the strands 7, reduce the width of the bracket and with it the width of the strand bundle so that the bracket can slide into the elongated cavity 11 in the frog 3 behind its cover plate 12. The angularly folded sides 10<sup>B</sup> allow the bundle of strands 7 to flare out to its full width and thus hold the strands in conjunction with bracket 8 at the other end of the strands 7 in perfect alignment and parallel to one another. The outwardly flaring portion of the clamp 10, provided by its angularly folded sides 10<sup>B</sup>, is partially surrounded by the ferrule 13 which encircles the beginning of the cavity 11 in front of the cover plate 12.

The back of the clamp 10 has an extension 10<sup>C</sup> and in this extension is provided the rectangular perforation 10<sup>D</sup>. The hooked end of the threaded stud 14 engages into this perforation and is clamped or otherwise fastened to the extension 10<sup>C</sup> so as to be held in alignment with the bracket. In this way the threaded stud 14 is made part of the clamp 10, so that insertion of the clamp into the cavity 11 will bring the threaded end of the stud into engagement with the end of the connecting and adjusting sleeve 15. This sleeve is rotatably mounted in the frog 3 at the end of the cavity 11 in alignment therewith, so that rotation in one direction will cause the threaded stud to be threaded thereinto and rotation in the opposite direction will cause the threaded stud to be threaded thereout of. A flange 15<sup>A</sup> at the outer end of the sleeve is engaged on the frog so as to keep it from moving endwise in the frog when rotated therein. The threaded sleeve 14 is rotated by means of a suitable screw driver (not shown) which can be inserted into the slot 15<sup>B</sup> provided for this purpose.

From the foregoing it will be apparent that the replaceable strand unit which is made up of the bundle of strands 7, the bracket 8 at the outer end and the clamp 10 at the inner end, can be readily attached to and detached from the bow

4

in a very short time and that no special skill is needed for this purpose. It is further apparent that the restranding of the bow by means of the replaceable strand unit in the manner described will result in perfectly aligned parallel strands, which are uniformly tensioned after any adjustment thereof.

While I have illustrated and described a preferred embodiment of my novel bow and replaceable strand unit therefor, it is to be understood that various changes and modifications are possible and may be made therein without departing from the scope of my invention as more particularly pointed out by the hereto appended claims.

I claim:

1. A bow of the character described comprising in combination with a flexible rod having a tip element at one end thereof and an adjustably mounted frog at the other end thereof, of an internally threaded sleeve rotatably mounted in fixed location in said frog, a screw element mounted for axial adjustment in said sleeve, a detachable bow string unit, means for connecting one end of said unit with said tip element, and means for separably connecting the other end of said unit with the screw element.

2. A bow in accordance with claim 1, wherein one end of said sleeve is provided with means adapted to be engaged by a separate sleeve turning implement.

3. A bow in accordance with claim 1, wherein said sleeve is provided with a transversely extending slot at one end thereof.

4. A bow in accordance with claim 1, wherein said screw element has a hook formation at one end thereof.

5. A bow in accordance with claim 1, wherein one end of said sleeve is arranged in transverse alignment with the rear surface of the frog.

6. A bow of the character described comprising in combination with a flexible rod having a tip element at one end thereof and an adjustably mounted frog at the other end thereof, of an internally threaded sleeve rotatably mounted in fixed location in said frog, a screw element mounted for axial adjustment in said sleeve, a detachable bow string unit, means for connecting one end of said unit with said tip element, and means for separably connecting the other end of said unit with the screw element in such manner as to effect lengthwise tensioning adjustment of said unit by movement thereof in axial alignment with the movement of said screw element.

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