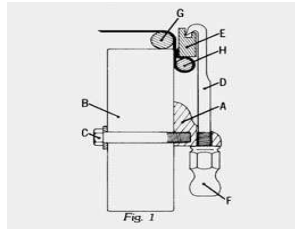
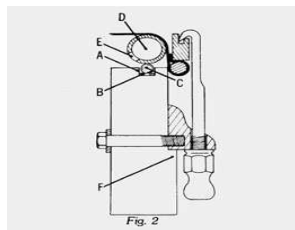


Gibson Banjo Rim Evolution



The very first Gibson banjo rim “pot” assemblies utilized shoes (A) that held onto the rim (B) with hex-head, screws (C), as shown in Fig 1. The top half of the outer edge of the hooks (D) were flattened and were designed to fit into a grooved stretcher band (E). The nuts (F) were large and had a rounded bottom. A simple round rod served as a tone ring (G), and rested on top of the rim. The skin heads were held on with “flesh hoops” (H), which were rings of either round or square brass. Necks were originally fitted to the rims with standard wooden “dowel sticks.” That system gave way to a combination of a dowel stick and a single coordinator rod, which in turn was replaced by an upper nut and a lower coordinator rod (a single rod was unable to “coordinate” the neck’s axis, and was later replaced by two coordinator rods (although some models in the late 50s and early 60s had only one rod).



The first version of the ball bearing tone chamber design is shown in Fig 2. Holes were drilled (A) into the top of the rim, and steel washers (B) were inserted to keep the balls (C) centered (some early versions had steel discs instead of washers), and to prevent them from digging into the wood. The hollow tube (D) that rested on top of the 20 balls was drilled (E) around its inner circumference. The balls were intended to prevent the tube from resting directly on the rim with the intention of making the tube resilient (springy). These early ball bearing rims had a thicker rim section (F) beneath the shoes. These rims also had the rounded bracket nuts that required a 5/16" nut wrench (the long, straight nuts on later models required a 1/4" nut wrench).

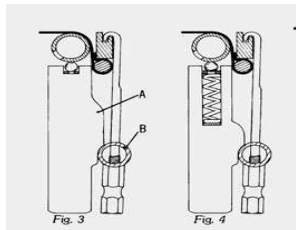
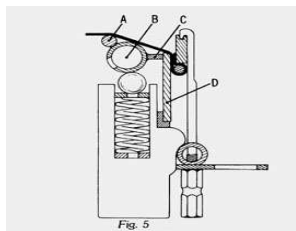
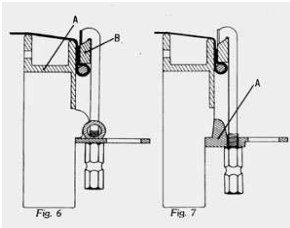


Fig 3. Shortly after the introduction of the ball bearing system, a lip (A) was machined into the rim's side to support the tube (B), which replaced the shoes. The tube added greater structural stability to the rim (acting as a hoop on a barrel) and assured that the laminates would not separate. The hooks were still the flat design, but the nuts (1/4" hexagonal) were changed to a more elongated shape.

Fig 4 indicates the addition of springs beneath the ball bearings to further increase the resiliency. The outer profile of the rim's lip was slightly changed to be more rounded and not as flat as (A) in Fig 3. As with the rims in Fig 3, the bracket nuts were the same elongated hexagonal 1/4" nuts.

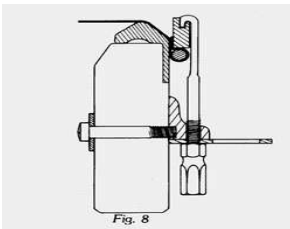


A major design change occurred in 1925 with the introduction of the modified ball bearing tone chamber (Fig. 5). A round rod (A), smaller in both diameter and circumference, was brazed onto the hollow tone tube (B). A second stamping (C) was brazed to the outside diameter of the tone tube to keep it centered within the outer support ring (D). [The early support rings were drilled with a staggered-hole pattern, which is visible from the outside of the banjo at position (D)]. Flat hooks were still used on this version, and the springs were larger than on previous models. The banjo head had two contact points, giving it the first "arch top" profile. Lastly, we see the introduction of the hexagonal 1/4" bracket nut which is still currently used on Gibson banjos.



In 1927, the first cast tone chamber (A) was employed (Fig. 6), which supported the head in the same arch-top manner as its predecessor. The inside perimeter of the tone chamber was drilled with 40 holes (although several instruments have been found with undrilled chambers). With the introduction of this system, a notched stretcher band (B) made its appearance, secured with round hooks that had straight-sided hexagonal nuts. The four-ply rim had a machined lip that accepted the tube. This design greatly simplified the banjo's structure, which reduced manufacturing and assembly problems.

Fig. 7. In 1929, a one-piece cast flange (A) replaced the tube-and-plate flange on several models. The absence of a lip for the tube permitted the use of three-ply rims which were easier and less expensive to manufacture.



The style-2 banjos of 1930 featured a small cast tone chamber of modified arch-top design, with flat hooks, a grooved stretcher band, and a full 3/4"-thick three-piece rim. And, as indicated in Fig. 8, the shoes were not entirely banished from Gibson's line. Lower-numbered models employed shoes with four-sided "diamond-hole" flanges and flanges whose plates were stamped in a wavy, flowing pattern. While these rims were used on lesser models, they had substantial mass (because they could be used a full 3/4" thick since no flange or tube had to slide up on, and be attached to the rim) and proved to be good sounding banjos.

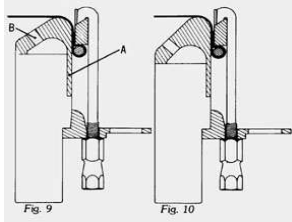


Fig. 9. In the early '30s, a new tone chamber was designed to take advantage of the full 11" head diameter. A cast tone chamber was prepared with a .655"-high lip (A) that could fit in place of the arch-top tone chamber (which had a lip of the same height). This design is often referred to as the "low-profile flattop tone chamber." It was drilled with 20 holes (B).

Around 1935, a new flattop tone chamber (Fig. 10) was designed with a top portion deeper than that of its predecessor. Because the "tone chamber" portion was larger, it only had a .420" lip, and thus was not inter-changeable with the arch-top tone chambers. The flattop tone chamber was available as an option, but not promoted as a standard tone chamber system until the announcement of the top-tension models. These had 20 holes although some have been found undrilled.

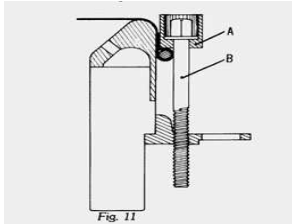


Fig 11. The top-tension banjos featured a specially cast and machined stretcher band (A), into which fit square-head, washer-head bolts (B) to allow adjusting of the skin heads of that time without removing the resonator. The square-head bolts threaded directly into the cast zamac (pot metal) flange, and the armrest could be removed (to get to the bolts beneath it) by loosening a thumbscrew. The flattop tone chamber was officially announced with the introduction of this model. From an acoustical standpoint, the added mass of the cast stretcher band and heavy bracket bolts provided improved sustain. This, combined with the top tension model's solid resonator gave this instrument unusual performance characteristics not found in Gibson's lighter-weight models.