

G. R. FOSDICK.
MACHINE FOR SAWING THIN BOARDS.
APPLICATION FILED MAR. 8, 1910.

1,054,524.

Patented Feb. 25, 1913.

3 SHEETS—SHEET 1.

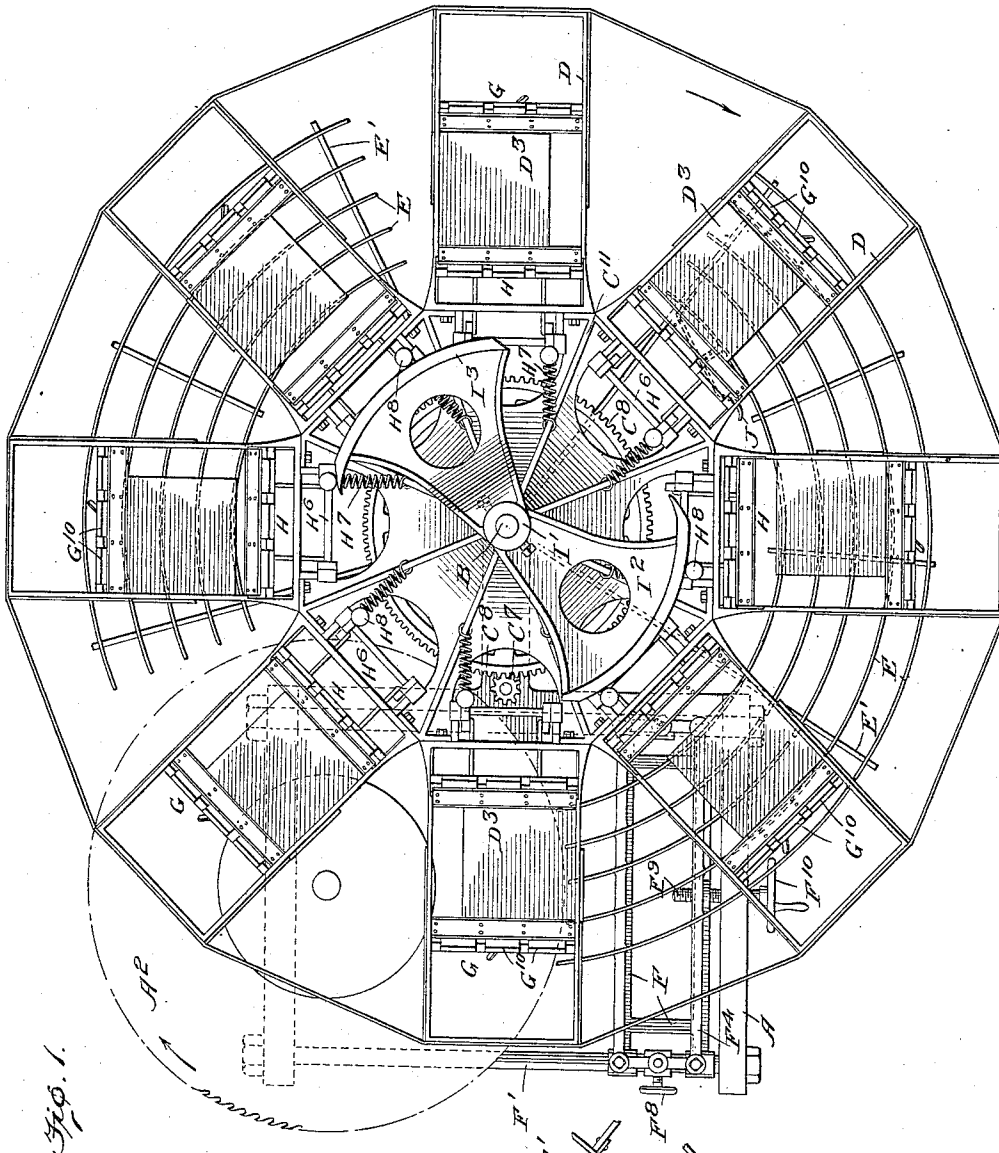
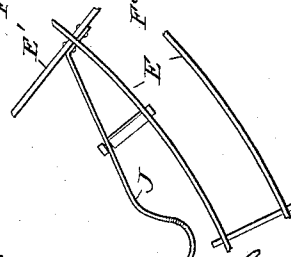


Fig. 1.

Fig. 10.



Witnesses

Edwin L. Bradford
R. Craig Greene

By

Gary R. Fosdick
Wallace & Co.,

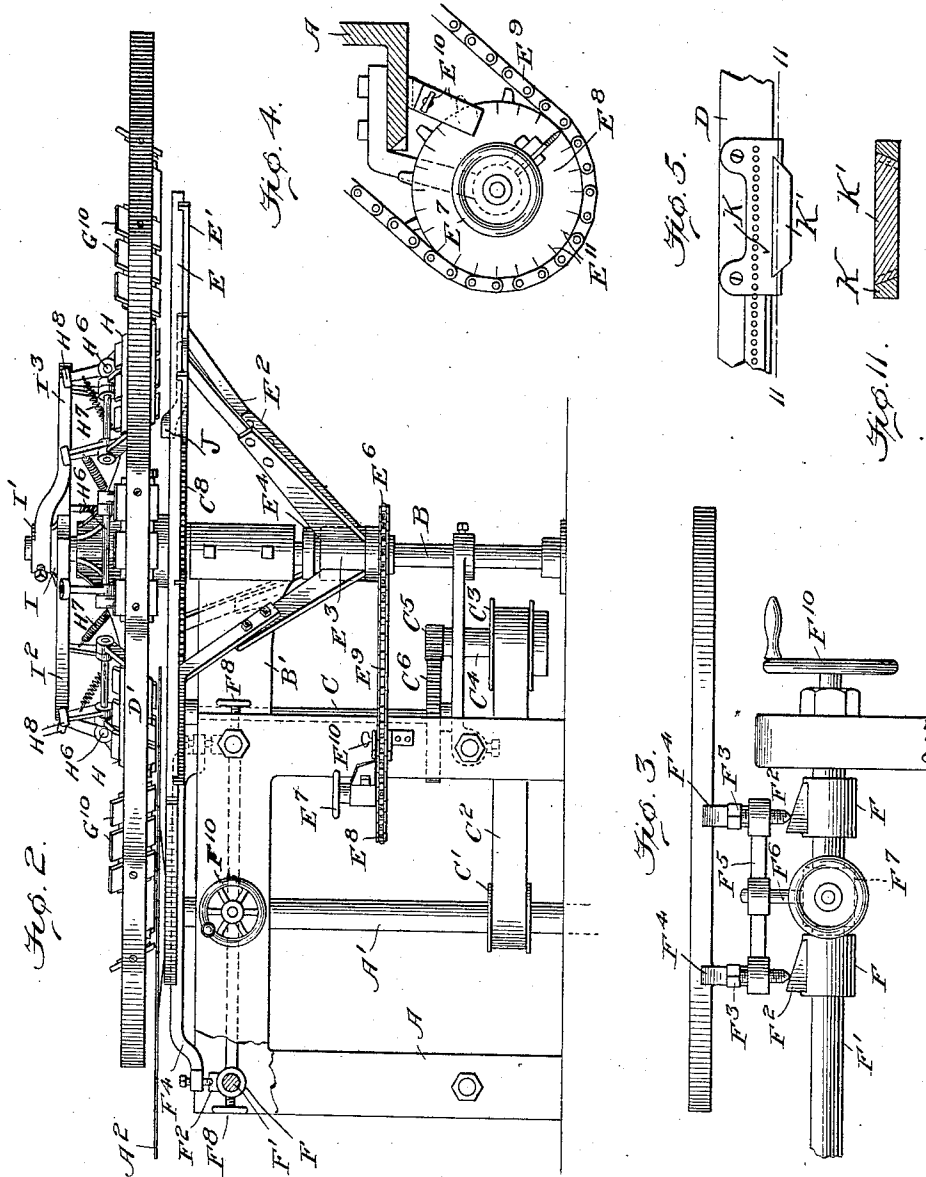
Attorney.

G. R. FOSDICK.
MACHINE FOR SAWING THIN BOARDS.
APPLICATION FILED MAR. 8, 1910.

1,054,524.

Patented Feb. 25, 1913.

3 SHEETS—SHEET 2.



Witnesses

Edwin L. Bradford
R. Craig Greene

By

G. R. Fosdick

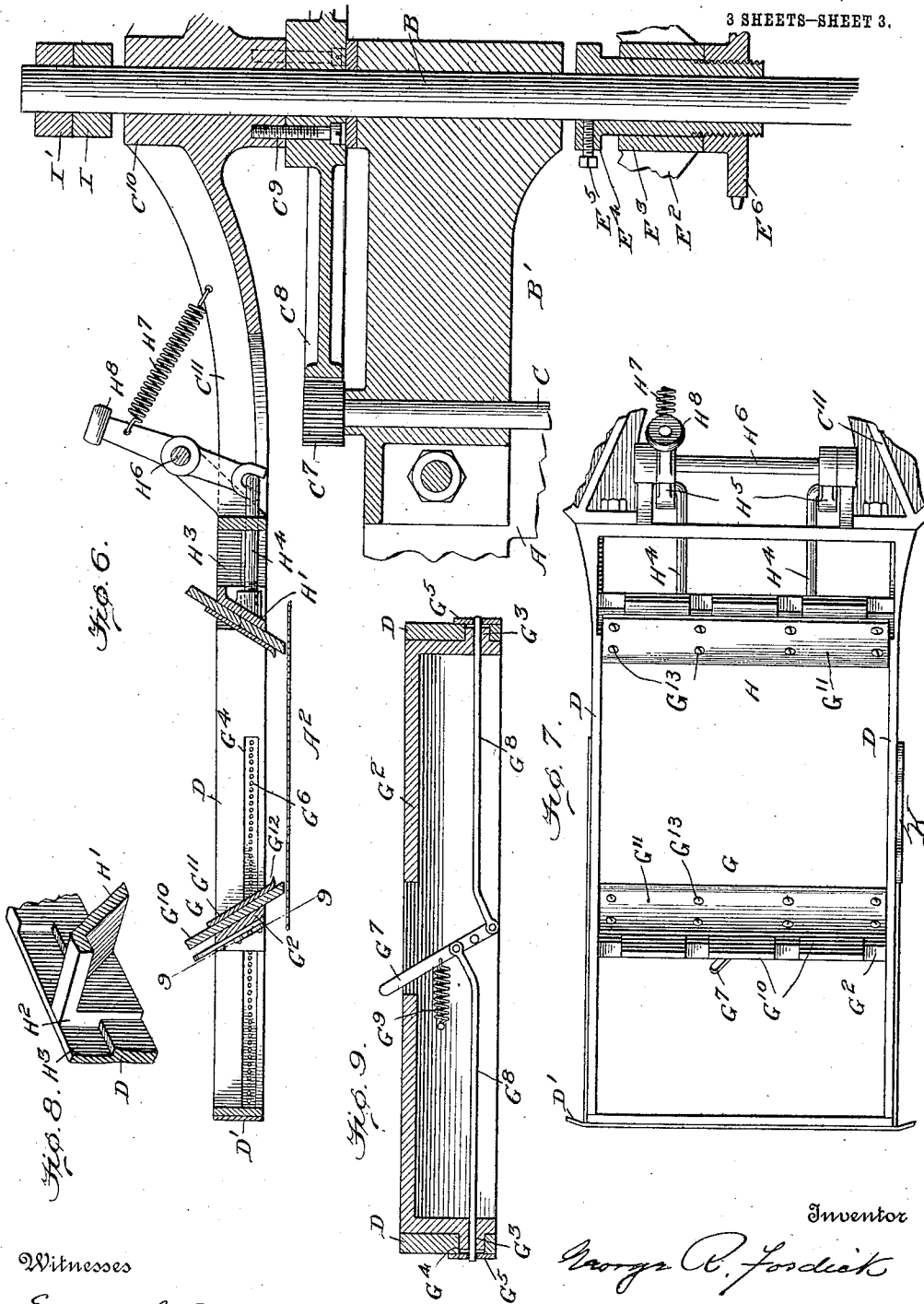
Wallace Greene,
Attorney

G. R. FOSDICK.
MACHINE FOR SAWING THIN BOARDS.
APPLICATION FILED MAR. 8, 1910.

1,054,524.

Patented Feb. 25, 1913.

3 SHEETS—SHEET 3.



Witnesses

Edwin L. Bradford
R. Craig Greene

Inventor

George R. Fosdick

By

Wallace Greene,
Attorney

UNITED STATES PATENT OFFICE.

GEORGE R. FOSDICK, OF WINCHESTER, NEW HAMPSHIRE.

MACHINE FOR SAWING THIN BOARDS.

1,054,524.

Specification of Letters Patent.

Patented Feb. 25, 1913.

Application filed March 8, 1910. Serial No. 548,012.

To all whom it may concern:

Be it known that I, GEORGE R. FOSDICK, citizen of the United States, residing at Winchester, in the county of Cheshire and State of New Hampshire, have invented certain new and useful Improvements in Machines for Sawing Thin Boards, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to machines for resawing blocks of lumber into thin sheets or boards for use in making light boxes and other purposes and the general objects are to provide a high speed automatic machine which shall cut the lumber uniformly, smoothly, and with a minimum of waste. These general ends are sought in cutting the boards from the lower sides of a series of blocks automatically and repeatedly presented to a horizontal circular saw by a rotary carrier which automatically allows each block to drop slightly after a board is cut from its lower side, again clamps the lowered block and again presents it to the saw, the remaining portion being automatically discarded when not enough remains to form another board.

In the accompanying drawings, Figure 1 is a plan view of the main portion of a machine embodying my invention. Fig. 2 is a side elevation of the same machine. Fig. 3 shows in elevation certain adjusting mechanism. Fig. 4 shows in like manner a portion of other adjusting devices. Fig. 5 is a detail view of a portion of a certain carrying frame. Fig. 6 is a radial vertical section through the axes of gears C⁷, C⁸, Fig. 1. Fig. 7 is an enlarged plan view of a block carrying frame and its adjuncts. Fig. 8 is a detail view of a portion of that frame. Fig. 9 is a section on the line 9—9, Fig. 6. Fig. 10 is a detail plan view of a fragment of a rack seen in Fig. 1. Fig. 11 is a section on the line 11—11, Fig. 5.

In these figures, A represents a suitable frame, A' a vertical saw shaft, A² a horizontal saw, carried by said shaft, above the frame, B a fixed, vertical post-like shaft alongside the frame and rigidly connected thereto by strong brackets B¹, B², and C a vertical shaft mounted in the frame and rotated at reduced speed from the shaft A' by means of a pulley C¹, belt C², pulleys C³, shaft C⁴, pinion C⁵, and gear C⁶. The shaft

C bears at its upper end a pinion C⁷ engaging a gear C⁸ loosely mounted on the fixed shaft B with its hub resting on the bracket B¹ and rigidly connected, by screws C⁹, with a rotary hub C¹⁰ from which radiate rigid arms C¹¹ forming part of a rotary block-carrying wheel or carriage for presenting blocks to the saw A² a little below the plane of these arms. In the plane of the latter and bolted to their outer ends are approximately rectangular and angularly equidistant frames D, shown in this instance as eight in number and as connected at their outer ends by a rigid metal band D', and each intended to carry a block D² from which boards are to be cut by the saw. A little below the plane of this carriage and parallel thereto, are two block-supporting rack sections each in this instance made up of concentric circularly curved bars E connected by radial bars E' which are supported by arms E² rising obliquely from a hub E³ upon a sleeve E⁴ adjustably fixed by a set screw E⁵ to the shaft E below the bracket B' (Figs. 2, 6). The hub is loose upon the sleeve and is supported and vertically adjusted on the sleeve by a sprocket wheel E⁶, threaded nut-like upon the sleeve and rotated by a hand-wheel E⁷, sprocket-wheel E⁸ and sprocket chain E⁹. The wheel E⁸ is locked in position by a clamp E¹⁰ and preferably bears graduations E¹¹ adapted to indicate the thickness of the boards that are cut with any particular position of the clamped wheel, which obviously corresponds to a certain height of the racks upon which the blocks descend between successive cuts from the same block. To secure rigidity of that portion of the rack section on which the blocks move at the moment when they reach the saw, I mount a sliding frame F upon two parallel rods F'. Each end of the frame bears near its sides, respectively, two blocks F² having equally inclined upper surfaces upon which rest the points of four adjustable screws F³ working in four arms F⁴ from the rack frame. The arms are connected near their ends by cross-bars F⁵ each perforated to receive a guide pin F⁶ from a block F⁷ adjustably fixed to one of the rods F' and locked thereto by a set screw F⁸, whereby any slight variation of the position of the screws on the blocks is guarded against. The frame F is adjusted along the rods by

a screw F^9 operated by a hand wheel F^{10} to adjust the height of the rack, and the inner and outer ends of the arms F^4 are adjusted by the screws F^3 to bring the rack into a plane exactly parallel to that of the saw. All these adjustments are to secure more accurate work than would be possible were reliance placed on the sprocket and chain adjustment alone.

10 The stock blocks in the frames are held by radially opposite clamp members G , H (Fig. 7), the outer one of which is adjusted along the side bars of the frame D to make the normal distance between the two members approximately equal to the length of the blocks to be cut. This member has a rigid iron frame G^2 extending across the frame D and provided with terminal tongues G^3 to slide in longitudinal slots G^4 in the sides of the frame, upon the outer faces of which are fixed steel plates G^5 provided with a series of perforations G^6 . Upon the back of the inclined body of the frame G^2 is pivoted a lever G^7 carrying rods G^8 pivoted to it upon opposite sides of its own pivot and adapted to enter the perforations in the plates G^5 , respectively, and thus lock the frame G^2 . The lever is normally held in locking position by a spring G^9 . To the working face of this frame spaced wood blocks G^{10} are clamped by a steel plate G^{11} having a forwardly turned sharp marginal lip G^{12} to engage the block to be sawed, and secured to the frame G^2 by screws G^{13} at suitable intervals. The lip is near the plane of the saw, but so far above it as to avoid the possibility of contact, while the blocks are usually made to project below the lip so far that on their first approach the saw cuts them to the proper length.

The clamp member H is of analogous construction, but its frame member H' has at each end a projection H^2 sliding freely in a recess or rabbet H^3 in the side of the frame. The locking devices of the other member are omitted, but the body is provided with two screw-attached rods H^4 which pass through the inner wall of the frame D and are pivotally engaged in the forked lower ends of bars H^5 fixed to a rock-shaft H^6 supported by the frame of which the frames D form a part. A strong spring H^7 urges the clamp member H toward its companion, but the member is retracted at proper times, to release the stock block, by means of a roller H^8 mounted on the upwardly projecting portion of one of the arms H^4 , the roller being in the path of cam devices to be described.

60 Upon the upper portion of the fixed standard B are bosses I , I' secured by set screws and from which, respectively, project, oppositely, cams I^2 , I^3 each having a circular marginal face from each end of which lead inclines lying in the normal path

of the rollers H^8 . As the carriage rotates the springs hold the clamp members H in engaging position so long as the rollers H^8 are free from the cams, and the latter are so placed that if a stock block is placed in one of the frames, while the corresponding roller is pressed outward by the cam I^2 , the block to be gripped while upon the carefully adjusted portion of the rack section, an instant before it reaches the saw which cuts a board from its lower side; and a little later the same roller will be again forced outward by the cam I^3 , allowing the block to fall upon the corresponding section of the rack. The roller passes from this cam before the block reaches the end of this rack section so that the block is clamped in its new position and carried across the space between the two rack sections and over the other rack section, to again adjust itself just prior to being again presented to the saw; and this is repeated until the residual block is no longer thick enough to be caught and held by either the metal lips or the wood blocks of the clamp members when the roller leaves the cam I^3 . In that case, the residual piece falls between the sections, and an attendant puts another block in that particular frame while it is over the rack section nearest the saw. It will sometimes happen that the residual block, while too thin at one or both edges to be engaged by the clamps, has yet the full thickness of the desired boards, and such blocks are later passed through a planer to insure their having uniform thickness.

It has been found that when in rapid movement the rollers H^8 ride out upon the incline of the cam I^2 , releasing the blocks, the outer sides of the latter sometimes become disengaged from the outer clamp member, rise from the rack and are held up by the clamp lip when they chanced to be thrown above it, and to guard against this I provide upon the rack, at the proper point a light spring J (Figs. 1, 2, 10), in position to press the block outward at the time of its release and gently resist its tendency to move out of place.

It is also evident that as the frame D does not closely approach the plane of the saw, it gives a thin block no lateral support, and as the block should be pushed positively against the saw, that side of each frame against which the thicker block rests, or the side which follows the block, is provided with a metal piece K (Figs. 5, 7, 11) in which is removably held a dovetail wood block K' flush with the inner face of the frame and extending downward to the plane of the saw.

It may be observed that the accurate adjustment of the rack near the working edge of the saw to secure exact parallelism of the

block and saw and exact thickness of the boards is highly important, since economy in the use of stock is practically highly desirable and since uniformity of thickness is essential in certain grades of boxes, particularly such as have locked corners, and since subsequently planing the boards is expensive. The automatic rejection of residual blocks is also very important.

10 Since the construction shown may be varied in various ways without passing the proper limits of my invention, I desire to claim the invention as broadly as the state of the art will permit, as well as specifically.

15 What I claim is:

1. The combination with a horizontal saw and a rotary carriage overlapping it, slightly above its plane, and having downwardly open compartments, of a plane 20 faced, screw-supported rack approximately parallel to and below the plane of the saw in position to support blocks in said compartments, an indexed hand wheel, and a chain connecting said hand wheel to the adjusting screw whereby the former rotates 25

the latter and indicates the distance of the rack from the plane of the saw.

2. The combination with a horizontal saw of a plane faced block support below and 30 parallel to the saw's plane and consisting of a section near the working side of the saw and a section widely separated from the first to allow blocks to fall between the two, a rotary carriage having downwardly open 35 compartments adapted to receive blocks to be sawed and push them along said support, normally engaged block clamps for each compartment, means for holding the clamps temporarily out of action while the blocks 40 are on said supporting sections, and a spring carried by the section first mentioned in position to press the edge of each block at the moment of its release when upon said first mentioned section. 45

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE R. FOSDICK.

Witnesses:

J. G. FULCH,
J. PLOCK.