S. De Vaughan,

Scroll Sawing Machine,

No. 25,250, Patented Aug. 30, 1859.

Fig 6

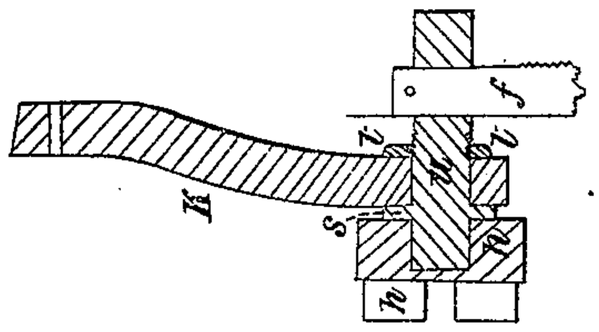


Fig 3

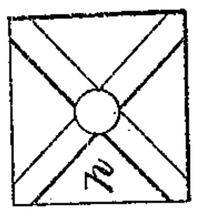


Fig 5

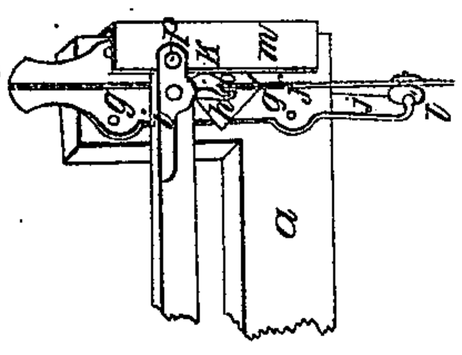


Fig 2

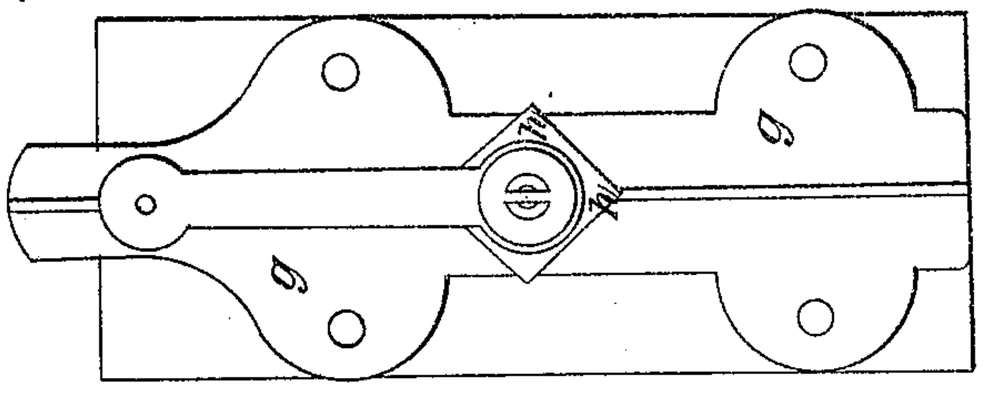


Fig 4

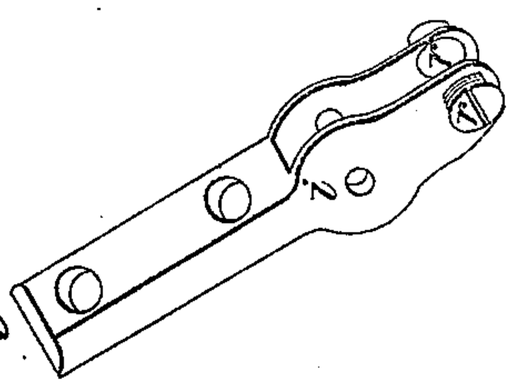
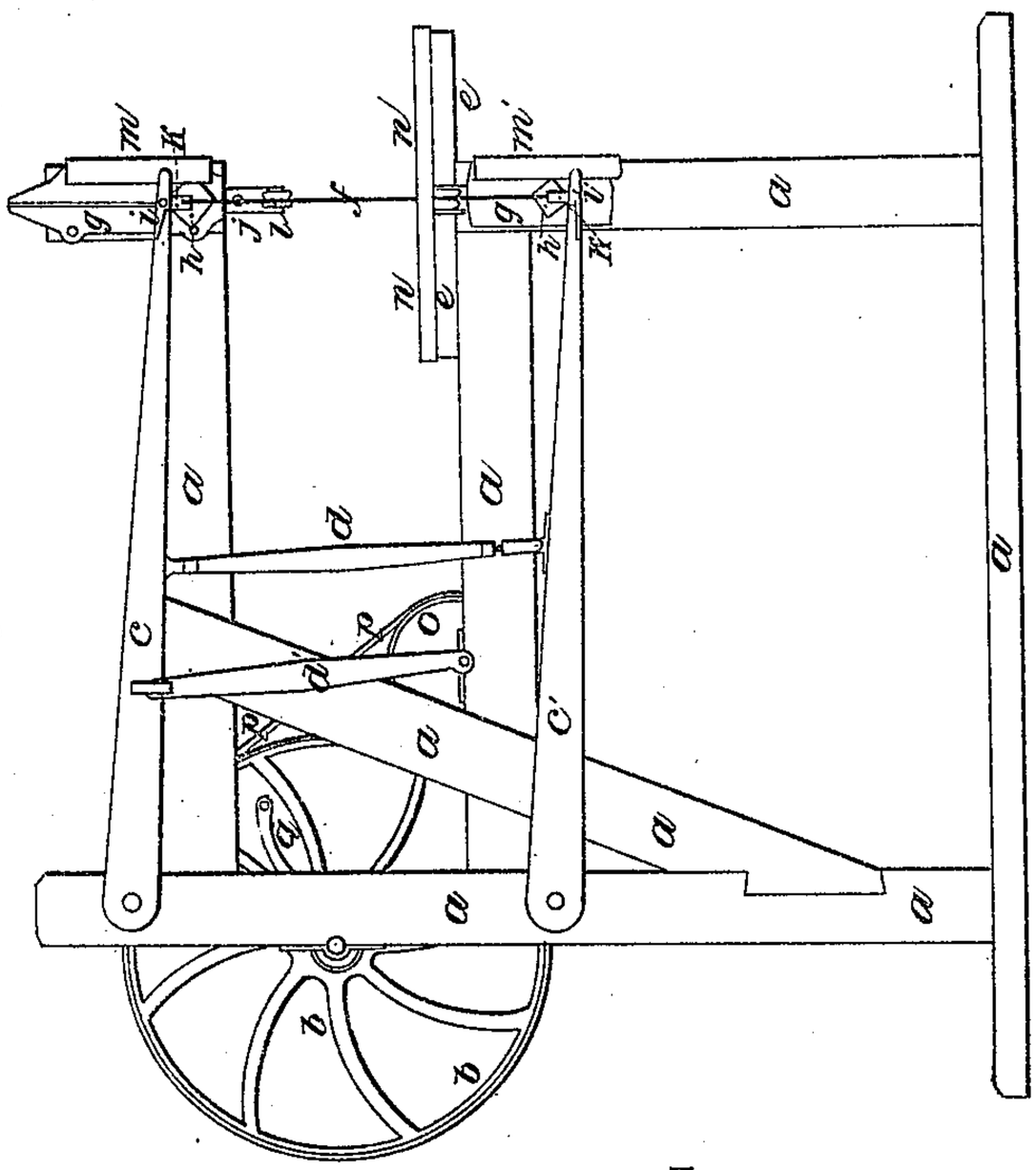


Fig 1



Witnesses:

J. G. Clayton

Chas. F. Burch.

Inventor:

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UNITED STATES PATENT OFFICE.

SAMUEL DE VAUGHAN, OF WASHINGTON, DISTRICT OF COLUMBIA.

SCROLL SAWING-MACHINE.

Specification of Letters Patent No. 25,250, dated August 30, 1859.

To all whom it may concern:

Be it known that I, SAMUEL DE VAUGHAN, of the city of Washington, District of Columbia, have invented certain new and useful Improvements in Scroll-Saws; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in the use of compound guides for regulating the motion of the saw and the manner of applying a driving belt to a pulley wheel, and improvement in swivel bearings, as hereinafter fully described in the drawings.

Figure 1, is a side elevation of the entire saw complete. Fig. 2, is a section enlarged of the guide plate and slide operating on it. Fig. 3, is a back view of the slide block. Fig. 4, is a perspective view of the guide arms attached to the vibrating arms *c* and *c'* for carrying the saw. Fig. 5, is a section of the upper guide plates attached to the frame, the slide block guide arm and bearing for saw with saw and guide roller. Fig. 6, full size side view of the slide and bearing.

To enable others skilled in the art to make and use my invention I will describe its construction and operation.

The main features of this machine is the same as the Wood and De Vaughan machine and I do not describe definitely its parts. The improvement is in being able to get clear of the T slot which I found always liable to choke up from the sawdust falling down into it thus choking it so as to prevent it operating and thus break the arms *c* or *c'*; this my invention avoids entirely as it always clears itself of the sawdust. In the construction of my invention I will describe the different parts the same letters designate like parts in each of the figures.

In Fig. 1, *g* the guide plates *h*, the guide blocks *i* the guide arm on the ends of arm *c* and *c' m* and *m'*, the front guide plates on which arm guides *i* plays *o*, the pulley wheel with tight elastic band having in it gromets firmly fitted to said wheel and on which band *p* from driving, wheel *b* operates *r*, *r*, screws in the guide arm *i*, to prevent the sides of the arm from wearing away by its friction on guides *m*, and *m'*.

In operating my invention it will be seen that these plates are fastened in a vertical position to the frame *a*, as seen in Figs. 1 and 5, and readily made true by a plumb rule applied to them. The guide block *h*, is made of any hard wood and has two slots cut in it diagonally crossing each other in the center as seen in Fig. 3. These slots being cut diagonally to the grain of the wood causes the friction to be against the ends of the wood instead of the sides and makes it wear much longer; this block thus made is put on to the end of the said bearing as seen in Fig. 6, and slides up and down on the plates *g*, and when it wears off in one of the slots, so as to work loose, it can easily be taken off the bearing and turned so as to fit the other groove to the plate, and thus one of these blocks will wear a great while, each block admitting of four changes. As it is known that wood and metal working together will last as long as two iron substances, equally situated, it will be seen that this arrangement entirely avoids the choking of the saw as was the case heretofore by the use of T slot, and continues to operate without oiling, clearing itself of the saw dust entirely. By this arrangement I always give to the saw a direct vertical cut.

The guides *m* and *m'* may be made of wood and the guide arms *i*, operate on this as described, and will last equally as long as if made of metal. These guides prevent the wabble of the arms laterally and compels them always to keep a straight line, thus always causing the saw to cut in a true vertical line.

By my improvement I have overcome what was objectionable in the Wood and De Vaughan saw, and have greatly reduced the expense of fitting the saws up, as the cost of the improvement is much less than the original plan.

The great advantage of my manner of applying belting is that I can use a smooth belt on the driving wheel, and if at any time it becomes loose it can be shortened and then will work equally as well as at first. In the swivel bearing of the Wood and De Vaughan saw, it was found that as the arm of the swivel bearing was rigidly attached to the bearing of the saw that as it vibrated a slight oscillating motion was given to the saw, thus throwing it out of a vertical line. In my improvement the link *k*, is made to revolve on the bearing *u*, of the saw and is held in its place by shoulders *s*, and screw nut *t*, which screws onto a screw cut on the bearing *u;* by this arrangement the arm K, can move freely from side to

side and never change the direction of the saw, which works always in a vertical line independent of the vibrations of the link *k;* by this arrangement I can give a much longer stroke to the saw than could be given to it before.

Having described my invention what I claim as new and desire to secure by Letters Patent, is:

1. The vertical plates *g*, and guide blocks *h*, plates *m* and *m'* and guide arm *i*, for the purpose of a compound guide as set forth.

2. I claim the manner of operating link *k*, on bearing *u*, in combination with block *h* and guide arm *i*, for the purpose set forth.

SAM. DE VAUGHAN.

Witnesses:
T. G. CLAYTON,
CHAS. B. BURCH.