

George H. Smith's Machine for making what is termed "Excelsior".

118289

PATENTED AUG 22 1871

Fig. 1.

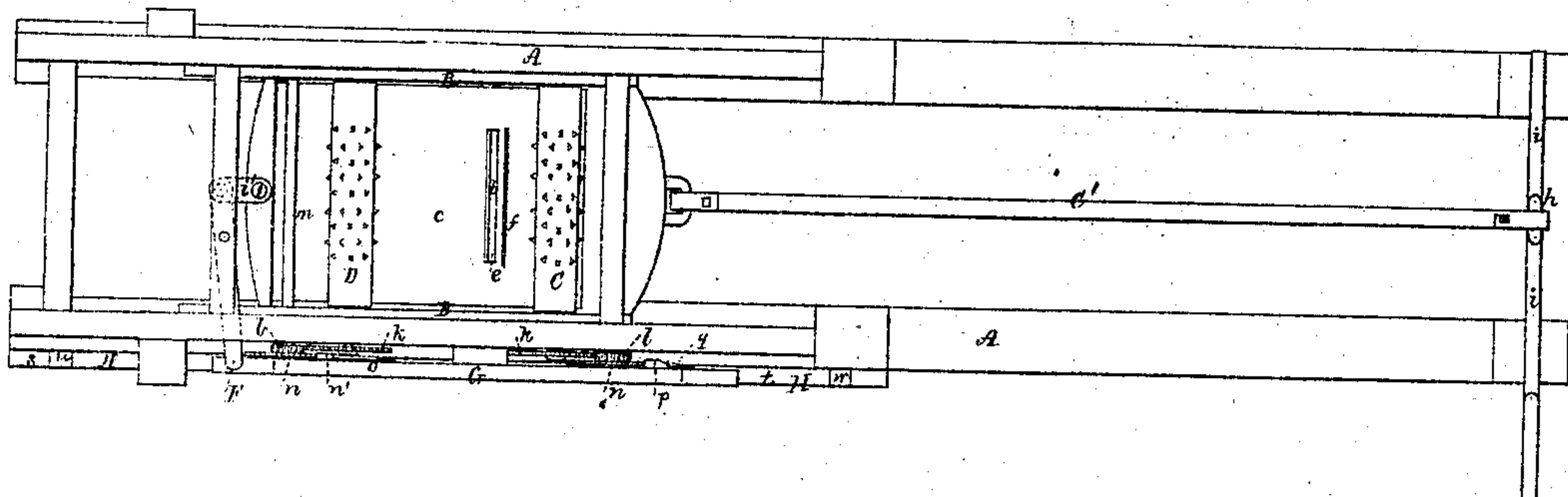


Fig. 2.

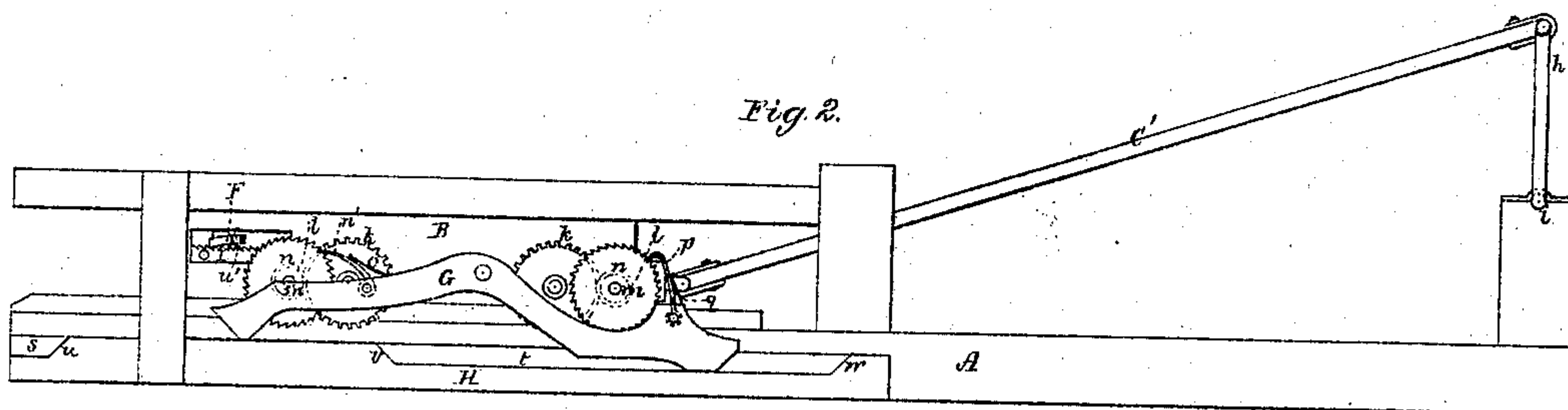


Fig. 3.

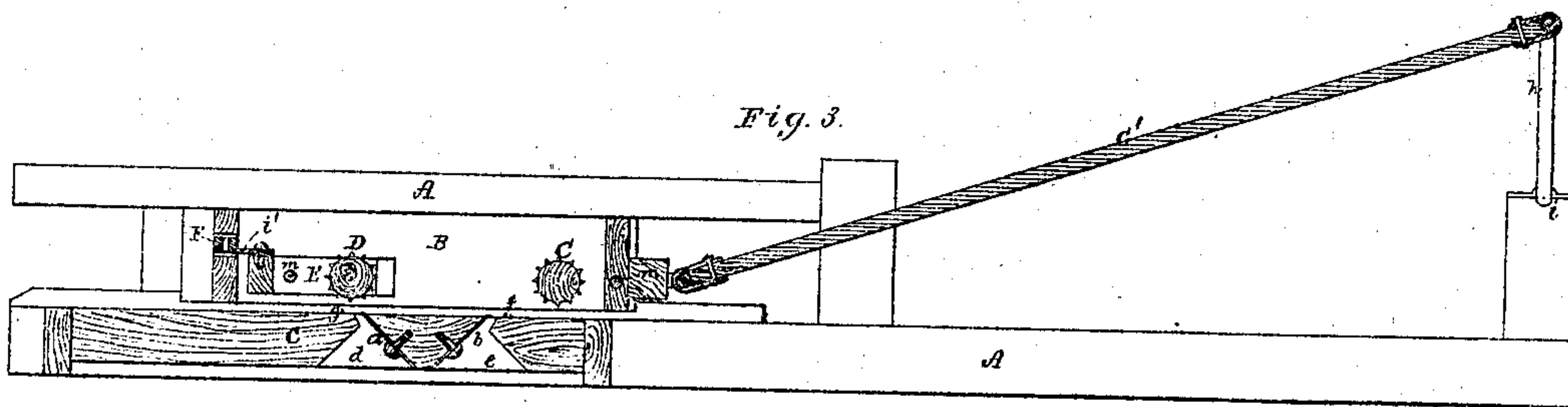
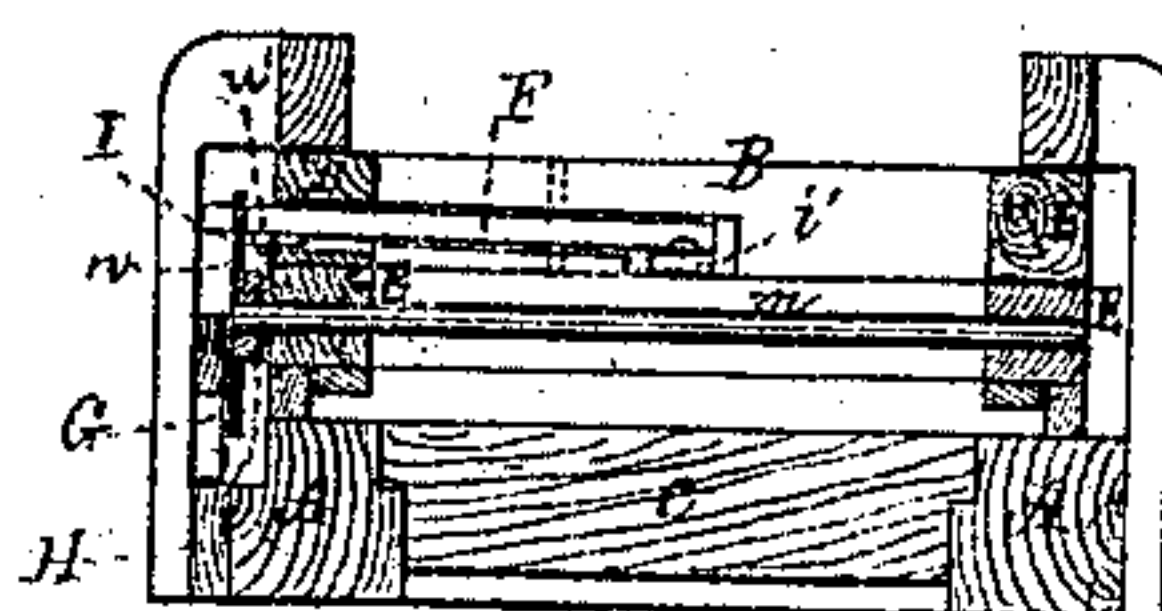


Fig. 4.



Witnesses:
S. H. Piper
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by his attorney
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UNITED STATES PATENT OFFICE.

GEORGE H. SMITH, OF GUILFORD, MAINE.

IMPROVEMENT IN MACHINES FOR MAKING "EXCELSIOR."

Specification forming part of Letters Patent No. 118,289, dated August 22, 1871.

To all whom it may concern:

Be it known that I, GEORGE H. SMITH, of Guilford, of the county of Piscataquis, of the State of Maine, have invented a new and useful or Improved Machine for Reducing Wood to enable it to be used for the stuffing of cushions or mattresses; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a top view, Fig. 2 a front elevation, Fig. 3 a longitudinal section, and Fig. 4 a transverse section of the said machine.

The nature of my invention consists in a peculiar combination and arrangement of instrumentalities whereby a block of wood may have a reciprocating rectilinear motion imparted to it relatively to the plane-irons or cutters and two sets of stripping-cutters, and be fed downward with an intermittent motion so as to be sliced during each movement and each slice be cut into strips. I am aware that there is no novelty in a machine provided with a frame to carry a plane-iron and a set of stripping-knives, and also having a carriage to hold a block of wood and move it across such plane-iron and knives, and provided with mechanism for feeding the block to the knives and plane-iron, the whole being so as to effect the slicing of the wood and reduction or stripping of the slice during each advance of the block. In carrying out my invention I have combined with such devices an auxiliary plane-iron and set of stripping-knives, and a feeding mechanism to feed forward the block both during its advance and during its retreat, thereby causing double the work to be effected by the machine in a given time.

In such drawing, A denotes the frame of the machine, it having two plane-cutters, *ab*, arranged in its bed *c*, in manner as shown in two throats, *d e*, made in and across such bed. Just in advance of one of such plane-irons, and in the bed, there is a series, *f*, of stripping-cutters, there being such another series, *g*, disposed in rear of the other plane-iron. The cutters of both series project above the bed and are for scoring the bottom of a block of wood in parallel lines or cuts, in order that each of the shavings removed therefrom may be reduced to strips or what in trade is termed "excelsior." Within the frame *a* and above the bed *c*, and applied to the said frame so as to

be capable of sliding longitudinally and rectilinearly therein, is an open frame or carriage, B, to one end of which a connecting-rod or bar, C', is pivoted, such bar at or near its other end being pivoted to a bell-crank, *h*, of a shaft, *i*, arranged as shown. The carriage B has within and across it two toothed rollers, C D, one of which has the bearings of its journals in the carriage B. The journals of the other roller are supported in an auxiliary frame or carrier, E, arranged to slide horizontally in the carriage B. A lever, F, pivoted to the carriage B, and connected with the carrier E by a pitman, *i'*, serves to enable a person to move the roller D either nearer to or further from the roller C, as occasion may require for the fixing of a block to and between the two rollers, in order that by means of them it may be fed or moved downward toward the cutters as may be needful. On the arbor of each of the feed-rollers is fixed a gear-wheel, *k*. These gears *k k* engage with pinions *l l*, carried by two separate shafts, *m m*, arranged as shown, there being a ratchet-wheel, *n*, fastened on the outer end of each shaft *m*. The teeth of one ratchet-wheel pitch in directions opposite to those of the other. A curved lever, G, shaped as shown in Figs. 1 and 2, is pivoted at its middle to the carriage B and arranged outside of the ratchet-wheels. To one arm of this lever an impelling pawl, *n'*, to work in the front ratchet-wheel, is jointed, it being held against the ratchet-wheel by a spring, *o*. A draw-pawl, *p*, is jointed to the other arm of the lever, operates with the other ratchet-wheel, and is kept up to it by a spring, *q*. Directly beneath the lever is a cam-bar, H, which is recessed in manner as shown at *s* and *t*, the ends of the recesses being cams or inclined planes *u v w*, all being arranged as represented. There is fixed to the side of the carriage B a serrated rack, I, to receive and operate with a projection, *w'*, from the lever F, such rack and projection being to hold the lever, and of course the auxiliary feed-roller carrier, stationary as may be required. During the reciprocating or rectilinear movement of the feed-roller carriage B a reciprocating motion on its fulcrum will be imparted to the lever G by the cams of the bar H, whereby both of the ratchets will be simultaneously intermittently revolved in order to effect corresponding movements of the feed-rollers, and thereby cause them to feed downward to the bed a block of wood when held

between and by them for being subjected to the action of the knives or cutters. During each advance, as well as during each retreat of the carriage B, the block of wood will be scored by the scoring-knives, and a shaving will be taken from it by one of the plane-irons, such shaving as it may leave the block being reduced to a series of narrow strips, each generally being curled into a spiral form.

I make no claim to the employment of a single plane-iron, a series of stripping cutters, and a mechanism for supporting and moving a block of wood over such and feeding it so that it may be separated into shavings and each of such be reduced to strips.

What I claim as my invention is—

1. The combination of parts constructed specifically and to operate as and for the purpose described, such being the frame A, the bed *c* with the two plane-irons *a b* and throats *d e*, and the

two sets *f g* of stripping-knives, the main and auxiliary carriages B E, and toothed feed-rollers C D, the gears and ratchets *k k l l n n* of the feed-rollers, the rocker-lever G and its two pawls, *n' p*, and the cammed bar H, all being applied as explained, the auxiliary feed-roller carriage E being provided with means as described for moving it and retaining it in position.

2. The mechanism or combination as described for effecting the intermittent revolutions of the two feed-rollers, such consisting of the cammed bar H, the rocker-lever G, the two pawls *n' p*, the ratchet-wheels *n n*, and the gears *k k l l*, all being arranged and applied to the reciprocating carriage and its bed in manner and so as to operate as set forth.

GEORGE H. SMITH.

Witnesses:

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J. R. SNOW.