

No. 616,353.

Patented Dec. 20, 1898.

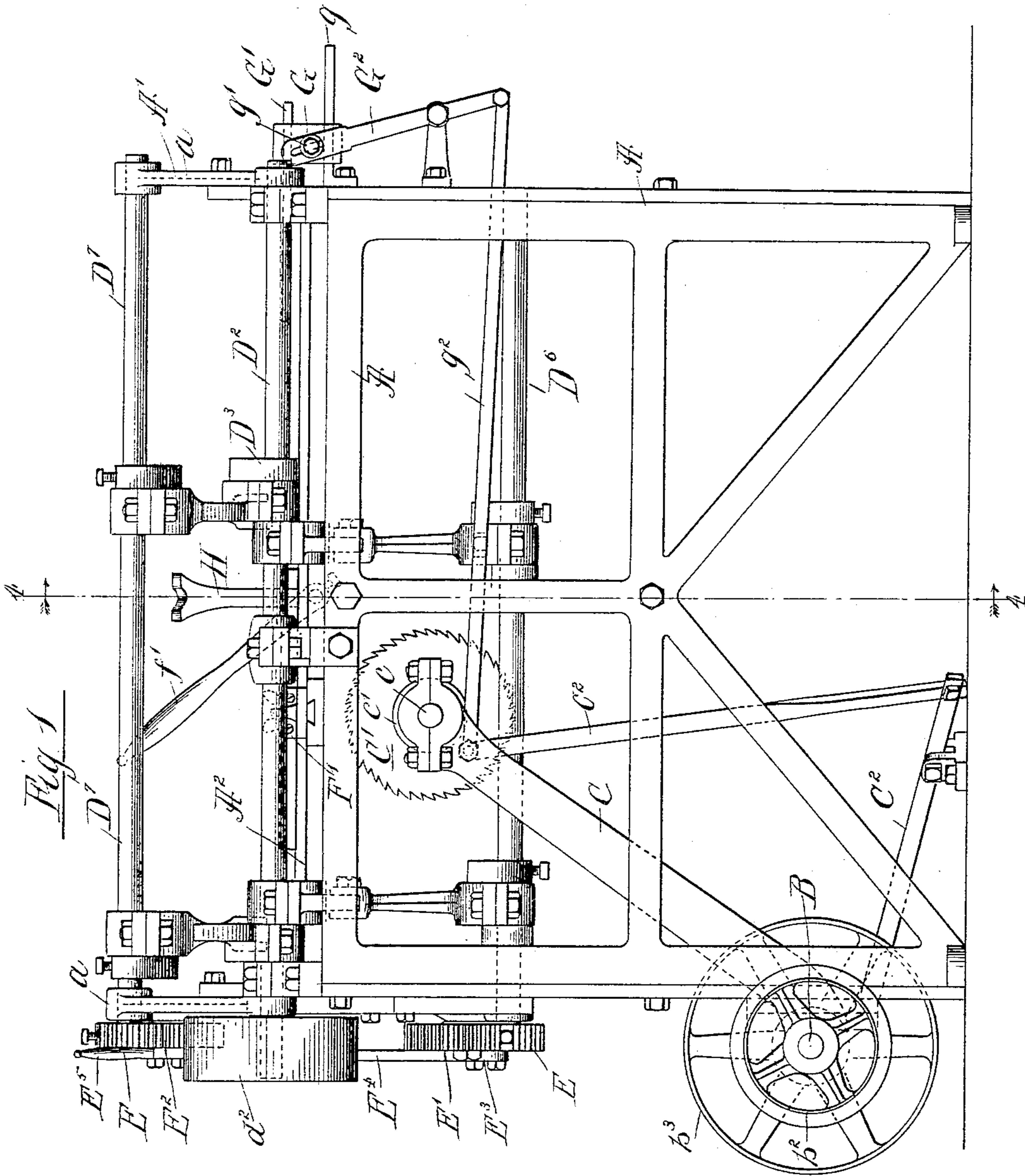
F. V. PHILLIPS.

MACHINE FOR CUTTING WINDOW STILE POCKETS.

(Application filed Jan. 20, 1896.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses  
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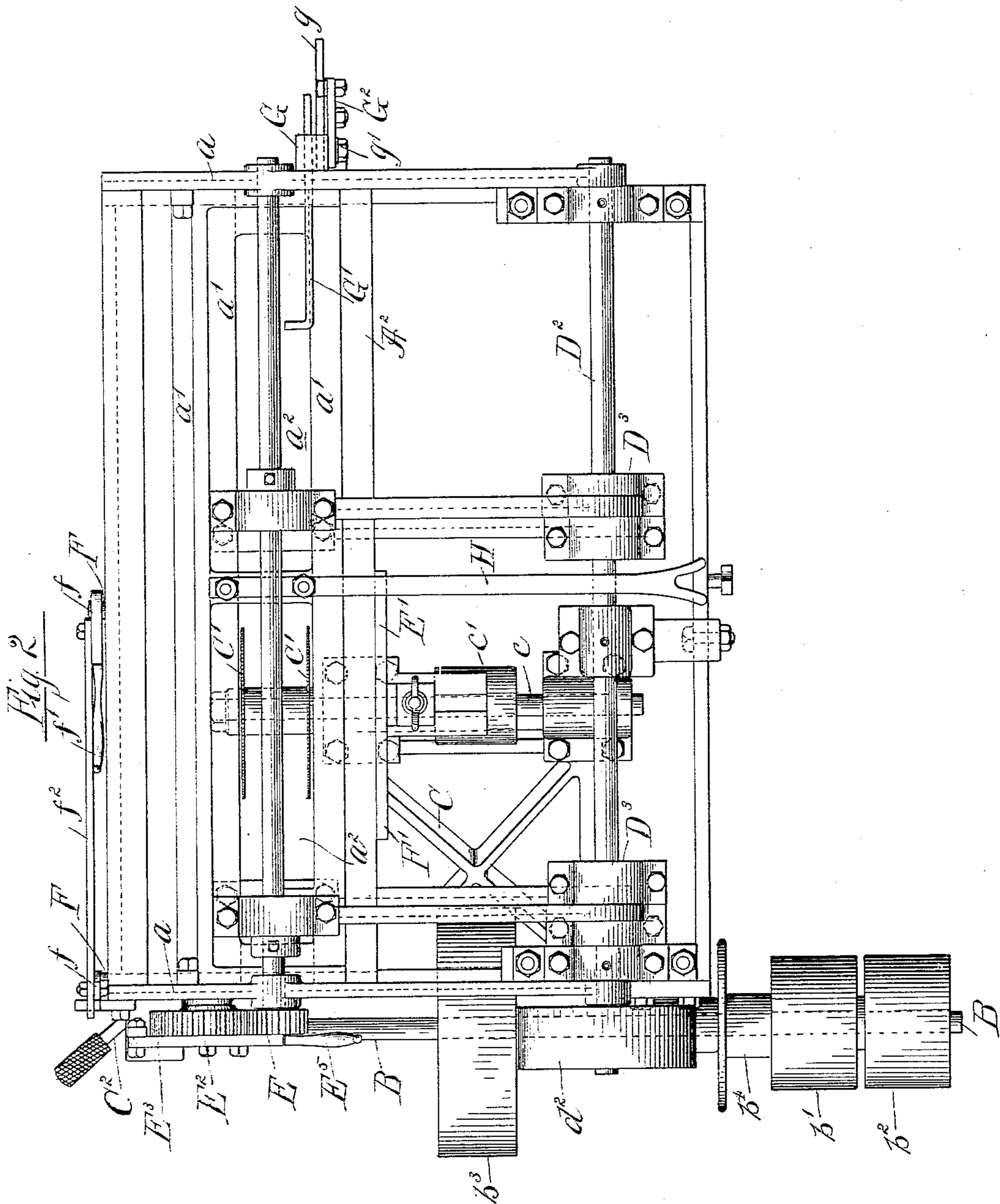
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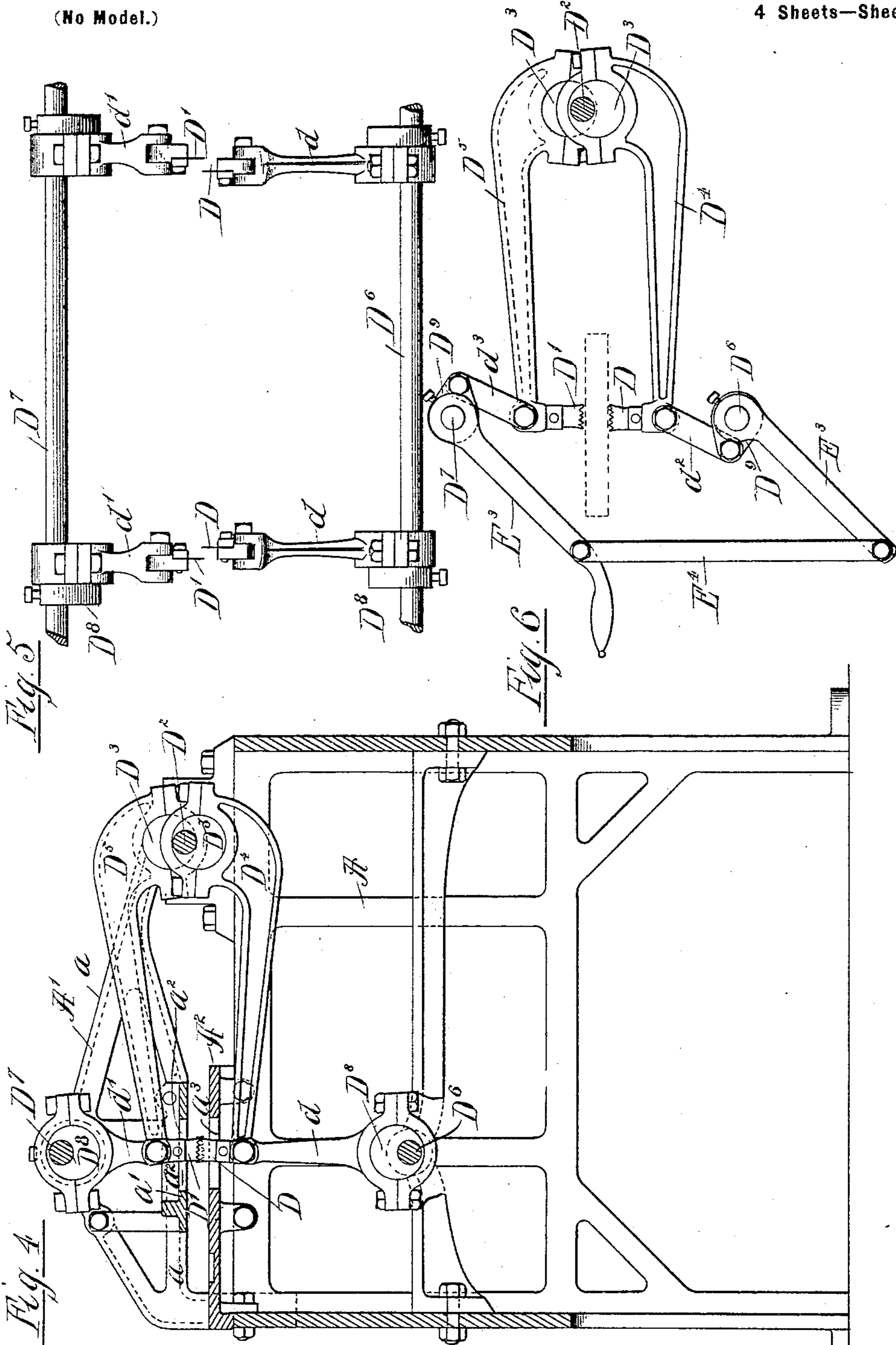
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4 Sheets—Sheet 4.



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# UNITED STATES PATENT OFFICE.

FRANCIS V. PHILLIPS, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE SMITH & PHILLIPS MANUFACTURING COMPANY, OF SAME PLACE.

## MACHINE FOR CUTTING WINDOW-STILE POCKETS.

SPECIFICATION forming part of Letters Patent No. 616,353, dated December 20, 1898.

Application filed January 20, 1896. Serial No. 576,116. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS V. PHILLIPS, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Cutting Window-Stile Pockets; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to machines for cutting window-stile pockets of the general character set forth in Letters Patent No. 483,968, granted October 4, 1892. Generally and briefly described, said pocket is formed by side cuts (one or two) parallel with the edge of the stile, which sever the pocket laterally from the body of the stile, two offset end cuts at each end of the pocket extending inward to a plane within the stile between its broad surfaces and fractures with the grain of the wood connecting the inner extremities of the offset end cuts at each end of the pocket. The end cuts made from the front surface of the stile are farther apart than those made from the back side, so that the pocket-piece is removable outwardly when the frame is in place in the building. I have heretofore invented and constructed a machine for cutting this kind of window-pocket, the same being set forth in Patent No. 548,454, dated October 22, 1895, and granted upon my application, Serial No. 445,959, filed September 15, 1892. I have also embodied the said invention in another and improved form, as set forth in a second application, Serial No. 536,611, filed January 24, 1895. The machine herein described is still another embodiment of the original invention, containing improvements and additional inventions.

The improvements herein described (using the term "improvements" to embrace additions) have for their objects, first, a construction in which a circular saw or a pair of circular saws may be employed for making the side or lengthwise cut or cuts; second, the separation of the operation of making the end cuts from that of making the side cut or cuts, whereby a machine may be adapted for making the end cuts alone and the side cut or cuts may be

previously or subsequently made by another machine and whereby the machine when organized, as here shown, to perform both operations one after the other the convertibility of the machine to one adapted for either the end cutting of pockets and the like or the uses of a general sawing-machine may be more readily effected, and, third, the convertibility of the machine into a table sawing-machine suitable for cutting dados, cross-gains, plowing, grooving, or plain sawing, and, fourth, a simpler and better construction of devices for actuating the cross-cutters.

Other improvements will also appear from the following description of the machine and will be pointed out in the accompanying claims.

In the machines illustrated in my said prior applications for patent the side cutters are shown as of straight form and as having lengthwise-reciprocating motion. In the present construction the side cutters are circular saws having a movement in their own planes, whereby they may be forced through the stile at the proper point for the formation of the pocket, the stile being given lengthwise motion to extend the length of the side cuts, if required. This improvement enables the cutting of pockets in stuff much thicker than can be advantageously cut by straight-toothed cutters, and therefore enlarges the range of usefulness of the machine. The machines of the prior patent and application are adapted only for cutting pockets. The present machine is convertible into a general sawing-machine, being constructed with a movable part or parts by which the circular saw is exposed in position for use for other purposes than pocket-cutting. This last-mentioned improvement has of course no relation to the use of the machine as a pocket-cutter; but it is a possibility resulting directly from the use of a circular saw or saws in the machine for making the side cut or cuts of the pocket. The great value of this convertible feature of the machine is due to the fact that by reason of the great capacity of the machine as a pocket-cutter small factories can give it employment for only a small part of the time, and when idle it necessarily occupies valuable space in the mill. By making the machine converti-

ble from a pocket-cutter to a plain circular sawing machine, dado-cutter, groover, &c., it may take the place of the ordinary sawing-machine, and thus increase the productive capacity of the mill without taking up additional space. The machine may obviously have the circular saws without being convertible, and certain of the claims hereto appended are intended to protect the invention in its non-convertible form. The invention is, however, herein illustrated in convertible form.

Describing the present invention with reference to the accompanying drawings, Figure 1 is a rear side view of the machine. Fig. 2 is a top view. Fig. 3 is a front elevation. Fig. 4 is a transverse vertical section on the line 4 4 of Fig. 1. Fig. 5 is an enlargement of certain details in side view, and Fig. 6 shows a modification of certain connections.

A represents the main frame of the machine, said frame being preferably rectangular and oblong in form, as shown. A' represents a separate and relatively-movable top frame composed of end castings  $a$   $a$ , joined by the parallel bars  $a'$   $a'$ , separated by the openings  $a^2$ .

$A^2$  represents a table which is secured upon the top of the main frame A, with a suitable lengthwise opening  $a^3$  therein directly beneath the opening  $a^2$  between the bars  $a'$ , this table  $A^2$  forming a support upon which the stile or other stuff to be operated upon may be moved or held (as the case may be) in operating thereon. Said table  $A^2$  may of course, if desired, be made either in a single piece, with the opening  $a^2$  formed therein, or of two parts having such a space or opening between them.

B represents the main driving-shaft, said shaft being mounted crosswise of the machine in suitable bearings  $b$   $b$ . It is here shown situated near the head of the machine, (where the operator stands;) but it may be at or near the opposite end, if preferred. This shaft has upon its projecting extremity the fast and loose pulleys  $b'$   $b^2$ , which should be adapted for a four-inch driving-belt. Between its ends is the belt-pulley  $b^3$ .

C is a rigid vibratory frame having its axis upon the driving-shaft B and having its free end extended upward in the inclined direction shown in Fig. 1 and adapted to rise and fall within the main frame A. Upon such free end of the vibratory frame C is mounted a horizontal saw-arbor  $c$ , arranged parallel with the driving-shaft B, and upon the projecting end of this arbor are secured in the usual or any suitable way one or two circular saws  $C'$   $C'$ , which (when two are employed) are separated by a space equal to the width of the stile-pocket to be cut. The saws  $C'$  are arranged to rise through the space  $a^3$  of the table  $A^2$  when acting upon the stile resting on said table and are adjustable on the arbor  $c$  by the usual means to permit the cutting of pockets of different widths or for other

purposes. The saw-arbor  $c$  is provided with a band-pulley  $c'$ , over which a suitable belt passes from the pulley  $b^3$  on the driving-shaft B.

$C^2$  represents a pivoted foot-lever connected by a stiff rod  $c^2$  with the free end of the saw-frame C, by means of which lever the operator may raise the saws  $C'$  through the table  $A^2$  and into the stile or other stuff resting thereon, the saws being held thus elevated while the stile is moved lengthwise along against the saws when the kerfs to be made therein are required to be longer than will be made by the elevation of the saws alone. The saw-frame may descend and retract the saws by its own weight or otherwise.

D D represent two lower cross-cutters, and  $D'$   $D'$  two upper cross-cutters, for cutting the ends of the stile-pocket. These cutters are shown to be vertical, as they are also shown in my said second prior application for patent, and not inclined, as shown in my first above-mentioned application. The inclination of such cross-cutters has been found in practice unnecessary and for some reasons less desirable. The cross-cutters D and  $D'$  are also here shown as being toothed saws and as being given their necessary reciprocatory movement in their own planes by the following means.

$D^2$  is a rotating shaft situated near the back of the machine in or near the plane of the table  $A^2$ , being given its motion by a twist belt trained over the pulley  $d^2$  thereon and the pulley  $b^4$  on the shaft B, or otherwise.  $D^3$   $D^3$  are four eccentrics secured on said shaft B. These eccentrics are arranged in two pairs separated on the shaft by a distance equal to the proposed length of the pocket to be cut, and the eccentrics of each pair are preferably arranged oppositely as to their throw.

$D^4$  and  $D^5$  are pitmen mounted on the eccentrics  $D^3$ , and at their free ends they connect with the cross-cutters D and  $D'$ , respectively. One pitman  $D^4$  proceeds from one of the eccentrics  $D^3$  of each pair of the latter to actuate one of the lower cross-cutters D, and, similarly, one pitman  $D^5$  proceeds from the other eccentric  $D^3$  of each pair to actuate one of the upper cross-cutters  $D'$ . Said pitmen are given the downwardly and upwardly curved forms shown for the obvious purpose of clearing the table  $A^2$  and superjacent frame-bar  $a'$ , below and above which, respectively, they connect with the cross-cutters.

The cross-cutters D and  $D'$  are fed into the stile and retracted therefrom preferably by connection of the free ends of the pitman with cranks or eccentrics on oscillatory shafts arranged, respectively, below and above the cross-cutters, as best illustrated in Figs. 4, 5, and 6. In all figures except Fig. 6 eccentrics are shown for this purpose; but in Fig. 6 cranks take the place of the eccentrics.

$D^6$  is a horizontal shaft mounted in the main frame A some distance below the table

$A^2$ , and in line with the free ends of the pitmen  $D^7$  is a like shaft mounted in the upper part of the top frame  $A'$  over the free ends of the pitmen.

5 Describing the construction in which eccentrics, as distinguished from cranks, are employed,  $D^8$  represents the eccentrics placed on the shafts  $D^6$  and  $D^7$ , one above each upper pitman and one below each lower one, the  
10 upper and lower eccentrics being arranged oppositely as to their throw, as plainly shown in Fig. 4. The box-straps of the lower eccentrics  $D^8$  connect with the extremities of the lower pitmen  $D^4$  through the medium of arms  
15  $d$ , and those of the upper eccentrics similarly connect with the upper pitmen through arms  $d'$ . By these means oscillation of the shafts  $D^6$  and  $D^7$  will obviously force the cross-cutters into a stile to make the end cuts of  
20 the pocket or retract the cutters after such end cuts have been made. For the purpose of simultaneously advancing and simultaneously retracting all the cross-cutters the shafts  $D^6$  and  $D^7$  are shown as having secured to their protruding ends at the head of  
25 the machine pinions or toothed segments  $E$   $E$ , and intermeshing with these are two segments  $E'$   $E^2$ , of larger radius, journaled on the frame. To these latter segments are secured  
30 parallel arms  $E^3$   $E^3$ , connected by a rod  $E^4$ , the upper one of the arms  $E^3$  being provided with a handle  $E^5$ , by which the operator may move it, and thus simultaneously rock the segments  $E'$   $E^2$  to oscillate the shafts  $D^6$   $D^7$ ,  
35 and he may thus advance all the cross-cutters  $D$   $D'$  into the stile at the same time in cutting the pocket, or he may simultaneously retract them out of the stile after the cuts have been made.

40 In the modification shown in Fig. 6 the shafts  $D^6$  and  $D^7$  have secured thereon cranks  $D^9$   $D^9$  in place of the eccentrics  $D^8$ , said cranks being connected with the ends of the pitmen  $D^4$   $D^5$  by means of pivoted rods or  
45 bars  $d^2$   $d^3$ . In this case the parallel connected arms  $E^3$   $E^3$  are secured to the front ends of the shafts  $D^6$   $D^7$ . The crank construction last described is preferable for its greater simplicity and by reason of the less  
50 vertical movement required of the levers  $E$  to give the full desired movements to the cross-cutters.

The length of the pocket cut by the machine may be varied at pleasure by shifting  
55 the positions of the eccentrics  $D^8$   $D^8$  (or of the cranks  $D^9$  used in place of the eccentrics  $D^8$ ) on the several shafts to which they are applied or by shifting such of these eccentrics as are concerned in the operation of the  
60 cross-cutters at one end only of the pocket. To this end said eccentrics and cranks will be movably secured to the shafts on which they are mounted by any familiar or suitable means of which the set-screws illustrated are  
65 an example. The side cut or cuts made by the circular saw or saws may of course be given any desired length by lengthwise move-

ment of the stile against said saw or saws when the latter are in action.

It will be observed that the machine-frame 70 affords openings at each end beneath the top frame for the introduction and passage of the stile to be operated upon as it rests or slides along the table  $A^2$ , and also that the top frame or the bars  $a'$   $a'$  thereof may afford a bearing 75 or rest for the upper surface of the stile when subject to pressure from below—as, for example, when the circular saws are being forced upward through the stile. The device here shown and desirably employed for clamping 80 the stile in place in the machine while the end cuts of the pocket are being made also presses upwardly on the stile against the resistance of the top frame.

In the clamping device herein shown  $F$   $F$  85 are oscillatory rods arranged transversely beneath the upper surface of the table  $A^2$  and having their ends projecting at the outside of said table, where they are provided with parallel arms  $f$   $f$ , on one of which is a handle  $f'$ . 90 These arms  $f$   $f$  are connected by a rod  $f^2$ , pivoted to both, so that the rods  $F$   $F$  may be simultaneously oscillated by the operator using the handled one of the arms  $f$  as a hand-lever. Opposite the opening  $a^3$  in the table  $A^2$  the 95 rods  $F$  have each one or more projecting spurs, which by the oscillation of the rod may be forced upwardly into the under surface of the stile to secure it in place or retracted therefrom to release it. 100

As a means for guiding or adjusting the stile in the machine I prefer to employ the gage set forth in my application for patent, Serial No. 536,611, which gage enters the stop-groove (which is always present in the stile) 105 instead of engaging the edge of the stile. The stop-groove gage is not herein shown; but in its place is shown the adjustable side gage  $F'$ , Figs. 2 and 3, which also serves as a general work-gage when the machine has been 110 converted into a plain sawing-machine, as will be hereinafter explained.

The end stop mechanism for the adjustment of the stile to position in cutting the pocket is preferably of the following construction. 115

$G$  represents an apertured block adapted to slide upon the fixed horizontal rod or bar  $g$ , which is attached to the end of the machine-frame in line with the table  $A^2$ . In a hole in the block  $G$  is adjustably secured a rod  $G'$ , 120 the inner end of which is arranged over the table  $A^2$  in position to be struck by the end of a stile inserted into the machine from its opposite end or side.

$G^2$  is a lever pivoted between its ends to 125 the machine-frame and provided at its upper end with a slot through which passes a pin or bolt  $g'$ , that enters the block  $G$ , and thereby enables the lever when vibrated to give movement to the block along its support  $g$ . The 130 lower end of the lever  $G^2$  is connected by a rod  $g^2$  with the upper part of the circular-saw frame  $C$ , as clearly shown in Fig. 1. In raising the circular saws, therefore, the lever  $G^2$

will be vibrated to throw the block G rearward, and in dropping the saws said block will be moved forward or inward to the position it occupies in Figs. 1 and 2. It may be understood that when the block G is in its inner position, or, in other words, when the saw-frame C is down, the adjustable rod G is in proper position to gage the place of the stile to receive the end cuts of the pocket.

The stile is thrust endwise into the machine far enough to commence the side cuts at the lower end of the pocket, and then after raising the saw or saws C' through the stile the latter is pushed farther into the machine and against the saws until the stile strikes the stop-gage G'. The saw-frame is then lowered or let fall, and in its descent it causes inward movement of the stop-gage, which pushes the stile back to the proper position to receive the end cuts. At this point the stile is clamped in place and the reciprocating end cutters caused to enter the stile. Their cuts being completed, they are retracted and the stile is released from its clamps and withdrawn.

It will be observed that the shaft D<sup>7</sup>, which is connected with the upper cross-cutters, and the part or parts opposed to the clamping-spurs belong to the top frame A'. For the purpose of exposing the circular saw or saws suitably for general or special use other than that of making the side cut or cuts of pockets this top frame A' is made removable away from the main frame or from over the table A<sup>2</sup>, and to give ready convertibility back to a pocket-cutter this is preferably done in the manner indicated in the drawings, in which it is shown hinged to the main frame on the rotary shaft D<sup>2</sup> as an axis. Thus connected, the top frame A' may be raised to the position shown in dotted lines of Fig. 3, where it may be temporarily fastened by a detachably-secured brace-rod H during the use of the machine for mere sawing purposes and from which it may be quickly lowered when the machine is to be again used for pocket-cutting. To free the top frame, in order that it may be raised as described, the rod E<sup>4</sup> may be detached at its upper end from the lever E<sup>3</sup> and any fastenings employed to secure the frame A' to the main frame released. The belt which drives the shaft D<sup>2</sup> should also be thrown off. One suitable form of fastening for holding the top frame A' to the main frame A when the machine is in use as a pocket-cutter is clearly shown in Fig. 3 and consists in a lug or lugs a<sup>4</sup>, depending from the top frame close to the main frame, and a bolt or pin a<sup>5</sup>, passing through the lug into the main frame.

It is evident that the detail mechanisms may be widely varied without departure from the invention, as well as that certain of the improvements set forth may be employed without others.

I claim as my invention—

1. In a machine for making window-stile pockets of the character described, the com-

bination, with cross-cutters for making the offset end cuts of the pockets from the opposite sides of the stile, of a saw-arbor carrying one or a pair of circular saws arranged to operate between the cuts made by said cross-cutters for making the side cut or cuts of the pocket, and means for supporting the stile, the saw-arbor and stile-support being relatively movable whereby the circular saw or saws may be made to enter and to be retracted from the stile laterally between its ends.

2. In a machine for making window-stile pockets of the character described, the combination, with cross-cutters for making the offset end cuts of the pocket, of a fixed support for the stile, and a movably-mounted saw-arbor carrying one or a pair of circular saws arranged to operate between the cross-cutters for making the side cut or cuts of the pocket, together with suitable means for moving the saw-arbor toward the stile, whereby said saw or saws may be made to enter the stile laterally between its ends.

3. In a machine for cutting window-stile pockets of the character described, the combination, with a saw-arbor carrying one or a pair of circular saws for making the side cut or cuts of the pocket, said arbor being suitably mounted to give movement to said circular saws in the direction of their planes and toward the side of the stile, of reciprocating cross-cutters located in front and rear of said circular saws arranged to enter the stile from opposite sides, vibratory arms carrying said cross-cutters, means for forcing said cutters into the stile, and means for reciprocating the free ends of the arms carrying said cross-cutters.

4. In a machine for cutting window-stile pockets of the character described, the combination of opposing offset cross-cutters, vibratory arms on the free ends of which said cutters are mounted, means for giving longitudinally-reciprocating motion to the free ends of said arms and means connected with the arms for forcing the cutters into the stile.

5. In a machine for cutting window-stile pockets of the character described, the combination of opposing offset cross-cutters, vibratory arms on the free ends of which said cutters are mounted, a rotary shaft provided with eccentrics which are connected with said arms, and means acting on the free ends of said vibratory arms for forcing said cutters into the stile.

6. In a machine for cutting window-stile pockets of the character described, the combination of opposing offset cross-cutters, vibratory arms on the free ends of which said cutters are mounted, means for giving vibratory movement to said arms, rock-shafts having eccentrics thereon which act upon the free ends of said arms, and a connection between said rock-shafts whereby the same may be simultaneously rotated.

7. In a machine for cutting window-stile pockets of the character described, the com-

5 combination of opposing offset cross-cutters, vibratory arms on the free ends of which said cutters are mounted, a rotary shaft provided with eccentrics upon which said arms are pivoted, and means acting on the free ends of said arms whereby the cutters may be forced into the stile from opposite sides thereof.

10 8. In a machine for cutting window-stile pockets of the character described, the combination of opposing offset cross-cutters, vibratory arms on the free ends of which said cutters are mounted, means for giving vibratory motion to said arms, rock-shafts provided  
15 with eccentrics which are connected with the free ends of the vibratory arms, and a connection between said shafts whereby they may be simultaneously rotated and the cutters forced into the stile from opposite sides  
20 thereof.

9. In a machine for cutting window-pockets of the character described, the combination of opposing offset cross-cutters, vibratory arms on the free ends of which said cutters are mounted, a shaft provided with eccentrics with which said arms are engaged,  
25 two rock-shafts provided with eccentrics which are connected with and act upon the free ends of said vibratory arms, and a connection between said rock-shafts whereby they may be simultaneously rotated and the cutters forced into the stile from opposite sides thereof.

30 10. In a machine for cutting window-stile pockets of the character described, the combination of opposing offset cross-cutters, vibratory arms on the free ends of which said cutters are mounted, a rotary shaft having eccentrics with which said arms are engaged,  
35 two rock-shafts provided with eccentrics which are connected with the free ends of said vibratory arms, one or both of the eccentrics on each shaft being movable lengthwise of the shaft for varying the length of  
40 the pocket.

11. In a machine for cutting window-stile pockets of the character described, the combination of cross-cutters arranged out of line with each other, vibratory arms on the free  
45 ends of which said cutters are mounted, a shaft provided with eccentrics with which said vibratory arms are engaged, two rock-shafts provided with eccentrics, pitmen connecting the last-mentioned eccentrics with  
50 the free ends of said vibratory arms, and connections between said rock-shafts by which both of the same may be moved together.

12. In a machine for cutting window-stile pockets of the character described, the combination of cross-cutters arranged out of line with each other, vibratory arms on the free  
55 ends of which said cutters are mounted, a shaft provided with eccentrics with which said vibratory arms are engaged, two rock-shafts provided with eccentrics, a pitman connecting the last-mentioned eccentrics with the free ends of said vibratory arm, and con-

nections between said rock-shafts by which both of the same may be moved together, all of said eccentrics being movable upon the  
60 shafts carrying them, whereby the said cross-cutters may be set at a greater or less distance apart for making pockets of varying lengths.

13. In a machine for cutting window-stile  
65 pockets of the character described, the combination, with a circular saw or saws for first making the side cut or cuts of the pocket, and cross-cutters for subsequently making the end cuts of the pocket, a movable stop adapted to limit the sliding movement of the stile  
70 in making the side cut or cuts, and thus to determine the length of the side cut or cuts, and means for moving said stop and to thereby retract the stile to the proper position for  
75 receiving the cross-cutters.

14. In a machine for cutting window-stile pockets of the character described, the combination, with means for supporting the window-stile and cutters for making the end or  
80 cross cuts of the pocket, of a movable saw-frame carrying one or more circular saws for making the side cut or cuts of the pocket, and a movable stop connected with the said saw-frame and adapted to engage the end of the  
85 window-stile to limit the length of the cut made by such circular saw or saws, said movable stop being caused, by such connection with the circular-saw frame and upon retraction thereof, to push the stile into position to  
90 receive the end cutters subsequently brought into action upon the stile.

15. In a machine for making window-stile pockets of the character described, said machine containing a circular saw for making  
95 the side cut of the pocket, a horizontal table, means for projecting and withdrawing the saw therethrough, and cross-cutters mounted upon pivotal arms arranged above the table, the combination with the lower portion of the  
100 machine-frame, of an upper frame carrying said upper cross-cutters, movable entirely away from the part of the table contiguous to said circular saw or saws so that said saw or saws are made fully accessible and avail-  
105 able for other purposes than the cutting of window-stile pockets.

16. The convertible stile-pocket-cutting machine described, consisting essentially of separable lower and upper frames, as A and  
110 A', a vertically-movable circular-saw frame mounted in the lower frame, a table on the lower frame, adapted to allow the said circular saw to protrude upwardly through it, and cross-cutters supported by the upper frame,  
115 which, with the parts supported thereby, is movable entirely away from that portion of the table contiguous to the circular saw or saws, thereby making said lower frame and supported parts available as a circular saw  
120 and table for other uses than cutting window-stile pockets.

17. In a machine for cutting window-stile pockets, the combination with a lower sta-

tionary frame having a substantially unobstructed horizontal table at its top and containing a vertically-movable circular-saw frame provided with a saw adapted to be projected up through said table, of a separate upper frame hinged at one side to the stationary frame in position to overhang said table and carrying cross-cutters for making end cuts of the stile-pockets, the driving mechanism for said cross-cutters being constructed to permit the lifting up of the top frame without disconnection of said driving mechanism, and means for detachably securing the top frame to the lower frame when lowered to its position for pocket-cutting, substantially as described.

18. In a machine for cutting window-stile pockets, the combination, with a lower stationary frame having a substantially unobstructed horizontal table at its top and containing a vertically-movable circular-saw frame provided with a saw adapted to be projected up through said table, of a separate upper frame hinged at one side to the stationary frame so as to overhang said table and carrying cross-cutters for making end cuts of the stile-pockets, and means for detachably securing the top frame to the lower frame when lowered to its position for pocket-cutting, substantially as described.

19. A machine for cutting window-stile pockets of the character described, comprising a saw-arbor carrying a circular saw for making a side cut of the pocket, said arbor being mounted to give movement to the said circular saw in the direction of its plane, reciprocating cross-cutters arranged to simul-

taneously enter the stile from opposite sides thereof, means for actuating said cross-cutters, means under the control of the operator for throwing the cross-cutters into action, and means under the control of the operator for throwing the said circular saw into action, said devices for throwing the cross-cutters and circular saw into action being independent of each other, so that the cross-cutters and circular saw may be independently or successively operated.

20. In a machine for making window-stile pockets, the combination of a machine-frame having a longitudinal support for the stile, on which the latter is adapted to slide endwise, a side gage for determining the lateral position of the stile on the support, an end gage for limiting the endwise movement of the stile, a movably-mounted saw-arbor arranged transversely with respect to the stile-support and provided with two saws arranged parallel with the said gage, said arbor being movable to project the saws through the stile-support and the stile resting thereon for making two cuts parallel with the sides of the stile, and hand-actuated means connected with said saw-arbor.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 10th day of December, A. D. 1895.

FRANCIS V. PHILLIPS.

Witnesses:

M. E. DAYTON,  
WILLIS D. SHAFER.