J. Cumberland,

Wood Plane Attachment.

No. 4,997. Patented Mar. 6, 1847.

Fig. 4

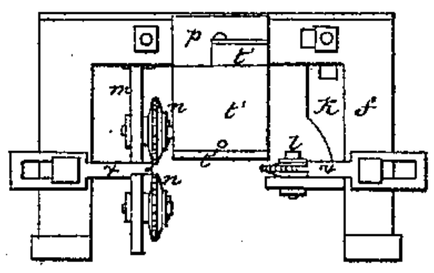

Fig. 2

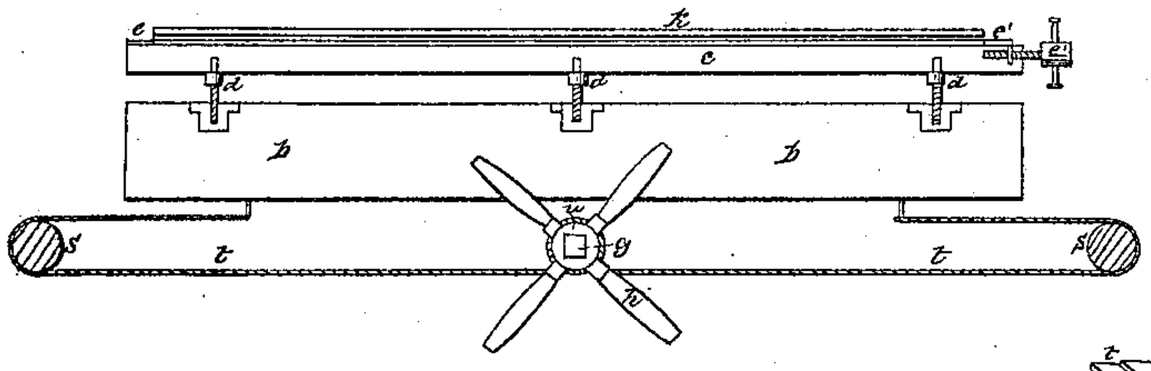

Fig. 3

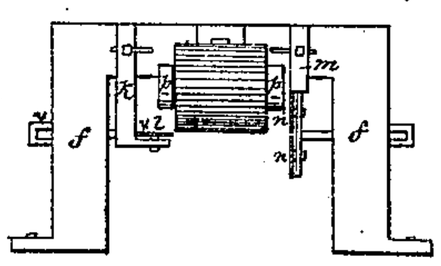

Fig. 5

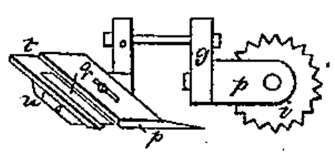

Fig. 6

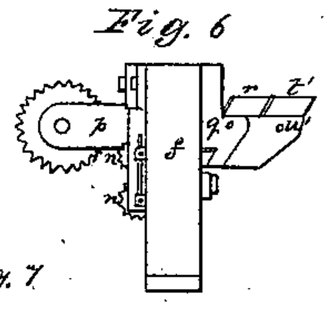

Fig. 1

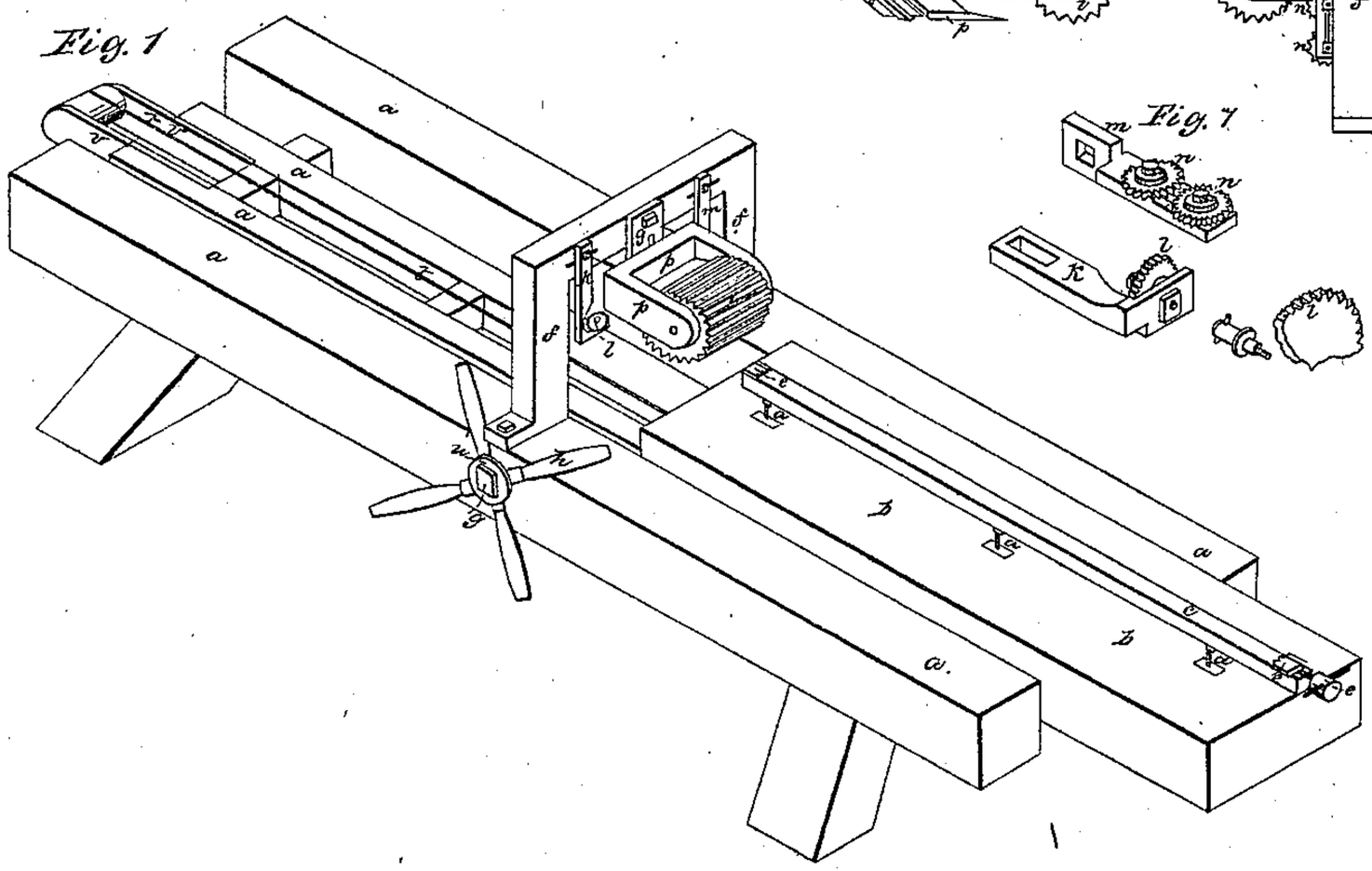

Fig. 7

UNITED STATES PATENT OFFICE.

JOHN CUMBERLAND, OF MOBILE, ALABAMA.

MACHINE FOR REDUCING AND PLANING BOARDS.

Specification of Letters Patent No. 4,997, dated March 6, 1847.

To all whom it may concern:

Be it known that I, JOHN CUMBERLAND, of Mobile, in the county of Mobile and State of Alabama, have invented a new and useful machine for reducing boards or plank, &c., to an equal thickness and planing and tonguing and grooving the same, and that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of the machine; Fig. 2, a longitudinal vertical section of the carriage; Fig. 3, front view of the standard frame to which the various cutters are attached; Fig. 4 back view of the same; Fig. 5, side elevation of the main scoring roller and plane irons attached to their stocks but detached from the standard frame; Fig. 6, reversed elevation of the same attached to the standard frame; Fig. 7, separate views on an enlarged scale of the scoring wheels and cutters for tonguing and grooving.

The same letters indicate like parts in all the figures.

The nature of my invention consists in passing the board or plank to be reduced and planed first under a roller or rollers whose surface is composed of a series of sharp edges parallel with the axis to form cutters which in rolling over the board makes cuts in its surface of required depth and at distances apart equal to the spaces between the cutting edges; and then, in shaving off the projections thus formed by means of one or more plane irons leaving the surface smooth,—whether these operations be performed by carrying the roller or rollers and plane or planes over the board or plank placed on a permanent platform, or whether this be fixed or connected with a permanent frame and the board or plank be carried to and by them by means of a carriage.

In the accompanying drawings (*a*) represents a permanent frame properly adapted to the purpose, and (*b*) a carriage sliding on appropriate ways (*a'*, *a'*) and guided in its movements in a straight line, motion being communicated to it by means of a cord or chain (*t*) attached to it at one end passing around a roller (*s*) at one end of the machine thence around a roller (*u*) on a horizontal shaft (*g*) turned by a hand wheel (*h*), and thence around another roller (*s'*) at the other end of the frame, and then made fast to the other end of the carriage. To the top of the carriage is secured by means of adjusting screws (*d*, *d*, *d*) a bed (*c*) on which is to be placed the board or plank (*k*) secured and held by the teeth of of a permanent and sliding dog (*e*) and (*e'*) the latter being operated by a clamp screw (*e''*). As the carriage with the board thereon is forced forward it passes under a horizontal roller (*i*) made of greater length than the width of the surface of the board to be planed, and having its cylindrical surface fluted with the edges thereof made sufficiently sharp to cut into the board to the required depth to reduce it to a given and equal thickness, which is regulated by elevating or depressing the bed (*c*) by means of the adjusting screws. The cutting (or rather scoring) roller has its bearings running in a frame (*p*) connected with the standard frame (*f*) by means of screw bolts or other known means. After the board has been thus scored it is brought against the cutting edge of an inclined plane iron (*r*) which forms a slight angle with the face of the board and an angle of about 45 degrees with the body thereof which is secured by a screw passing through a slot for adjustment to a stock (*q*) attached to the standard frame. After passing this cutter, which splits off the scored part of the board, it is passed under a smoothing plane (*t'*) having the same inclination as the stock of the first and attached to a second flanch (*u'*) of the same stock, and this smoothing plane may, the better to insure a smooth surface, be provided with a cap or double iron in the same manner as a hand smoothing plane. Care should be taken to leave sufficient space between these two cutters for the passage and escape of shavings. The cutting edges of these two cutters or planes are set diagonally across the board so as to make a skew rabbet cut.

For the purpose of grooving the board there is a wheel (*l*) turning on a vertical stud connected with the standard frame. This wheel has its periphery formed with a tongue, and fluted in like manner as the scoring roller (*i*) for cutting into the edge of the board, the scored parts being then cut out and the groove completed by a permanent cutter (*x*) formed to cut the bot-

tom, sides, and edges of the groove. On the other edge of the board, for forming the tongue there are two wheels (n, n) turning on horizontal studs placed one above the other and connected with the frame by the standard (m). The cylindrical peripheries of these wheels are fluted and reduced to cutting edges like the others, and they are placed so as to leave between them space enough for the formation of the tongue, the surfaces of which are smoothed off by means of the permanent cutter (x') similar to the cutter (x) except that it is the reverse thereof. These wheels and cutters for forming the groove and tongue are arranged on opposite sides and so as to act on the board immediately after the main surface has been acted upon.

It will be obvious from the foregoing that any known mode of making, adjusting, and moving the carriage may be adopted, as this makes no part of my invention, and that instead of adjusting the thickness of the board to the cutters, they (the cutters) can be adjusted to the bed on which the board is placed. And further, it may be well to observe that instead of moving the board to the cutters, this order may be inverted, and the board be fixed on a permanent platform. The number and form of the cutters it will be manifest may be increased or decreased at pleasure without changing the principle of my invention.

What I claim as my invention and desire to secure by Letters Patent, is—

1. The method of reducing boards to equal thicknesses or widths by passing them under the action of cutting or scoring wheels which cut into the surface, substantially as herein described, when this is combined with another cutter or cutters which cuts off the parts scored or indented, substantially as herein described.

2. And I also claim in combination with this a smoothing plane or planes for shaving or smoothing the surface, substantially as herein described, and I wish it to be understood that I claim this method of reducing and planing plank, boards, &c., whether for planing the surface, tonguing, or grooving, or cutting moldings.

JOHN CUMBERLAND.

Witnesses:
ROB P. WIZZINZ,
BENJAMIN FRANKLIN.