W. M. & E. N. BOTSFORD.
Scroll-Sawing Machine.

No. 211,129. **Patented Jan. 7, 1879.**

Fig. 1

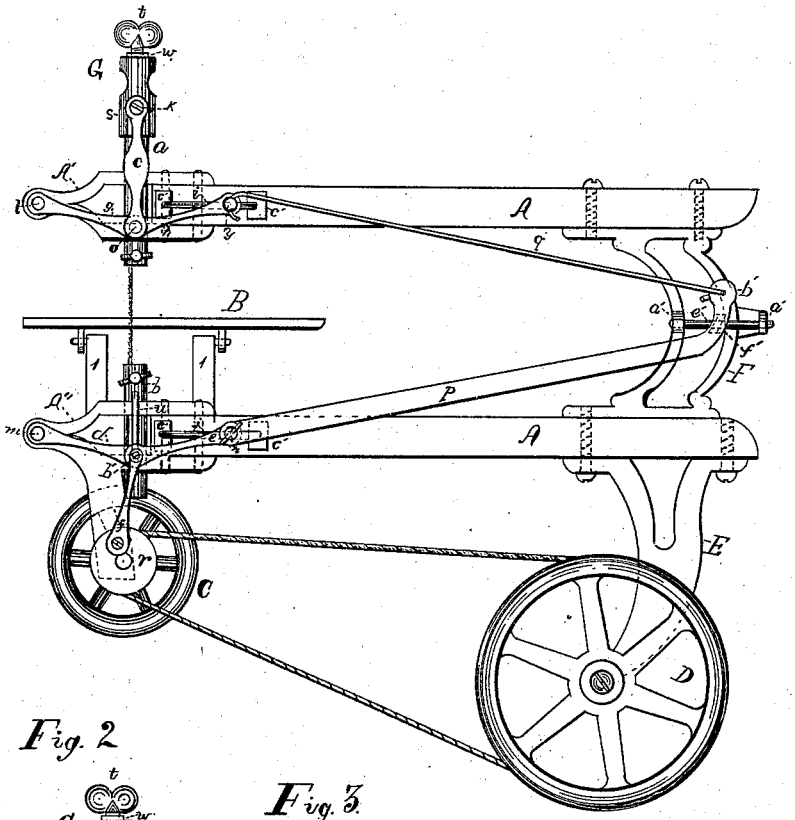

Fig. 2

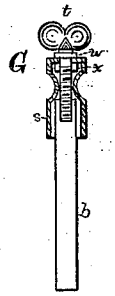

Fig. 3.

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UNITED STATES PATENT OFFICE.

WALLACE M. BOTSFORD AND EUGENE N. BOTSFORD, OF WEST STRATFORD, CONNECTICUT.

IMPROVEMENT IN SCROLL-SAWING MACHINES.

Specification forming part of Letters Patent No. **211,129**, dated January 7, 1879; application filed May 24, 1878.

To all whom it may concern:

Be it known that we, WALLACE M. BOTSFORD and EUGENE N. BOTSFORD, of West Stratford, county of Fairfield, State of Connecticut, have invented a new and useful Improvement in Jig-Saws, of which the following is a specification:

This invention consists in the arrangement of levers, connecting-rods, and pitmen for operating jig or scroll saws.

In the accompanying drawing, similar letters of reference indicate like parts.

Figure 1 is a side view of the machine complete, of which A A are two pieces of wood, connected together by the iron support F. A′ A″ are skeleton frames or heads attached to the pieces A A, through which the sliding rods *a* and *b* work. *e f d* and *c h g*, in connection with the rods *p* and *q*, operate the sliding rods *a* and *b*. The rods *p* and *q* have a horizontal motion on the guides *e′ i j*. On the upper sliding rod, *a*, is the saw-adjuster G, comprising the shell *s*, thumb-screw *t*, and nuts *w* and *x*. The thumb-screw *t* is screwed into the pitman *a*, and by attaching the lever *c* to the shell *s* by means of the screw *k*, a very sensitive adjustment can be obtained.

Fig. 2 is a sectional view of the adjuster G. B is the table, attached to the supports 1 1. One end of the lever *f* is fastened to the crank-pulley *r*. The other end is connected with the levers *e* and *d* to the pin *b′*. The three levers *e d f* are connected to the rod *u*. Said rod is attached to the sliding rod *b*, swinging freely therein, accommodating itself to the rotary motion of the crank-pulley *r*. A view of rod *u* is shown at Fig. 3. The levers *d* and *e* form a toggle-joint, operated by the lever *f*. The other end of lever *d* is fastened to the pin *m* of the skeleton-frame A″. The other end of lever *e*, together with the connecting-rod *p*, is attached to the stud *n*, through which a hole is drilled, allowing it to slide freely on the guide *j*. The other end of connecting-rod *p* slides on the rod *e′* by means of the nut *f′*.

The upper pitman is operated in the same manner as the lower one, with the exception of the lever *c*, which is attached to the shell *s*. On giving motion to the crank-pulley *r*, levers *e* and *d* are raised to a horizontal position by means of lever *f*. The connecting-rods *p* and *q* are forced along the guides *j e i*, the rod *q* controlling the upper levers, *h g*, which operate the sliding rod *a*.

We are aware that levers have heretofore been used for operating saws, and one great objection to their use is the uneven motion of the saw, owing to the cramping of the levers when operated from an immovable fulcrum—a result which cannot occur with the peculiar arrangement, as described, of the levers and rods in reference to the guides *e′ i j*, together with the levers acting directly on a line with the sliding rod, thus permitting a free and easy motion, devoid of cramping and straining.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the levers *e f d* and pins *m* and *b′* with the crank-pulley *r* and skeleton-head A″, as described and set forth.

2. In combination with levers *e f d*, the rod *u*, for operating the sliding rod *b*, as set forth.

3. The guide *j* and stud *n*, in combination with levers *e f d* and rod *p*, as set forth.

4. The guide *e′*, nut *f′*, and ears *a′ a′*, in combination with rods *p* and *q* and support F, as set forth.

5. The combination of the levers *c h g* and pins *b o* with skeleton-head A′ and sliding rod *a*, as described.

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