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(54) **GUITAR NECK**

GITARRENHALS

MANCHE D'UNE GUITARE

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US-A- 647 173 US-A- 6 103 961**

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Description

Field of the invention

[0001] The present invention relates to a neck of a guitar, especially the neck of a classical guitar.

[0002] It is to be noted that the term guitar is to be interpreted broadly and is intended to include any appropriate instrument having a body with a sound table; a neck carrying a fingerboard with frets; and strings held tightly over the sound table and finger board for creating the desired sounds.

Background of the invention

[0003] The neck of the classical guitar connects the head of the guitar with the sound-box. Strings are arranged above the upper surface along the neck from the head towards the bridge of the guitar. The neck of the guitar is full and inside there are some rods or other stiffening materials. In the cross section the neck has a semicircular shape creating the base. At the top it is connected with the fingerboard in the form of a flat or slightly convex board.

[0004] In the description of the CN 205302910 utility model we can find a guitar with the neck created from the bottom base where there are reinforcing rods arranged alongside. The top surface of the neck is covered with the fingerboard.

[0005] In the US 4084476 patent specification there is a guitar whose neck resembles a semicircle in the cross section where we can find stiffening elements in the form of thin wooden strips. The neck in the lower part has got an oblong hollow open at the bottom where there is a stiffening element in the form of an insert.

[0006] The WO 2016 / 154006 A1 registration form depicts the stiffening of the neck of an acoustic guitar in the form of an oblong board arranged along the neck of the guitar. This board is located in the hollow from above and resembles a semicircle. In the central part of the board there is an empty oblong hollow and in its vicinity thin elements of the reinforcement made of glass fiber are embedded.

[0007] Other examples of the guitars with the modified necks were disclosed in the following patent documents: US 647 173 A, US 6 103 961 A, JP H05 333852 A and WO 03/094146 A1.

[0008] However, none of the presently available prior art documents disclosed or fairly suggest the distinguishing features set forth in the present invention nor suggest alternative solutions. Indeed each of documents: US 647 173 A, US 6 103 961 A, JP H05 333852 A and WO 03/094146 A1 discloses a neck for a stringed musical instrument with a stiffened hollow cavity along its length, from the headstock to the base of the neck, where the cavity only directly emits the acoustic pressure inside the acoustic-box of the instrument and not at the sides of the base part of the neck.

Inconveniences of the known solutions

[0009] The known solutions undoubtedly strengthen and stiffen the neck of the guitar, which is essential in increasing the life of the guitar itself. However, they do not contribute to the improvement in the sound transmission from the first fret through the neck to the sound-box. Generally, it is only the sound-box that has influence on the quality of the sound coming out of an acoustic guitar.

Aim of the making invention

[0010] In order to eliminate the above inconveniences an invention has been drawn up the essence of which is displayed in the construction of the neck of the guitar improving the sound transmission from the first fret through the neck to the sound box.

Nature of the invention

[0011] According to the invention, a guitar neck comprises: an elongated front part adapted to be covered with a fingerboard, a head at one end of the front part, and a base on the other end of the front part, where said base is adapted to connect the neck with a sound-box; additionally, in said front part there is a hollow which is formed along the entire length of the front part and a stiffening element which is placed in said hollow; and further containing acoustic tubes in the form of acoustic through holes, situated in both sides of the base with respect to the top side of the neck, near the place where the front part changes into said base; and further comprising grooves in the base, which are open at the top of said base and limited each by a respective side which is in the shape of a bow; and wherein the grooves form chambers when covered with a fingerboard, and each of the grooves is formed to connect the hollow from the front part to a respective through hole of the acoustic through holes.

[0012] It is advantageous when each of the sound holes has the shape similar to an ellipse.

[0013] It is also advantageous when the hollow in the front part turns from the base into the tilted area located in the base changing into sound through holes.

[0014] It is advantageous too when the stiffening element is empty inside and open at the top, and the shape of the stiffening element in the cross section corresponds to the shape of the hollow in the cross section.

[0015] It is furthermore advantageous when an upper part of the base has a flat surface constituting an extension of the flat framing of the front part.

Beneficial effects of the invention applying

[0016] Using the neck built in accordance with the invention enables to get high acoustic properties, much better than those applied in the traditional guitar. The invention enables sound transmission from the first fret

through the neck of the guitar onto the sound board, which is better than the one in the traditional guitar. Inside the neck of the guitar acoustic pressure is created which finds its way out through the two sound through holes located behind the twelfth fret. These holes constitute acoustic tubes. A musician playing the guitar can hear sounds coming not only from the acoustic box but from the neck as well.

Brief description of the drawing figures

[0017] The subject of the invention is shown in the example of execution in the drawing wherein:

fig.1 shows the general view of the guitar,
fig.2 -general view of the neck of the guitar,
fig.3 perspective view of the neck of the guitar with acoustic tubes,
fig.4 - side view of the neck of the guitar,
fig.5 - overhead view of the neck of the guitar,
fig.6 -another side view of the neck of the guitar,
fig.7 - the A-A diameter of the neck of the guitar,
fig.8 - the B-B diameter of the neck of the guitar,
fig.9 - scattered view of the guitar with acoustic tubes,
fig. 10 - side view of the neck of the guitar without the fingerboard,
fig. 11 - overhead view of the neck of the guitar without the fingerboard,
fig.12 - the view of the other side of the neck of the guitar without the fingerboard,
fig. 13 -bottom view of the neck of the guitar without the fingerboard,
fig.14 - front view of the neck of the guitar without the fingerboard (side A)
fig.15 - front view of the neck of the guitar without the fingerboard (side B)

Detailed description of the invention:

[0018] The neck 3 of the guitar in accordance with said invention also called the guitar neck is equipped with the head 1 located on one end of the neck 3, connected with the sound-box 2 on the other end 24 where we can find a sound hole 6. The strings 5 are arranged above the upper surface 15 along the neck 3 from the head 1 towards the guitar bridge 4. The neck 3 contains acoustic tubes 7, each featuring an acoustic through hole 14.

[0019] The neck 3 features a single element made of wood, preferably maple or any other hardwood and consists of the front part 8 changing into the base 9 where it is attached to the sound-box 2. In the front part 8 from the front side and on both sides there is a flat frame 10 changing into a hollow 11 situated along the entire length of the front part 8. The hollow 11 from the base 9 forms a tilted area 12 located in the base 9 changing into acoustic through holes 14. The acoustic holes 14 forming acoustic tubes 7 are located on both sides 13 of the base 9 near the place where the front part 8 creates the base

9. Each of the sound holes 14 has a shape resembling an elongated, asymmetrical ellipse. Acoustic inserts 18 are placed in acoustic through holes 14. The shape of the acoustic insert 18 corresponds to the shape of the sound hole 14. The upper part 15 of the base 9 is flat. In the base 9 from the front part 8 there are the grooves 16 open from above limited by the sides 17 in the shape of bows. In the neck 3 covered with the fingerboard 21 the grooves 16 form chambers. In front view from side A the front part 8 has the shape of a circular segment. In side view the base 9 has a shape of a narrow extended unilateral trapezium with one straight side 22 located at the frame 10 and the other tilted side 23 rising towards the end 24 of the neck 3.

[0020] In the hollow 11 of the neck 3 we find a stiffening element 19 which in cross section corresponds to the shape of the hollow 11 in the cross section. The stiffening element 19 is empty inside and open from the top and its surface 20 shapes a bow. The stiffening element 19 is made of aluminium, fibre glass or any other material with stiffening properties. The neck 3 along with the stiffening element 19 is covered with the fingerboard 21 with metal frets 25.

Claims

1. A guitar neck (3) comprising: an elongated front part adapted to be covered with a fingerboard (21), a head (1) at one end of the front part (8), and a base (9) on the other end (2) of the front part (8), where said base (9) is adapted to connect the neck (3) with a sound-box (2); additionally, in said front part (8) there is a hollow (11) which is formed along the entire length of the front part (8) and a stiffening element (19) which is placed in said hollow (11); the guitar neck **characterized by:**

further containing acoustic tubes (7) in the form of acoustic through holes (14), situated in both sides (13) of the base (9) with respect to the top side of the neck (3), near the place where the front part (8) changes into said base (9); and further comprising grooves (16) in the base (9), which are open at the top of said base (9) and limited each by a respective side (17) which is in the shape of a bow; and

wherein

the grooves (16) form chambers when covered with a fingerboard (21), and each of the grooves (16) is formed to connect the hollow (11) from the front part (8) to a respective through hole of the acoustic through holes (14).

2. The guitar neck according to claim 1, **characterized in that** each of the sound through holes (14) has a shape similar to an ellipse.

3. The guitar neck according to claim 1, **characterized in that** in the front part (8), from the front side and on both sides, there is also a flat frame (10) changing into the hollow (11) situated along the entire length of the front part (8); the hollow (11) from the base (9) forms a tilted area (12) located in the base (9) changing into acoustic through holes (14).
4. The guitar neck according to claim 1, **characterized in that** the stiffening element (19) is empty inside and open at the top, and the shape of the stiffening element (19) in cross section corresponds to the shape of the hollow (11) in the cross section.
5. The guitar neck according to claim 3, **characterized in that** an upper part (15) of the base (9) has a flat surface extending the flat frame (10) of the front part (8).

Patentansprüche

1. Gitarrenhals (3), umfassend: einen länglichen Vorder-
 teil, der mit einem Griffbrett (21) abgedeckt werden
 kann, einen Kopf (1) an einem Ende des Vorder-
 teils (8) und eine Basis (9) am anderen Ende (2)
 des vorderen Teils (8), wobei die Basis (9) geeignet
 ist, den Hals (3) mit einer Soundbox (2) zu verbinden;
 zusätzlich gibt es in dem vorderen Teil (8) eine Ver-
 tiefung (11), die entlang der gesamten Länge des
 vorderen Teils (8) ausgebildet ist, und ein Verstei-
 fungselement (19), das in der Vertiefung (11) ange-
 ordnet ist;
 der Gitarrenhals **gekennzeichnet durch**:
 ferner enthält er Schallrohre (7) in Form von akusti-
 schen Durchgangslöchern (14), die sich auf beiden
 Seiten (13) der Basis (9) in Bezug auf die Oberseite
 des Halses (3) nahe der Stelle befinden, an der sich
 die Vorderseite befindet Teil (8) wechselt in die Basis
 (9); und ferner Rillen (16) in der Basis (9) umfassen,
 die oben an der Basis (9) offen sind und jeweils durch
 eine jeweilige Seite (17) begrenzt sind, die die Form
 eines Bogens hat; und worin Die Nuten (16) bilden
 Kammern, wenn sie mit einem Griffbrett (21) bedeckt
 sind, und jede der Rillen (16) ist ausgebildet, um die
 Vertiefung (11) vom vorderen Teil (8) mit einem je-
 weiligen Durchgangsloch der akustischen Durch-
 gangslöcher zu verbinden (14).
2. Der Gitarrenhals nach Anspruch 1, **dadurch ge-
 kennzeichnet, dass** jeder Klang durch Löcher (14)
 haben eine Form ähnlich einer Ellipse.
3. Gitarrenhals nach Anspruch 1, **dadurch gekenn-
 zeichnet, dass** im vorderen Teil (8) von der Vorder-
 seite und auf beiden Seiten auch ein flacher Rahmen
 (10) in den Hohlraum (11) übergeht, der sich entlang
 des gesamten befindet Länge des Vorderteils (8);

Der Hohlraum (11) von der Basis (9) bildet einen
 geneigten Bereich (12), der sich in der Basis (9) be-
 findet und sich in akustische Durchgangslöcher (14)
 verwandelt.

4. Gitarrenhals nach Anspruch 1, **dadurch gekenn-
 zeichnet, dass** das Versteifungselement (19) ist in-
 nen leer und oben offen und die Form des Verstei-
 fungselements (19) gekreuzt Schnitt entspricht der
 Form des Hohlraums (11) im Querschnitt.
5. Der Gitarrenhals nach Anspruch 3, **dadurch ge-
 kennzeichnet, dass** ein oberer Teil (15) des Die Ba-
 sis (9) hat eine flache Oberfläche, die den flachen
 Rahmen (10) des vorderen Teils (8) erstreckt.

Revendications

1. Le manche (3) d'une guitare comprenant: une partie
 avant allongée adaptée pour être recouverte d'une
 touche (21), une tête (1) à une extrémité de la partie
 avant (8) et une base (9) de l'autre extrémité (2) de
 la partie avant (8), où ladite base (9) est adaptée
 pour relier le manche (3) à une caisse de résonance
 (2); de plus, dans ladite partie avant (8), il y a un
 creux (11) qui est formé sur toute la longueur de la
 partie avant (8) et un élément de raidissement (19)
 qui est placé dans ledit creux (11);
 le manche de guitare **caractérisé par**:
 contenant en outre des tubes acoustiques (7) sous
 forme de trous de passages acoustiques (14), situés
 des deux côtés (13) de la base (9) par rapport au
 côté supérieur le manche (3), près de l'endroit où la
 partie l'avant (8) se transforme en ladite base (9); et
 comprenant en outre des rainures (16) dans la base
 (9), qui sont ouvertes au sommet de ladite base (9)
 et limitées chacune par un côté respectif (17) qui a
 la forme d'un arc; et où les rainures (16) forment des
 chambres lorsqu'elles sont recouvertes d'une tou-
 che (21), et chacune des rainures (16) est formée
 pour relier le creux (11) de la partie avant (8) à un
 trou traversant des trous de passages acoustiques
 (14) respectif.
2. Le manche de la guitare selon la revendication 1,
caractérisé en ce que chacun des trous de passa-
 ges accustiques (14) ont une forme similaire à une
 ellipse.
3. Le manche de la guitare selon la revendication 1,
caractérisé en ce que dans la partie avant (8), du
 côté avant et des deux côtés, il y a également un
 cadre plat (10) se transformant en niche (11) situé
 le long de l'ensemble longueur de la partie avant (8);
 le niche (11) de la base (9) forme une zone inclinée
 (12) située dans la base (9) se transformant en trous
 de passages accustiques (14).

4. Le manche de la guitare selon la revendication 1, **caractérisé en ce que** l'élément raidisseur (19) est vide à l'intérieur et ouvert en haut, et la forme de l'élément raidisseur (19) en coupe correspond à la forme du creux (11) dans la section transversale. 5
5. Le manche de la guitare selon la revendication 3, **caractérisé en ce que** une partie supérieure (15) du la base (9) présente une surface plate prolongeant le cadre plat (10) de la partie avant (8). 10

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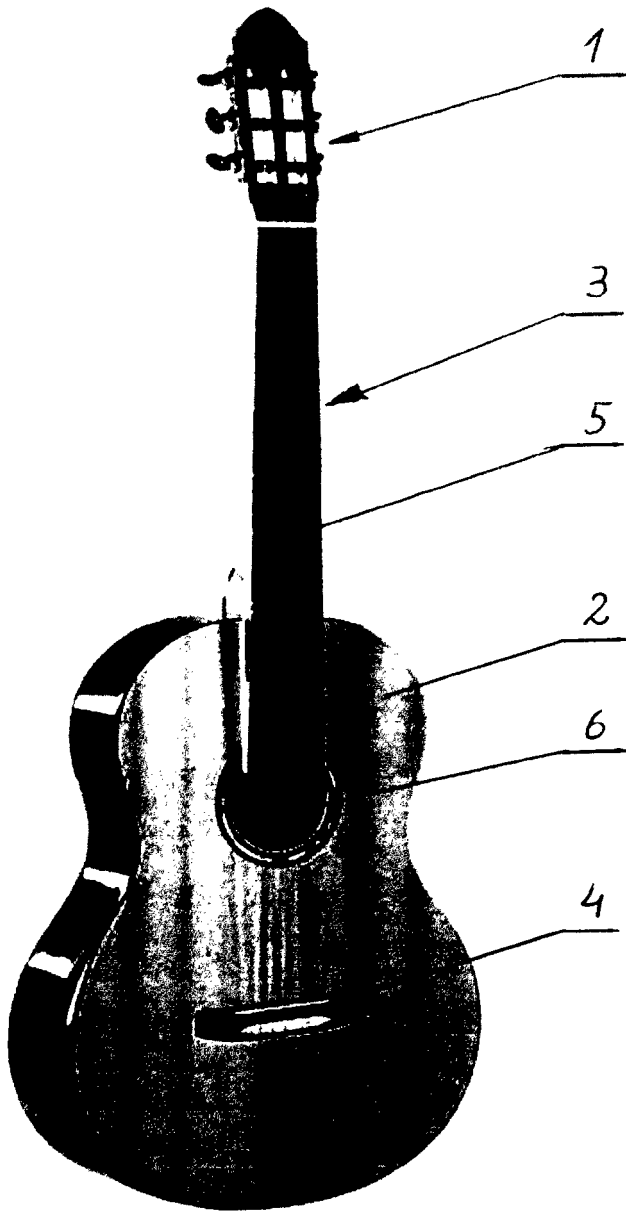


Fig. 1

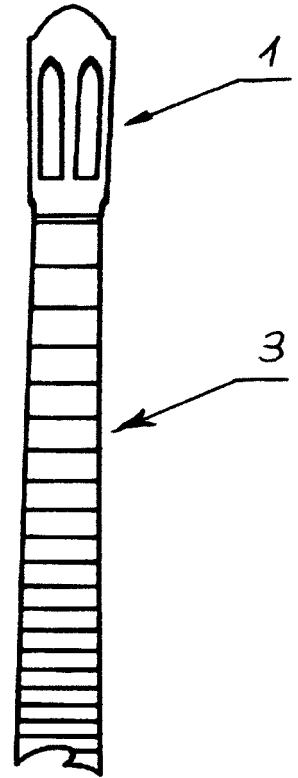
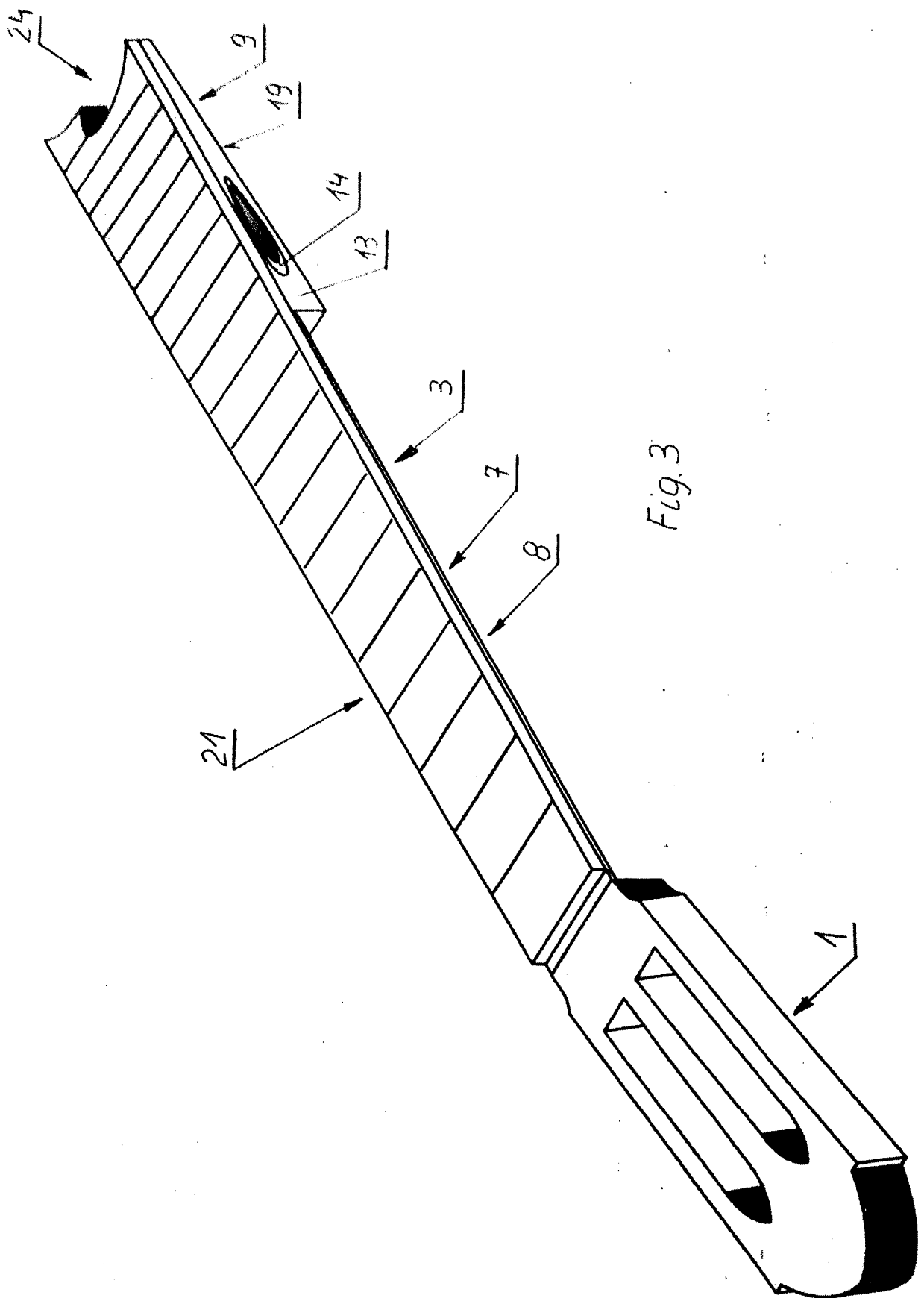
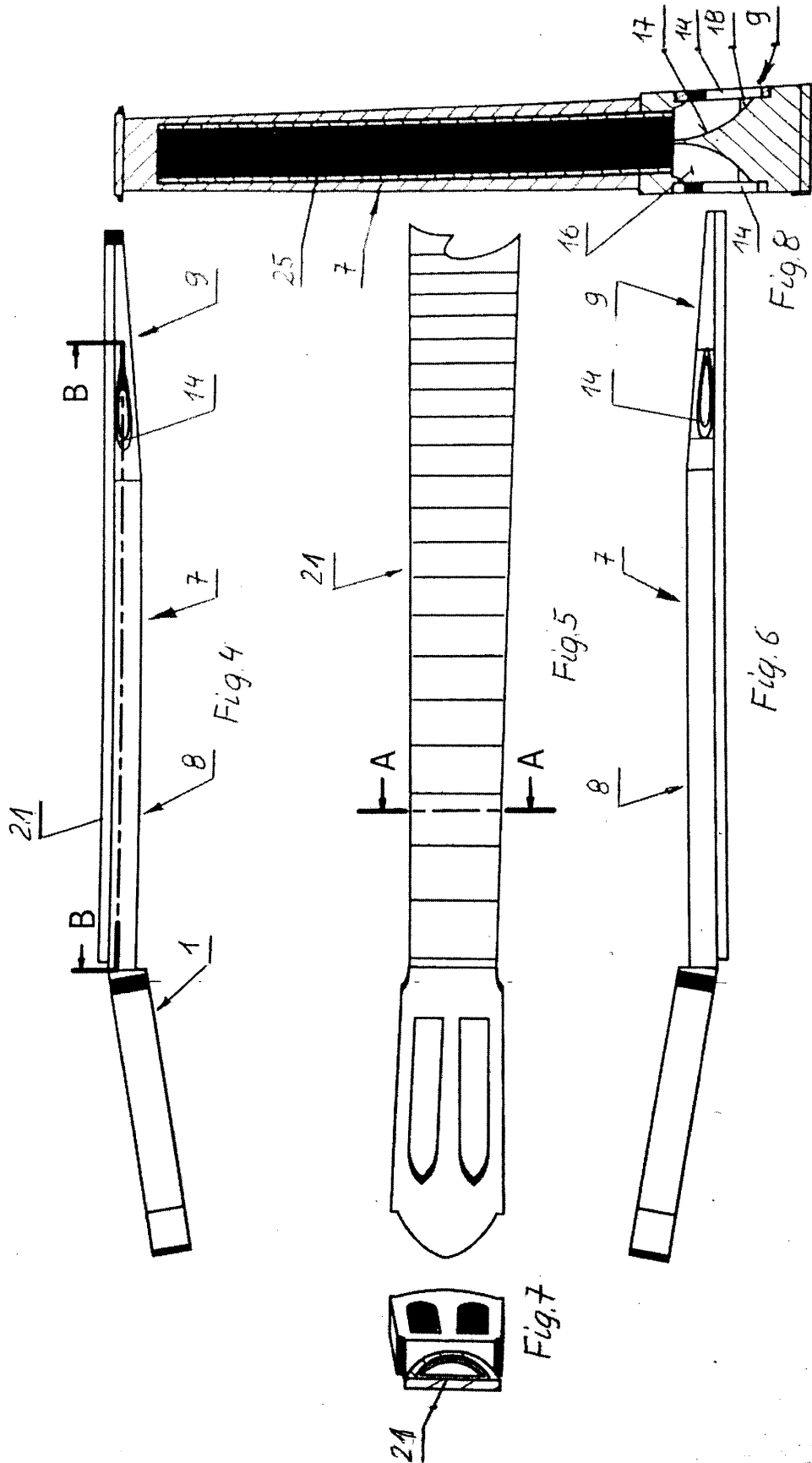
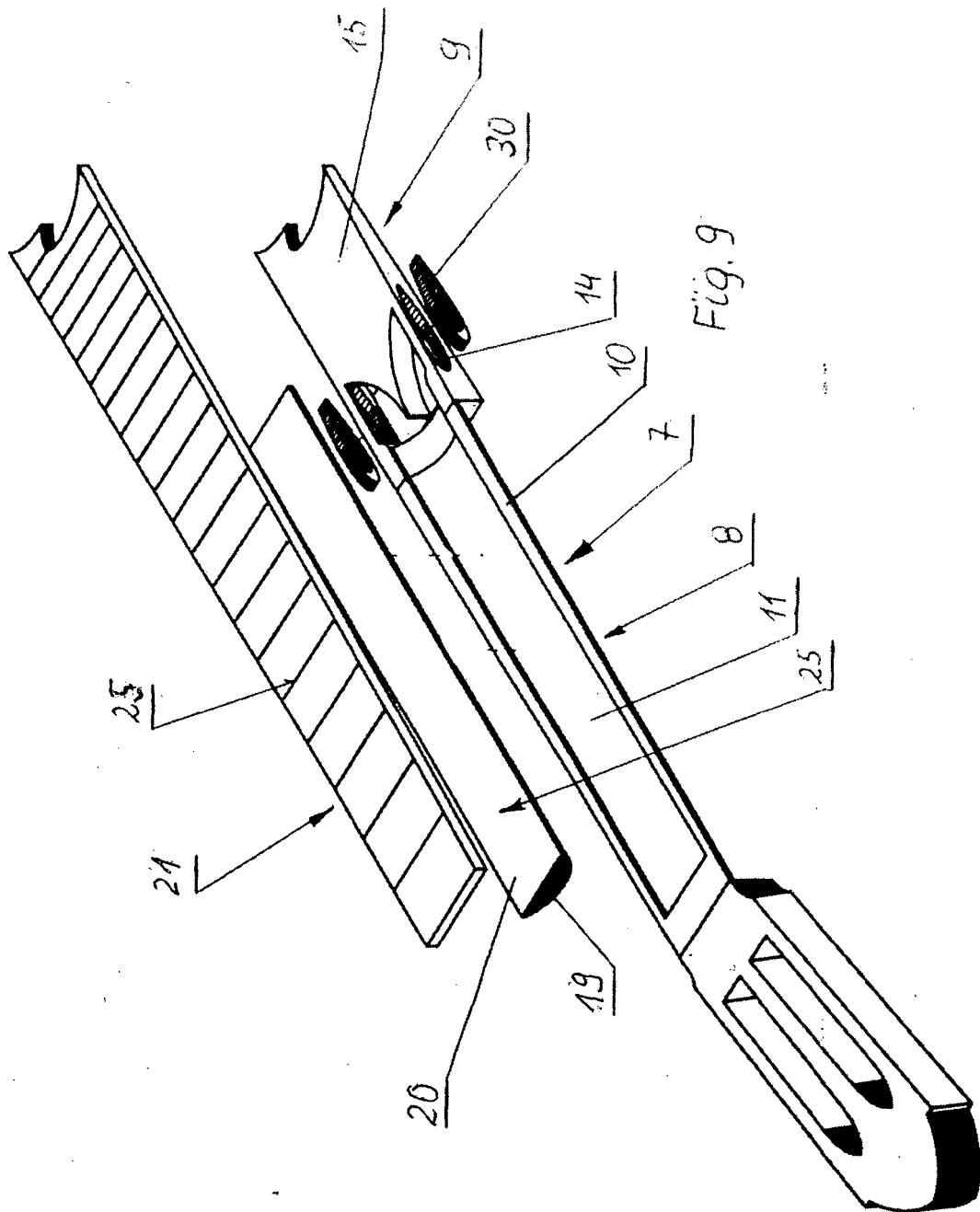
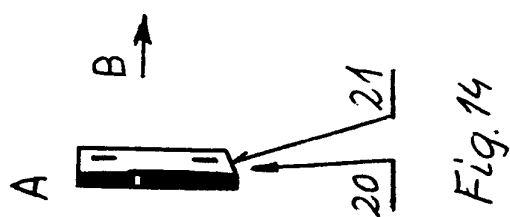
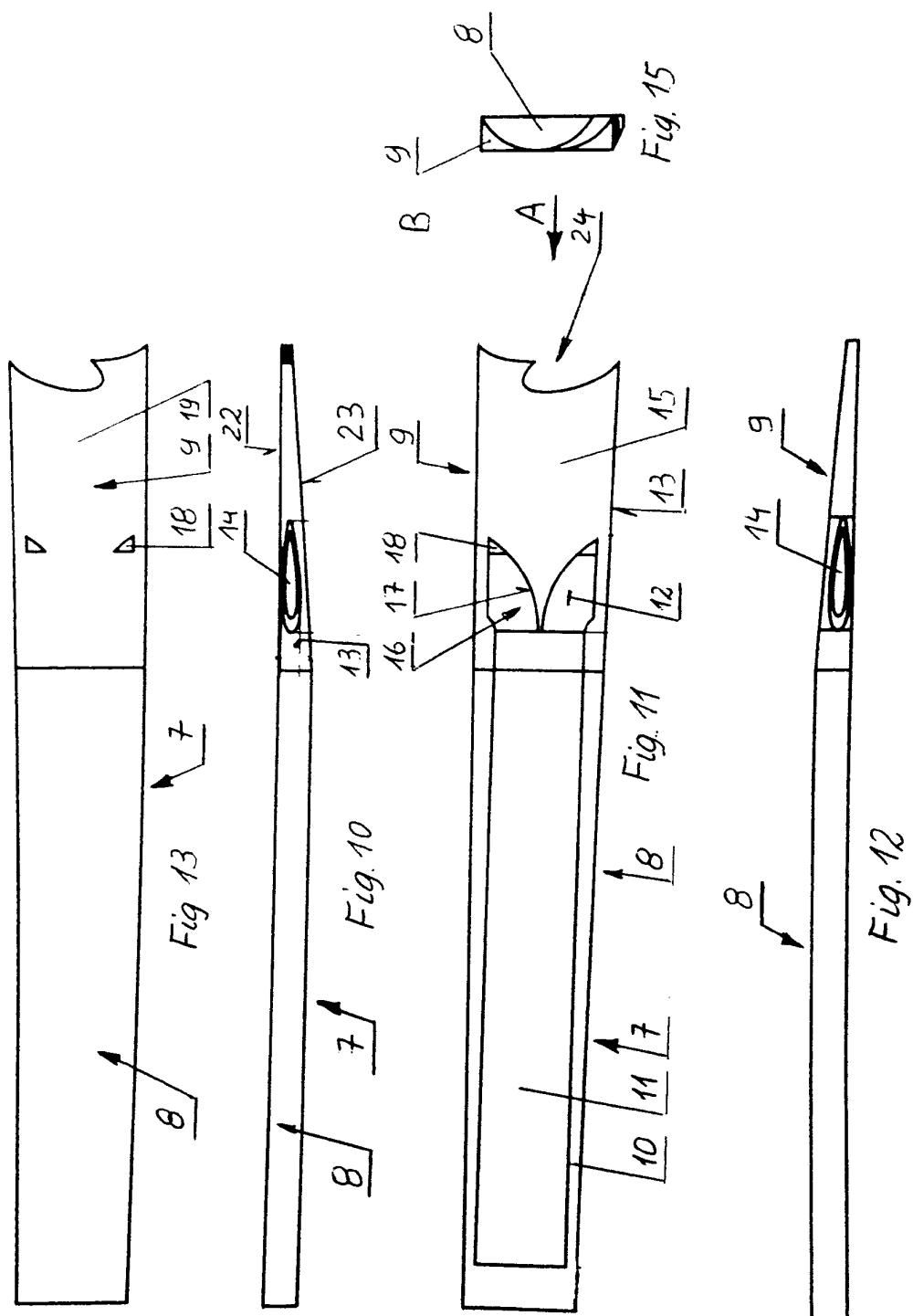


Fig. 2









REFERENCES CITED IN THE DESCRIPTION

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