

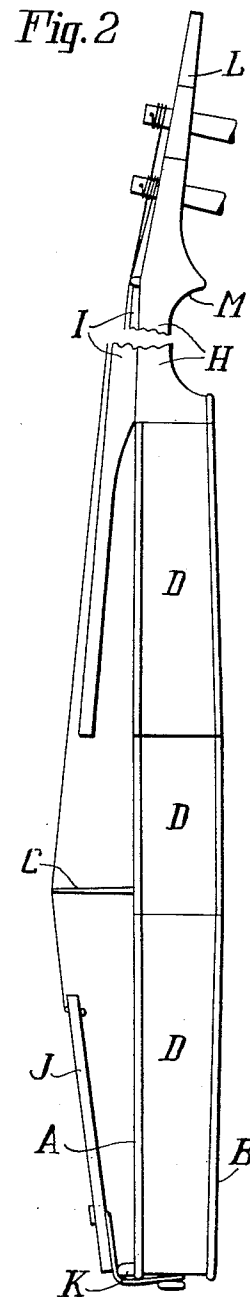
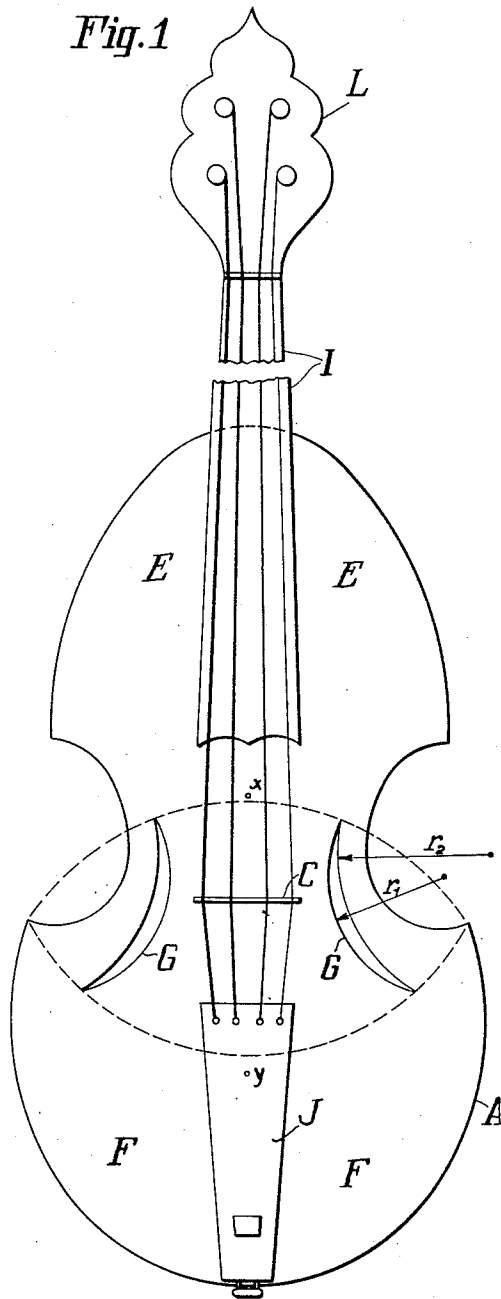
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VIOL CLASS INSTRUMENT

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VIOL CLASS INSTRUMENT

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This invention relates to viol class instruments. The undertaking to design novel viol class instruments is based on the recognition that the decline of house music is largely due to the lack of instruments of a sound type suitable for performance in small rooms. All our modern musical instruments have been adapted for a long time to the sound requirements of the large romantic orchestra and to the acoustic requirements of large concert halls. It is apparent that instruments the sound intensity of which is thus increased are not capable of producing that intimate effect which is required for house music and renders the latter enjoyable. Moreover, beautifully sounding instruments desired for soloist chamber music are most expensive and can be afforded only by a small number of amateurs.

The redesign of viol class instruments, therefore, faces the problem to provide instruments to be played just as the conventional viol instruments but having a sound which is clear, noiseless, gentle, and warm, and a light response. Their sound intensity must not be exaggerated, as in most modern or modernized viol class instruments, to such a degree that the instruments sound sharp, shrill, or rough, and that, when several solo parts are played together, their sound can be blended with that of several similar or different instruments only to an insufficient degree so that the balance and beauty of the overall sound is destroyed. It is also necessary that these novel viol class instruments, in spite of the high sound quality requirements to be complied with, must lend themselves to being manufactured much less expensively than the viol class instruments now in use, where conditions of manufacture (manufacture of individual instruments by masters, repetition work, factory manufacture) are the same. This is possible only when the entire construction of the novel instruments is simpler than that of the traditional viol class instruments.

Thus the invention relates to viol class instruments comprising a substantially parallel-faced sound body. The essential feature of the invention consists in that the horizontal outline of the sound body corresponds to the longitudinal cross section of an egg, interrupted by two re-entrant portions between the cheeks, and that the originally plane top and bottom plates are strained in a cylindric or spherical-segment shape to the sides, which are higher adjacent to the bridge.

It has been proved by facts that the usual

vaulting of top and bottom conventional in viol class instruments is not significant for the fundamental sound character of the instruments. This design mainly corresponds to a baroque style. The plane top and the plane bottom, which are both strained in a cylindric or spherical-segment shape, do not change the fundamental sound character.

The shaping of the top and bottom plates (decreasing taper toward the sides) is simple and creates no problems. Therefore, there are much less sources of mistakes than in scooping out the top and bottom in the violin. This is of great significance particularly for repetition work.

In an inherently flat top and bottom the oscillation is relatively simple. For this reason the sound will be clear. The necessary balance of the sounds of the several strings is also improved by the simpler oscillation.

The top is provided with a bass beam, the attachment of which, from the craftsman's viewpoint, is much simpler where the top is plane than where it is vaulted. Similarly as in the viola da gamba or the viola d'amore the bottom has a cross beam. As in all viol class instruments the bottom and top are connected by a sound post.

The peg plate signifies a great simplification as compared with the peg box and scroll in viol class instruments. By its substantial thickness it provides a better hold for the downwardly extending pegs. The entire arrangement enables a more convenient method of tuning the strings.

In the science of musical instruments the name and conception of the type of an instrument depend not only on structural and acoustic features but to a high degree also on its outside shape. For instance, if a viol class instrument is called "violin" this name and the corresponding type of instrument is inseparably connected with the known baroque form. The various differently shaped forerunners of the violin have other names. The idea of a musical instrument comprises not only its structural and acoustic features but also the corresponding outside shape. For this reason every museum collection of instruments proves that musical instruments are evaluated not only from the structural viewpoint as sound producing devices but to a high degree also as creations of artistic craftsmanship. A musical instrument which in its outside shape, in its execution and in its entire appearance is not considered beautiful and balanced will not be desired by anyone and will, therefore, not find any distribution. By necessity, the struc-

tural and acoustic requirements must be blended in every musical instrument with the requirements of playing technique and with the outside shape to give an integrity.

The characteristic, simple, almost flat construction of the top and bottom of the viol class instrument according to the invention requires also a plain and simple outline and this in turn necessitates a simple shape of the sound holes. The thus shaped sound body in turn determines the shape of the peg plate, of the finger board, and of the tailpiece.

The accompanying drawings show by way of example an embodiment of the invention, in Fig. 1 in a top plan view and in Fig. 2 in a side view.

As can be seen from the drawings the sound body of the novel viol class instrument has a substantially flat top A and a similarly flat bottom B. The top and bottom are substantially parallel each other but are strained in a slightly cylindrical or spherical-segment shape over the sides, which reach their maximum height adjacent to the bridge C, whereas the sides taper in height towards the ends in accordance with the desired straining of the top and bottom.

The horizontal outline of the sound body corresponds to the cross section of an egg which is interrupted by the re-entrant portions between the upper cheeks E and the lower cheeks F. The sound holes G are of crescent shape, for formal and space reasons. The end points of the crescent holes (radius r_1 and radius r_2) are situated on two circles having opposite centers x and y and extending through the outer end points of the lower cheeks.

The neck H is fitted into the top block so as to be flush with the top and not protruding over the same. The finger board I is of wedge shape up to the sound body. The tail piece J is shaped similarly as the finger board. The saddle K for the tail piece at the lower end of the sound body is heavily elevated to reduce the string pressure correspondingly.

The neck has at its upper end a peg plate L, similarly to those of the early-medieval fiddle or the old lyra da braccio. It is tenon-and-mortise jointed to the neck and slightly inclined backwardly. The pegs extend below the plate.

For reasons of playing technique, the portion M where the neck joins the peg plate has the same shape as in viol class instruments having a peg box. Finally it may be mentioned that this novel musical instrument can be built in

various sizes in accordance with the different voice parts.

What I claim is:

1. A viol class string instrument comprising a sound box having a belly panel, a back panel, and walls spacing said panels entirely around the sound box, the outline of the horizontal cross-section of said sound box being substantially similar to the longitudinal cross-section of an egg, a substantially semi-circular bout in each side of the sound box to form a waist substantially midway between the longitudinal extremities of the sound box, said walls being of gradually increasing depth approaching the middle of the sound box, said belly panel and back panel both being under a bending stress and slightly arched in a longitudinal direction of the instrument only.

2. A viol class string instrument in accordance with claim 1, wherein the thickness of said belly and back panels decreases from a central point toward the outer edges thereof.

3. A viol class string instrument in accordance with claim 1, comprising also a peg plate attached to said sound box.

4. A viol class string instrument in accordance with claim 3, also comprising a finger board having a wedge-shaped portion extending over the sound box.

5. A viol class string instrument in accordance with claim 1, also comprising a tail piece connected to one end of said sound box, a bridge centrally located on said belly, a peg plate connected to the other end of said sound box comprising tuning pegs positioned therein, a finger board, and strings extending from said tail piece over said bridge to said tuning pegs, said tail piece being spaced from said sound box by a supporting member attached to the edge of the sound box, whereby the pressure exerted by said strings upon said bridge is substantially reduced.

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