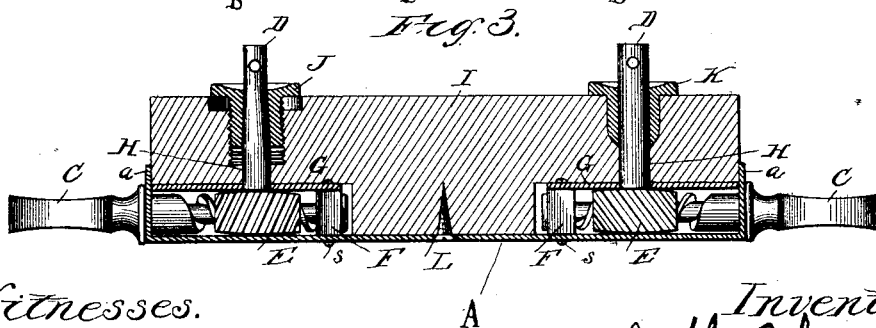
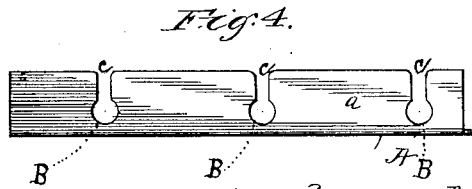
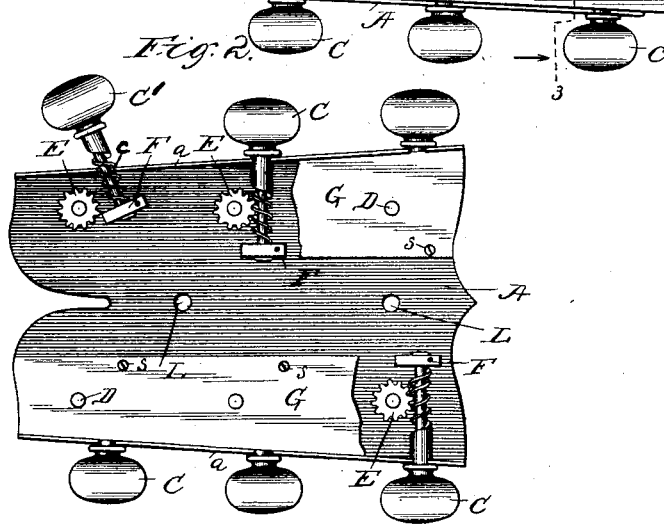
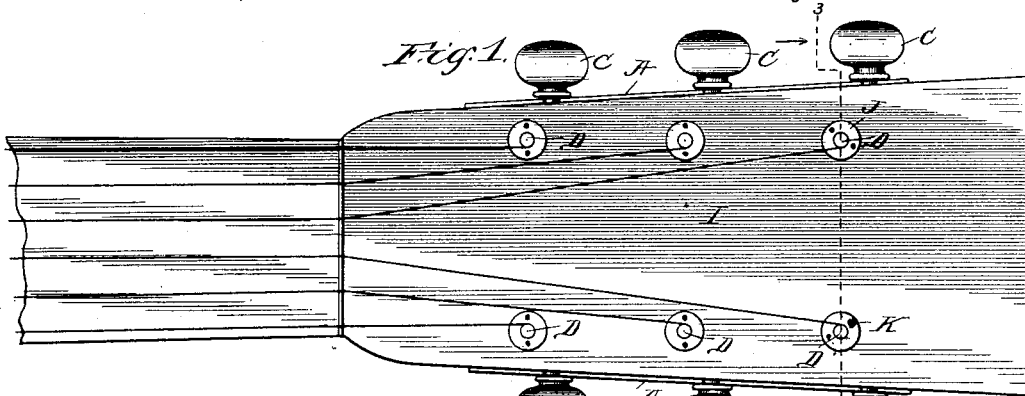


(No Model.)

J. BOHMANN.
HEAD FOR MUSICAL INSTRUMENTS.

No. 427,962.

Patented May 13, 1890.



Witnesses.
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JOSEPH BOHMANN, OF CHICAGO, ILLINOIS.

HEAD FOR MUSICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 427,962, dated May 13, 1890.

Application filed June 22, 1889. Serial No. 315,178. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH BOHMANN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Machine-Heads for Musical Instruments, of which the following is a specification.

My invention relates to heads for guitars, banjos, mandolins, and similar instruments,
10 which are usually provided with a combination of worm-gearing known as a "machine," by which the force applied in tightening the strings is greatly multiplied, and the amount of movement imparted them being correspondingly reduced their exact adjustment
15 is comparatively easy.

The object of my invention is to facilitate the construction and increase the durability of the head, at the same time giving it a more
20 ornamental appearance.

In the drawings the head shown is that of a guitar, Figure 1 being a front or top view. Fig. 2 is a corresponding view of the machine removed, a portion of the casing being broken
25 away to show the interior. Fig. 3 is a section on line 3 3, Fig. 1; and Fig. 4, an elevation of one of the flanges.

As seen most clearly in Figs. 2 and 3, the machine consists of a plate of sheet metal
30 A, having flanges *a a* upturned at its sides. The flanges have holes *B B*, &c., of sufficient diameter to receive the shanks of the thumb-screws *C C*, and slots *c c*, Fig. 4, extend from the holes *B B* to the edge of the flange, said
35 slots being of less width than the diameter of the holes. The plate *A* is pierced at proper intervals for the reception of the tuning-pegs *D D*, &c., which have the worm-wheels *E E*, &c., formed upon their lower ends.
40 The ends of the thumb-screws *C C* turn in blocks *F F*, &c., which are secured to plate *A* and to plates *G G* by screws *s s*. The plates *G G* serve to keep the tuning-pegs in place, so that the machine is self-contained
45 and may be fully assembled before being attached to the guitar or mandolin. The end of the thumb-screw *C* is riveted over, so as to retain it in the block *F*, as shown.

The holes *H H* in the guitar-head *I* are
50 provided with bushings *J K K*, &c., two forms being shown in Fig. 3. The purpose of bushing the holes is to provide a more durable bearing for the tuning-pegs and to prevent

the strings from wedging between the bearing and the head. The bush may be a plain
55 cylindrical ring provided with an outwardly-turned flange, as seen at *K*, Fig. 3, but is preferably made as shown at *J*. The outer part of the bush is threaded, so as to screw into the wood, and the interior is made tapered and the tuning-peg tapered to correspond. Thus the closeness of the fit may be
60 adjusted and maintained by screwing the bushing in more or less, as may be required. Holes *L L* permit the insertion of the screws
65 which secure the machine to the head.

The head as thus constructed has great durability; but if it be desired to take it apart for repairs it may be most readily
70 done. The removal of the machine from the head and the taking out of the screws *s s* from the blocks *F F* permit the removal of both the tuning-pegs and the thumb-screws. The latter could not be removed without un-
75 riveting them from the block *F*, (*vide* Fig. 2,) except for the presence of the slots *c c*, whose width equals the diameter of the thumb-screws at the bottom of the threads, so that by partially withdrawing the thumb-
80 screws they may be slipped out sidewise through said slots, as may be seen by reference to the thumb-screw marked *C'*, Fig. 2.

I claim—

1. The combination, in a machine-head for guitars and similar instruments, of a plate,
85 as *A*, having flanges on two sides, through which the thumb-screws pass, bearing-blocks secured to and supporting the inner ends of said thumb-screws, and slots *c c*, extended to the edges of said flanges from the thumb-
90 screw holes, whereby the insertion or removal of said screws is facilitated.

2. The combination, in a machine-head for guitars and similar instruments, of a plate,
95 as *A*, having flanges on two sides, through which the thumb-screws pass, blocks secured to said plate and supporting the inner ends of said thumb-screws, tuning-pegs provided with worm-gear meshing in said screws, and
100 a second plate, as *G*, secured to said block and inclosing the worm-gears and screws.

JOSEPH BOHMANN.

Witnesses:

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