

(No Model.)

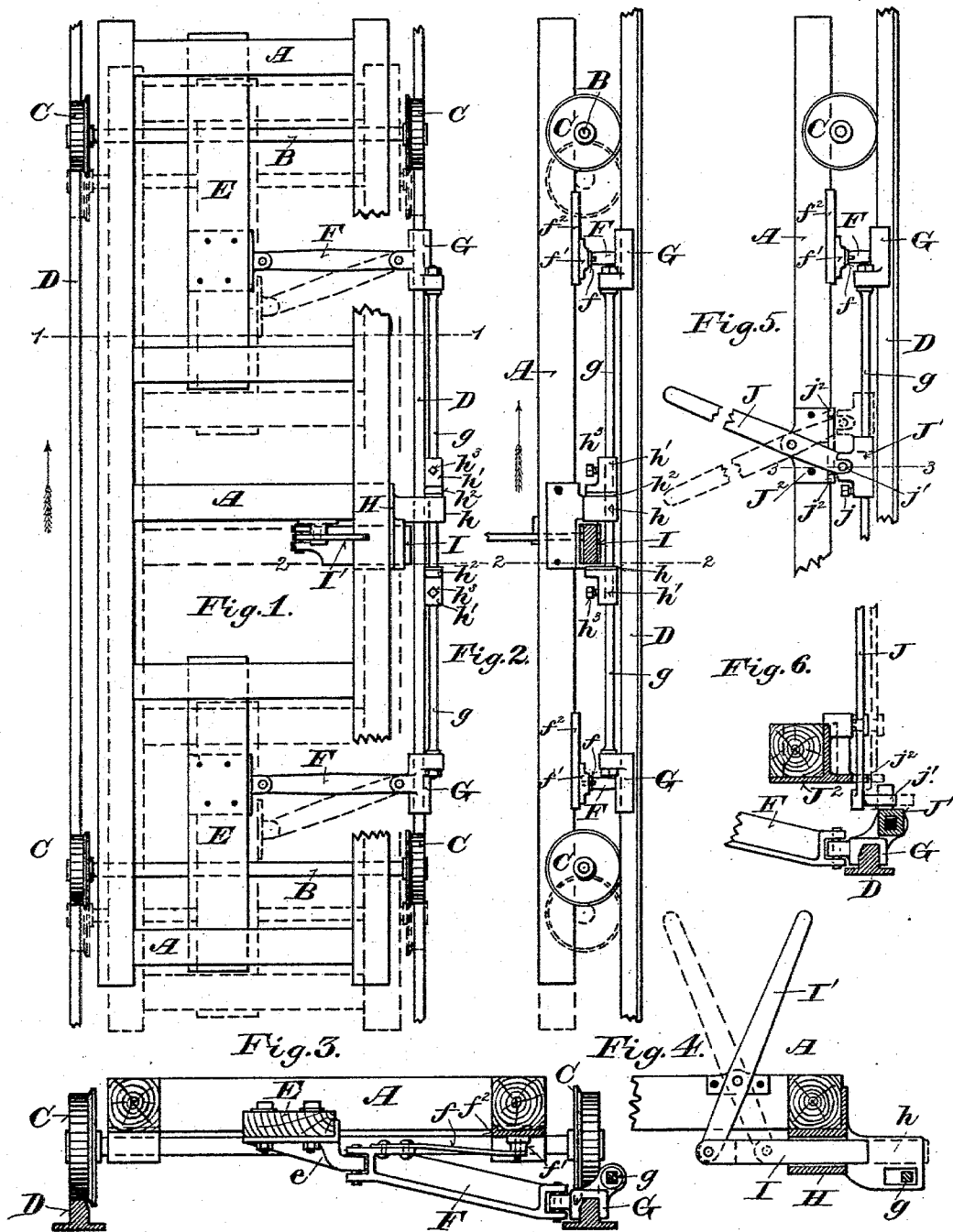
3 Sheets—Sheet 1.

A. CUNNINGHAM.

OFFSETTING MECHANISM FOR SAWMILL CARRIAGES.

No. 494,735.

Patented Apr. 4, 1893.



WITNESSES:

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(No Model.)

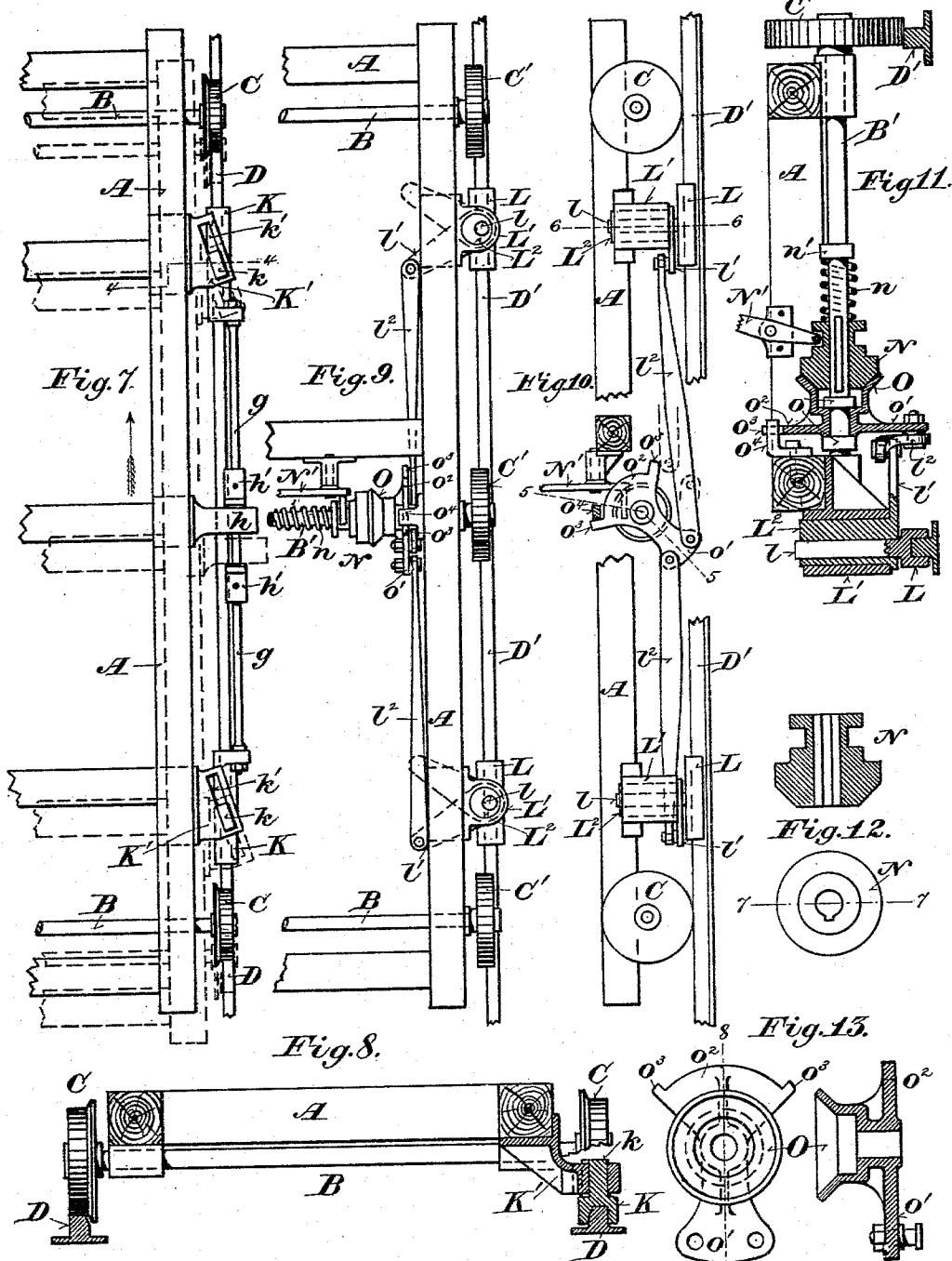
3 Sheets—Sheet 2.

A. CUNNINGHAM.

OFFSETTING MECHANISM FOR SAWMILL CARRIAGES.

No. 494,735.

Patented Apr. 4, 1893.



WITNESSES:

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(No Model.)

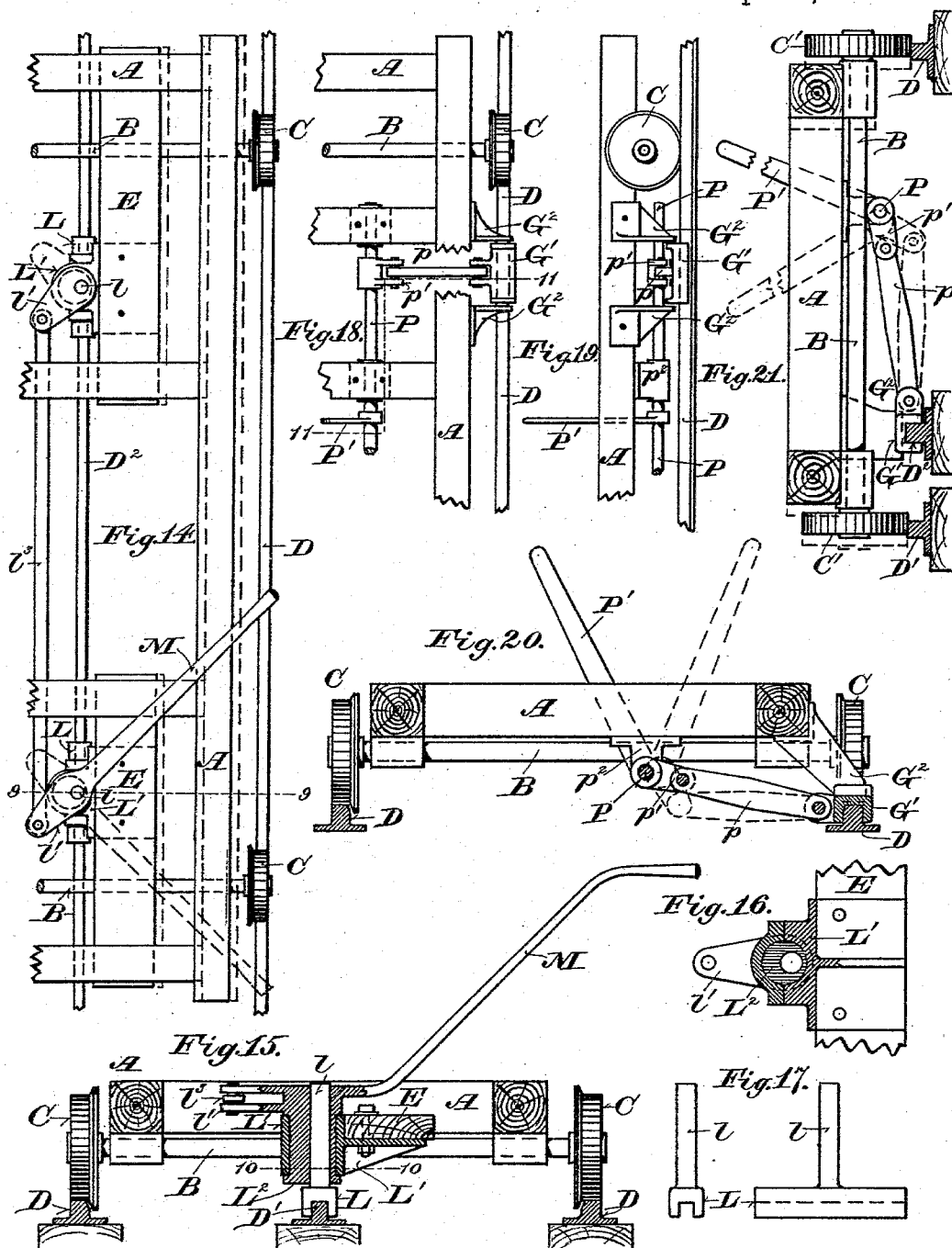
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A. CUNNINGHAM.

OFFSETTING MECHANISM FOR SAWMILL CARRIAGES.

No. 494,735.

Patented Apr. 4, 1893.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ALBERT CUNNINGHAM, OF MILWAUKEE, WISCONSIN.

OFFSETTING MECHANISM FOR SAWMILL-CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 494,735, dated April 4, 1893.

Application filed April 14, 1888. Serial No. 270,619. (No model.)

To all whom it may concern:

Be it known that I, ALBERT CUNNINGHAM, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Offsetting Mechanism for Sawmill-Carriages; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The main object of my invention is to move the log or timber to be sawed laterally away from the saw in gigging or running the carriage backward.

It consists essentially of a laterally movable carriage frame, a guiding shoe arranged to traverse a guiding track lengthwise thereof but laterally immovable thereon, and connected by suitable offsetting mechanism with the carriage frame, and of certain other peculiarities of construction and arrangement hereinafter particularly described and pointed out in the claims.

In the accompanying drawings like letters designate the same parts in the several figures.

Figure 1 is a plan view of a saw-mill carriage to which my improved offsetting mechanism is applied. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical cross section on the line 1 1, Fig. 1. Fig. 4 is a cross section on the line 2 2, Figs. 1 and 2. Fig. 5 is a side elevation of a portion of a carriage with my improved offsetting device and a hand lever connection for operating the same. Fig. 6 is a cross section on the line 3 3, Fig. 5; and Figs. 7 to 21 inclusive illustrate various modifications of my invention.

Referring to Figs. 1, 2, 3 and 4, A represents the carriage frame, which is capable of slight lateral movement upon its supporting axles B B. D D are the track rails of the usual or any suitable form and construction. C C are the carriage or truck wheels provided with flanges to guide them on the rails D D. G G are shoes longitudinally grooved or flanged to

engage with a guiding rail or one of the track rails D, on which it is adapted to slide lengthwise thereof, but is held immovable laterally. They are connected with each other by a rod *g* parallel with the track or carriage and by arms or links F F with the carriage frame A. The arms F F each have a jointed connection at one end with the adjacent shoe G and at the other end with a bracket *e* attached to a beam E secured parallel with the carriage sides to cross girts of frame A. Connected in this manner with the shoes G and the carriage frame A, the arms F F are capable of angular movement with reference to said carriage, and the track which it traverses, as indicated by dotted lines, Fig. 1. The shoes G are held down in engagement with the guiding track rail D by means of springs *ff* attached at one end to the arms F F and provided at the other end with sliding pads *f' f'* bearing on plates *f² f²* attached to the under side of the rear side rail of the carriage frame, as shown in Figs. 2 and 3. When said arms F are perpendicular or at right angles to the carriage and track the carriage frame A will obviously occupy a position nearest the saw line, as shown by full lines in Fig. 1, but when they are inclined to the carriage and track the frame A will be drawn correspondingly toward the shoe guiding rail, or in this case, away from the saw line, as shown by dotted lines in the same figure. The connecting rod *g* passes at an intermediate point in its length through a slotted opening in arm *h* attached to and projecting from the side of the carriage frame A, and upon opposite sides of said arm *h* are adjustably secured upon rod *g* by means of set bolts *h² h²*, stop collars or blocks *h' h'*, so as to limit the longitudinal movement of the shoes G with reference to the carriage or vice versa, and thereby to limit the action of the offsetting mechanism. The stop blocks or collars *h' h'* are provided on their working faces with cushions *h² h²* of any suitable elastic material to prevent hammering when they strike the arm *h*. I is a sliding block working transversely to the rod *g* in a sleeve formed for the purpose in bracket H beside the arm *h*, which

is also formed with said bracket. I' is a hand lever fulcrumed to the carriage frame A and connected with the block I so as to move the same between the arm *h* and one of the stop blocks *h'* and thus prevent the offsetting mechanism from operating, or so as to withdraw it and allow said offsetting mechanism to act.

Referring to Figs. 5 and 6, J represents a hand lever fulcrumed to a bracket J² attached to the side rail of the carriage frame A. It is provided at the lower end with a lateral projection or pin *j'*, which projects between and works with lugs on a block J' adjustably secured by a set bolt *j* upon the connecting rod *g*. The bracket J² is provided with two lugs or stops *j²j²*, which engage with and limit the angular movement of the lever J, as well as the movement of the shoes G G with reference to the carriage. When the hand lever J and stops *j²j²* are employed the stops *h' h'* may be dispensed with if desired.

My improved offsetting device operates as follows:—When the carriage is advanced in the direction indicated by arrows, Figs. 1 and 2, the arms F F assume the position shown by full lines in Fig. 1 at right angles to the line of travel of the carriage, and move the carriage frame A laterally into working position toward the saw line, the arm *h* engaging the forward stop *h'* and arresting the action of the offsetting mechanism when the arms F F are moved into the position above stated. When the movement of the carriage is reversed the shoes G G are retained by their frictional engagement with the guiding track quiescent until the links or arms F F are moved into the position indicated by dotted lines Fig. 1, and the carriage frame A is moved laterally away from the saw line. The arm *h*, engaging with the rear stop *h'*, arrests the further offsetting of the carriage at the desired point. It will be observed that the operation of the offsetting mechanism by reason of the frictional engagement of the shoes G G with the guiding track with which the work is automatic. When the movement of the carriage is reversed said shoes through their connections with the carriage frame hold and guide said carriage frame either in its working or offset position, irrespective of the carriage supporting or truck wheels.

Whenever it is necessary or desirable to prevent the offsetting of the carriage, the block I is moved by means of the lever I' between the arm *h* and rear stop block *h'*. The movement of the offsetting mechanism is limited and adjusted by the proper adjustment of the stop blocks *h' h'* on the connecting rod *g*, or when the lever J and stops *j²j²* are employed in place thereof, by means of the adjustment of the block J' on said connecting rod. The offsetting mechanism may be operated independently of the feed of the carriage, or prevented from operating automatically by means of the hand lever J.

Referring to Figs. 7 and 8, representing re-

spectively a plan view and a vertical cross section on the line 4 4, Fig. 7, of a carriage with a modified form of my improved offsetting device, K K are shoes similar to those hereinbefore described, and working like them with a guiding rail D of the track, but formed with upwardly projecting stems *k k*, which are inserted and work in inclined slots *k' k'* of the brackets K' K' attached to the side of the carriage frame A. The shoes K K are connected by a rod *g* upon which is adjustably secured stop blocks *h' h'*, one on each side of an arm *h* in the manner previously described. When the carriage is fed forward in the direction of the arrow, Fig. 7, the shoes K K engaging the track rail D sufficiently to hold them quiescent while the inclined slots *k' k'* slide on their stems *k k*, move the carriage frame obliquely toward the saw line till the arm *h*, engaging the forward stop *h'*, moves said shoes along the track with the carriage. When the movement of the carriage is reversed, the inclined slots of brackets K' sliding on the stems of the detained shoes K move the carriage frame obliquely away from the saw line, till it assumes the position indicated by dotted lines in Fig. 7, when the arm *h*, engaging the rear stop block *h'*, carries said offsetting mechanism along with the carriage.

Referring to Figs. 9, 10, 11, 12 and 13, illustrating respectively a plan view, a side elevation, a vertical cross section partly on the line 5 5 and partly on the line 6 6, Fig. 10, and details of a still further modified form of my improved offsetting device, L, L are shoes adapted, like those described, to engage and traverse a guiding rail, but provided with round stems *l l* extending upwardly therefrom into upright eccentric sleeves L² L², which work in boxes L', attached to the carriage frame A. The sleeves L² are provided with crank arms *l'* which are connected by rods *l² l²* with the crank arm *o'* on an intermediate axle B'. The crank arm *o'* is formed in connection with one section O of a conical friction clutch and with a sector shaped extension *o²*, having at the extremities of its periphery lugs *o³ o³*, which engage with a stop *o⁴* fixed to the carriage frame, and limit the angular movement of the crank arm. The section O of the friction clutch, provided with the crank arm, and shown in Fig. 13 in side elevation and in cross section on the line 8, 8, is free to turn on the axle B', but is restrained from lateral movement thereon by collars *o o*, shown in Fig. 11. The other section N of said clutch, shown in Fig. 12 in elevation and section on the line 7 7, is feathered and movable endwise on said axle and is held by a spring *n* interposed between it and a collar *n'* in engagement with the section O. The clutch sections may be disengaged by means of a lever N' fulcrumed to the carriage frame and engaging a groove in section N.

Unlike the construction hereinbefore de-

scribed, the carriage frame A has no lateral movement upon and independently of its axles B B and its wheels C' C' are not flanged but have plane faces adapted to be moved in offsetting laterally upon the rails D' D'. The flanges employed on the carriage wheels when the carriage frame A is movable upon and endwise of its supporting axles B B to guide them on the track rails D D are dispensed with when the carriage frame has no such lateral movement upon its axles and the carriage wheels are designed to slide laterally upon the rails when the carriage is in motion.

The operation of the foregoing device is as follows:—When the movement of the carriage in either direction is reversed, the section N of the friction clutch, rotating with the carriage axle B', turns the section O with its arm o' till its movement is arrested by one of the lugs o³ engaging the stop o⁴. The crank o', operating through the connecting rods ⁷ 7 upon the crank arms ¹¹ 11, turn the eccentric sleeves L² L² in their bearings and thereby move the carriage frame A toward or from the shoe stems ¹¹ 11 in said sleeves, and toward or from the saw line according to the direction of the travel of the carriage.

Referring to Figs. 14, 15, 16 and 17, illustrating respectively a plan view, a vertical cross section on the line 9, 9, Fig. 14, a horizontal section on the line 10, 10, Fig. 15, of the eccentric sleeve and box inverted, and details of a further modification of my improved offsetting device, D' represents a separate guiding rail laid between and parallel with the track rails D D. LL are shoes like those shown in Figs. 9 and 10, working with said rail and provided with round stems extending upwardly into eccentric sleeves L² L², which work in boxes L' L' attached to beams E E, like those previously described. The eccentric sleeves L² L² are provided with crank arms ¹¹ 11, which are connected by a rod ⁷ 7, and one of said sleeves is provided with a hand lever M by means of which the offsetting mechanism is operated by hand.

Referring to Figs. 18, 19 and 20, being respectively a plan view, a side elevation and a vertical cross section of a portion of a carriage and offsetting mechanism embodying a further modification of my improvements, G' represents a shoe similar to those hereinbefore described in connection with Figs. 1, 2 and 3, working with one of the track rails D between two brackets G² G², which are attached to the carriage frame and cause said shoe to travel with the carriage with little or no lost motion. P is a rock shaft supported lengthwise of the carriage in suitable boxes ⁶⁰ p² p² attached to cross girts of the carriage frame A. This shaft is provided with a crank arm p', which is connected by a link p with the shoe G and it is also provided with a hand lever P', by means of which the offsetting mechanism is operated independently of the travel of the carriage. Two or more shoes G'

connected in like manner with the rock shaft P are employed.

Fig. 21 is a vertical cross section of a still further modification of my invention, in which offsetting mechanism like that shown in Figs. 18, 19 and 20 is employed, but with a separate guiding track D² for the shoes G' and plane faced carriage wheels, C' C' instead of flanged wheels, the carriage frame A having no lateral movement upon, and independently of, the carriage axles B B.

It will be observed that in the several methods hereinbefore described of applying the guiding shoes to offsetting carriages, the offsetting mechanism or devices act transversely through said shoes upon a guiding rail, and not directly through the ordinary carriage axles and wheels upon the track rail or rails, hence the shoes instead of the carriage wheels control the position of the log frame transversely with reference to the travel of the carriage, not only serving temporarily as laterally immovable attachments for the off-setting mechanism, in moving the carriage frame transversely to the line of travel of the carriage, but also as guides for holding said carriage frame during its movement forward and backward in its working and offset positions.

It is obvious that friction rollers may be placed in or substituted for the side flanges of the guiding shoes and that various modifications of the device may be employed for connecting the offsetting mechanism with the guiding rail without change in the mode of operation, or departure from the spirit of my invention.

I claim—

1. The combination with a laterally movable carriage frame of a rail parallel with the line of travel of the carriage, a shoe adapted to traverse said rail lengthwise thereof in engagement therewith and laterally immovable thereon, and off-setting mechanism connected with said shoe and with said carriage frame, and arranged to act through said shoe transversely upon said rail for off-setting and guiding said carriage frame, substantially as and for the purposes set forth.

2. The combination with a sawmill carriage frame capable of movement transversely to the line of travel of the carriage, of a guiding rail parallel with said line of travel, two or more connected guiding shoes adapted to engage with and to traverse said rail lengthwise and off-setting mechanism connected with said shoes and with said carriage frame and acting through said shoes transversely upon said rail to offset the carriage frame and to guide it in its working and offset positions, substantially as and for the purposes set forth.

3. The combination with a sawmill carriage frame capable of lateral movement with reference to the line of travel of the carriage, of a guiding rail parallel with said line of travel, guiding shoes adapted to engage with and

10 traverse said guiding rail lengthwise and arms
15 having jointed connections with said shoes
and with said carriage frame, and acting
through said shoes transversely upon said
guiding track to offset the carriage frame and
to guide it in its working and offset positions,
substantially as and for the purposes set forth.

4. The combination with a sawmill carriage
frame capable of lateral movement with ref-
erence to the line of travel of the carriage, of
a fixed guiding rail parallel with said line of
travel, guiding shoes adapted to engage with
and traverse said rail, and capable of a limited
movement lengthwise thereof independ-
ently of the travel of the carriage and off-
setting mechanism connecting said shoes with
said carriage frame and acting through said
shoes transversely upon said rail to offset the
carriage frame and to guide it in its working
and offset positions, substantially as and for
the purposes set forth.

5. The combination with a sawmill carriage
frame capable of movement transversely to
its line of travel, of a guiding rail, guiding
shoes adapted to traverse said rail in engage-
ment therewith and capable of a limited move-
ment independently of the travel of the car-
riage, off-setting mechanism connecting said
shoes with said carriage frame and acting
transversely through said shoes upon said
rail to offset the carriage frame and to guide
it in its working and offset positions, and
stops arranged to limit the independent move-
ment of said shoes, substantially as and for
the purposes set forth.

6. The combination with a sawmill carriage
frame capable of movement transversely to
its line of travel, a guiding rail parallel with
the carriage, shoes adapted to traverse said
rail in engagement therewith, off-setting
mechanism connecting said shoes with said
frame, a rod connecting said shoes with each
other, and stops attached to said carriage
frame and to said rod, substantially as and
for the purposes set forth.

7. The combination with a sawmill carriage
frame capable of movement transversely to
its line of travel, a guiding rail parallel with
said frame, shoes adapted to traverse said
rail in engagement therewith and connected
with each other by a rod, off-setting mechan-
ism connecting said shoes with said frame and
stops, one or more of which are adjustably
attached to said frame and to said rod, sub-
stantially as and for the purposes set forth.

8. The combination with a sawmill carriage
frame capable of movement transversely to
its line of travel, a guiding rail parallel there-
with, shoes adapted to engage with and trav-
erse said rail and having a limited movement
independently of the travel of the carriage,
off-setting mechanism connecting said shoes
with said frame, a rod connecting said shoes
with each other, stops attached to said rod
and to said frame and a sliding block arranged
to be interposed between the fixed and one of

the movable stops whereby the off-setting
mechanism is restrained from action, sub-
stantially as and for the purposes set forth.

9. The combination with a laterally mov-
able sawmill carriage frame, of a guiding rail
parallel therewith, a guiding shoe adapted to
traverse said rail lengthwise in engagement
therewith and laterally immovable thereon,
off-setting mechanism connecting said shoe
with said frame and acting transversely
through said shoe upon said rail to offset said
frame, and to guide and hold it in its work-
ing and offset positions, and a locking device
whereby the off-setting mechanism may be
prevented from operating and said frame from
off-setting, substantially as and for the pur-
poses set forth.

10. The combination with a laterally mov-
able sawmill carriage frame, of a guiding rail
parallel therewith, guiding shoes adapted to
traverse said rail lengthwise in engagement
therewith and laterally immovable thereon,
said shoes being capable of a limited move-
ment independently of the travel of the car-
riage, off-setting mechanism connected with
said shoes and with the frame and acting
through said shoes transversely on the guid-
ing rail to offset said frame and to hold and
guide it in its working and offset positions,
and a locking device whereby the independ-
ent movement of said shoes and the off-set-
ting of said frame may be prevented, sub-
stantially as and for the purposes set forth.

11. The combination with a laterally mov-
able sawmill carriage frame of a guiding rail
parallel with its line of travel, a guiding shoe
adapted to travel said rail lengthwise in en-
gagement therewith and laterally immovable
thereon, off-setting mechanism connected with
said shoe and with said frame and acting di-
rectly through said shoe transversely on said
rail to offset said frame and to guide it in its
working and off-set positions, and a hand le-
ver connected with and arranged to operate
said off-setting mechanism independently of
the movement of the carriage, substantially
as and for the purposes set forth.

12. The combination with a laterally mov-
able carriage frame, of a guiding rail parallel
therewith, a guiding shoe adapted to traverse
said rail lengthwise in engagement therewith
and capable of a limited longitudinal move-
ment thereon independently of the travel of
the carriage, off-setting mechanism connect-
ing said shoe with said frame and acting
transversely through the same directly upon
said rail to offset said frame and to hold and
guide it in its working and offset positions,
and a spring holding said shoe by a yielding
pressure in engagement with said rail, where-
by the shoe is caused to remain quiescent
while the carriage travels the required dis-
tance to operate the off-setting mechanism,
substantially as and for the purposes set forth.

13. The combination with a sawmill car-
riage frame laterally movable with reference

to the line of travel of the carriage, of a fixed
rail parallel therewith, a guide movable
lengthwise of said rail and held immovable
laterally thereon, and off-setting mechanism
5 connected with said frame and with said guide
and acting directly through said guide upon
said rail to offset said frame and to hold and
guide it in its working and offset positions,
substantially as and for the purposes set forth.

In testimony that I claim the foregoing as
my own I affix my signature in presence of two
witnesses.

ALBERT CUNNINGHAM.

Witnesses:

CHAS. L. GOSS,
GEORGE M. GOLL.