2 Sheets—Sheet 1

W. D. HERSCHEL.

SCROLL SAWING-MACHINE.

No. 173,466. Patented Feb. 15, 1876.

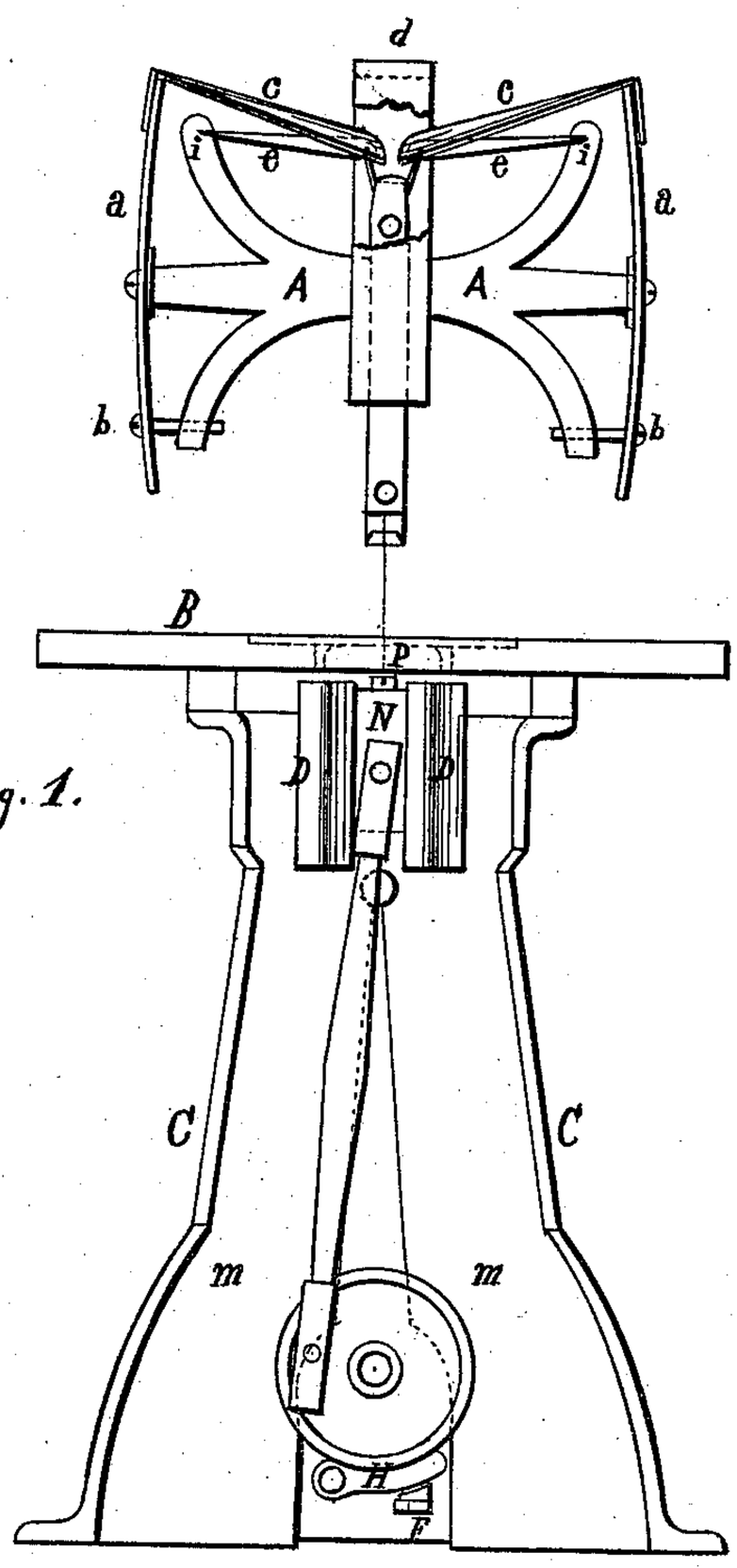

Fig. 1.

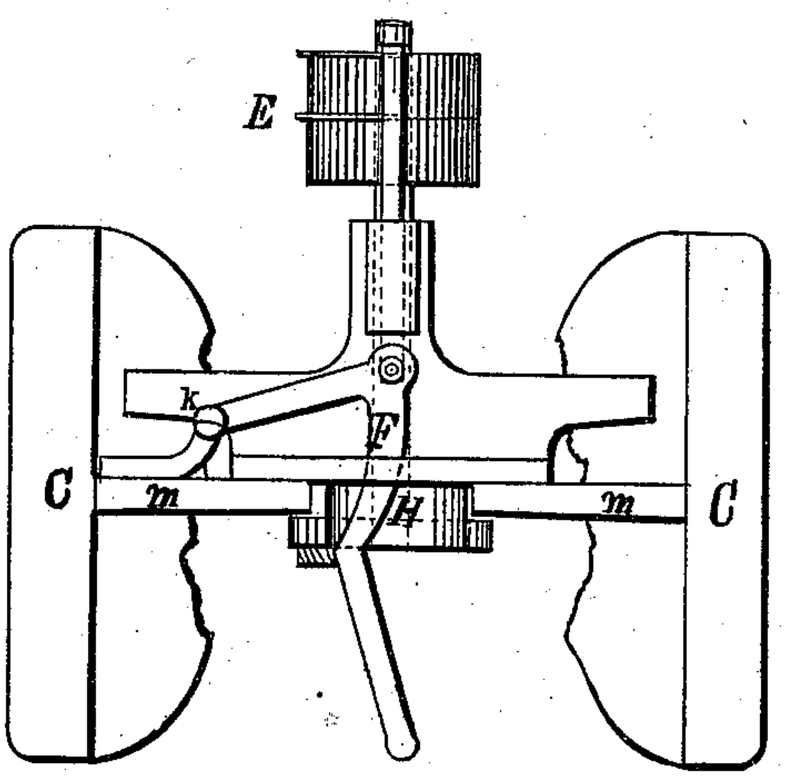

Fig. 2.

WITNESSES~

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2 Sheets—Sheet 2.

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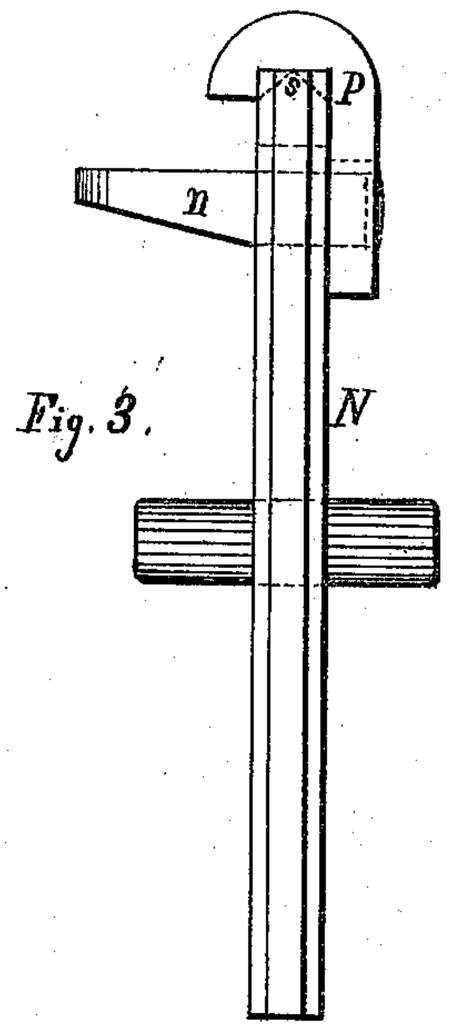


Fig. 3.

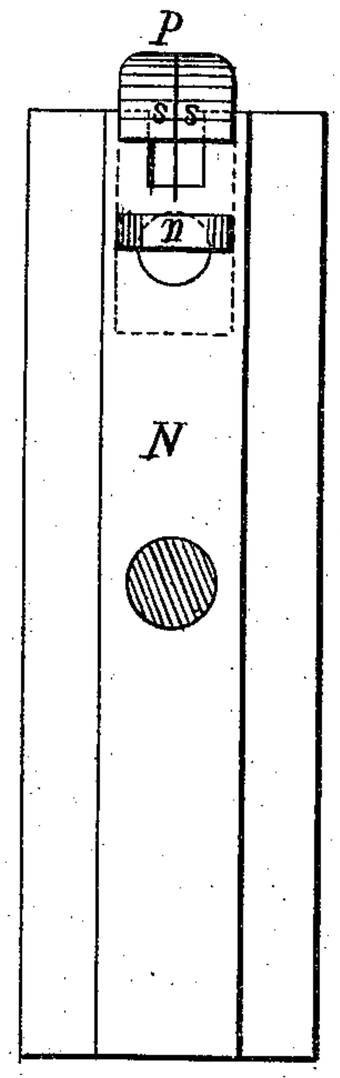


Fig. 4.

Fig. 5.

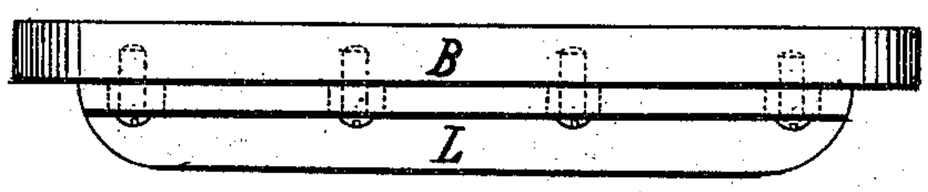
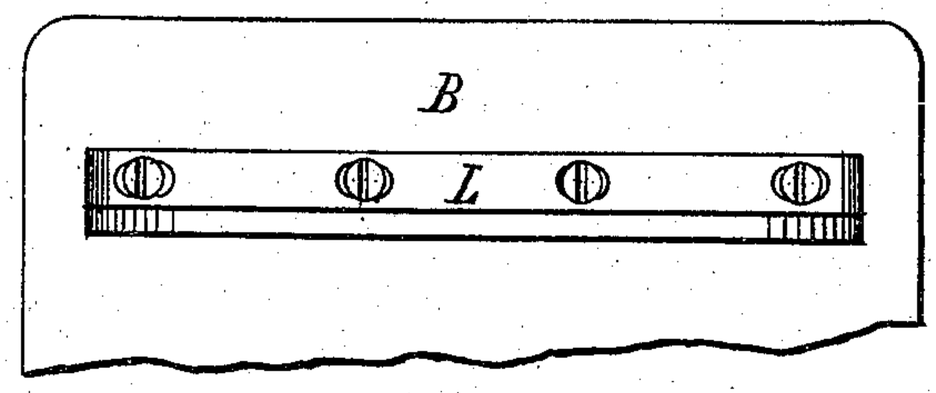


Fig. 6



WITNESSES~

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UNITED STATES PATENT OFFICE.

WILLIAM D. HERSCHEL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO LYMAN GOULD, OF NORWICH, CONNECTICUT.

IMPROVEMENT IN SCROLL-SAWING MACHINES.

Specification forming part of Letters Patent No. **173,466**, dated February 15, 1876; application filed July 9, 1875.

To all whom it may concern:

Be it known that I, WILLIAM D. HERSCHEL, of Philadelphia, in the State of Pennsylvania, have invented certain Improvements in Scroll-Sawing Machines, of which the following is a specification:

The object of my invention is to effect certain improvements in scroll-saw machines, which will enable the machine to be run at a higher speed without jar, and without the saw being slack at any time, and which also adds to the firmness and cheapness of the machine, as well as to convenience in its use.

Figure 1 is a front view of my improved saw-machine, showing all its parts in their respective positions. Fig. 2 is a view of the bottom of the same, showing my improved combined shipper and brake. Fig. 3 is a side view, and Fig. 4 a front view, of my improved cross-head; and Figs. 5 and 6 show the side and bottom of the table of the machine with my improved stiffening-bar.

A is the frame of my improved device for straining the saw. This may be made of cast metal, in one piece, secured in position above the table, and having projecting arms, as shown in the drawing. *a a* are the springs of the straining device. These are fastened in a vertical position upon the sides of the frame A, having adjusting-screws *b b*, by which the tension of the saw may be increased or diminished. *c c* are straps or links, connecting the upper ends of the side springs *a a* to the inner ends of the radial braces *e e*, which are connected to the upper hook of the saw, and swing against the supports *i i* in the top of the frame A. *d* is a stop upon the top of the frame A, to keep the parts of the straining device in place in case of the breaking of the saw.

It is evident that with this straining device, since, as the side springs are bent inward and become stiffer, the straps *c c* approach nearer the fulcrums *i i*, and thus the leverage upon the springs is increased, therefore the strain upon the saw may be made equal, if desired, throughout its whole stroke.

B is the table of the machine, and L, in Figs. 5 and 6, is one of the stiffening cross-bars, which are secured across the bottom of the table to prevent its warping, having short slots, through which the screws are inserted, so that these slots allow play for the screws for the shrinkage or swelling of the wood.

C C are two similar cast-metal supports for the table, each having a web or flange, *m*. These flanges are fastened together, and thus form a firm and cheap base for the machine, which can thus be cast with any ornamental finish or designs upon its outer sides.

E are the ordinary fast and loose driving-pulleys, and F is an angle shipper-lever, which is pivoted at *k* upon the web *m*, having a wedge-shaped top, which, at the same time the belt is shipped, slides under the pivoted friction-block H, and wedges it tightly against the crank-wheel of the machine, thus holding the saw stationary until the angle-lever is thrown back, when it releases the brake and starts the machine at the same moment.

N is the cross-head, which slides in the guides D D, which are secured to the upper ends of the webs *m m*, thus tying together the upper end of the base C C, while the bearings of the driving-shaft tie together the lower end of the base, thus forming one firm and compact whole. P is the cross-head hook, which is secured upon the cross-head by the pin *n*, which passes through both, and projects out, and is widened in front, thus forming also a step for the lower end of the saw to rest upon, which is a great convenience in setting a new saw..

In order to make the parts firm and light, so as to admit of high speed, I make the inside of the hook P V-shaped, so that the saw-pin centers itself within it, while the hook, being wider than the recess made through the upper end of the cross-head, laps over corresponding V-shaped shoulders upon the upper end of the cross-head, as shown by the dotted lines S S in Figs. 3 and 4, thus binding all these parts closely together.

I claim as my invention—

The combination of the springs *a a* with the radial levers *e e*, having their adjacent ends connected with the free ends of the springs *a a* by straps or links *c c*, to form a straining device, substantially as herein described.

WILLIAM D. HERSCHEL.

Witnesses:

A. F. PARK,

WEBSTER PARK.