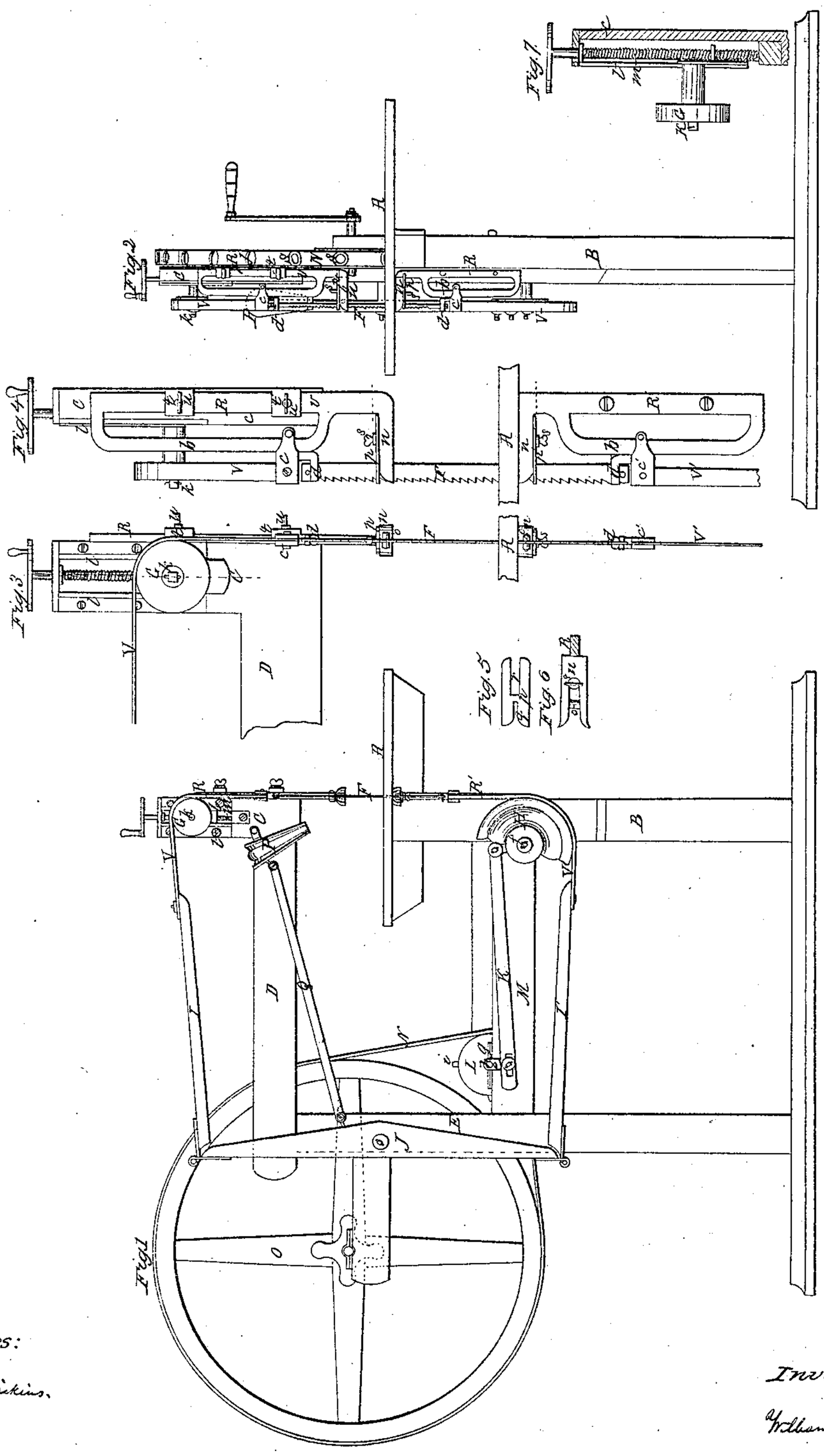
W. P. Wood,

Scroll Sawing Machine,

No. 28,800. Patented June 19, 1860.



Witnesses:

James J. Dickins.

Inventor

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UNITED STATES PATENT OFFICE.

WILLIAM P. WOOD, OF WASHINGTON, DISTRICT OF COLUMBIA.

SCROLL-SAWING MACHINE.

Specification of Letters Patent No. 28,800, dated June 19, 1860.

To all whom it may concern:

Be it known that I, WILLIAM P. WOOD, of the city of Washington, District of Columbia, have invented a new and useful Improvement in Sawing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, in which—

Figure 1, represents a side and Fig. 2, a front elevation of a machine embracing my improvement; Fig. 3, a side and Fig. 4, a front elevation of the saw guideways and buffers detached and broken off from the machine; Figs. 5 and 6 a plan of the slotted plate and buffer detached from the guideway; Fig. 7, a vertical section of the head or straining block.

The nature of my invention consists first in an improved mode of mounting saws, whereby greater saw room is obtained than in other sawing machines. Another advantage of my plan of mounting the saw, is, that the saw proper may, without complicating the machinery or impairing the strength and rigidity, be arranged at a considerable distance from the prime mover and gearing parts, which, in many instances will be found to be of great convenience and service.

My invention also relates to an improved arrangement and combination of the guideway and buffer, whereby I am enabled to apply and readily use saw blades of different lengths without any alteration of the head block, and, lastly, my invention consists in a certain improved arrangement and combination of the devices for guiding the saw, for the purpose of preventing deflection and of readily adjusting and adapting it, to saw blades of different widths.

To enable others skilled in the art to make, construct and use my invention, I will now proceed to describe it in detail, having reference to the accompanying drawing in which—

A represents the table of the saw, which is supported on a column or post (B). Over this table is arranged vertically a straining or head block (C) supported by a beam (D) extending from the main frame (E) on which the gearing parts are arranged; or the same may be supported by an independent frame work depending from the roof or ceiling of the shop, should such an arrangement be deemed preferable. At the side of this block (C) is arranged the guide way (R) a corresponding one (R′) being also arranged on the post (B) below the table (A). The projecting portions (*b*) of these guide ways (B and B′) which are slotted for this purpose are provided with clamps (*c*) in such manner as to be free to slide up and down, and to which are secured the bearings (*d*) between which the saw blade (F) is mounted. To these clamps (*c* and *c*′) are secured by screws, rivets or otherwise the ends of belts (V and V′) by means of which motion is to be communicated to the saw; the other ends of these belts, (the upper one (V,) of which passes over the straining pulley (G) and the lower one (V′) over the sectional wheel (H) and to which it is permanently secured,) being secured to the ends of connecting strips (I and I′) which in turn are hinged to the connecting bar (J) the bar (J) being pivoted to the side of the main frame.

The under or sectional wheel (H) is connected to the crank (*e*) by means of a pitman (K) in such manner that, on motion being communicated to the driving pulley or gear, as the crank (*e*) revolves, a reciprocating motion will be communicated on its axis (*f*) to the said sectional wheel (H), the whole being so arranged that the partial revolution of the sectional wheel (H) will be equal to the desired play of the saw.

Thus constructed, and the saw attached or secured to the belts (V and V′) the connection between the ends of the saw is complete, and ready to receive the necessary motion for its work, this being effected through the crank (*e*), secured to the driving pulley (L) which has its bearings (*g*) on the cross beam (M) of the frame of the machine, and the pitman (K) which communicates a reciprocating motion to the sectional wheel (H), to which the lower saw strap (V′) is permanently secured, which as the sectional wheel is made to turn outward, draws down the saw, drawing the upper end of the connecting bar (*f*) forward, and throwing the lower end backward, each of their corresponding connecting strips taking a like direction; and as the sectional wheel (H) is made to turn inward, drawing the connecting bar and its respective connecting strips in the opposite direction, thus elevating the saw and so in the same manner as long as motion is communicated to the machine.

The crank (*e*) is secured to the shaft (*h*) of the small wheel (L) that has its bearings

in the cross beam (M) that connects the main frame (E) and the post (B) that supports the table. On the face or periphery of this wheel are secured spurs (*i*) at regular intervals apart, which take into holes (*j*) in the belt (N) that communicates motion to the wheel (L) from the driving wheel (*o*). The holes in the belt being strengthened, to prevent tearing and enlargement, with metallic grummets (S). On the shaft of the driving wheel (O) and which is mounted in suitable bearings in the main frame, is fitted a crank shaft and handle by which motion can be communicated to the machine when intended to be driven by hand power, but when driven by an engine or other prime motor, the large driving wheel, grummet belt, and spur wheel are dispensed with and a driving pulley substituted in their place, by which and a belt from the driving shaft of the engine motion is communicated to the machine.

In order to adjust and strain the saw, and to adapt it to saw blades of different lengths, the eye of the pulley (*k*) is mounted on a bearing axle, the back part of which fits in a guide way (*l*) formed in the head block (C) and has a screw thread cut in it, through which is passed the straining screw (*m*) by means of which the pulley may be raised or lowered as circumstances may require.

At one end of the saw guide ways (R and R′) are secured the buffer shoes (*n*) in which are provided friction rolls (*o*) against which the back edge of the saw blade plays.

In connection with the buffer shoes (*n*) are arranged slotted guide plates (*p* and *p′*) for the purpose of preventing any deflection of the saw blade. These guides consist of a metallic plate provided with a narrow slit (*g*) at the front end for the reception of the saw blade; and having at the rear end a longitudinal cut (*r*) of a sufficient width, to engage with the prolongation of the guide way next to the shoe, through which slot (*v*) is made to pass a set screw (*s*) by means of which the plate (*p*) can be secured to the shoe. By sliding these plates (*p* and *p′*) out or in on the buffer shoe so that their slotted ends shall project more or less over the friction rollers (*o*) against which the rear edge of the saw blade has to rest, they may be readily adjusted to serve as proper guides for blades of different widths and which is of very great practical importance for the reason that the guide plates should always extend to the base of the teeth of the saw. The upper guideway (R) instead of being rigidly secured like the lower one (R′) is so arranged as to be capable of sliding together with its buffer shoe (*n*) up and down, so as to render the machine readily adaptable to the use of blades of different lengths, and to conform to any thickness of material required to be cut, without altering the head block. This is effected in this instance, by arranging two or more staples (*t* and *t′*) with set screws (*u* and *u′*) one above the other on the side of the head block (C) for the reception of the rear portion (*v*) of the slotted guide way (R) said staples being provided with screw threads for the reception of set screws (*u* and *u′*) by means of which the guide way (R) is retained in the desired position after it has been adjusted to the proper height.

On the head block (C) are arranged bellows (P) for blowing away the saw dust from the blade of the saw, they being operated by means of a rod hinged (Q) to the connecting bar (J).

Having thus described my improvements I claim—

1. The horizontal pitman (K) and sectional wheel (H) or their or either of their equivalents, as arranged, in combination with the hinged connecting strips (I and I′) connecting arms (J) and straining block (C) or their or either of their equivalents the whole being constructed, arranged and operated in the manner and for the purposes substantially as set forth.

2. Combining the guideway (R) and buffer in one piece, so that they can be simultaneously adjusted to suit saw blades of different length, substantially as described.

3. The adjustable slotted plates (*p*) in combination with buffer foot (*n*) having in its fork a plain friction roller in the manner and for the purposes substantially as set forth.

In testimony whereof I hereunto subscribe my name in presence of two subscribing witnesses.

WILLIAM P. WOOD.

Witnesses:
JAMES J. DICKINS,
E. ELMUTTER.