

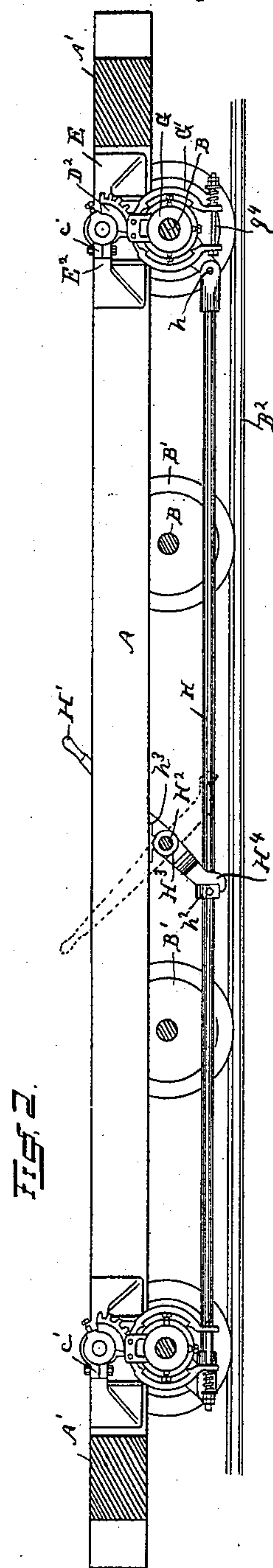
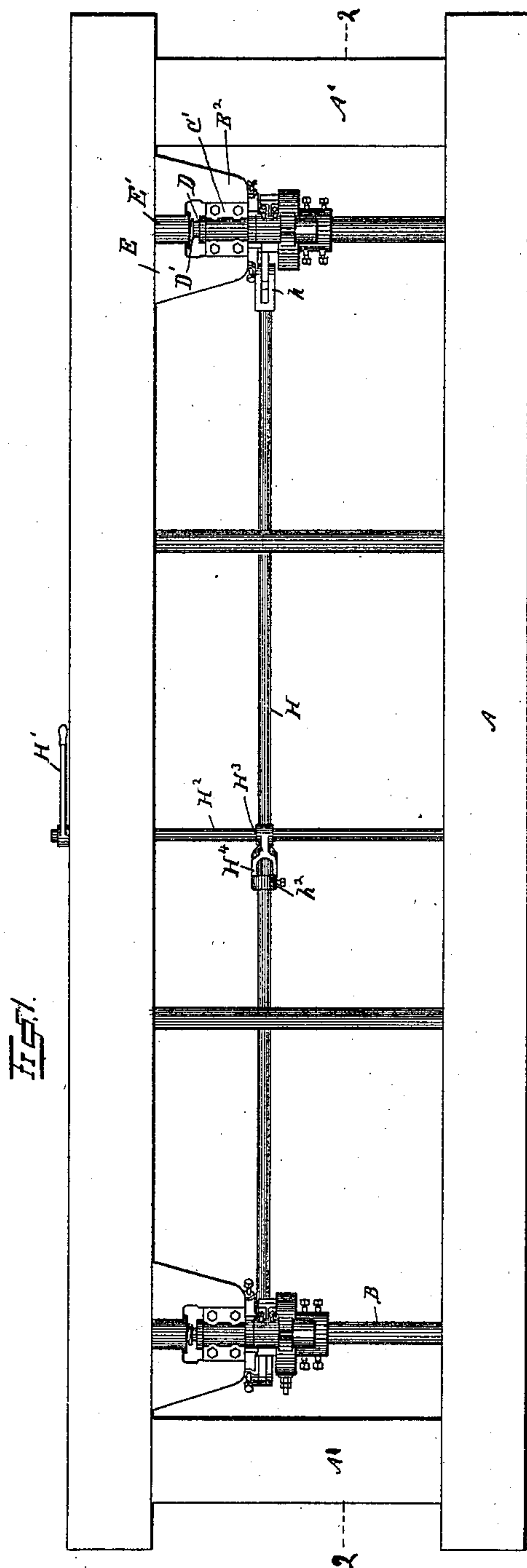
(No Model.)

3 Sheets—Sheet 1.

W. M. WILKIN.
SAWMILL CARRIAGE.

No. 539,321.

Patented May 14, 1895.



WITNESSES.

Wm. Marks, Jr.
J. P. Bloom

INVENTOR.

William M. Wilkin
By Attorney,
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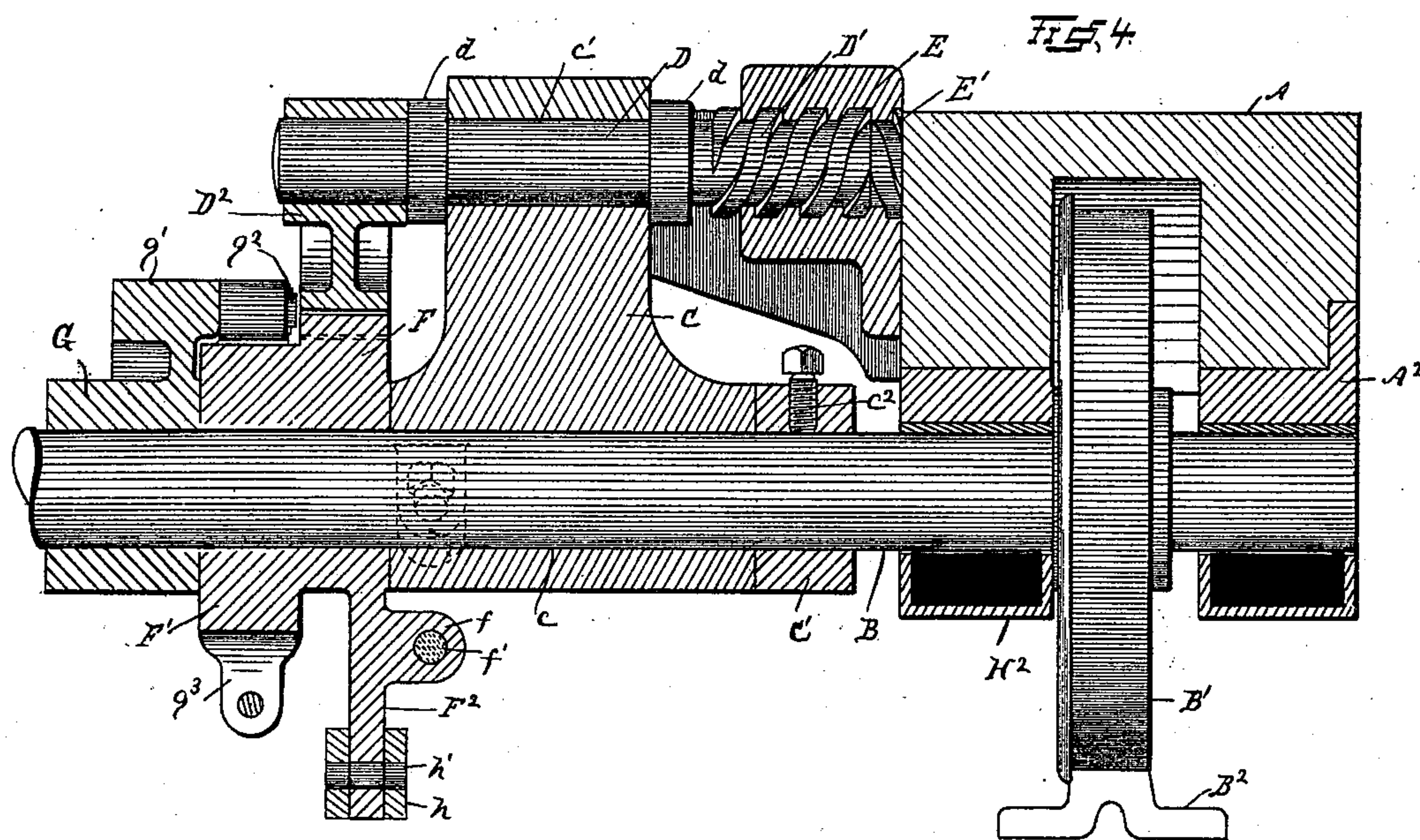
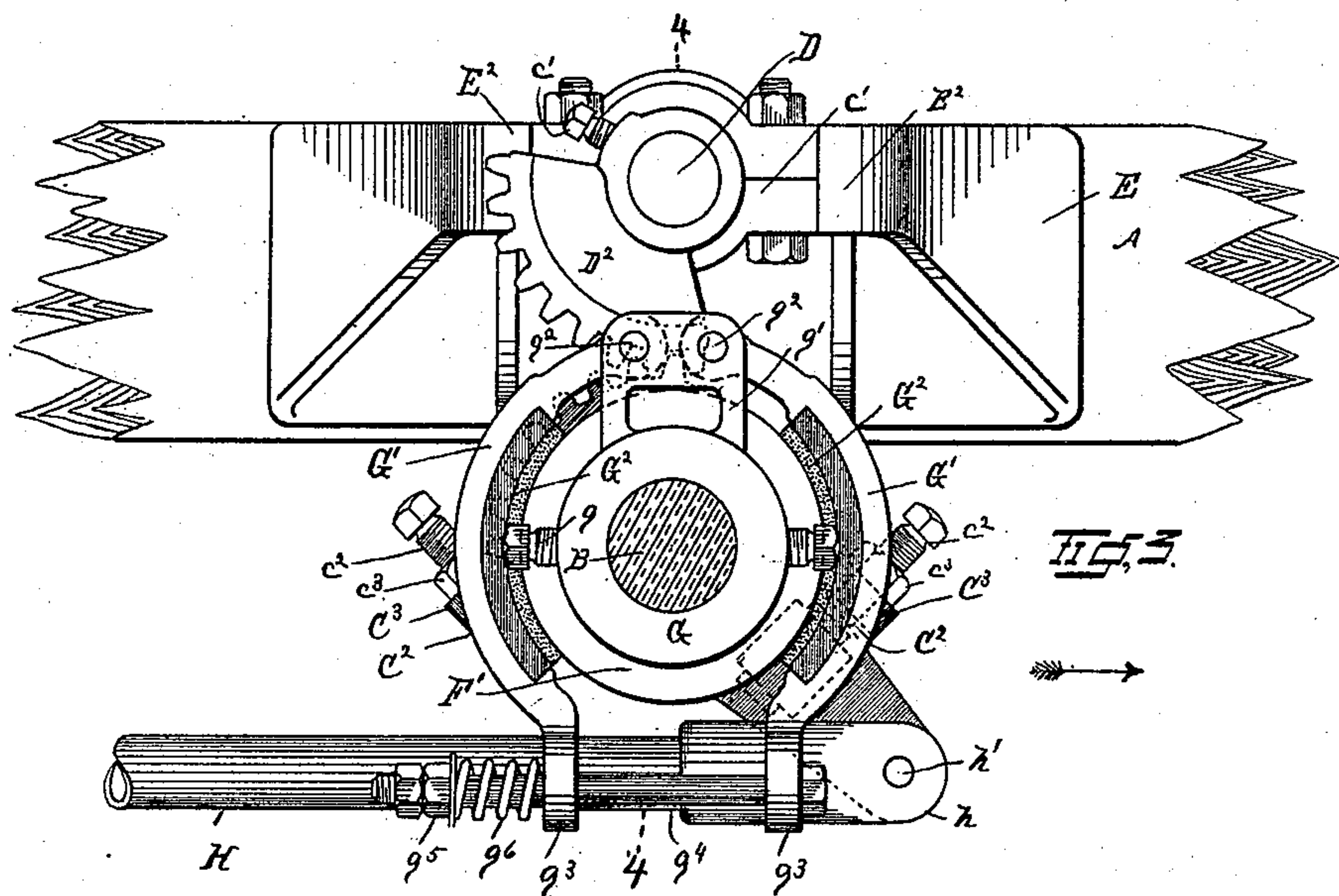
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WITNESSES:

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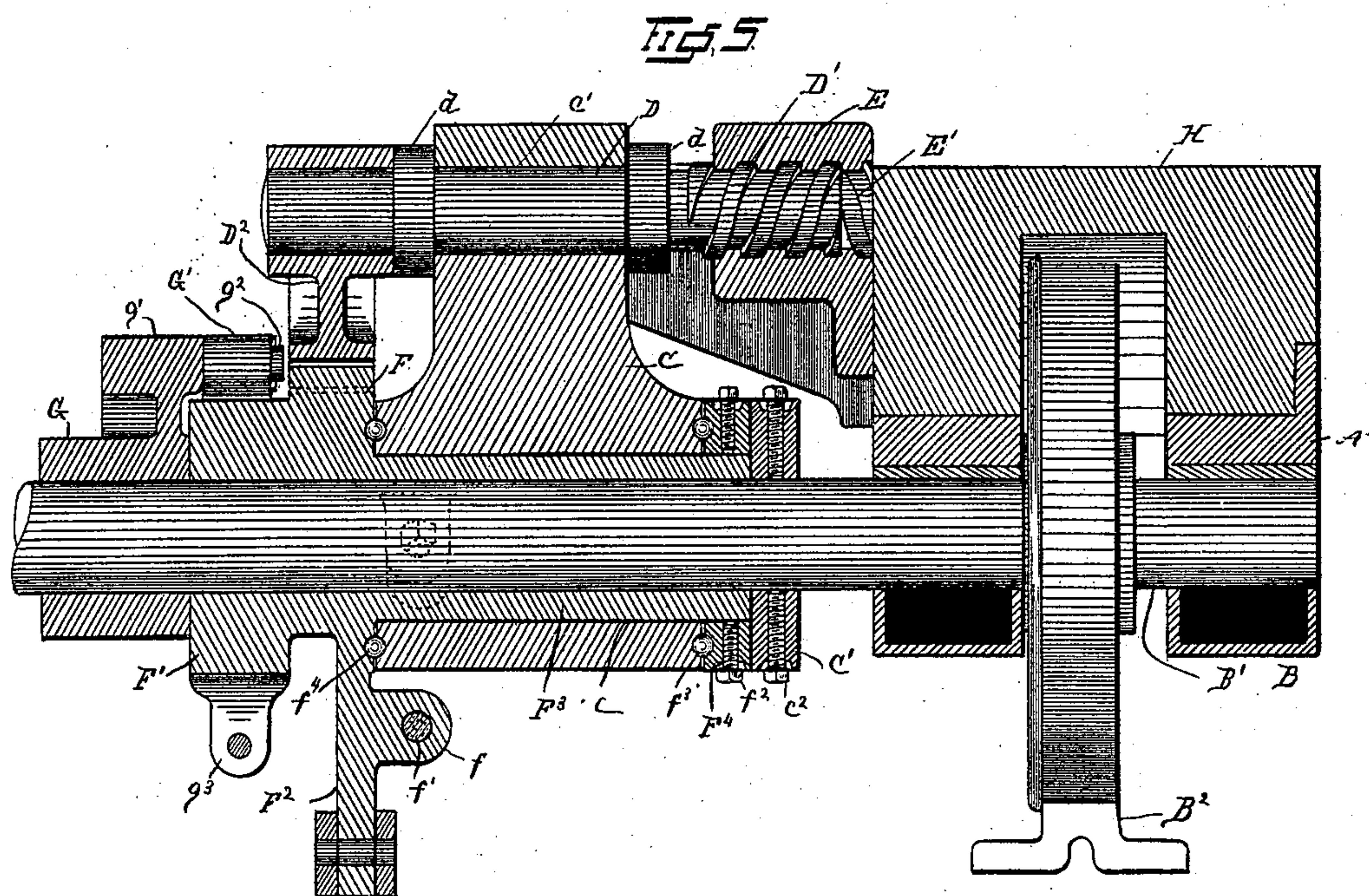
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UNITED STATES PATENT OFFICE.

WILLIAM M. WILKIN, OF ERIE, PENNSYLVANIA.

SAWMILL-CARRIAGE.

SPECIFICATION forming part of Letters Patent No. 539,321, dated May 14, 1895.

Application filed June 2, 1894. Serial No. 513,256. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. WILKIN, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, 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.

This invention relates to saw mill carriages and consists in certain improvements in the construction thereof as will be hereinafter fully described and pointed out in the claims.

More particularly, my invention relates to a set-off mechanism for saw-mill carriages, *i. e.*, a mechanism for moving the carriage laterally to and from the saw.

The invention is illustrated in the accompanying drawings as follows:

Figure 1 shows a plan of a sawmill-carriage, the blocks and upper mechanism being removed and showing my invention in place thereon. Fig. 2 is a section on the line 2 2 in Fig. 1. Fig. 3 shows a fragment of a carriage side, the truck-axle in section, and the off-setting mechanism in place thereon. Fig. 4 is a section on the line 4 4 in Fig. 3. Fig. 5 is a similar section showing an improved construction.

A, marks the carriage side; A', the girts connecting the side thereby completing the frame; A², the truck-boxes secured under the sides; B, the truck-axles, so journaled in their boxes as to have the necessary lateral movement to effect the off-setting; B', the truck wheel; B², a track on which the carriage moves. All these are common and need no further description by me.

A standard C, is journaled on the axle by means of a journal box c, and at the upper end of this standard is another journal box c'. A collar C', set on the axle by means of a set screw c², holds the standard from lateral movement in one direction, and mechanisms hereinafter described hold said standard from lateral movement in the other direction so that the standard is locked against lateral movement on the axle. Journaled in the journal box c', is a screw rod D, which is locked against lateral movement in the standard C, by means of two collars d d, at the opposite ends of the

journal box c'. On the frame side of the screw rod is a screw D', which runs in a similarly screw threaded socket E', which socket is in a screw block E, which is bolted to the carriage side. The outer edges of the journal box c', are surfaced and parallel and extending from the screw block E, are two guides E², also surfaced and parallel and contact the journal box c', at each side, so as to hold the journal box, c', in accurate alignment with the screw socket E', and the standard C, in its proper position, and the guides being parallel allow the off-setting movement between them.

Now as the carriage is free to move upon the axle and the standard C, and screw rod D, are locked against lateral movement with respect to the axle, it will be readily seen that the lateral position of the carriage with respect to the axle and consequently the saw is controlled by the screw D', and a rotative movement of the screw rod will draw the carriage to or from the standard C, and change the lateral position of the frame of the carriage relative to the axle and so effect the off-set, and to be practical this movement should be accomplished automatically so that during the forward movement of the carriage it will have its normal lateral position and when reversed for the return movement it will be moved away from the saw, and then again when reversed for its forward movement it will be brought back to its normal lateral position. The object of this movement is well understood and will need no explanation by me.

The mechanism for operating the screw D', so as to effect the movement just described is as follows: On the end of the screw rod D, is attached the gear segment D², which meshes a gear segment F. The gear segment F, is carried by and preferably made integral with a friction wheel F', which is journaled on the truck axle. A collar G, is rigidly attached to the axle by means of set screws g, and locks the friction wheel F', and standard C, against lateral movement in its direction. Cast integrally with this collar is a small extension g', on which are studs g², which extend over the friction wheel F', and pivoted on these studs are two arms G' G' encircling the friction wheel F' and supporting the friction plates G² G².

The arms G' terminate in perforated ears

g^3 through which is passed a tightening bolt g^4 . Between the tightening nut g^5 , and the ear of the arm and circled around the bolt is a spring g^6 , so that the tightening of friction plates is effected through the intermedium of the spring which effects a yielding but constant frictional contact of the friction plates and the clutching action resulting from the frictional contact should be strong enough to readily effect the movement of the screw and intermediate parts.

In Fig. 5, I show an improved construction in which the lateral friction encountered in off-setting the carriage is utilized in conjunction with the friction clutch to effect the off-setting so that the strength of the clutch may be less and still be operative, and as the force of the clutch is at all times except when reversing the off-set exerted against the feed movement of the carriage it is very desirable that its force be as little as will operate the off-set. Extending from the segment F, is a sleeve F^3 , which runs through and forms a bearing for the standard C, and on the end of this sleeve is a collar F^4 , set in place by set screws f^2 , which collar holds the standard from lateral movement on the sleeve and the whole mechanism is held against lateral movement on the shaft by the collar C' , as in the construction heretofore described. It will readily be seen that the thrust of the screw in off-setting the carriage is sustained by the standard C, which in turn is thrust laterally in one direction directly against the gear F, and indirectly but finally against the collar G; and in the other direction directly against the collar F^4 and indirectly but finally against the collar C' . Now it will be seen that as the axle and the collars G and C, turn in the direction it is desired the gear segment F, shall turn to effect the off setting; whatever lateral thrust there is against them incident to the off-setting movement will have a tendency to assist the clutch in moving the gear segment and thus effecting off-set. In order that the tendency may not be neutralized by the friction between the standard and the gear segment and collar f^3 I make the bearing between them as nearly anti-friction as possible, preferably a ball bearing f^4 as shown.

On the standard C, are two stops C^2 , which are formed by ears C^3 , through which are screwed stop bolts c^2 , which may be screwed in or out to effect the adjustment of the desired stopping point and are secured in position by a jam nut c^3 . An arm F^2 , extends downwardly from the gear segment F, on which is a stop lug f on which is a stop cushion f' , so positioned as to come in contact with the stops C^2 , as the arm F^2 , is rotated with gear, segment F, and friction wheel F' , on the axle. The stops C^2 , have a sufficient arc between them to allow the movement that it is desired the gear segment shall make in order to give the proper rotative movement to the screw, which of course will be regulated by the relative size of the gear segments F,

and D^2 , and the lead of the screw and the desired movement of the carriage.

Now it will readily be seen that as the carriage is moved in one direction the gear segment F, is moved with the axle for the limit of its movement and there is a consequent movement of the screw and lateral movement of the carriage. When the movement of the carriage is reversed there is a reverse movement of the axle and a consequent reverse movement of the screw which moves the carriage laterally to or from the saw and consequently effects the off-set. The direction of the screw should be such that a forward movement of the carriage will result in a lateral movement to the normal position, and the return movement move the carriage laterally away from the saw.

In the drawings the carriage is shown in the normal position in Figs. 1 and 2 and in the off-set position in Figs. 3, 4, and 5 and the forward movement is in the direction of the arrow.

It will readily be seen that this construction is simple, durable and cheap. By making an auxiliary screw rod not attached directly to the axle it can be made of a size only sufficient to properly do the work, can be adjusted at the shop making the mechanism, can be readily attached to carriages already in operation and can be conveniently placed with relation to the other parts on the carriage.

In order that the off-set movement may effect the whole carriage two of the mechanisms hereinbefore described should be provided, one for the front and one for the rear axle. In order that they may work in unison and equally so that the carriage will be at all times in alignment I connect the mechanisms together by means of a rod H, attached to the arms F^2 , by means of fork h , and pin h' .

It is often desirable that the movement of the carriage be reversed without effecting the off-set as for example where the saw encounters a piece of metal and the sawyer wishes to back out of the log. To effect this result I provide the following mechanism: A hand lever H' , is placed at a convenient point in the carriage to be operated by the setter and is attached to a rod H^2 , which runs across the carriage and is journaled in boxes h^3 , attached to the carriage sides. A lever H^3 is attached to the rod H^2 , and terminates in a throat H^4 , which straddles the rod H. A collar h^2 , is fixed on the rod H, and so located that the prongs of the throat H^4 , will contact it when moved in the direction which the rod moves as the off-set mechanism moves the carriage to its normal position. By this means by applying a sufficient force to the hand lever to overcome the friction of the clutch the off-set mechanism is locked against movement, and the carriage may be kept in its normal position while running in the return direction. When the lever is not in use it is thrown to the position shown in dotted lines in Fig. 2.

This brings the throat H^4 , out of the travel of the collar h^2 , so that the hand lever stays normally stationary with the carriage. By placing the off-set locking mechanism (H^3 , H^4 , H' , &c.) in connection with connecting rod H , the lever operating it can be placed at any part of the carriage so as to bring it in proximity with the setting lever of the carriage.

What I claim as new is—

10 1. The combination with a saw mill carriage free to move laterally on the axle thereof and said axle; of a standard journaled on a journal with said axle as a center and locked against lateral movement thereon; a screw
15 rod journaled in said standard and having a screw connection with the carriage frame; and means for actuating said screw rod from the axle upon which said standard is mounted.

20 2. The combination with a saw mill carriage free to move laterally on the axle thereof, and said axle; of a standard journaled on a journal, with said axle as a center and locked against lateral movement thereon; a screw
25 rod journaled in said standard and having a screw connection with the carriage frame; a gear on said screw rod; a gear on the axle that meshes said screw rod gear; a friction clutch for moving said axle gear from the
30 axle; a sleeve on the axle gear that extends through the standard; a collar on said sleeve that holds the standard from lateral movement on said sleeve; a collar fixed on the axle that abuts the axle gear; and a collar fixed on the axle that abuts the axle gear
35 sleeve and attached collar.

3. The combination with a saw mill carriage free to move laterally on the axle thereof, and said axle; of a standard journaled on a journal with said axle as a center and locked
40 against lateral movement thereon; a screw rod journaled in said standard and having a screw connection with the carriage frame; a gear on said screw rod; a gear on the axle that meshes said screw rod gear; a friction
45 clutch for moving said axle gear from the axle; a sleeve on the axle gear that extends through the standard; a collar on said sleeve that holds the standard from lateral movement on said sleeve; a collar fixed on the axle
50 that abuts the axle gear; a collar fixed on the axle that abuts the axle gear sleeve and attached collar; and "anti friction" bearings between the standard and the axle gear and

between said standard and the gear sleeve collar.

55 4. The combination with a saw mill carriage free to move laterally on the axle thereof and said axle; of a standard journaled on a journal with said axle as a center and locked against lateral movement thereon; the screw
60 block E , on the frame of the carriage, guides E^2 extending from said screw block and embracing said standard; a screw rod journaled in said standard and having a screw connection with said screw block E ; and means for
65 actuating said screw rod from the axle.

5. The combination with a saw mill carriage free to move laterally on the axle thereof and said axle; of a standard journaled on a journal with said axle as a center and locked
70 against lateral movement thereon; a screw rod journaled in said standard and having a screw connection with the carriage frame; a gear segment on said screw rod; means for limiting its movement; a gear on the axle
75 that meshes with the gear segment; and means for moving said axle gear from the axle upon which said gear is mounted.

6. The combination with a saw mill carriage free to move laterally on the axles thereof; off-setting mechanism on said axles; a
80 rod connecting said mechanism and moving coincidently therewith; and a lever normally out of engagement with said connecting rod and adapted to be thrown into engagement
85 with said rod to lock it against movement in one direction.

7. The combination with a saw mill carriage free to move laterally on the axles thereof, and the axles thereof; off-setting mechanisms on said axles; a rod connecting said
90 mechanisms and moving coincidently therewith; the collar h^2 , on said connecting rod; lever rod H^2 , journaled on the carriage frame; throated lever H^3 , on said lever rod H^2 and
95 adapted to be thrown against the collar h^2 to lock said connecting rod against movement in one direction; and hand lever H' keyed to the lever rod H^2 .

In testimony whereof I affix my signature 100 in presence of two witnesses.

WILLIAM M. WILKIN.

Witnesses:

C. B. HAYES,

J. KEESE HALLOCK.