(No Model.) 3 Sheets—Sheet 1.

DE WITT C. PRESCOTT.

SAW MILL CARRIAGE.

No. 385,523. Patented July 3, 1888.

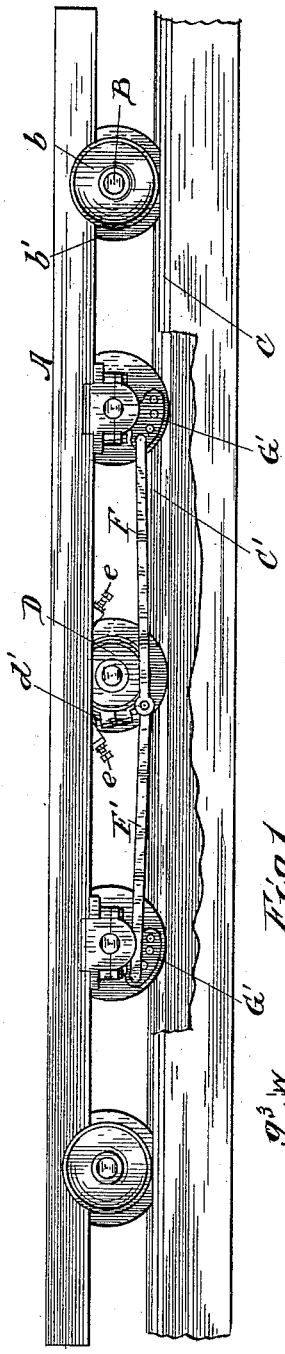


Fig 1

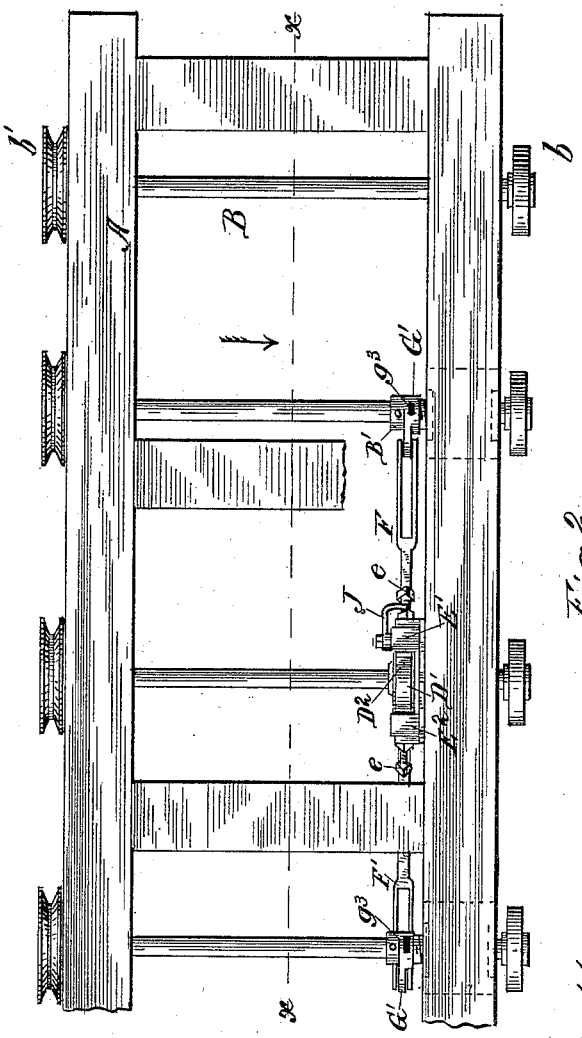


Fig 2

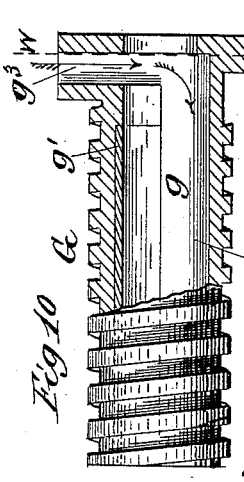


Fig 10

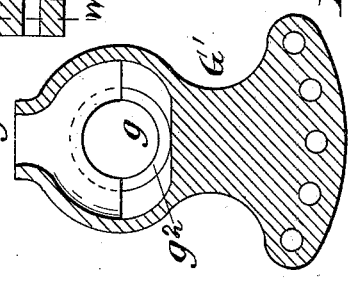


Fig 11

Witnesses,
W. C. Curtis.
Irvine Miller.

Inventor,
DeWitt C. Prescott.
By Coburn & Thacher
Attorneys.

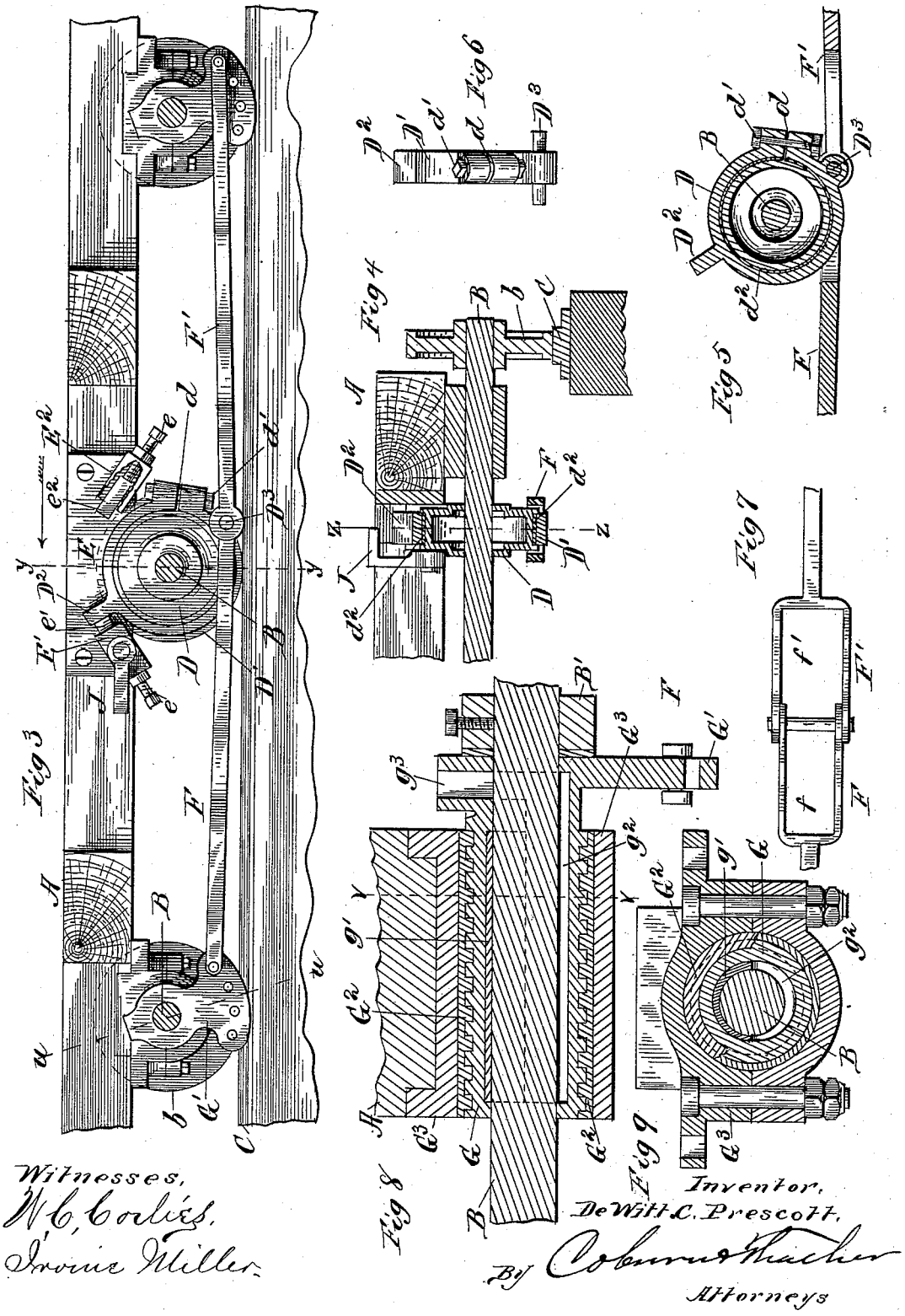
N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 3 Sheets—Sheet 2.

DE WITT C. PRESCOTT.

SAW MILL CARRIAGE.

No. 385,523. Patented July 3, 1888.



Witnesses,
W. C. Curtis.
Irvine Miller.

Inventor,
DeWitt C. Prescott,
By Coburn & Thacher
Attorneys

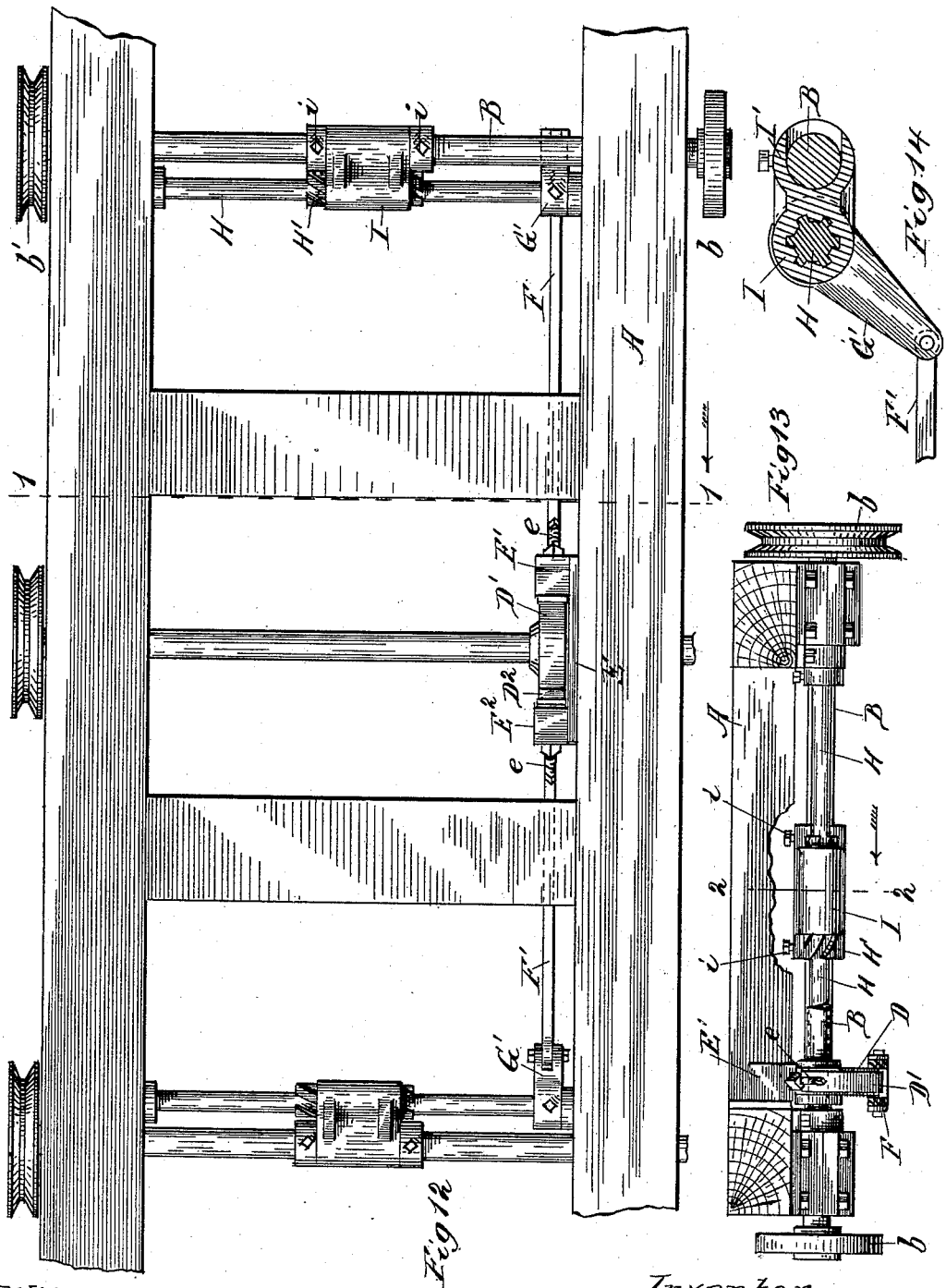
N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 3 Sheets—Sheet 3.

DE WITT C. PRESCOTT.

SAW MILL CARRIAGE.

No. 385,523. Patented July 3, 1888.



Witnesses,
W. C. Curtis.
Ivorie Miller.

Inventor,
DeWitt C. Prescott.
By Coburn & Thacher.
Attorneys

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

DE WITT CLINTON PRESCOTT, OF MARINETTE, WISCONSIN.

SAW-MILL CARRIAGE.

SPECIFICATION forming part of Letters Patent No. 385,523, dated July 3, 1888.

Application filed August 2, 1886. Serial No. 209,799. (No model.)

To all whom it may concern:

Be it known that I, DE WITT CLINTON PRESCOTT, a citizen of the United States, residing at Marinette, in the county of Marinette and State of Wisconsin, have invented a certain new and useful Improvement in Saw-Mill Carriages, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a saw-mill carriage embodying my invention; Fig. 2, a plan view of the same; Fig. 3, a longitudinal sectional view taken on the line *x x* of Fig. 2 and looking in the direction of the arrow; Fig. 4, a vertical sectional view taken on the line *y y* of Fig. 3 and looking in the direction of the arrow; Fig. 5, a detail sectional view taken on the line *z z* of Fig. 4; Fig. 6, a detail view of the friction-band detached; Fig. 7, a detail plan view illustrating the connection between the pitmen and the friction-band; Fig. 8, a detail sectional view taken on the line *u u* of Fig. 3; Fig. 9, a detail sectional view taken on the line *v v* of Fig. 8; Fig. 10, a detail elevation of one of the shifting-screws detached and partly in section; Fig. 11, a sectional view taken on the line *w w* of Fig. 10; Fig. 12, a plan view of a modified form of my invention; Fig. 13, a sectional view of the same taken on the line I I and looking in the direction of the arrow; and Fig. 14, a detail sectional view taken on the line 2 2 of Fig. 13 and looking in the direction of the arrow. Figs. 1 and 2 are on the same scale. Figs. 3, 4, 5, 6, 7, 12, 13, and 14 are on the same scale with respect to each other, but on a larger scale than Figs. 1 and 2. Figs. 8, 9, 10, and 11 are on the same scale with respect to each other, but on a still larger scale than the remaining figures.

Like letters refer to like parts in all the figures of the drawings.

My invention relates to saw-mill carriages, and more particularly to that class in which the carriage is provided with automatic means for shifting the log clear of the saw upon its return movement, its object being to provide a simple and efficient construction for positively effecting this result; and to this end my invention consists in certain novel features which I will now proceed to describe, and will then particularly point out in the claims.

In the drawings, A represents the frame of the saw-mill carriage, this frame being of any approved construction and provided with the usual means for securing the log in position thereon. The frame is mounted on a series of trucks composed of axles B, provided with wheels *b* and *b'*, secured to the said axles and revolving therewith. The wheels travel upon the rails C and C', the said wheels and rails being constructed in any approved form, although I prefer that shown, in which one of the rails, as C', is provided with a projecting rib, while the corresponding wheel, *b'*, is grooved to fit upon the rib and prevent lateral displacement of the trucks.

The carriage A is free to move laterally upon the axles B, so as to clear the log of the saw upon the return movement of the carriage, and it is to the means for effecting this lateral movement of the carriage that my present invention more particularly relates. Upon one or more of the axles B is secured a friction-wheel, D, which revolves with the said axle.

D' represents a friction band or ring surrounding the friction-wheel D, the said band being split or divided, as shown at *d*, and provided with an adjusting bolt or screw, *d'*, by means of which it may be tightened or loosened, as desired. The said friction-band is preferably provided with an inner facing, d^2, of vulcanized fiber or other suitable material. The friction-band D' is provided upon its outer periphery with a projecting lug, D^2, in the path of which are arranged stops or buffers to limit its travel. These stops or buffers are preferably constructed as follows:

E represents a plate secured to the frame A and carrying boxes E' and E^2, arranged on each side of the friction-band D'. Within suitable recesses in the boxes E' and E^2 are arranged blocks of rubber, e' e^2, which may be adjusted to project to a greater or less extent, as desired, by means of adjusting-screws *e*, passing through the blocks and bearing against their inner ends.

The friction-band D' is provided on its outer periphery with a crank-pin, D^3, to receive the forked ends *f f'* of two pitmen, F F'. These pitmen serve to operate the screws by means of which the lateral movement of the carriage

is effected, and they may be two in number, when two screws are used, as shown, or a single pitman may be used with but a single screw. The screws may be either mounted upon the axles of the carriage, as shown in Figs. 1 to 11, inclusive, of the drawings, or upon auxiliary screw-shafts, as shown in Figs. 12, 13, and 14. I will first proceed to describe the former construction, premising that as the construction is identical at each end of the carriage it is only necessary to describe one of the screws and its associated parts, it being, of course, understood that the other is similar in construction.

G represents the shifting or traversing screw, which is constructed substantially as shown in Figs. 8, 9, 10, and 11 of the drawings, being provided with an external thread, as shown, and with a crank-arm, G′, upon its projecting extremity, provided with a series of apertures for the attachment of the end of the pitman F or F′. The screw G is mounted loosely upon the shaft B, being provided with an internal bore, g, extending throughout its length to receive said shaft. A bearing-block, g', of suitable anti-friction metal, is arranged within the upper part of the interior of the screw G, where it rests upon the axle B. The lower portion of the bore g is somewhat enlarged, leaving a space, g^2, between its inner wall and the shaft B to form an oil-chamber, to which oil may be fed by means of a passage, g^3, at the end of the screw.

G^2 represents a fixed nut secured in a suitable housing, G^3, attached to the carriage A, the said nut being internally threaded to receive the screw G, as shown in the several figures of the drawings. A collar, B′, on the axle B prevents any displacement of the screw relatively to the axle. The thread of the screws is preferably left-handed in right-hand mills and right-handed in left-hand mills, in order to cause the friction of the truck-axles to assist in revolving the screws and thereby facilitating the operation of the device.

In Figs. 12, 13, and 14 I have shown a modified form of my invention, in which the screws are mounted on independent shafts, instead of being mounted on the truck-axles. In this construction H represents a shaft mounted in suitable bearings in the carriage A and moving laterally therewith, the said shaft being provided with a screw, H′, which passes through a fixed nut, I, suitably threaded internally to receive the same. The nut I is held in position by means of a forked arm, I′, which passes over the axle B, as shown in Fig. 14, and is prevented from moving laterally with respect to the said axle by means of collars i, secured on said axle at each side thereof.

The operation of my improved saw-mill carriage is as follows: The friction-band D′ is first tightened upon the friction-wheel by means of the adjusting bolt or screw d', so as to cause a sufficient friction between the two to overcome the resistance of the carriage to the operation of the shifting-screws. The stops or buffers are then adjusted so as to give the carriage the desired amount of lateral travel, by causing the rubber blocks e' e^2 to project to the desired extent by means of the adjusting-screws e. By connecting the ends of the pitmen F F′ to the proper apertures in the ends of the crank-arms G′ the carriage may be caused to assume a position in greater or less proximity to the saw at the end of its lateral travel. These parts having been properly adjusted, the carriage will start upon its forward travel to make the first cut, when the rotation of the truck-axle B and the friction-wheel D, secured thereto, will rotate the friction-band B′ until the stop D^2 thereon comes in contact with the stop or buffer e'. This rotation of the friction-band will, through the pitmen F F′ and crank-arms G G′, revolve the screws G, say one-quarter of a turn, and through the medium of the fixed nuts G^2 in the carriage will move the said carriage bodily in a lateral direction upon the truck-axles toward the saw, thereby presenting the log to the operation of the saw to make the first cut. It is of course understood that the friction-band is sufficiently loose on the friction-wheel to allow this latter to revolve within it after the motion of the band has been arrested by the stops, the adjustment of the contact between the two being regulated to effect this result by the means hereinbefore described. When the carriage has completed its forward journey and the feed is reversed, the friction-wheel will immediately throw the friction-band over until the lug D^2 is in contact with the other stop, e^2, and during this movement of the band the screws will be rotated through the medium of the pitmen, so as to move the carriage bodily upon the axles away from the saw, thereby clearing the log from the saw and preventing any contact between the two during the return movement of the carriage.

The operation of the construction shown in Figs. 12, 13, and 14 is not different from that just described above, with the exception that in this case the screws travel laterally with the carriage through the nuts, which latter do not move laterally, being prevented by the collars on the axles. In either case it will be seen that the shifting of the carriage laterally is entirely automatic at each end of its line of travel, requiring no attention on the part of those in charge of the mill. Of course the friction device will to a certain extent operate as a brake upon the movement of the carriage; but with the amplified leverage of the crank-arms and screws this brake action is comparatively slight, and with a proper feed will be no material detriment to the operation of the machine. The feed which I prefer to employ in connection with this form of carriage, as being more particularly adapted for such use, owing to its great power, is the steam-feed set forth in an application filed by me, although it is of course understood that any approved form of feed may be employed.

It is occasionally necessary to move the carriage back without moving it laterally on its

axles—as, for instance, when it is desired to remove the saw from an uncompleted cut for any reason. In order to effect this, I provide a holding device to prevent the rotation of the friction-band by means of the friction-wheel, my preferred form of this device being that shown, which consists of a dog, J, pivoted to the box E′, or to any other convenient portion of the apparatus, and capable of being thrown over to engage with the lug D^2, and thereby prevent the rotation of the friction-band in an obvious manner. When the friction-band is thus locked, the carriage may of course be moved back without any lateral movement accompanying this reversal.

It will of course be understood that various modifications in the construction shown and described may be made without departing from the principle of my invention. For instance, friction-wheels and their connecting mechanism may be arranged on more than one shaft, and a greater or less number of screws than that shown may be employed. Shifting-screws may be mounted on each of the truck-axles and have their crank-arms connected by a rod or series of rods, and friction-wheels may be mounted on these same axles, or any number of them, and have their friction-bands connected directly to the crank-arms of the shifting-screws. Various other modifications, mechanical in their nature, and relating both to the general arrangement of the parts and to the particular details of the construction, will readily suggest themselves, and I therefore do not wish to be understood as limiting myself strictly to the precise construction hereinbefore set forth, and shown in the drawings.

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

1. The combination, with the truck-axles, of a carriage arranged to move laterally on said axles, a screw or screws to cause the said lateral movement, a friction-wheel secured to one of the axles and provided with a friction-band connected to the said screws to actuate the same, and adjustable stops arranged to limit the motion of the friction-band in each direction, substantially as specified.

2. The combination, with the truck-axles, the laterally-movable carriage, the shifting-screws, the friction-wheel secured to one of the axles, and the friction-band, of the pitmen connected to the friction-band at one end and having their other ends adjustably connected to the crank-arms of the shifting-screws, substantially as specified.

3. The combination, with the truck-axles, the laterally-movable carriage, the shifting-screws, and the friction-wheel secured to one of the axles, of the friction-band connected to the screws and provided with a lug, D^2, and the rubber blocks $e' e^2$, mounted in the boxes $E' E^2$ and provided with adjusting-screws e, substantially as specified.

4. The combination, with the truck-axles, the laterally-movable carriage, and the shifting-screws, of the friction-wheel secured to one of the axles, the friction-band connected to the screws, and a holding device to prevent the rotation of the friction-band, substantially as specified.

5. The combination, with the truck-axles, the laterally-movable carriage, and the shifting-screws, of the friction-wheel secured to one of the axles, the friction-band provided with a projecting lug, and the pivoted dog J, capable of engagement with the said lug to prevent the movement of the band, substantially as and for the purposes set forth.

6. In a saw-mill carriage, the combination, with the laterally-movable carriage, of the axles B, the hollow screws G, mounted thereon and each provided with an oil-chamber, g^2, feed-passage g^3, and bearing-block g', the fixed nuts G^2, attached to the carriage and adapted to receive the said screws, and actuating mechanism connecting the screws and axles, substantially as and for the purposes specified.

DE WITT CLINTON PRESCOTT.

Witnesses:
W. P. MARS,
JOHN J. ANDREW.