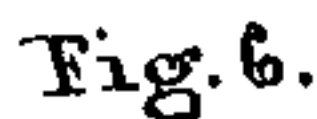
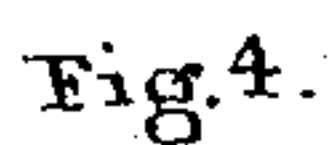


Patented June 25, 1889.



Delos A. Sears,
per
L. L. Morrison,
Attorney.

UNITED STATES PATENT OFFICE.

DELOS A. SEARS, OF ROCKFORD, ILLINOIS.

ROUTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 405,916, dated June 25, 1889.

Application filed June 19, 1888. Serial No. 277,603. (No model.)

To all whom it may concern:

Be it known that I, DELOS A. SEARS, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented a certain new and useful Improvement in Routing-Machines, of which the following is a specification.

The object of this invention is to produce a machine for routing at different depths for the use of wood-engravers, wood-carvers, and other artisans; and the invention consists of certain new and useful features of construction and combinations of parts, hereinafter described, and pointed out in the claims.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is an isometric view of my improved machine. Fig. 2 is a view of a front elevation of the same, having a longitudinal central vertical partial section therethrough. Fig. 3 is a plan view of the upper adjusting-spring of the machine. Fig. 4 is an under side view of the lower counterpart adjusting-spring of the same. Fig. 5 is a detailed isometric view of a portion of a set-screw to be described hereinafter. Fig. 6 is a detailed isometric view of the head portion of the spring shown in Figs. 1, 2, and 3.

Like letters of reference indicate corresponding parts throughout the several views.

A is a table for supporting the machine, and may be mounted on legs or otherwise to suit the convenience of the operator.

B is the frame of the machine, and consists, essentially, of a base B', standard B², the horizontal arms B³ B⁴ B⁵, and a vertical rest B⁶, connecting the arms B⁴ B⁵ together. This frame can be most advantageously constructed by casting the same integral. The parts B', B³, B⁴, and B⁵ are provided with vertical cylindrical openings C' C², C³, and C⁴, which serve as bearings for portions of the machine to be described hereinafter. The part B⁴ is also provided upon the upper side thereof with a horizontal lug C⁵, a slot C⁶, and threaded cylindrical passage C⁷, the two latter extending vertically therethrough.

D is a vertical shaft mounted in the bearings C³ C⁴ in the arms B⁴ B⁵, capable of end-wise motion and adjustment, having a vertical socket in the lower end thereof to hold

a routing-tool D', and provided with an outwardly-projecting annular flange D² and a collar D³.

E is an adjusting-spring having a curved head E' upon the upper side thereof, which has a vertical circular opening E² therein to admit the upper portion of the shaft D.

E³ is a counterpart of the spring E, and has a head E⁴ on the under side thereof, which is provided with a vertical circular opening E⁵ extending therethrough, also for admitting the upper portion of the shaft D. The joint operation of the adjusting-spring E E³ is to hold the routing-tool D' normally in contact with its work while cutting, and not to hold it normally out of engagement therewith, as in other routing-machines. The advantages of having the routing-tool held normally in contact with its work are, that the tool can be more readily acted upon and kept under better control by the operator than when it is held normally out of contact with its work.

E⁶ is a metallic disk secured to the under side of the spring E³, having shallow centrally-intersecting grooves E⁷ therein. The springs E E³ are securely fastened to the lug C⁵ of the frame B by means of the cross-piece F and screws F'.

G is a horizontal fast pulley having a groove in the periphery thereof to admit a belt G'.

G² G³ are upper and lower bosses of the pulley G.

H is a set-screw for regulating the springs E E³ and the parts supported by the same, having a chisel-edge H' on the upper end thereof to adapt it to engage with the grooves E⁷ in the disk E⁶, in order to prevent the screw H from being loosened or turned by the vibrations of the machine while in operation.

I is a lever-cam, consisting of the cam I' and handle I².

I³ is a horizontal pintle upon which the lever-cam I is mounted in the slot C⁶ in the arm B⁴.

J is a vertical shaft mounted in the bearings C' C² in the base B' and arm B³, and provided with horizontal fast pulleys K K', having grooves K² K³ in the peripheries of the same to admit belts, the former being occupied by the belt G'. Power to propel the machine is applied to the pulley K'.

In order to rout any outer portion of a block,

as L, to a uniform depth, grasp the rest B⁶ with the fingers of the left hand and engage the lever-cam I with the thumb of the same hand and press it in the direction indicated by the dotted lines x of Fig. 2, whereupon all the parts resting upon the cam I' will be carried upward, as indicated by the dotted lines x' x^2 . Next turn up the set-screw H until the routing-tool D' shall penetrate the block L to the desired depth and release the lever-cam I. Then apply power to the pulley K' and guide the block upon the table A with the hand, and any desired areas, as L' I², of uniform depth may be routed in the block L.

Whenever it is desired to rout the outer portion of any block, as M, in areas increasing or decreasing in depth, the operator turns the set-screw H downward until the flange D² rests upon the arm B⁴ of the frame, and by means of the lever-cam I gradually lowers or raises, according as he desires to rout to a greater or a less depth, the revolving shaft D and routing-tool D'.

I claim—

1. In combination, a suitable machine-frame, a vertical shaft mounted in bearings in said frame and capable of endwise motion

and adjustment, the adjusting-springs secured to said frame and connected with said shaft in such a manner as to press the same downward, and a lever-cam mounted in said frame engaging with said springs, and adapted to raise and lower them and the shaft connected with the same, substantially as described, and for the purpose specified.

2. In a routing-machine, the combination, with a frame B, of a vertical shaft D, mounted in bearings in said frame and being capable of endwise motion and adjustment, the adjusting-springs E E³, secured to the frame and connected with the shaft D in such a manner as to press it downward, a lever-cam I, mounted in said frame engaging with the springs E E³, and adapted to raise and lower the same and the shaft D, the set-screw H, for regulating the said springs and the parts supported by the same, and suitable accessory mechanism for operating said machine, substantially as set forth.

DELOS A. SEARS.

Witnesses:

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