

(No Model.)

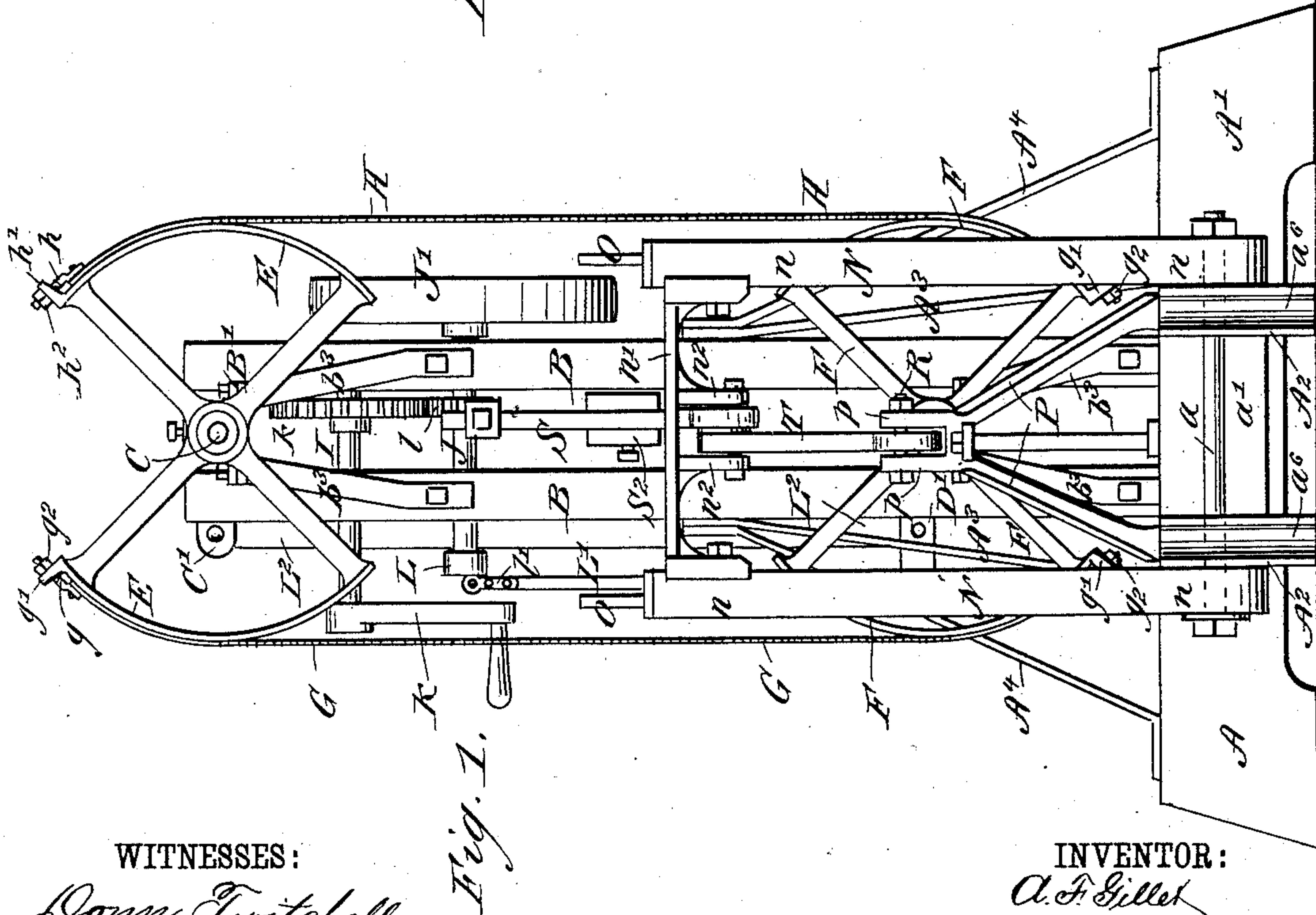
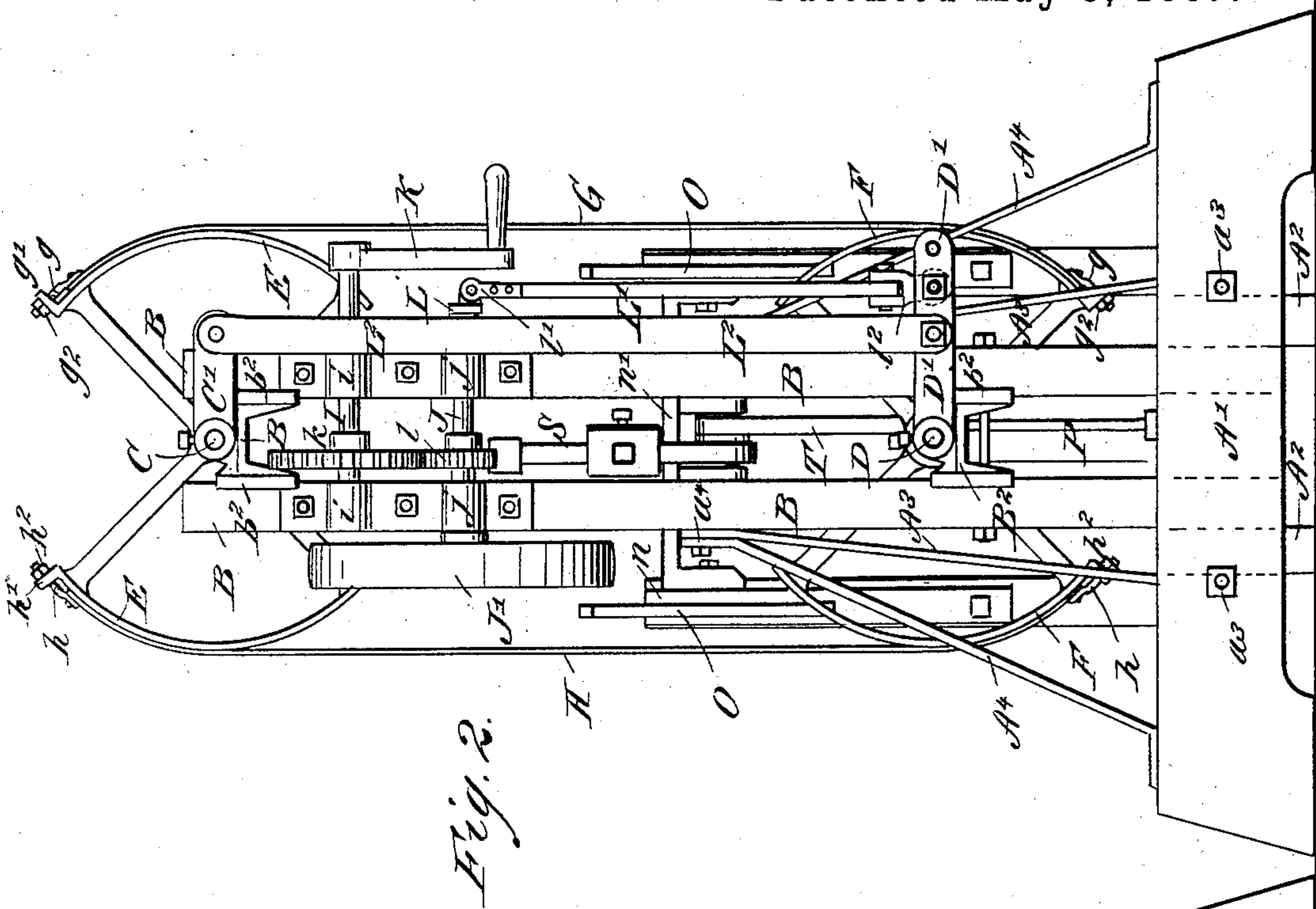
3 Sheets—Sheet 1.

A. F. GILLET.

SAWING MACHINE.

No. 362,270.

Patented May 3, 1887.



WITNESSES:

Donn Twitchell
C. Sedgwick

INVENTOR:

A. F. Gillet

BY

Munn & Co.

ATTORNEYS.

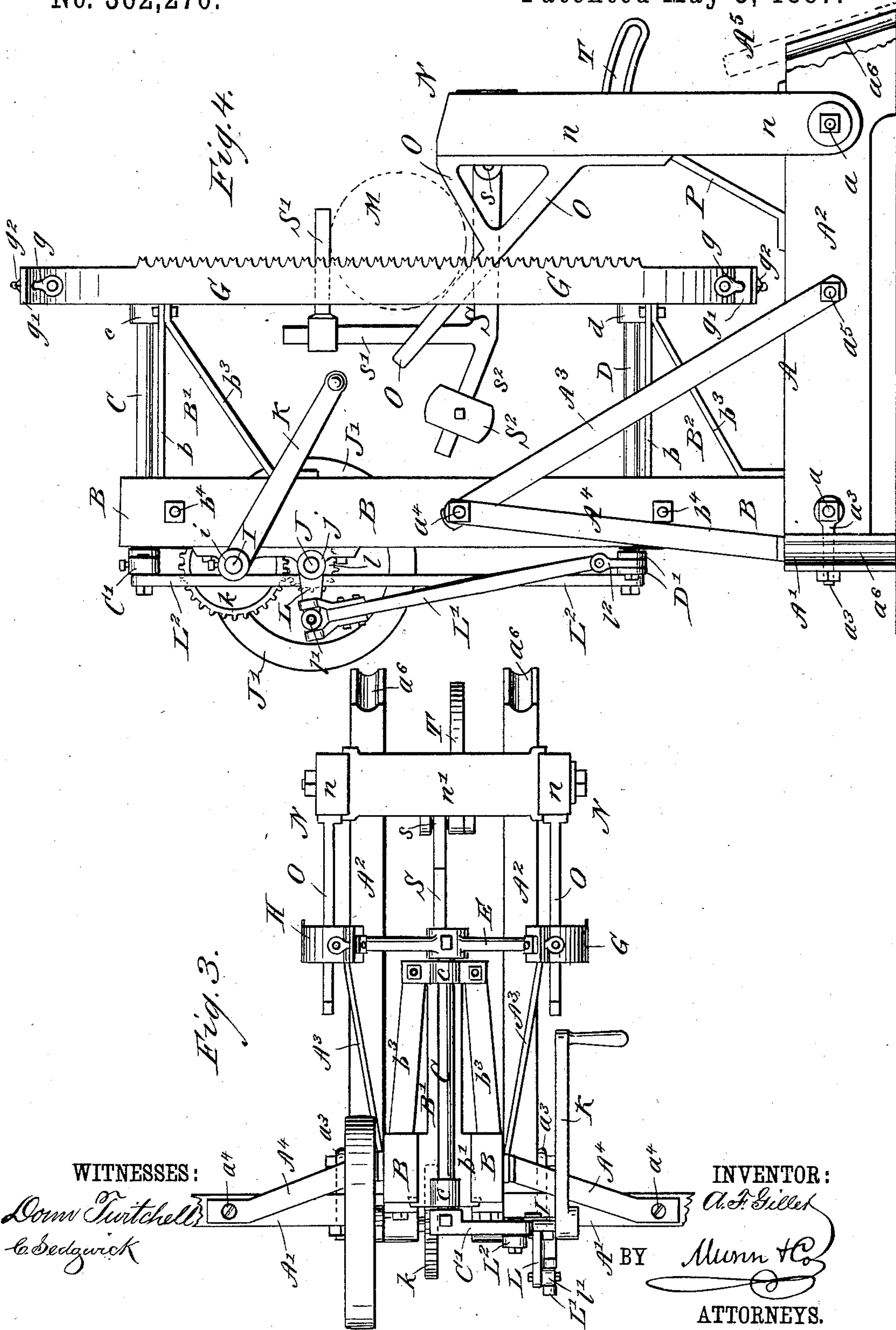
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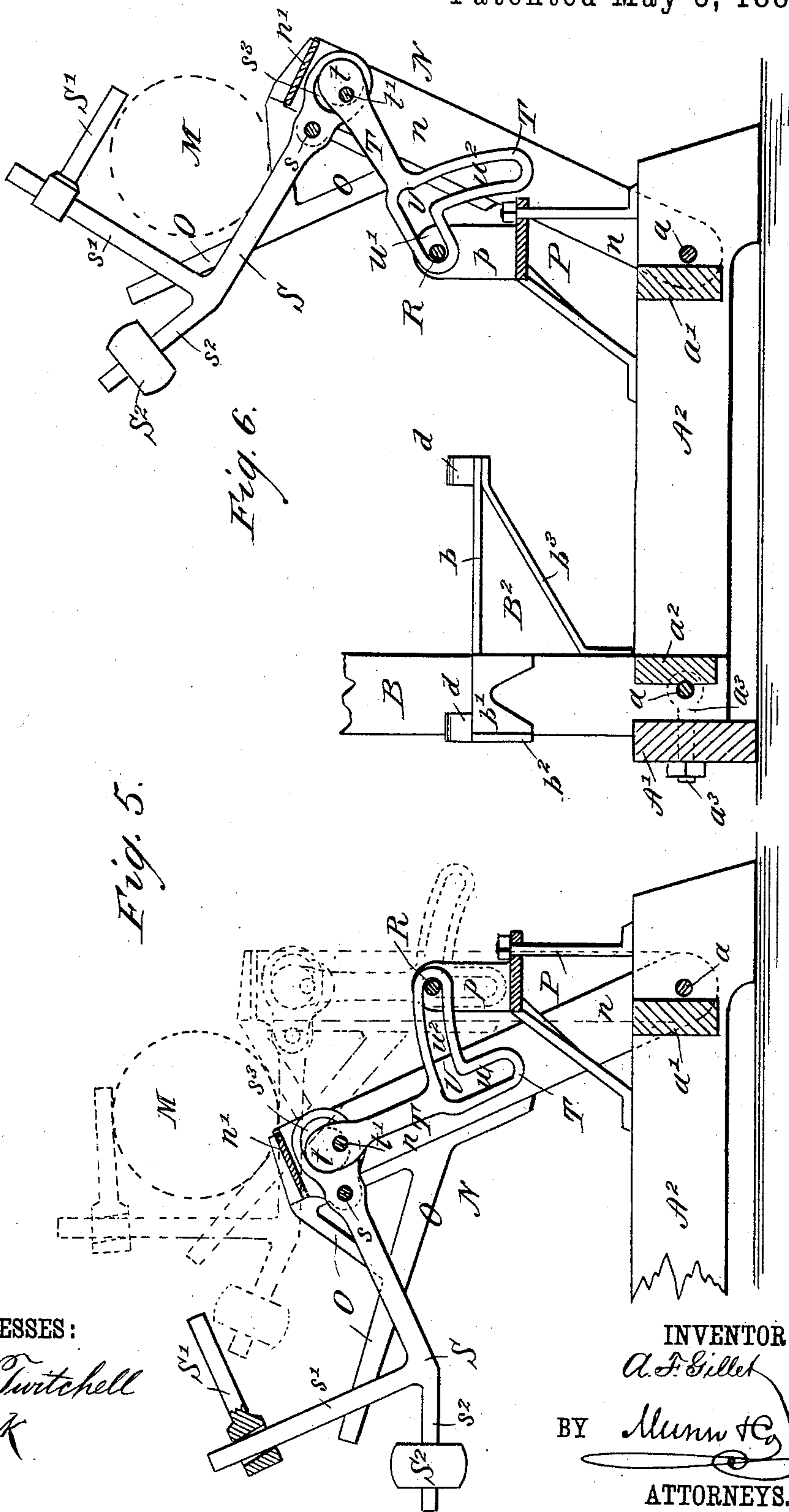
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UNITED STATES PATENT OFFICE.

ALEXIS FRANÇOIS GILLET, OF BURLINGTON JUNCTION, MISSOURI.

SAWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 362,270, dated May 3, 1887.

Application filed June 21, 1886. Serial No. 205,787. (No model.)

To all whom it may concern:

Be it known that I, ALEXIS FRANÇOIS GILLET, of Burlington Junction, in the county of Nodaway and State of Missouri, have invented a new and Improved Sawing-Machine, of which the following is a full, clear, and exact description.

My invention relates to a machine adapted especially for crosscutting sticks of timber of any thickness into stove-wood, but applicable also for other duty; and the invention has for its object to provide a simple, comparatively inexpensive, and durable machine of this character, which may be operated by hand or power with marked economy of time and labor as compared with the sawing of wood by the ordinary handsaw and buck.

The invention consists in certain novel features of construction and combinations of parts of the sawing-machine, all as hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of my improved sawing-machine. Fig. 2 is a rear view thereof. Fig. 3 is a plan view, partly broken away. Fig. 4 is a side view of the machine; and Figs. 5 and 6 are enlarged detail views, intended more especially to illustrate the operation of the wood holding, feeding, and discharging devices.

The frame of the machine is made with a base or foot section, A, and two uprights or posts, B B. The base A consists of a rear cross-timber, A', two timbers, A² A², ranging from front to rear of the machine and abutting the cross-timber A', and two spacing-blocks, a' a², the one a' placed between the forward parts of timbers A² A², and the one a² placed between the lower ends of the posts B B, which are placed inside of the timbers A² A² and are rabbeted over the cross-timber A'. Cross-bolts a a bind the timbers A² A², the spacing-blocks a' a², and the lower ends of the post B B securely together, and eyebolts a³ a³, engaging the rear cross-bolt a by their eyes, pass through the rear cross-timber, A', and receive nuts at the back thereof, whereby the timber A' is held firmly. Braces A⁴ A⁴, one at each side

of the frame, are bolted at a⁴ to the posts B, and at their lower ends are secured to the cross-timber A', and braces A³ A³, one at each side of the frame, are held at their tops to the posts B by the bolts a⁴, and are bolted at their lower ends at a⁵ to the opposite sill-timbers, A² A². A frame thus constructed is very strong and stable, and gives substantial support to the operating parts of the machine, presently described. Both ends of the base-timber A' and the front ends of the timbers A² A² are concaved or grooved, as at a⁶, to allow stakes, as shown at A⁵ in dotted lines in Fig. 4, to be driven into the ground and lie within the grooves a⁶, to anchor the machine securely when it is to be operated by other than manual or hand power.

To and between the top and bottom parts of the frame-posts B B there are secured the heavy brackets B' B², respectively, each of said brackets consisting of a top plate, b, connected at its back end to a yoke or head piece, b', which has opposite side plates resting against the opposing faces of the posts B B, and has flanges b² b² lapping on the rear sides of the posts. Two strong brace bars or plates, b³ b³, are bolted to the outer end of the top plate, b, and at their lower ends are bolted to the opposite posts, B B. The brackets B' B² are held to the posts B B by bolts b⁴, and on the brackets there are formed or fixed front and rear boxes, c c d d, in which are journaled upper and lower shafts, C D, respectively.

To the shafts C D there are fixed at the front of the machine the segment-wheels E F, respectively, and to these wheels the two saws G H are attached by means of bolt ends g h, fixed to the ends of the saws and passing freely through lugs g' h' on the saw-wheels, and receiving nuts g² h² at the backs of the lugs, and whereby the saws may be strained up at any time by tightening the nuts on the bolt ends, and allowing quick removal of the saws for sharpening them. The saws have teeth cutting both ways.

In boxes i j on metal plates bolted to the rear faces of the frame-posts B B are journaled shafts I J, to which are fixed the intermeshing gear-wheels k l. A hand-crank, K, on the shaft I will, when turned, cause rotation of shaft J, to which is fixed a balance-wheel, J',

to aid the working of the machine by the hand-crank, and over which wheel J' a belt may be passed from any convenient steam-engine shaft or other motor for driving the saws by other than manual power.

To the shaft J there is fixed a crank-arm, L, the wrist-pin on which is connected, preferably, by a universal joint, l' , with the upper end of a rod, L' , the lower end of which is connected by a link-piece, l^2 , with a crank-arm, D', fixed to the lower saw-wheel shaft, D, and to this arm D' there is pivoted the lower end of a connecting-rod, L^2 , which is attached at its upper end to a crank-arm, C', fixed to the upper saw-wheel shaft, C. With this construction, as the crank-arm L is turned by and with the shaft J, the rods L' L^2 will rock the shafts C D, and their saw-wheels E F will be oscillated to impart a vertical reciprocation to both the saws G H, alternately, in opposite directions.

The buck or support N for the sticks M of wood to be crosscut or sawed is made with two side pieces, $n n$, connected at their upper ends by a metal head-plate, n' , and pivoted at their lower ends to the base-frame A, on the front cross-bolt, a , of the frame. To the rear faces of the sides $n n$ of the buck N there are fixed a couple of metal arms, O O, made with their tops inclining downward both ways toward their centers, as in Figs. 4, 5, and 6, to receive the sticks M. Between the sides of the buck N there is fixed to the base-frame a tripod-stand, P, having two head-plates, $p p$, through the tops of which a bolt or pin, R, is passed.

To and between heavy lugs $n^2 n^2$ on the head-plate n of the buck N there is pivoted, at s , an arm, S, which extends rearward and has a stem, s' , on which is placed a clamp-bar, S', having a loose fit on the stem, allowing the bar to be self-clamping by biting the stem at two diagonally-opposite corners of the mortise of the bar through which the stem passes, as will be understood from Fig. 5 of the drawings. The arm S also has a rearwardly-projecting stem, s^2 , on which is placed an adjustable counter-weight, S^2 , which by its gravity swings the buck N backward at the proper time for feeding the stick M to the saws, as hereinafter explained. At its front part the arm S is provided with an elongated hole, s^3 , in which is fitted the head or disk t of a lever, T, said head t also being pivoted to the lugs $n^2 n^2$ of the buck-head plate n by a stout pin, t' , which is placed off the center of the head t , causing the latter to act as an eccentric on the arm S, when the buck is swung backward, for clamping the stick M, or forward, for releasing the stick.

The lever T is provided at its lower end with an L-shaped slot, U, through which the pin R passes, to hang the lever onto the tripod-stand P, the two parts $u' u^2$ of slot U having special functions relatively to the pin R and the parts O S of the buck in clamping, feeding, and discharging the stick, as presently described.

The operation is as follows: The sawyer will swing the buck N forward toward him to the

position shown in Fig. 6 of the drawings, and he will then place the stick M to be sawed onto the buck-arms O O, and the clamping-bar S' will then be lowered to the stick. In this forward position of the buck the base of the part u' of the slot U of lever T will rest against the pin R in the stand P. After the stick M is placed on the buck the latter will be pushed backward by the sawyer to the position indicated by dotted lines in Fig. 5, or until the buck side pieces, $n n$, and the main body part of the lever T stand about in vertical position. During this backward movement of the buck the pin R will be confined by the part u' of slot U, and the eccentric head t of the lever T will throw the forward end of the arm S upward by action in the slot s^3 of said arm, whereby the rear portion of the arm will be swung downward on the pivot s as a fulcrum, to cause the clamp-bar S' to bite or bind on the stem s' , and simultaneously press hard upon the stick M and clamp it securely to the buck, which result is effected just as the motion of lever T has caused the fixed pin R to stand at the point of junction of the parts $u' u^2$ of the slot U, and from this point the slot u^2 describes an arc struck from the hinge-bolt a of the buck as a center, and whereby, as the buck is swung backward, the pin R will rest in the part u^2 of the slot and will have no effect to shift the lever T, either for clamping or unclamping the stick. About at the time the buck reaches the dotted position in Fig. 5 the stick M will be carried against the reciprocating saws G H, and the weight S^2 on the arm S will automatically swing the buck backward to feed the stick to the saws until the stick is cut through, and the backward swing of the buck will almost immediately thereafter be stopped by contact of the front end wall of the part u^2 of slot U against the pin R, the buck then assuming its extreme backward position. (Shown in full lines in Fig. 5.) As the stick is cut through, its two end parts, which overhang the arms O O of the buck, fall to the ground, one at each side of the machine, and the center portion or third part of the stick still remains clamped on the buck. To discharge this center portion of the stick the sawyer only has to draw the head of the buck forward or toward him, and as the buck sides $n n$ and lever T move forward of the vertical position, the pin R will, by its action on the lever T, at the angle of the slot U, and in the part u' of said slot, throw the front slotted end of arm S downward and lift its rear part and raise the bar S to unclamp the stick, which will then automatically be disengaged from the buck by the momentum of its rearward movement, and the buck will again rest in the position shown in Fig. 6, ready to receive another stick to be sawed in the manner above described.

It is obvious that two cuts are made through the stick at once, leaving the cut wood the proper length for use in ordinary stoves, and the work is done very much faster than when

the ordinary saw and buck are used, and with much greater ease and comfort, as the sawyer when turning the crank K to operate the saws stands quite erect and so that he can apply
 5 his strength with advantage, and, as the saws move through the stick in a straight line, they cut clean and with very little friction, which greatly economizes the driving-power. The saw-wheels E F may be made any size to space
 10 the saws G H apart any distance for cutting the sticks into pieces of any preferred length. The hand-crank K may be connected with the shaft J, and the gearing *kl* and shaft I be dispensed with; but the arrangement shown
 15 for speeding up the motion of the saws is preferred in practice.

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

20 1. The combination, in a sawing-machine, of a supporting-frame, opposite saw-supports journaled thereon, two saws held at opposite ends to the supports, mechanism for oscillating the supports to reciprocate the saws alter-
 25 nately in opposite directions, and a saw-buck hinged for movement to and from the saws and comprising side bars, *nn*, to support the sticks to be sawed, and an arm, S, pivoted at *s* to the buck-frame and having a stem, *s'*, and
 30 clamping-bar S' on said stem, a slot, *s*³, in the arm S, a lever, T, having an L-shaped slot, U, a pin, R, held to the sawing-machine frame and entering said slot, and said lever T hav-
 35 ing a head, *t*, entering the slot *s*³ of arm S and pivoted eccentrically at *t'* to the buck-frame, substantially as described, and for the purposes set forth.

2. In a sawing-machine, the combination, with a frame, as at A B, and bearings thereon,

of shafts C D, saw-wheels E F' thereon, saws G 40 H, held to the wheels, a shaft, J, and gearing rotating said shaft, crank-arms C' D' on shafts C D, crank-arm L on shaft J, rod L', connect-
 ing the crank-arm L with the crank-arm D', and a rod, L², connecting the crank-arms C' D', 45 substantially as described, for the purposes set forth.

3. In a sawing-machine, the saw-buck N, comprising side bars, *nn*, pivoted to the machine-frame and connected at their upper 50 ends, arms O O, fixed to bars *nn*, to support the sticks to be sawed, an arm, S, pivoted at *s* to the buck-frame, and having a stem, *s'*, and clamping-bar S' on said stem, a slot, *s*³, in
 55 the arm S, a lever, T, having an L-shaped slot, U, a pin, R, held to the sawing-machine and entering said slot, and said lever T having a head, *t*, entering the slot *s*³ of arm S and pivoted eccentrically at *t'* to the buck-
 60 frame, substantially as described, for the purposes set forth.

4. In a sawing-machine, the saw-buck comprising a frame, *nnn'*, pivoted to the machine-frame, arms O O, to support the sticks, an arm, S, pivoted at *s* to the buck-frame and having 65 a stem, *s'*, a clamping-bar, S', adjustable on said stem, a stem, *s*², on arm S, a weight, S², on stem *s*², a lever, T, having an L-shaped slot, U, a pin, R, held to the sawing-machine
 70 frame and entering said slot, and said lever T having a head, *t*, entering slot *s*³ of arm S and pivoted eccentrically to the buck-frame, substantially as described, for the purposes set forth.

ALEXIS FRANÇOIS GILLET.

Witnesses:

LOUIS GILLET,
 ALEXIS MARCHAND.