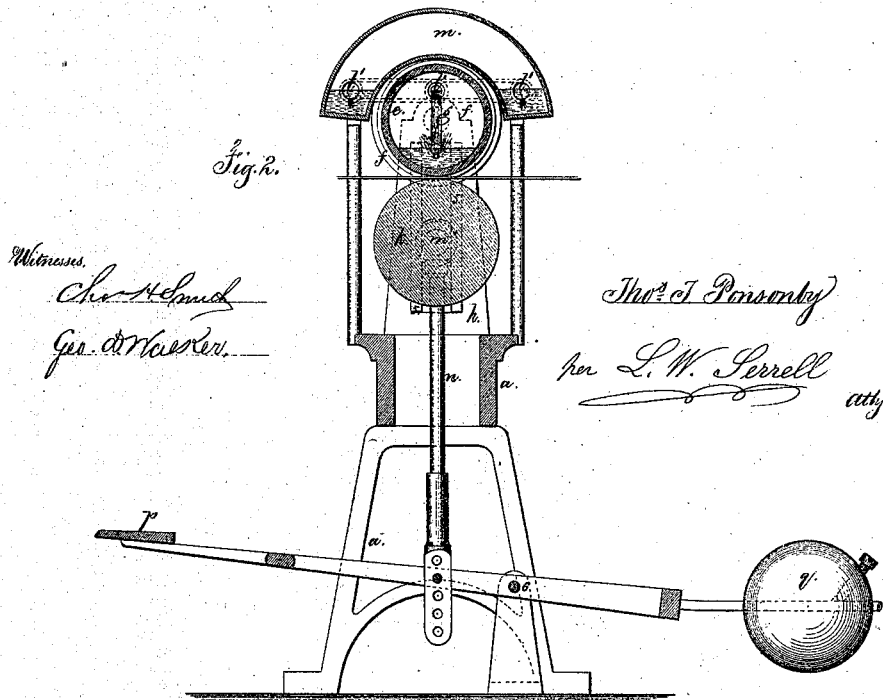
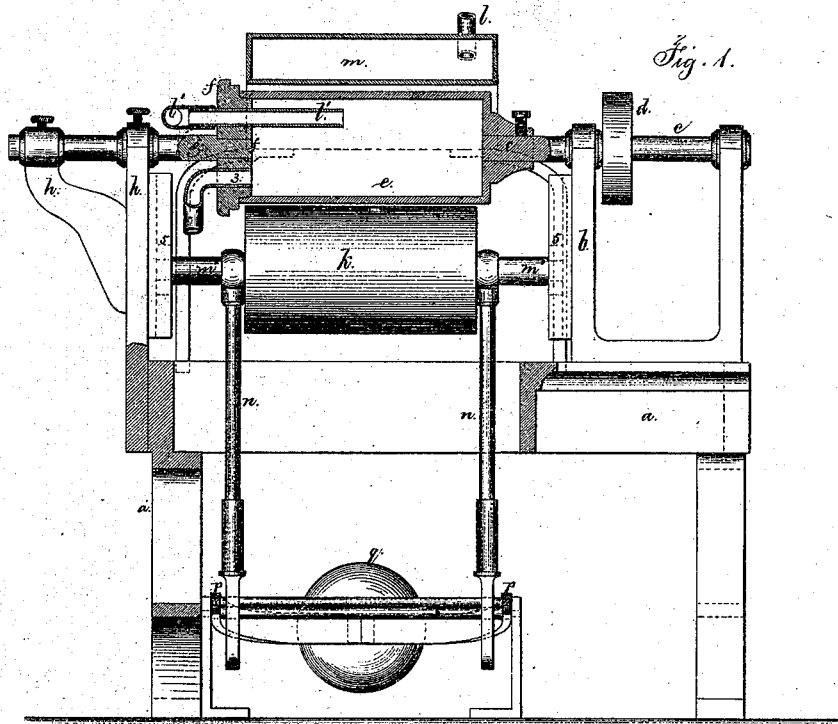


*T. T. Fensomby,*

## Ornamenting.

No. 107,718.

*Patented, Sept. 27. 1870.*



# United States Patent Office.

THOMAS THOMPSON PONSONBY, OF NOTTINGHAM, ENGLAND.

Letters Patent No. 107,718, dated September 27, 1870.

## IMPROVEMENT IN MACHINES FOR ORNAMENTING THE SURFACE OF WOOD, &c.

The Schedule referred to in these Letters Patent and making part of the same

*To all whom it may concern:*

Be it known that I, THOMAS THOMPSON PONSONBY, of Nottingham, England, have invented an Improvement in Ornamenting the Surface of Wood and other materials; and the following is declared to be a correct description thereof.

Before my present invention machinery had been made for ornamenting the surface of veneers, and articles of wood, paper, or other materials, by a pattern or design in relief, heated sufficiently to char or burn the surface of the wood, and produce the corresponding design or picture thereon.

In the mechanism that has heretofore been employed for this purpose, difficulty has been experienced in obtaining a sufficiently high and uniform temperature to insure accuracy and uniformity in the operation, and to give the attendant the power of instantly relieving the pressure, so as to prevent a repetition of the design or pattern by the revolution of the cylinder, and also to insure uniformity of pressure, regardless of the thickness of the material.

In my present invention these difficulties are overcome, and this is effected by employing melted lead, or other metal, circulating through and heating the cylinder, so as to obtain a high uniform temperature; and a surrounding casing is used above the said cylinder, also, to retain heat and render the temperature uniform. The pressure of the material upon the ornamenting surface is regulated by a movable weight, and that pressure is instantly relieved, when necessary, by a foot-treadle.

In the drawing—

Figure 1 is an elevation of the machine, with the frame and engraved cylinder in section; and

Figure 2 is a vertical transverse section of the said machine.

The frame *a* carries the mandrel-head *b*, mandrel *c*, and driving-pulley *d*.

Upon the projecting end of the mandrel or shaft *c* is the hollow cylinder *e*, the surface of which is to be engraved with the pattern or design to be burned or charred into the wood or other material to be ornamented.

The open end of the cylinder *e* sets around a disk, *f*, that is sustained by a shaft, *g*, in heads *h*, and the edge of the cylinder *e* and disk *f* are to be ground together, so as to form a tight joint, but allow the cylinder to be revolved.

The cylinder *e* is heated by a stream of melted lead

or other metal, flowing in through the pipe *l*, from any suitable melting-pot, in a furnace, and the metal flows off by the pipe *3*, and is returned to the melting-pot by any suitable elevating apparatus.

The case or bonnet *m* is made to cover the upper part of the roller *e*, and is hollow, so that the melted metal can flow into and through the same from the pipe *l*, and then pass out, and go, by the pipe *l*, into the hollow roller or cylinder *e*.

The roller *k*, that is used to press the paper, wood, or other material up to the cylinder *e*, is mounted upon a shaft, *m'*, that is set to slide at its ends in the guides *5*; and the rods *n* connect the shaft *m'* with the foot-treadle *p*, that is set to swing upon a fulcrum, *6*, and the rear part of said treadle *p* extends to form a lever for the weight *q*, that is movable, so that it can be positioned to give the pressure necessary to force the roller and material to be ornamented into contact with the heated cylinder *e*, and thereby cause the surface to be charred by the relief engraving upon such cylinder.

By this apparatus the engraving can be transferred very perfectly, and the heat is under the control of the attendant, and also the pressure that forces the wood to the cylinder.

I claim as my invention—

1. The hollow engraved cylinder *e*, mounted upon the mandrel or shaft *c*, at one end, and supported at the other end by the stationary disk *f*, substantially as set forth, so that the tubes for introducing the heat to the cylinder may pass through said disk, substantially as set forth.

2. The hollow engraved cylinder, heated by a stream of melted metal flowing through the same, in combination with mechanism for pressing the surface of wood or other material to the said cylinder, for the purposes and substantially as set forth.

3. The case surrounding the upper portion of the cylinder *e*, and heated by a stream of melted metal flowing through the same, in combination with the engraved cylinder *e*, as and for the purposes set forth.

4. The arrangement of the weighted lever and treadle *p*, to press the roller *k* and material to be ornamented to the cylinder *e*, substantially as specified.

Signed this 31st day of August, A. D. 1870.

THOMAS T. PONSONBY.

Witnesses:

CHAS. H. SMITH,  
GEO. T. PINCKNEY.