G. W. SWAN.

Machines for Making Boxes.

No. 142,297. Patented August 26, 1873.

Fig. 1.

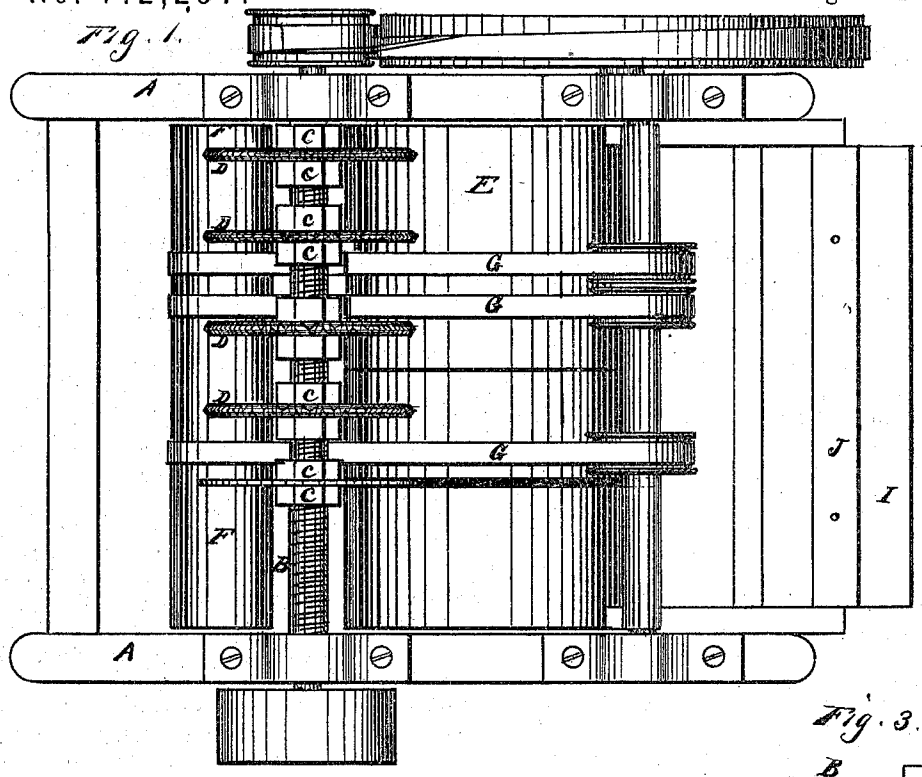


Fig. 3.

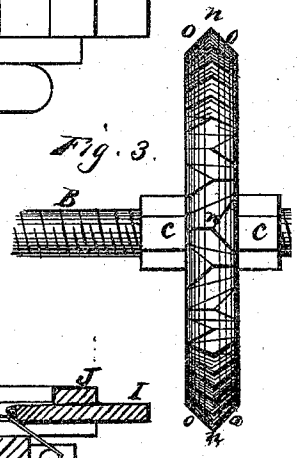
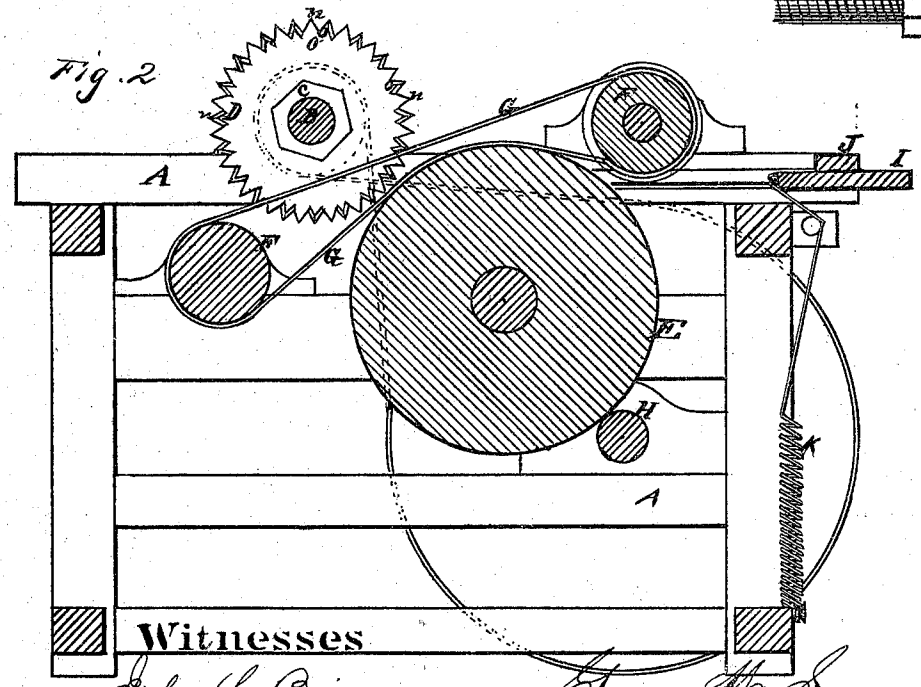


Fig. 2.



Witnesses

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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

GEORGE W. SWAN, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN MACHINES FOR MAKING BOXES.

Specification forming part of Letters Patent No. **142,297**, dated August 26, 1873; application filed June 28, 1873.

To all whom it may concern:

Be it known that I, GEORGE W. SWAN, of San Francisco city and county, State of California, have invented a Machine for Channeling Veneers for Boxes; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention without further invention or experiment.

My invention relates to a novel mechanism for scarfing or forming shallow channels across the sheets of thin wood or veneer which are used for making boxes, these channels being so made that the material can be folded or bent at the angles, and at the same time strengthened by the shape which is given to the channels. This is done by the use of a series of saws or cutters made adjustable upon a shaft, and a drum revolving near enough to the saws to hold the veneer at the proper point to be channeled as it passes beneath the saws. Suitable belts carry the veneer as it is fed, and the saws are set so as to form a V-shaped channel.

Referring to the accompanying drawing for a more complete explanation of my invention, Figure 1 is a plan or top view of my machine. Fig. 2 is a longitudinal section. Fig. 3 is an enlarged view, showing the manner in which the teeth are filed to make the V-shaped channels.

A is a frame, having a shaft or arbor, B, extending across its top, and turning in suitable journals. Between these journals this arbor has a screw-thread cut upon it, so that nuts C C can be used to secure the saws D at any point upon the shaft, thus accommodating them to any size of box to be made. The saws are filed and set so that their highest point *n* will be in a line, while the cut will be made by the sloping sides *o* of the teeth, so that it will be V-shaped, as shown. This form of cut will just close up when the sides of the box are bent at right angles to each other, and if any glue or cement be used, it is manifest that the box will be very strong at these corners.

In order to hold the veneers so that all the channels will be of the proper depth, and also to feed them into and out of the machine, I employ the drum E and the belt pulleys or rollers F, around which the belts G pass, as shown. The drum E rotates in such a position with reference to the saws D that the latter will cut almost through anything which may pass over the drum. The pulleys F are so placed with reference to the drum that the lower part of the belt will run over the upper surface of the drum. The drum is caused to rotate by means of a friction-roller, H, which is mounted upon the main driving-shaft of the machine, and turns in contact with the drum. As the belts also lie closely against the drum, it is manifest that its motion will also carry the belts and their pulleys F.

In order to feed the stuff rapidly, I have a sliding table, I, with a gage-board, J, which can be adjusted to suit any size of stuff that may be used.

The veneers are stamped out into the proper size, and may be laid in a pile upon a cover which extends over the saws and drum. From this pile they can be drawn, one at a time, and laid upon the table I, resting against the gage-board J, when the table will be pushed forward until the belts G catch the veneer and carry it over the drum beneath themselves. As the veneer passes beneath the saws, which have been previously set for channeling the particular size when passing, it will have the V-shaped channels made across it, and will then pass through and fall upon the ground. A spring, K, serves to retract the table in readiness for another veneer as soon as one has left it and the table is released.

Any form of teeth may be used on the saws, and any thickness of saw-plate may be used; but I prefer to set my saws so as to make the V-shaped channel, and the saw-plate may be made thicker, as the stuff to be used is thicker.

In the place of saws, cutters may be used to make the channels, and one saw may be large enough to cut off the stuff at the right length, a groove being made in the drum beneath it.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The drum E, together with the pulley F and carrying-belts G, for the purpose of carrying the veneers to the saws, and to hold them so that they will all be channeled to the same depth, substantially as described.

2. The feeding-table I, with its gage J and the retracting-springK, in combination with the drum E and belts F, substantially as and for the purpose herein described.

3. A machine for channeling veneers consisting of the adjustable saws D, in combination with the drum E, the carrying-belts G and pulleys F, and feeding-table I, substantially as herein described.

In witness whereof I hereunto set my hand and seal.

GEORGE W. SWAN. [L. S.]

Witnesses:
JOHN L. BOONE,
C. M. RICHARDSON.