7.10.3.2 Fender's Jazzmaster vibrato (aka. tremolo)

He did give it another try … according to Duchossoir, Leo Fender had already sought the separation of bridge and tailpiece in the Stratocaster, but it did not work out in that first attempt. Once more into the breach, then: in 1958, the Jazzmaster was presented, offering a *"floating tremolo with a floating bridge"* based on a tailpiece-bearing on a knife edge, and a bridge set onto two pins (**Fig. 7.120**). The 6 bridge saddles (short, threaded rods) sat in a u-shaped rail that itself was positioned on two pointed posts. As we operate the vibrato lever (we do call it that, dear Leo, because it is – after all – not a tremolo that we achieve) the strings do not need to slide (with much friction) across bridge saddles, but rather the whole bridge tilts back and forth on the very-low-friction steel points. The inner diameter of the bushing is slightly larger than the diameter of the posts and allows for a shift of the bridge of about ±1 mm. That is enough for moderate pitch changes – they do primarily not depend on the length variation of the string but on the strain variation!

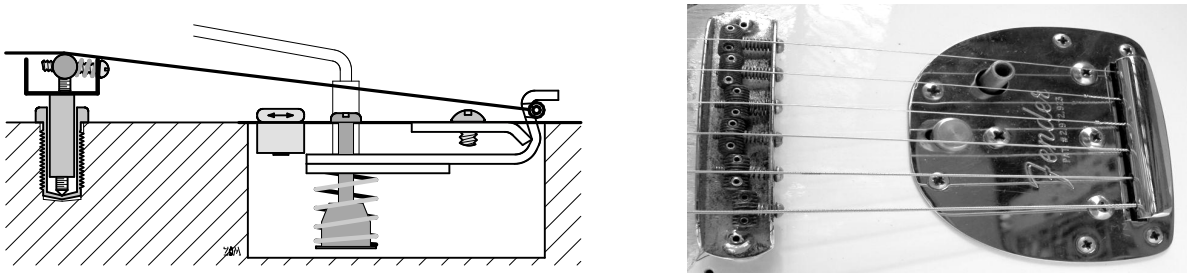

Fig. 7.120: Vibrato system of the Jazzmaster.

The main issue with the Jazzmaster vibrato system is that the strings bend across the bridge saddles with a very the shallow angle (6 – 7°). As late as 1968, 10 years after the introduction of the Jazzmaster, the Fender catalog specifies 012-strings as factory fit; and it was presumably this string gage with which Leo Fender optimized his guitars. For a set of 012-strings, the tension force of the E_4-string amounts to 105 N, for a 009-set it is 59 N, and for a 008-set it is a mere 47 N. This results in a string pressure at the bridge of F_y = 5.2 – 12 N, and a force at each of the two vertical adjustment screws of 2.6 – 6 N (the thinner the string, the smaller the forces become). The longitudinal force resulting from the bend amounts to only F_x = 0.3 – 0.7 N i.e. it is barely existent at all. This force should not be pronounced, too, because it can only be absorbed via the string friction as the bridge "floats". To keep the bridge saddles from longitudinally resting on the bridge in a totally undefined manner, Leo Fender fitted them each with a coil spring – but this generated only a weak tension in the case of the treble strings. For the bass strings, the coil springs got in the way of perfect intonation plus they had to be shortened, presumably killing off many a precision wire cutter.

Maybe this guitar (just like the Jaguar fitted with the same bridge) was reasonably playable with 012-strings, but with the increasingly popular light gauge strings, problems mounted, and the success on the market failed to materialize. Jazz players did not want to change, and all others already had the Stratocaster and the Telecaster if they opted for buying a Fender. Dutifully, the promo-department had exaggerated: *Fender's famous Jaguar guitar is the standard of solid body excellence on today's musical market. This exceptional instrument incorporates Fender features offering playing versatility unmatched by any other.* Well… Hendrix did not burn his Strat at Monterey out of frustration, only to change over to the mentioned "standard" with flying colors, did he? Some sources say that he was seen with a Jazzmaster initially … but only for a short time, and from 1966, the Strat was it for him.

