

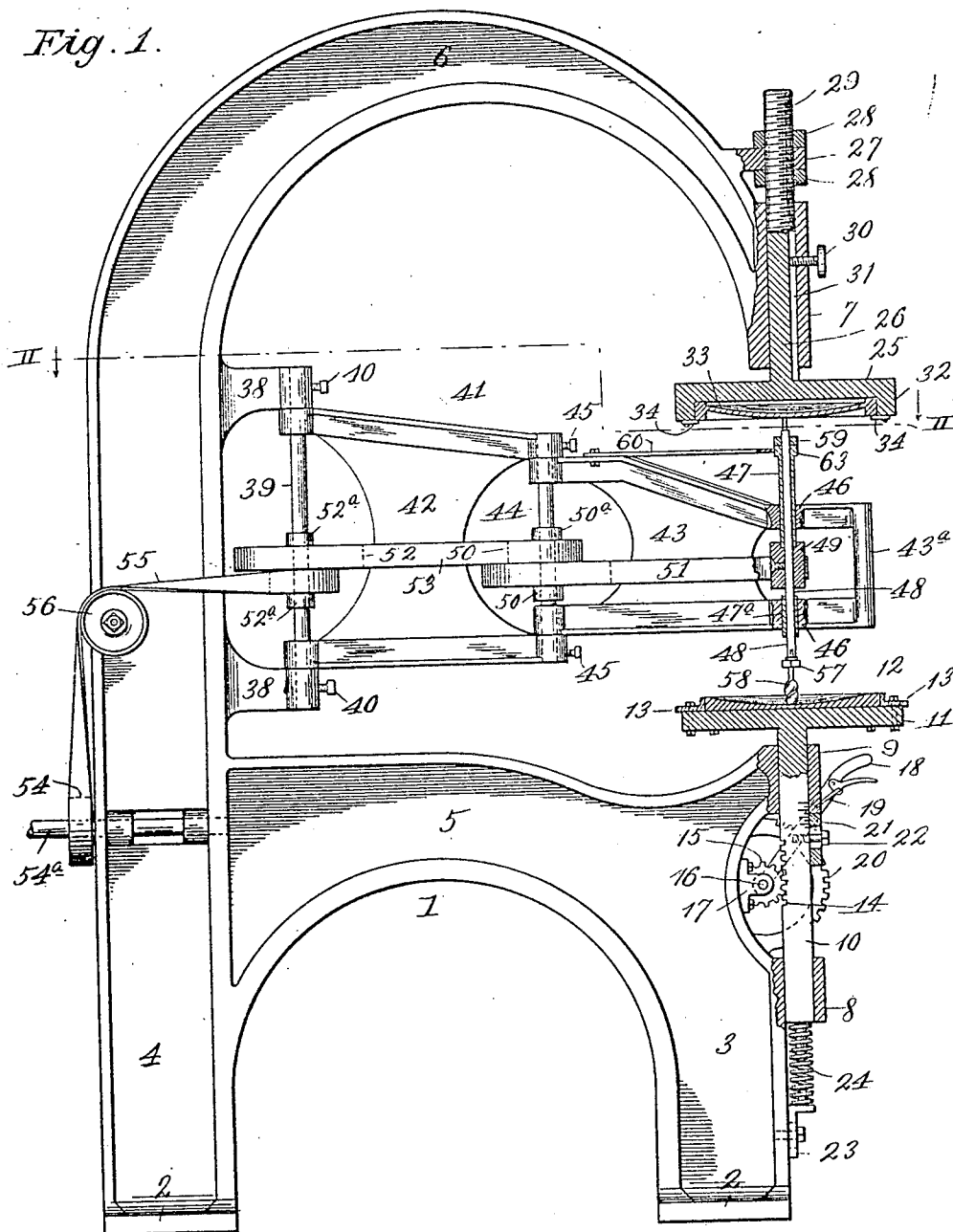
No. 799,825.

PATENTED SEPT. 19, 1905.

J. H. BEHEE.  
CARVING MACHINE.  
APPLICATION FILED NOV. 5, 1904.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

*R. Hamilton.*

*J. Moore.*

INVENTOR

*Joseph H. Behee*

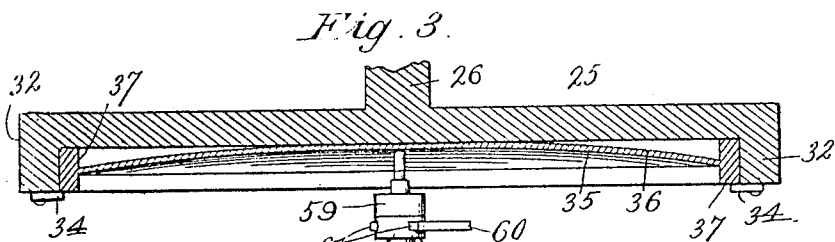
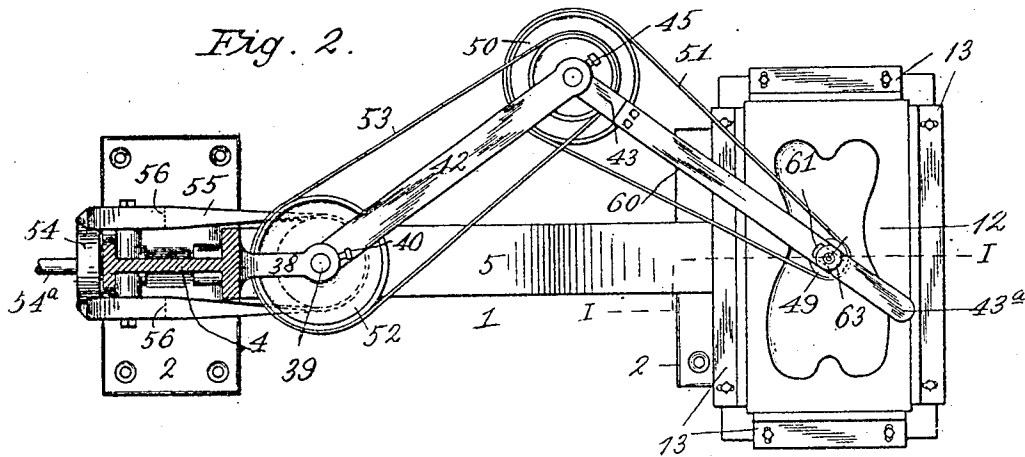
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No. 799,825.

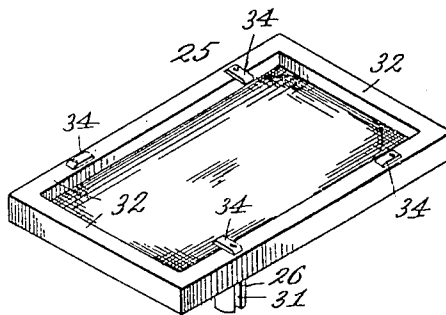
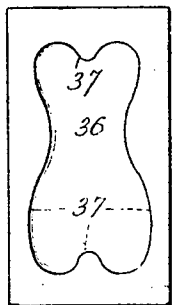
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2 SHEETS—SHEET 2.



*Fig. 4.*



*Fig. 5.*

WITNESSES:

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J. Moore.

INVENTOR:

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# UNITED STATES PATENT OFFICE.

JOSEPH H. BEHEE, OF LEAVENWORTH, KANSAS.

## CARVING-MACHINE.

No. 799,825.

Specification of Letters Patent.

Patented Sept. 19, 1905.

Application filed November 5, 1904. Serial No. 231,465.

*To all whom it may concern:*

Be it known that I, JOSEPH H. BEHEE, a citizen of the United States, residing at Leavenworth, in the county of Leavenworth and State of Kansas, have invented certain new and useful Improvements in Carving-Machines, of which the following is a specification.

My invention relates to improvements in carving-machines; and it consists in the novel construction, arrangement, and combination of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, which illustrate the invention, Figure 1 represents a side elevation of my improved machine, partly in section, taken on line 1-1 of Fig. 2. Fig. 2 is a sectional plan view of the same, taken on line 11-11 of Fig. 1. Fig. 3 is an enlarged vertical section of a portion of the front of the machine. Fig. 4 is a plan view of a templet forming part of the invention. Fig. 5 is an inverted perspective view of the templet-holder.

In carrying out my invention I employ a frame 1, comprising base portions 2, standards 3 and 4, united by a horizontal portion 5, and an arched portion 6, formed integral with the upper portion of standard 4 and terminating at its opposite end in a head-stock 7.

Standard 3 is provided at its front side with bearings 8 and 9, arranged in vertical alinement with head-stock 7, for the reception of a stem 10, formed integral at its upper end with a bed-plate 11, upon which the material 12 is firmly secured in position by adjustable clamps 13. Bearings 8 and 9 are preferably rectangular in plan view to prevent stem 10, which is rectangular in cross-section, from turning therein. Stem 10 is provided at its rear side with a series of cog-teeth 14, intermeshing with a pinion 15, mounted upon a shaft 16, journaled in bearings 17 and provided at one end with a rigidly-secured hand-lever 18, having a latch 19 adapted to engage any of the notches in a segment 20, secured to standard 3.

21 designates a gage adjustably secured by a set-screw 22 to the front side of stem 10 and adapted to contact with the under side of bearing 9 in order to limit the upward movement of said stem, the face of which latter is graduated in order to assist in accurately setting the stop.

23 designates a bracket secured to standard 3 vertically below bearing 8.

24 designates an expansion-spring interposed between bracket 23 and stem 10 in order to press the latter upwardly, together with bed-plate 11 and material 12, so that said material will normally be in contact with a cutter hereinafter mentioned.

25 designates a templet-holder provided with a stem 26, extending upwardly through head-stock 7 and a boxing 27, in which latter it is adjustably secured with lock-nuts 28, which engage threaded portion 29 of said stem. Stem 26 is prevented from turning while being adjusted vertically by means of a set-screw 30, arranged in the head-stock, engaging a vertical groove 31 in the front side of said stem. Templet-holder 25 has a rectangular recess, formed by marginal flanges 32 for the reception of a reversible templet 33, detachably secured in said recess by turn-buttons 34, pivotally secured to the under sides of flanges 32. Templet 33 comprises in the present instance a web having a concave surface 35 and a convex surface 36 surrounded by marginal flanges 37, the inner surfaces of which have the same contour as that desired to be given to material 12.

38 designates a pair of bearings secured to the inner side of standard 4 for the reception of a vertical shaft 39, rigidly secured in said bearings by set-screws 40.

41 designates a pair of jointed arms comprising a link 42, pivotally mounted at its rear end upon shaft 39, a link 43, provided with a handle 43<sup>a</sup>, and a vertical shaft 44, pivotally connecting the adjacent ends of said links. Shaft 44 is held from rotation in the forward ends of link 42 by set-screws 45. Link 43 is provided at its forward portion with bearings 46 for the reception of bushings 47 47<sup>a</sup>, in which a mandrel 48 is rotatably and slidably mounted.

49 designates a small pulley rigidly mounted upon the mandrel and driven by a stepped pulley 50 through the instrumentality of an endless belt 51. Pulley 50, which is journaled upon shaft 44, is driven by another stepped pulley 52 through the instrumentality of an endless belt 53. Pulley 52, which is journaled on shaft 39, is driven by a pulley 54 through the instrumentality of an endless belt 55, which passes over idlers 56, journaled vertically above pulley 54 and arranged upon the opposite sides of standard 4.

54<sup>a</sup> designates a drive-shaft upon which pulley 54 is rigidly mounted.

50<sup>a</sup> and 52<sup>a</sup> designate collars secured to

shafts 39 and 44 for retaining pulleys 50 and 52, respectively, in proper position on said shafts.

57 designates a chuck on the lower end of mandrel 48 for adjustably securing a cutter 58 thereto.

59 designates a collar rigidly secured to the upper portion of mandrel 48.

60 designates a flat spring which is rigidly secured at its rear end to link 43 and provided with a bifurcated forward end 61, engaging notches 62 in a head 63, formed integral with the upper end of bushing 47.

In practice the material is clamped upon the bed-plate which is elevated by spring 24 until said material is brought almost into contact with cutter 58. Gage 21 is then adjusted the proper distance below bearing 9 to prevent the bed-plate from passing upwardly far enough to permit the cutter to pierce the material or cut too deeply therein. Templet-holder 25 is then lowered until the convex surface of the templet contacts with and depresses the mandrel far enough to cause the cutter to contact with the upper surface of the material. This depression of the mandrel straightens out spring 60, so that the outer end of the latter will constantly exert an upward pressure on the mandrel and cause the latter to follow the curvature of the templet as said mandrel is moved back and forth. After these adjustments have been made the cutter is set in motion at a high rate of speed and moved back and forth over the surface of the material by the proper manipulation of handle 43<sup>a</sup>. As fast as the material is cut away it is elevated by spring 24 until gage 21 contacts with the under side of bearing 9. The bed-plate is then lowered with hand-lever 18 and the material is turned over (see Fig. 3) and again secured to said bed-plate. The templet is also turned over (see Fig. 3) so that the upper end of the mandrel will bear against the concave surface 35, with the result that after the operation above described has been repeated the shape of the web and the contour of flanges 37 will be imparted to the material.

From the above description it is apparent that I have produced a machine whereby the front and back portions of musical instruments—such as violins, guitars, mandolins, &c.—can be cheaply and accurately made. A variety of other work, however, may be turned out with the machine, as it is obvious that templets of different designs may be employed.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A machine of the character described consisting of a frame comprising two standards, a horizontal portion uniting said standards, an arch formed integral with one of said standards, a head-stock formed integral with one end of said arch, and bearings arranged in vertical alinement with said head-stock and secured to the front of one of said standards; a stem adjustably arranged in the bearings, a bed-plate secured to said stem, a stem arranged in the head-stock, a templet-holder secured to said stem, jointed arms pivoted to one of the standards and having their free end arranged to swing between the bed-plate and the templet-holder and a mandrel journaled in the free end of said arms.

2. In a carving-machine, the combination, with a frame having vertically-alined bearings formed therein, of a templet-holder adjustably secured in the upper of said bearings, a stem mounted in the lower of said bearings and having rack-teeth formed thereon, a work-support carried by said stem, a pinion meshing with said rack-teeth, a stop for limiting the upward movement of said stem, a hand-lever for imparting movement to said pinion, a segment-rack for retaining said hand-lever in position, a spring for normally holding said stem in its elevated position and a rotative cutter movable in a horizontal plane between the templet and the work-support.

In testimony whereof I affix my signature in the presence of two witnesses.

JOSEPH H. BEHEE.

Witnesses:

F. G. FISCHER,  
LESLIE E. BAIRD.