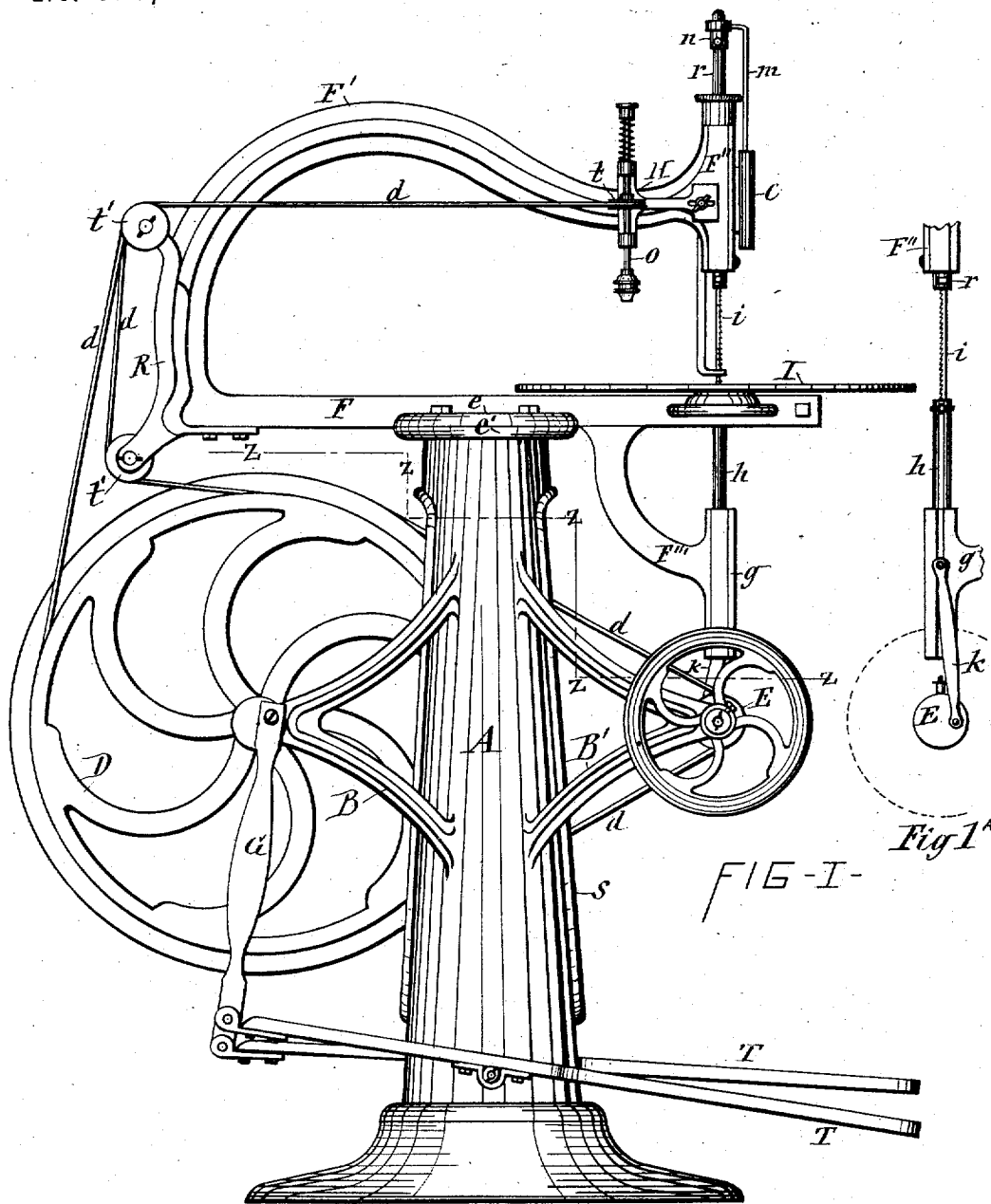


A. BALL.

SCROLL SAWING MACHINE.

No. 310,491.

Patented Jan. 6, 1885.



WITNESSES

C. Bendison

Wm E. Raymond

INVENTOR

Anscl Ball

per Knell, Laess & Hey
his Atty

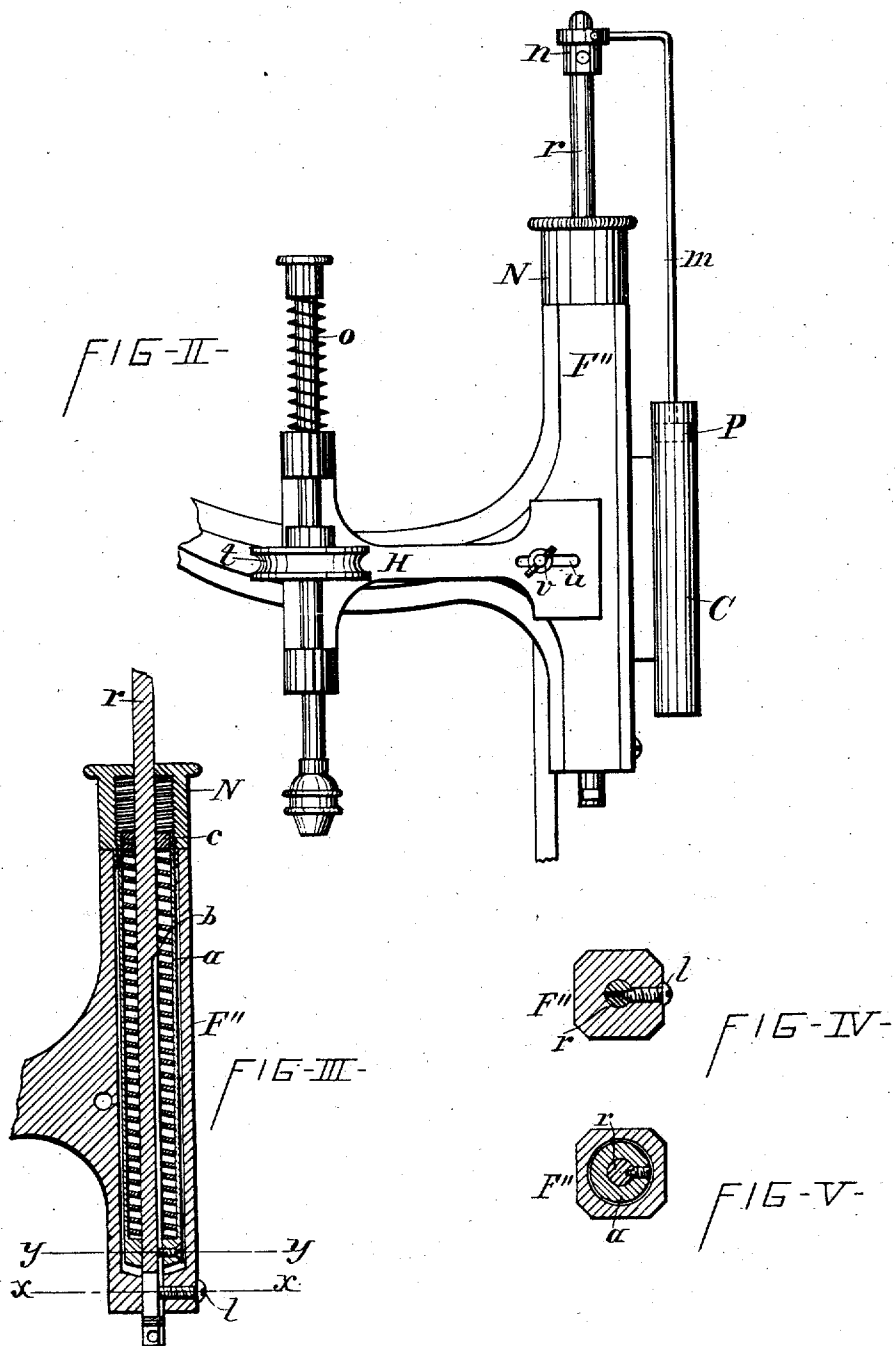
(No Model.)

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UNITED STATES PATENT OFFICE.

ANSEL BALL, OF SENECA FALLS, NEW YORK, ASSIGNOR TO ADELBERT S. DAVIS, OF SAME PLACE.

SCROLL-SAWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 310,491, dated January 6, 1885.

Application filed September 24, 1884. (No model.)

To all whom it may concern:

Be it known that I, ANSEL BALL, of Seneca Falls, in the county of Seneca and State of New York, have invented new and useful Improvements in Scroll-Saws, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of scroll-sawing machines in which a jig-saw is guided and maintained at the requisite tension by a rod connected with the upper end of said saw, and sliding vertically in an arm of the frame extending over the table; a spring seated in said arm exerting an upward pressure on the rod, and a dust-blower is connected with the aforesaid rod to be operated thereby.

My invention consists in an improved spring-support of the rod which guides the upper end of the jig-saw, and in an adjustable connection of the aforesaid rod with the rod of the piston which operates the air-blast cylinder designed to blow the dust off the work in front of the saw, said improvements serving to render the machine more durable and efficient and convenient in its operation, all as hereinafter more fully described, and specifically set forth in the claims.

In the accompanying drawings, Figure I is a side elevation of a combined scroll-sawing and drilling or boring machine embodying my invention. Fig. I^a is a detached view of the reverse side of the jig-saw and its connection with the pitman. Fig. II is an enlarged side view of the head of the supporting-frame which carries the jig-saw and drill. Fig. III is a vertical transverse section of the head of the aforesaid supporting-frame. Figs. IV and V are transverse sections, respectively, on lines *x x* and *y y*, Fig. III.

Similar letters of reference indicate corresponding parts.

A denotes the standard or pedestal on which the machine is mounted. From opposite sides of the standard project arms or brackets B B'. The arms B on one side of the standard are provided with suitable bearings in which is journaled the main-driving pulley D. On the arm B' on the opposite side of the standard is

journaled the pitman-pulley E. The standard A is formed with a vertical slot, *s*, through which passes the driving-belt *d*. On the lower portion of the standard A are fulcrumed the treadles T, which are, by means of pitmen G, connected with wrist-pins on the driving-pulley shaft and transmit motion to the driving-pulley D.

F, F', F'', and F''' designate the main members of the frame of the machine, all cast in one piece of metal, and consisting of a horizontal bar, F, formed near its center with a disk, *e*, by which it rests on the cap *e'*, on the upper end of the standard A, and to which it is fastened by bolts, as shown in Fig. I of the drawings. One end of the bar F is provided with a clamp, H', having a cylindrical eye, *f*, in which is clamped the hub of the table I, which latter is thus secured in position, as represented in Fig. I of the drawings. The hub is hollow, and the table is provided with the usual slot through which the jig-saw plays, the construction of the table being of the common style and so well understood by those familiar with this class of machines as not to require a special illustration in this case. From the under side of the bar F depends an arm, F'', which terminates in a vertical sleeve, *g*, which stands in range with the central saw-slot of the table I. On said sleeve slides a rod, *h*, the upper end of which is adapted for the attachment of the jig-saw *i*, and the lower end is connected with the wrist-pin of the pitman-pulley E by the pitman *k*. From the opposite end of the bar F rises the second member, F', of the frame, said member being in the form of a curved arm which is extended over the bar F and terminates in a vertical head, F'', over the central saw-slot of the table I. Said head is made tubular or hollow from the top down to near the lower end thereof, the latter being provided with a vertical channel through which is extended the usual rod, *r*, which carries the upper end of the jig-saw *i*, connected therewith in any ordinary and well-known manner, said rod *r* being usually sustained in an elevated position by a spring which maintains the jig-saw at the requisite tension. It is the adjustment of this spring to which my in-

vention has special reference; and it consists of a sleeve, *a*, seated in the tubular head *F''* and closed at its lower end, where it is provided with a suitable lug or pin which enters a vertical groove in the side of the rod *r*, and thus serves to prevent the sleeve from turning on said rod. The rod is also prevented from turning by a screw, *l*, inserted radially in the lower end of the head *F''*, and entering the vertical groove of the rod, as illustrated in Fig. V of the drawings.

In the sleeve *a* is seated the spiral spring *b*, which surrounds the rod *r*, and at the upper end of the spring a collar, *c*, is adjustably secured to the rod *r* by means of a set-screw passing through the collar and engaging the rod. The spring *b* is thus confined between the closed lower end of the sleeve and the collar *c*, and by pressing the said collar more or less on the spring and fastening it in position on the rod *r* greater or less tension is imparted to the spring and to the jig-saw connected with the rod *r*. The upper end of the sleeve *a* is screw-threaded externally, and onto said end screws a nut, *N*, which rests on top of the head *F''*. By turning said nut the sleeve *a*, with its inclosed spring *b*, can be raised or lowered, and thus more or less pressure on the spring *b* can be obtained; hence a second and final adjustment of the tension of the saw can be readily effected by the medium of the nut *N*, which is situated in a convenient position for the operator.

C designates the cylinder which is to furnish the air-blast required for blowing the dust off the work in front of the saw, said cylinder being secured to the side of and parallel with the head *F''*.

P is the piston of the cylinder *C*, which piston is connected with the rod *r* by a rod, *m*, projecting upward from the piston, and having affixed to its upper end a collar, *n*, which is connected with the rod *r* adjustably in relation to its distance from the end of the cylinder *C*, so that the collar *n* can be shifted on the rod *r* to conform the movement of the piston *P* to the movement of the said rod under the various adjustments of the spring *b*.

O denotes the drill-spindle, journaled in an upright position on a hanger-arm, *H*, secured to the head *H''* of the frame, said drill-spindle having attached to it a pulley, *t*, on which

runs the driving-belt *d*, the belt being guided to the pulley *t* by means of idlers or loose pulleys *t' t'*, pivoted on a bracket, *R*, which is firmly secured to the frame at or near the junction of the bar *F* and arm *F'* thereof, as shown in Fig. I of the drawings.

I do not claim, broadly, the connection of the piston-rod of the dust-blower with the guide-rod of the jig-saw to operate the former automatically with the movement of the latter, as I am aware the same is not new; but

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the frame-head *F''*, jig-saw, and rod *r*, connected with said saw, the sleeve *a*, seated in the head *F''* and surrounding the rod *r*, and provided with screw-threads on its upper end, the spring *b*, seated in the sleeve, the collar *c*, affixed to the rod *r* at the upper end of the spring, and the nut *N*, seated on top of the head *F''* and engaging the screw-threaded end of the sleeve, substantially as described and shown.

2. In combination with the frame-head *F''*, jig-saw *i*, and rod *r*, the sleeve *a*, seated in the head *F''* and surrounding the rod *r* and screw-threaded at its upper end, a lug and groove connection between the sleeve and rod, the spring *b*, seated in the sleeve, the collar *c*, adjustably connected to the rod above the spring to adjust the tension of said spring, and the nut *N*, seated on top of the head *F''* and engaging the screw-threaded end of the sleeve, whereby a secondary adjustment of the spring is effected, substantially as described and shown.

3. In combination with the jig-saw *i*, rod *r*, cylinder *C*, and piston *P*, the collar *n*, connected with the piston-rod and clamped on the rod *r* adjustably in relation to its distance from the end of the cylinder *C*, substantially as described and shown.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Seneca Falls, in the county of Seneca, in the State of New York, this 6th day of September, 1884.

ANSEL BALL. [L. s.]

Witnesses:

S. H. SALISBURY,
C. A. MACDONALD.