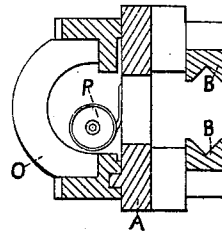
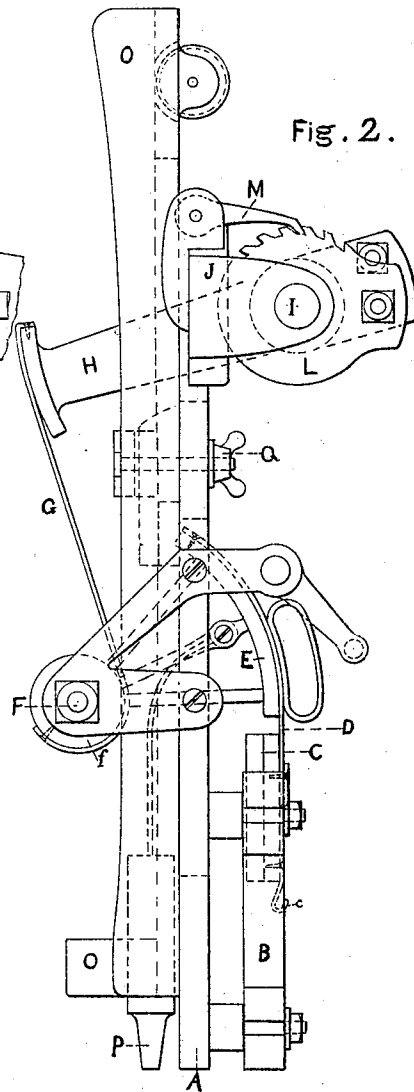
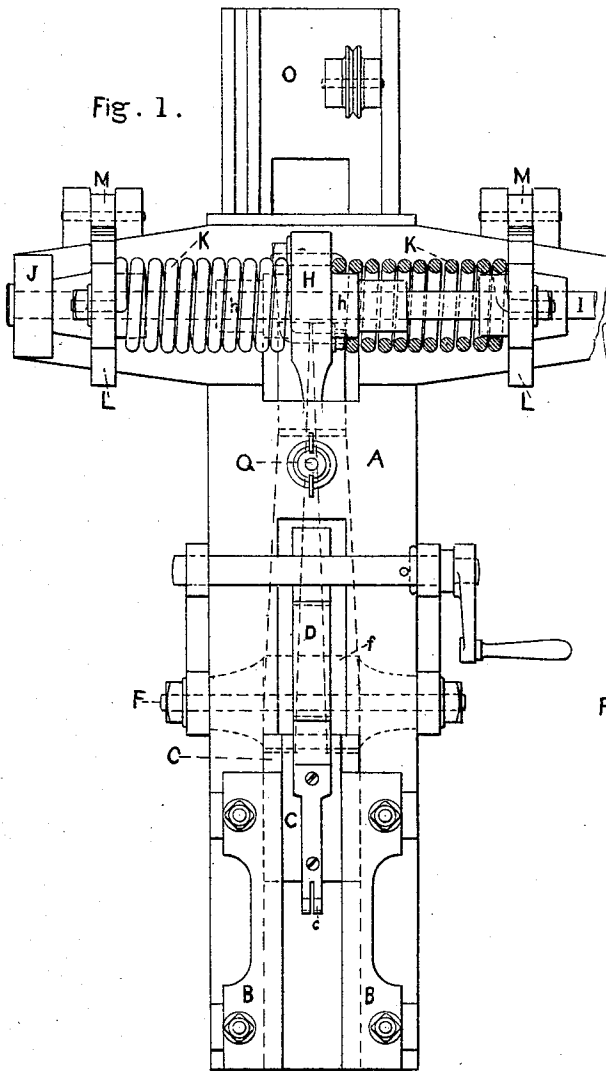


H. L. BEACH.  
Scroll-Saws.

No. 145,084.

Patented Dec. 2, 1873.



WITNESSES.  
*H. W. Hewley.*  
*J. Cook*

} Henry L. Beach per Attorney  
INVENTOR.

# UNITED STATES PATENT OFFICE.

HENRY L. BEACH, OF NEW YORK, N. Y., ASSIGNOR TO BEACH WHEEL HORSE-RAKE MANUFACTURING COMPANY, OF SAME PLACE.

## IMPROVEMENT IN SCROLL-SAWS.

Specification forming part of Letters Patent No. **145,084**, dated December 2, 1873; application filed April 3, 1873.

*To all whom it may concern:*

Be it known that I, HENRY L. BEACH, (assignor to the BEACH WHEEL HORSE-RAKE MANUFACTURING COMPANY, of New York,) of the city, county, and State of New York, have invented, made, and applied to use, Improvements in Scroll-Saws; and that the following is a full, clear, and correct description of the same, reference being had to the accompanying drawing, making part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a front view of my improved saw. Fig. 2 is a side elevation of the same. Fig. 3 is a top view of the lower portion of the frame A.

In the drawing, like parts of the invention are designated by the same letters of reference.

The nature of the present invention consists in certain improvements, as more fully hereinafter set forth, in the construction of reciprocating saws; the object of the invention being to provide reliable and simple means for straining the saw tight, and thus securing an adequate and equable strain upon the saw, no matter how rapidly it may be driven, and in the use of these devices also to lift the saw after it has been drawn down through the stuff to be sawn.

To enable those skilled in the arts to make and use my invention, the following description will be sufficient:

A is the frame or plate for supporting the operative parts of the machine. B are ways attached to the frame A, in which a bearing-plate, C, moves to and fro. C is a bearing-plate for the upper end of the saw. D is a strap or band, one end of which is attached, with the hook *c*, to the bearing-plate C, and its opposite end to the curved plate E, or its equivalent, supported upon an axle, F, provided with a hub, *f*. F is an axle, provided with a hub, *f*, which axle is held in boxes in the frame A. G is a second strap or band, one end of which is attached to the hub upon the axle, and its opposite end to a lever, H, held upon the shaft I. H is a lever, provided with shoulders, *h*, and held upon a shaft, I. I is a shaft, the ends of which are inserted in

boxes, or, more correctly, lugs J, upon the frame A, and over which shaft pass the spiral springs K, and upon which shaft the ratchet-wheels L are fastened. L show ratchet-wheels, made with shoulders, and M are parts which engage with the ratchet-wheels L. The first and last coils of the springs K are supported by the shoulders upon the ratchet-wheels and the lever, while the balance of the springs are left free for action. The ends of the springs K are passed through the ratchet-wheels L and lever H, and are securely fastened by nuts. O shows a support for the machine, over which the frame or plate A slides to accommodate the frame to saws of different lengths. P is an air-pump, for supplying air for removing the saw-dust that may accumulate upon the table of the machine.

Such being the construction, the operation is as follows: The machine having been placed in position, the frame A is adjusted to the proper length of saw by moving the frame A up or down, as may be required, upon the support O, and tightening the thumb-screw Q. The upper end of the saw is then hooked into the hook *c*. Now, that the saw may be strained tightly, and that the strain upon it may be equable, and that the saw, after it has passed through the stuff to be sawn, may be brought back to its former position, the springs K, attached as shown, are tightened or loosened, according to the weight of saw, by turning the ratchet-wheels L, in which the ends of the springs are held, in the proper direction, and, when the springs have been regulated as desired, depressing the pawls M so as to engage with the ratchet-wheels L. The saw is now ready for use, and, power being applied to the machine, the saw is drawn down through the stuff, (by a crank movement, or otherwise,) and, as it passes through the stuff, the lever or curved plate E is drawn down also, and, through the strap G, connected to the lever H, draws down this lever H, in the shoulders *h* of which the ends of the springs K are held, and contracts these springs held upon the shaft I. The saw having passed through the stuff, the springs K expand, and the saw attached to the bearing-plate C, connected in turn to the springs K, is raised or carried

back to its former position. Thus it will be seen that, while the strain upon the saw is adequate and equable, the saw is also returned to its former position, or its upward movement effected, by the springs and levers, as shown.

Springs of any desired weight and capacity may be employed, and easily regulated upon one or both sides of the saw, as required.

One spring, equal in size and capacity, may sometimes be employed instead of two, in which case one end of the spring would be fastened in one ratchet-wheel and the other

end in the opposite ratchet-wheel, and the spring pass through the lever H.

Having now set forth my invention, what I claim as new is—

The combination, with the bearing-plate C, of the strap or belt D, segmental plate or curved lever E, connected to the lever H, springs K, ratchet-wheels L, and shaft I, substantially as and for the purposes set forth.

HENRY L. BEACH.

In presence of—

A. SIDNEY DOANE,  
ISAAC P. HUBBARD.