

No. 615,587.

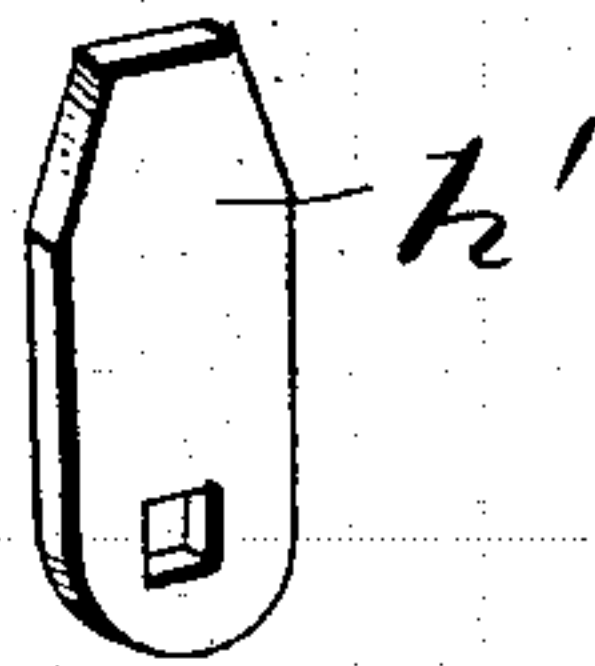
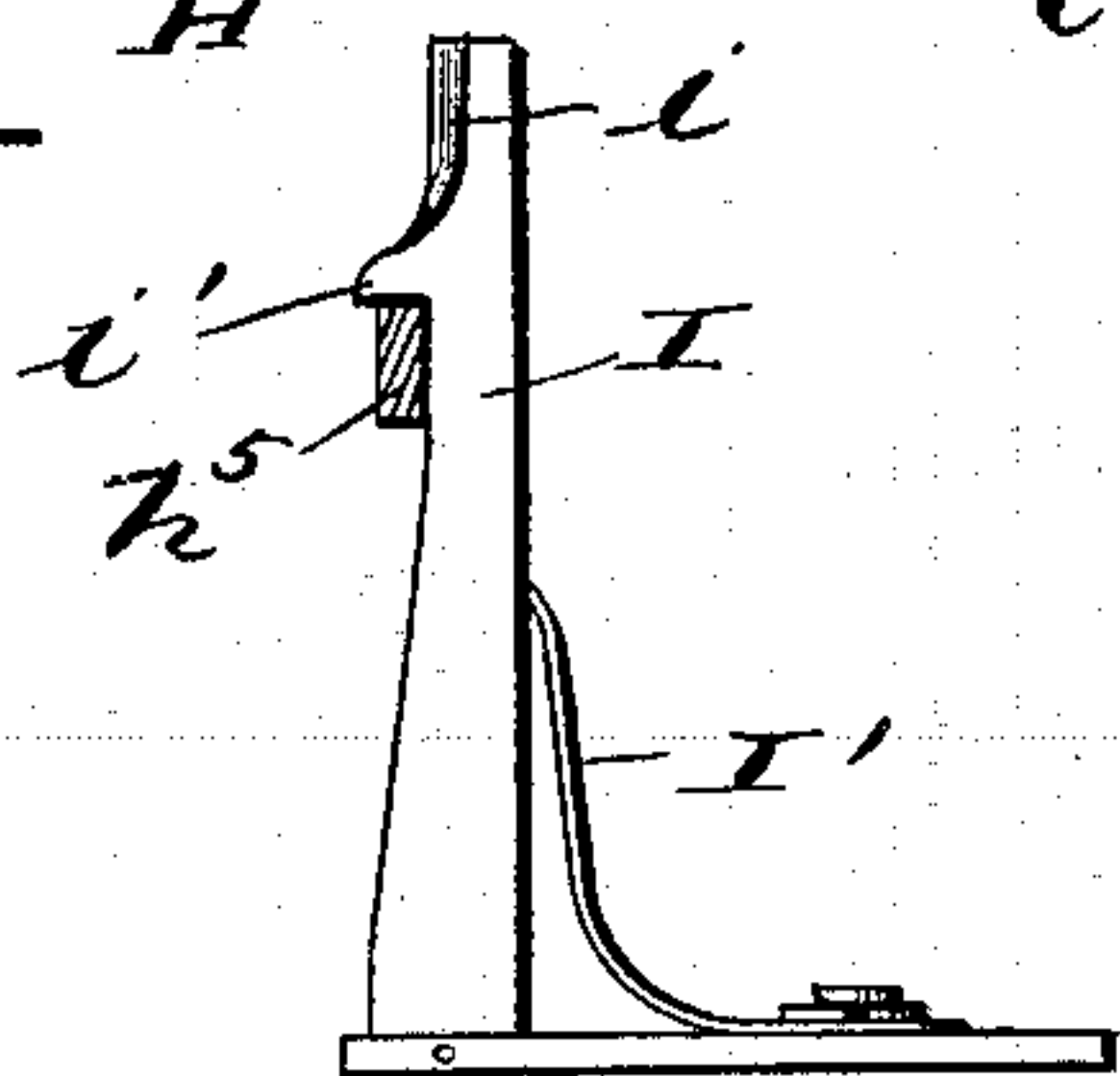
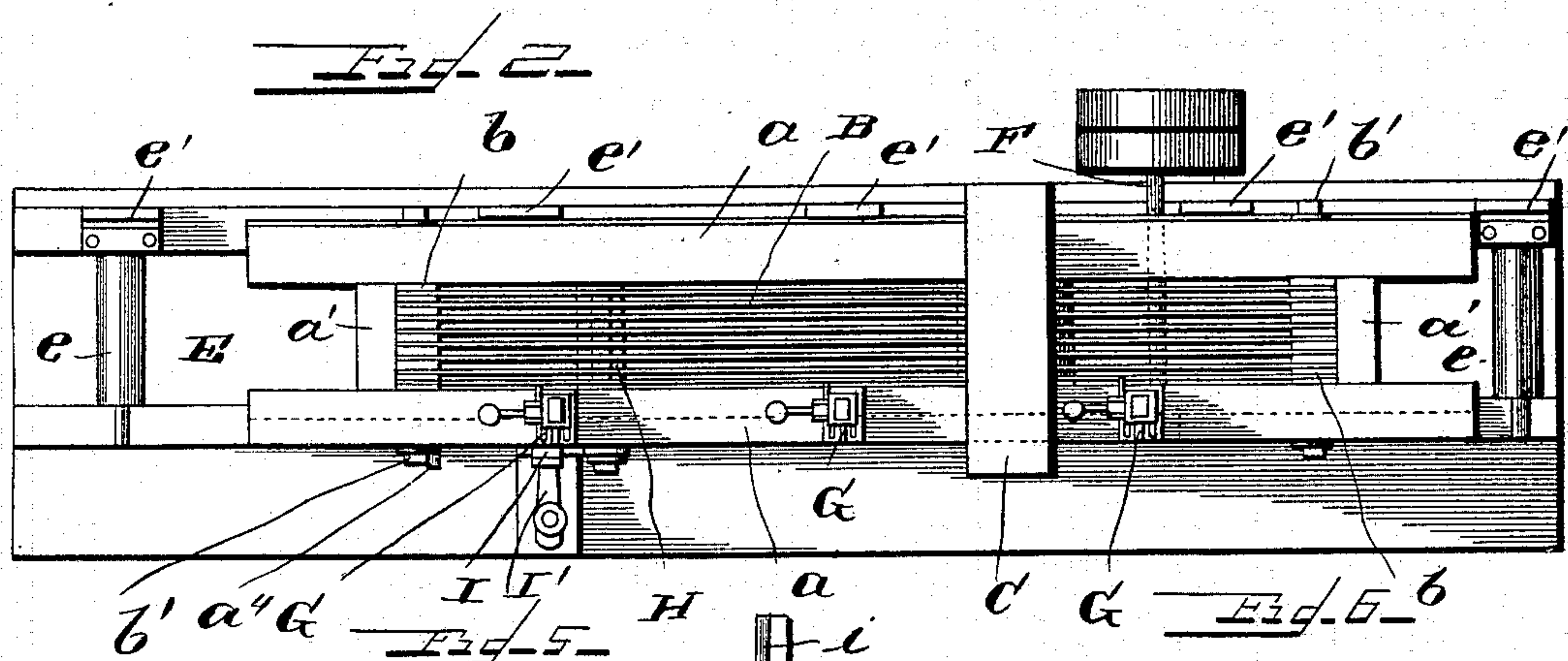
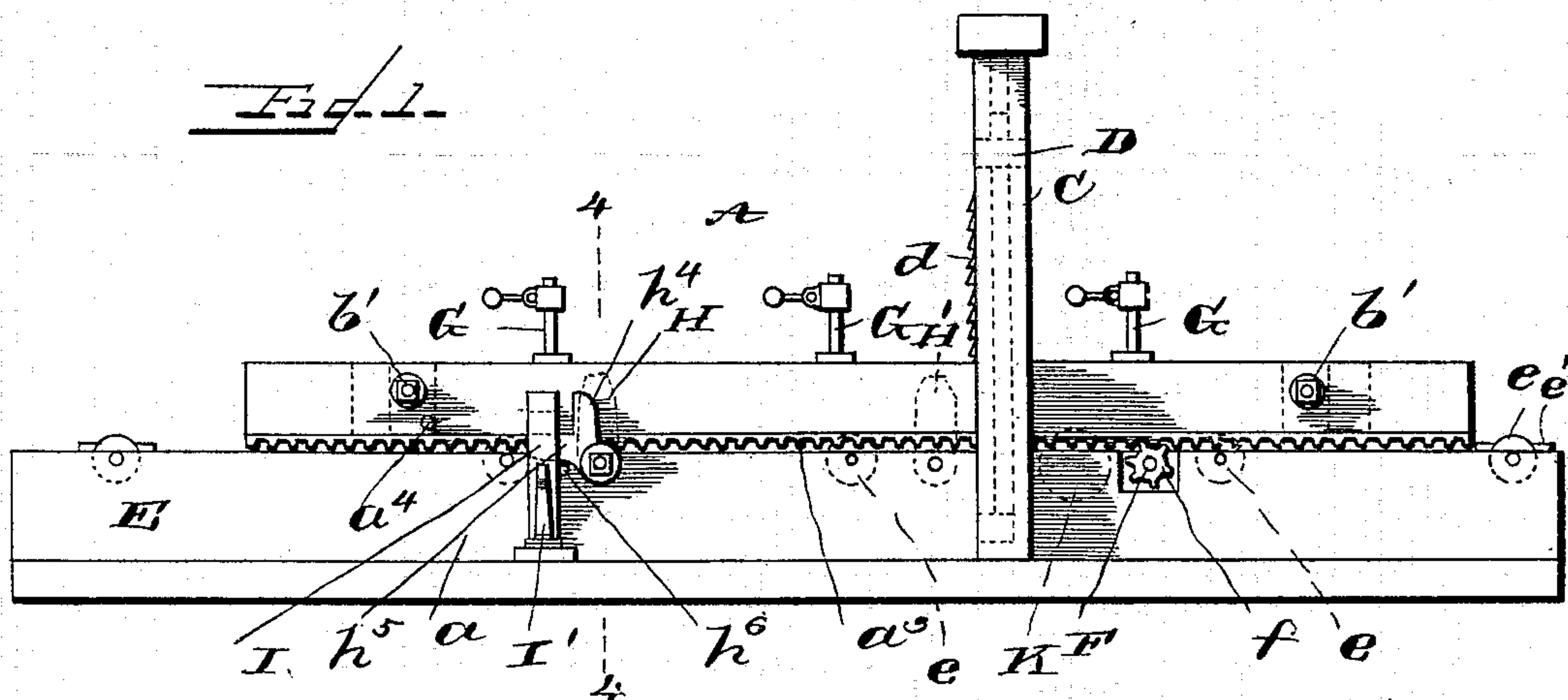
Patented Dec. 6, 1898.

W. SPRINGER.  
SAWMILL CARRIAGE.

(Application filed May 10, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses—

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2 Sheets—Sheet 2.

Fig. 3.

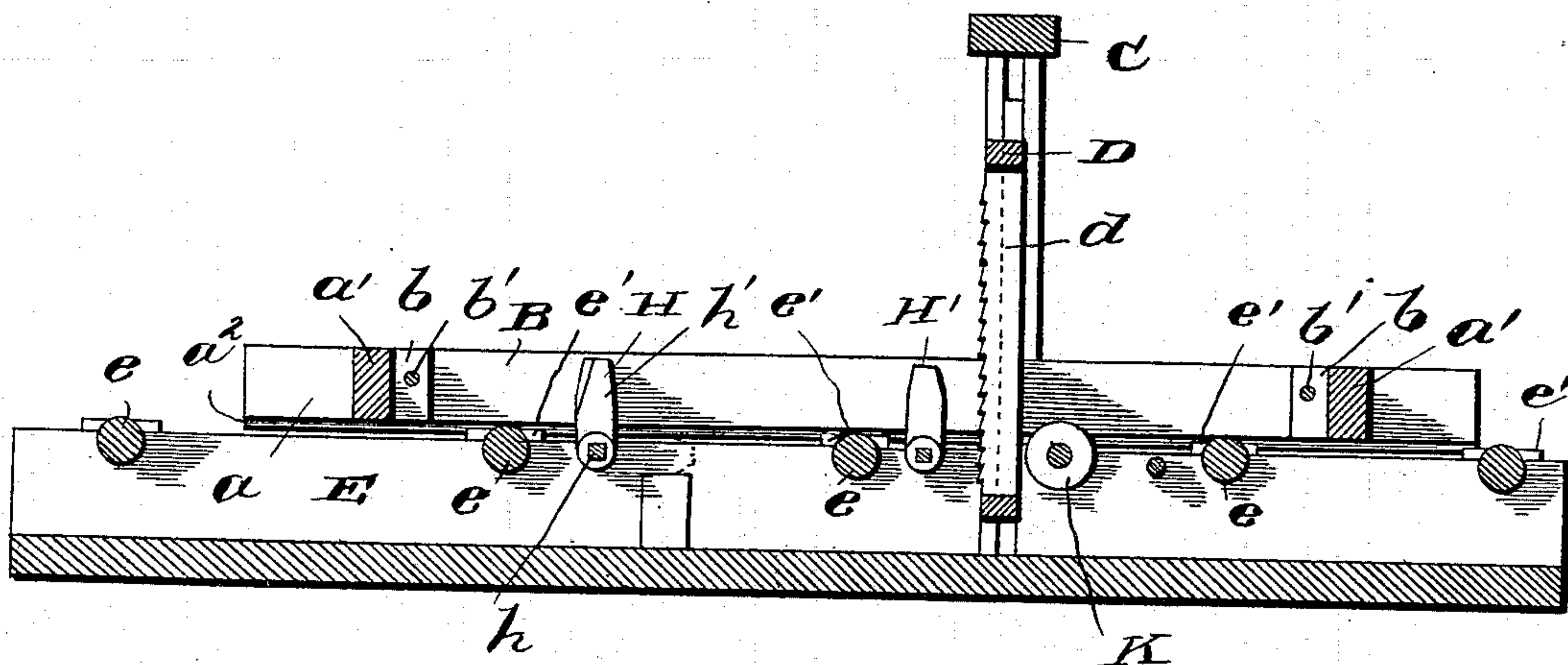
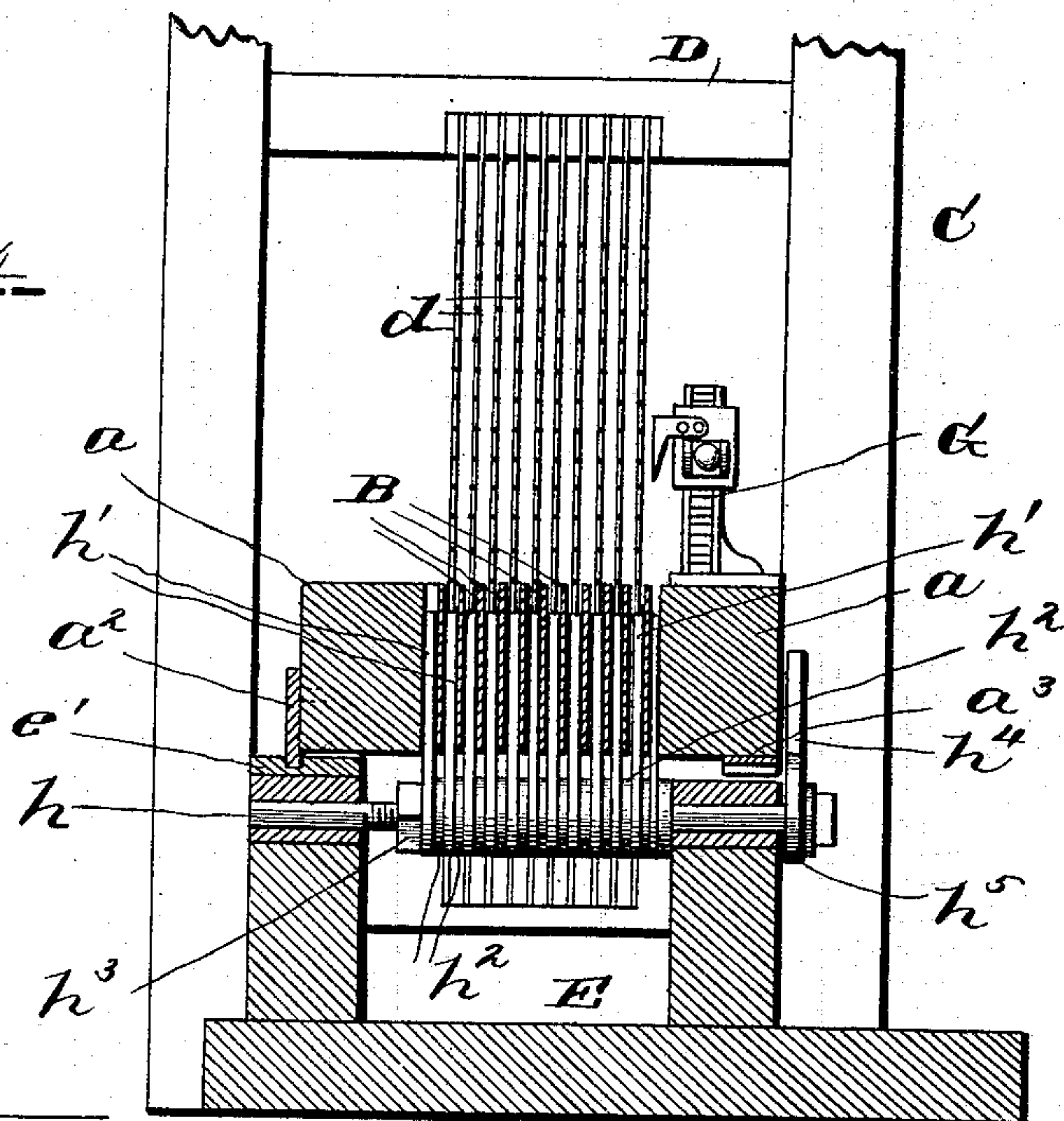


Fig. 4.



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# UNITED STATES PATENT OFFICE.

WHILLDIN SPRINGER, OF SOUTH CREEK, NORTH CAROLINA.

## SAWMILL-CARRIAGE.

SPECIFICATION forming part of Letters Patent No. 615,587, dated December 6, 1898.

Application filed May 10, 1898. Serial No. 680,287. (No model.)

*To all whom it may concern:*

Be it known that I, WHILLDIN SPRINGER, a citizen of the United States, residing at South Creek, in the county of Beaufort and State of North Carolina, have invented certain new and useful Improvements in Sawmill-Carriages; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention is an improvement in sawmill-carriages; and it consists in the novel features hereinafter described, reference being had to the accompanying drawings, which illustrate one form in which I have contemplated embodying my invention, and said invention is fully disclosed in the following description and claims.

Referring to the drawings, Figure 1 represents a side view of my improved carriage, its supporting-bed, a reciprocating gang of saws, and the supporting-frame for the same. Fig. 2 represents a top plan view of the same. Fig. 3 represents a longitudinal sectional view of the apparatus, and Fig. 4 represents a transverse sectional view on the line 4 4 of Fig. 1. Fig. 5 is a detail of a part of the mechanism hereinafter referred to. Fig. 6 is a detail view of one of the plates of the spacing device.

In sawing logs into planks and boards by the use of a gang of saws it has been customary heretofore to slab the logs on opposite sides and pass them between upper and lower feeding and pressure rolls while they are being sawed by the gang. This slabbing of a log before submitting it to the action of a gang of saws is an expensive operation, requiring a considerable outlay for machinery in addition to the gang-sawing mill and adds greatly to the cost of producing lumber. It has been proposed to feed rough logs which have not been slabbed to a gang-saw by means of feed and pressure rollers; but so far as I am aware this has not been successfully done on a commercial scale, or, if it has been done, it is attended with difficulties and inconveniences owing to the inequalities of the surfaces of the logs and the small amount of their curved surfaces which impinge upon the feeding and pressure rollers.

The object of my invention is to provide a

reciprocating sawmill-carriage adapted particularly for use with a gang of saws and so constructed that logs may be rolled upon the said carriage, secured thereon by means of dogs, and fed to the gang of saws so that the entire log may be cut up into boards or planks in a single operation.

Referring to the drawings, A represents my improved carriage, which consists of a suitable framework composed in this instance of the longitudinal timbers *a a* and crossed timbers *a' a'* adjacent to the ends of the longitudinal timbers, the parts of the carriage being firmly united in any desired or usual manner and leaving a space between the timbers *a a* and *a' a'* of greater width than the width of the gang of saws. This central space is filled by a series of parallel plates or bars, of iron or steel, which are spaced or separated a distance sufficient to allow the saws of the gang to pass between adjacent plates. In the drawings I have shown these plates B of the vertical width equal to the depth of the carriage, the said plates being spaced at each end by suitable spacing-blocks *b*, said blocks and plates being firmly held in the carriage with the upper edges of the plates flush with the top of the carriage by means of transverse securing-bolts *b'*, passing through the plates and spacing-blocks, as shown in Figs. 1, 2, and 3. I have shown one of these bolts *b'* at each end of the carriage; but it is obvious that any number may be employed at each end, as may be found desirable.

C represents the saw-frame guide, in which is mounted the vertically-reciprocating saw-frame D, provided with a parallel series of saws *d*, constituting the gang. I have not deemed it necessary to illustrate the means for reciprocating the saw-frame, as it forms no part of my invention, any suitable means being employed for the purpose; and I further do not limit myself to the use of vertically-reciprocating saws, as my improved carriage can be used as well with a gang of circular or band saws.

E represents the carriage-bed, which may be of any preferred form, but in this instance consists of two parallel timbers provided with supporting-rollers *e* for the carriage and grooved guides *e'*, (see Figs. 2 and 4,) which are engaged by a vertical guide-rail *a''*, se-



cured to one side of the carriage for preventing lateral movement of the carriage. The carriage may, however, be supported and guided in other ways, if preferred. I have also shown means for feeding the carriage, consisting in this instance of a rack  $a^3$ , secured to the under side of one of the timbers  $a$  and which is engaged by a pinion  $f$ , on a feed-shaft  $F$ , which is driven in both directions by any suitable means for the purpose of reciprocating the carriage. The carriage is also provided with suitable dogs  $G$ , of any preferred construction, the said dogs being located at one side of the gang-saws and of course on the side opposite that from which the logs are rolled upon the carriage. In the use of my improved carriage a log is rolled upon the same and secured by means of the dogs  $G$ . It will be seen that the logs will be supported entirely by the steel plates  $B$ , which, however, in no way obstruct the operation of the saws of the gang. As the carriage is advanced the saws will cut the entire log in a single operation into boards or plank which will be afterward edged in the usual manner, and will leave a slab at each side of the log.

In order to prevent the plates  $B$  from becoming bent or deflected out of a straight line in rolling on heavy logs, I prefer to provide the carriage-bed with the movable spacing device  $H$ . (See Figs. 3 and 4.) This device consists of a transverse shaft  $h$ , mounted in suitable bearings in the carriage-bed and provided with a series of spacing-plates  $h'$ , adapted to extend upward between the plates  $B$  and to fill the spaces between said plates and between the outer of said plates and the timbers  $a$  of the carriage, so as to hold the plates  $B$  firmly while logs are being rolled upon the carriage. In forming this spacing device I prefer to provide the shaft  $h$  with a squared portion, upon which are placed the spacing-plates  $h'$  and alternating therewith rings or washers  $h^2$ , said plates and washers being clamped together by means of a nut  $h^3$ , engaging a threaded portion of the shaft, or a key can be used instead of a nut. As this spacing device would interfere with the forward movement of the carriage I provide means for alternately depressing and raising the said device. To this end the shaft  $h$  is provided with two arms  $h^4$   $h^5$  at one side of the carriage-bed, said arms being disposed at right angles to each other or substantially at right angles. A stud  $a^4$  is secured to the carriage (see Fig. 1) in position to engage the arm  $h^4$  when the carriage is moving forward to rotate the shaft  $h$  in a forward direction and turn the spacing-plates  $h'$  into a horizontal position out of the way of the carriage. The forward movement of the arm  $h^4$  will cause the arm  $h^5$  to stand in a vertical position, and as the carriage is moved rearward the stud  $a^4$  will engage the arm  $h^5$ , rock the shaft  $h$ , and elevate the spacing-plates  $h'$  to a vertical position between the plates  $B$ . The rear edges of the said spacing-plates are pref-

erably beveled on both sides, so that they will enter between the plates  $B$  readily, as will be seen in Fig. 6, where one of the plates  $h'$  is illustrated in detail.

In order to hold the spacing device  $H$  firmly in its vertical position, I provide the carriage-bed with a stud  $h^6$ , which is engaged by the lower side of the arm  $h^5$  when the device is in vertical position, and I also provide a locking device for holding the arm  $h^5$  in horizontal position. This device consists of a vertical pivotally-mounted lever  $I$ , provided with a beveled portion  $i$  and a locking-shoulder  $i'$ , adapted to engage the upper side of the arm  $h^5$ , the said lever  $I$  being held in its normal position by a suitable spring  $I'$ . As the carriage moves forward the stud  $a^4$  (see Fig. 1) will engage the beveled portion  $i$  of the locking-lever  $I$  before it reaches the arm  $h^4$ , forcing said locking-lever outwardly to release the arm  $h^5$ . As the spacing-plates  $h'$  substantially fill the spaces between the plates  $B$  there will be a slight frictional contact between the plates  $h'$  and plates  $B$ , so that when the arm  $h^5$  has been released by the locking-lever  $I$  the forward movement of the carriage will by reason of this frictional contact immediately cause the plates  $h'$  to be drawn forward, slightly turning the shaft  $h$ , so that when the locking-lever is released by the stud  $a^4$  the arm  $h^5$  will have been raised above the locking-shoulder  $i'$ , and the forward movement of the carriage will bring the stud  $a^4$  into engagement with the arm  $h^4$  and complete the downward movement of the spacing device. On the return movement of the carriage the stud  $a^4$  will strike the arm  $h^5$  and throw it down into horizontal position, where it will be locked by the lever  $I$ .

I also prefer to provide the carriage-bed with a spacing device  $H'$  immediately in front of or behind the saws, (see Fig. 3,) the said device being constructed exactly the same as the spacing device  $H$ , except that the shaft is mounted rigidly in the carriage-bed, thus holding the spacing-plates always in vertical position. This device serves two purposes—one in keeping the plates  $B$  free from chips, sawdust, &c., which might otherwise become lodged between them, and the other in steadying the plates against lateral vibration while the logs are being sawed. To further steady the said plates, I may also provide the carriage-bed in rear of the saws with a roller  $K$ , having grooves in its surface, which are engaged by the lower edges of the plates  $B$ ; but this roller may be dispensed with, if not deemed necessary or desirable.

The operation of the carriage will be fully understood from the foregoing description, and it will be seen that by its use in connection with any form of gang-saws the logs can be rapidly cut up without previous slabbing and will be firmly held and supported while they are being sawed.

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



1. The combination with the gang of saws, of a carriage provided with a series of longitudinally-disposed parallel supporting-bars spaced to permit the saws of the gang to pass between them, and a spacing device provided with a series of spacing-plates adapted to pass between the said bars to prevent the said bars from moving laterally, substantially as described.

2. The combination with a gang of saws, of a carriage having a main frame surrounding the saws, a series of parallel longitudinally-disposed flat bars set on edge, supported in said main frame, and spaced to permit the saws to pass between them, securing devices at each end of the carriage for securing said bars together and to the carriage, said securing devices being on opposite sides of the saws, and a steadying-roller mounted in stationary bearings below the carriage and provided with grooves to engage the lower edges of said bars, and annular portions extending between said bars to prevent the lateral movement thereof between their ends, substantially as described.

3. The combination with a gang of saws, of the reciprocating carriage provided with parallel longitudinal supporting-bars, spaced to permit the saws to pass between them of a movable spacing device mounted below the carriage provided with spacing-plates adapted to pass up between said bars to prevent lateral movement of the same, and means for disengaging said device from said bars as the carriage advances, substantially as described.

4. The combination with a gang of saws of

the reciprocating carriage provided with parallel longitudinal supporting-bars, spaced to permit the saws to pass between them, a stationary spacing device mounted below the carriage, and adjacent to the saws, having spacing-plates passing up between the supporting-bars for preventing the lateral movement of the same, and a movable spacing device at a distance from the saws, having spacing-plates passing up between the bars and devices operated by the reciprocation of the carriage for moving said movable device into and out of engagement with said bars, substantially as described.

5. The combination with the gang of saws, of the reciprocating carriage having a series of longitudinal parallel bars spaced to permit the saws to pass between them, the movable spacing device comprising an oscillating shaft having spacing-plates secured thereto and adapted to pass up between the said bars, a pair of arms secured to said shaft and disposed at an angle to each other, a stud on said carriage adapted to engage said arms, and a locking device for one of said arms adapted to lock the spacing device in position with its plates in engagement with said bars, said locking device having a part in the path of said stud, substantially as described.

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

WHILLDIN SPRINGER.

Witnesses:

LUTHER B. TUTHILL,  
WHILLDIN SPRINGER, Jr.