(No Model.) 2 Sheets—Sheet 1.

C. ELVIDGE.

AUTOMATIC OFFSET MECHANISM FOR SAWMILL CARRIAGES.

No. 524,779. Patented Aug. 21, 1894.

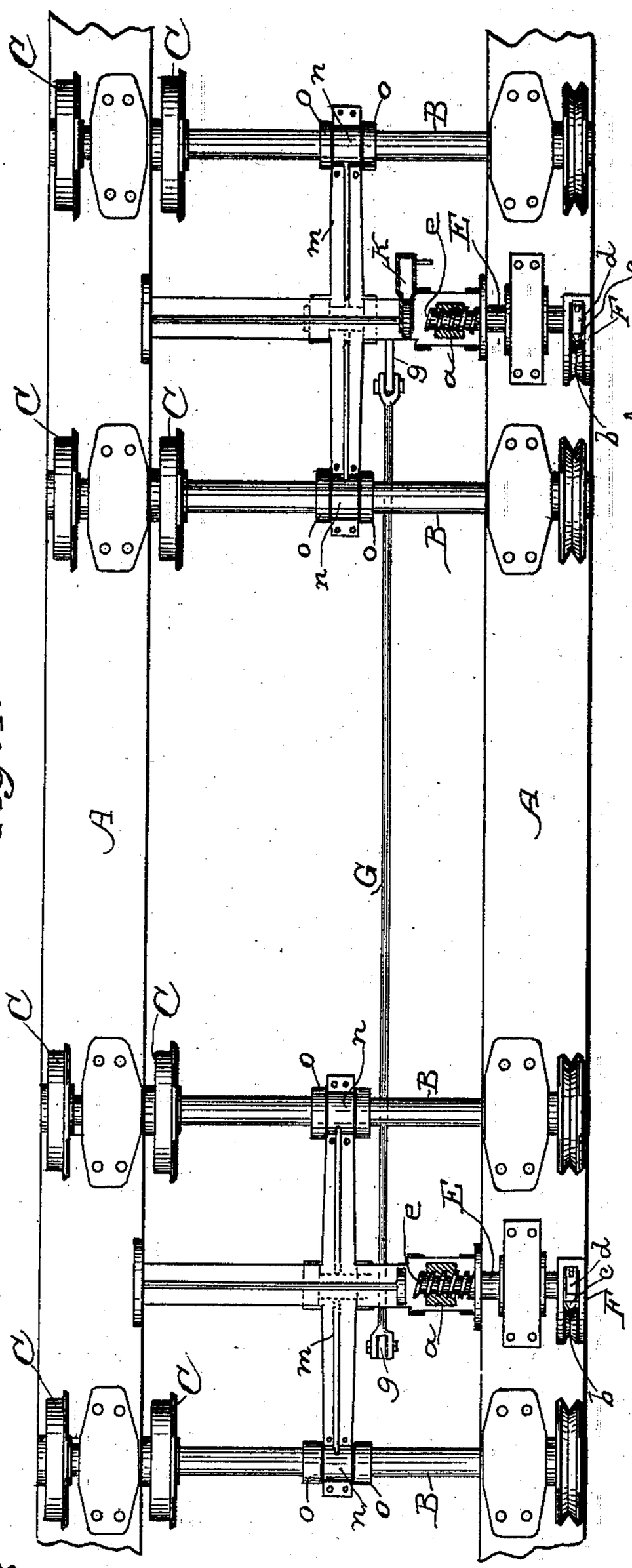

Fig. 1.

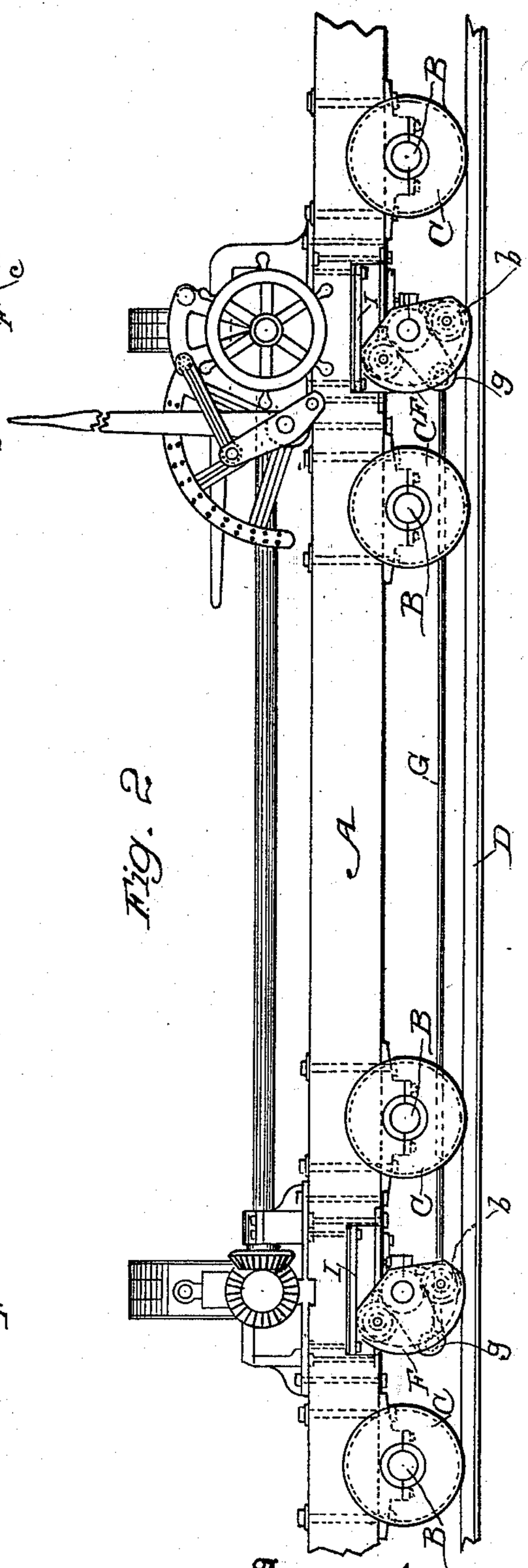

Fig. 2.

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AUTOMATIC OFFSET MECHANISM FOR SAWMILL CARRIAGES.

No. 524,779. Patented Aug. 21, 1894.

Fig. 3.

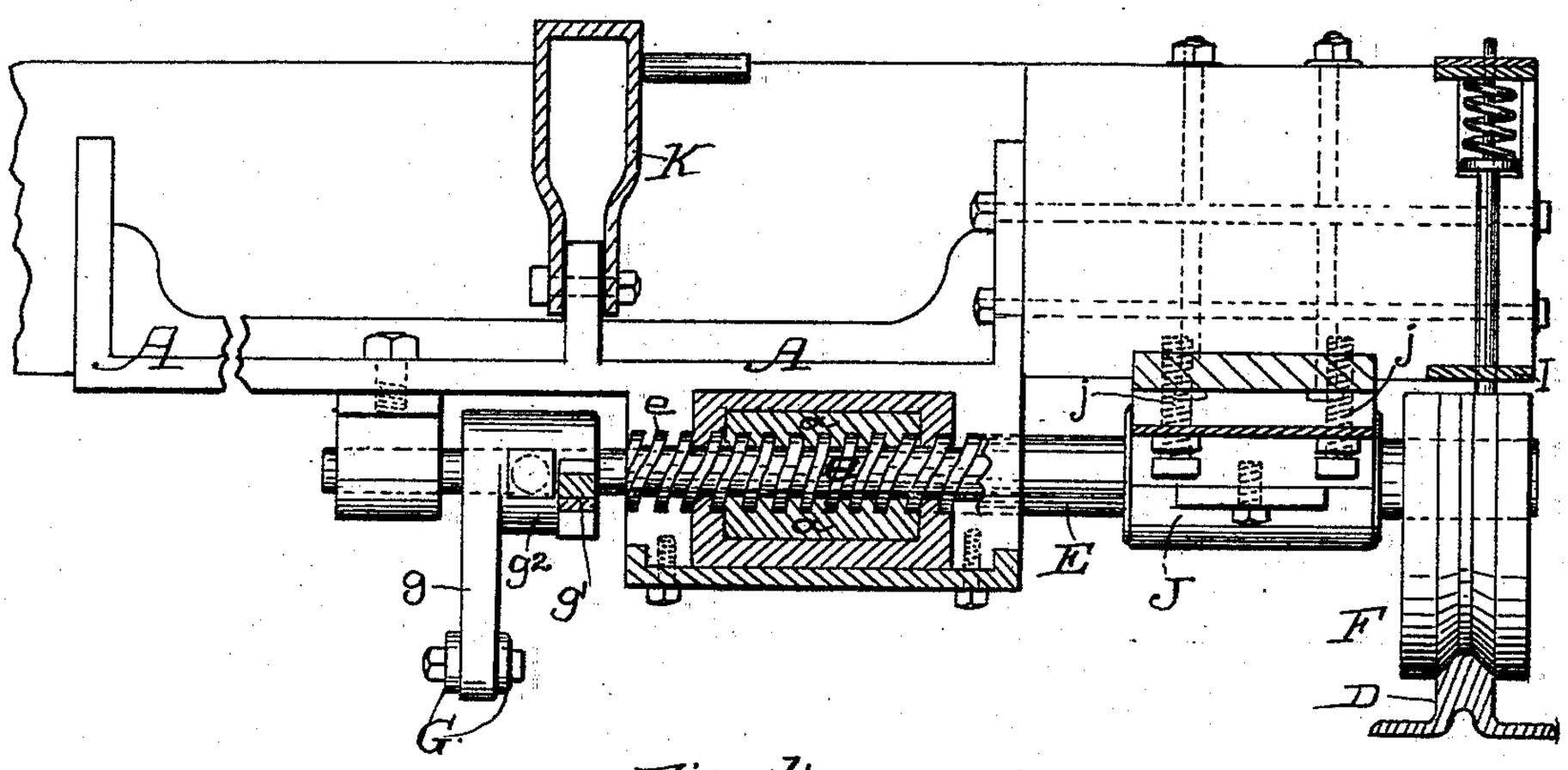
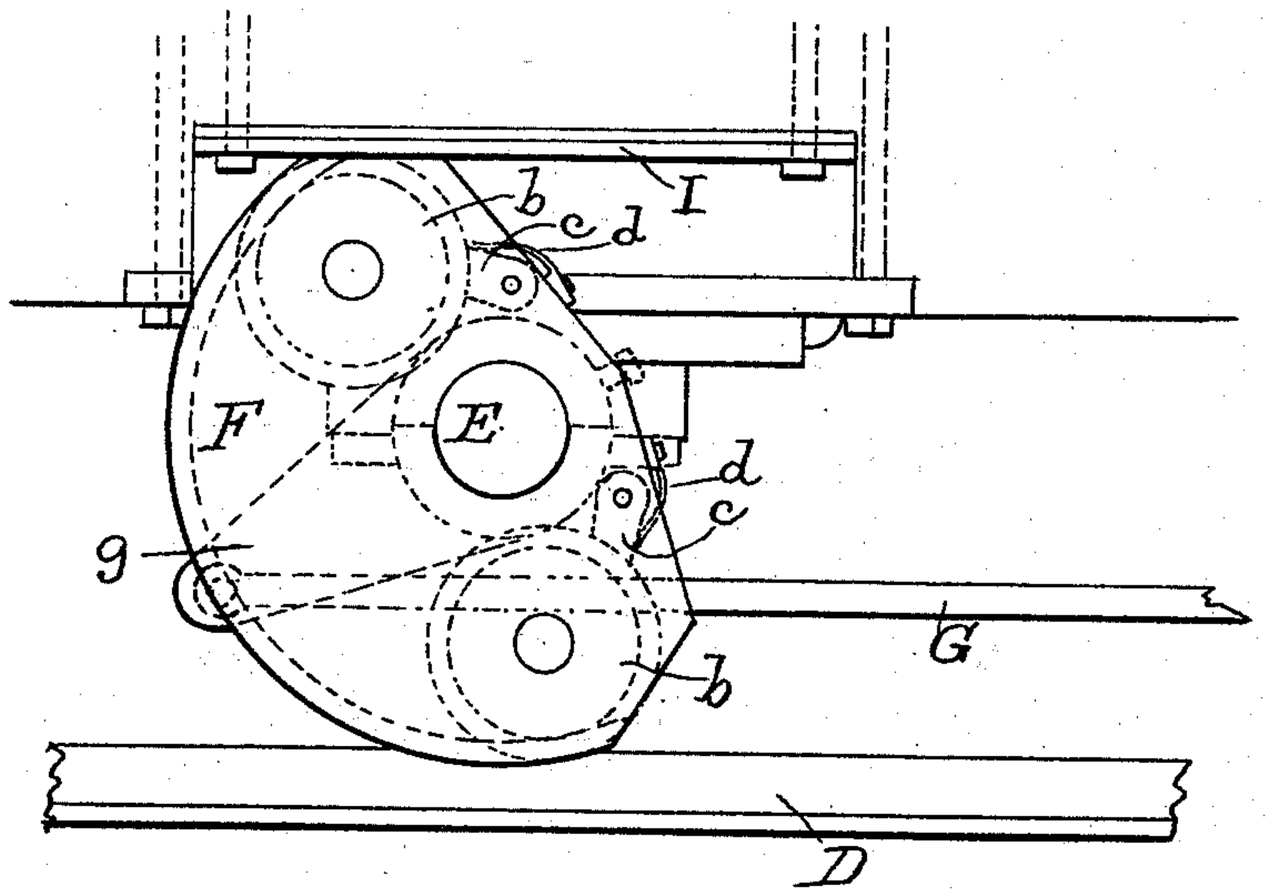


Fig. 4



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UNITED STATES PATENT OFFICE.

CHARLES ELVIDGE, OF OAKLAND, CALIFORNIA, ASSIGNOR OF ONE-HALF TO JOHN D. EBY, OF SAME PLACE.

AUTOMATIC OFFSET MECHANISM FOR SAWMILL-CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 524,779, dated August 21, 1894.

Application filed March 2, 1894. Serial No. 502,135. (No model.)

To all whom it may concern:

Be it known that I, CHARLES ELVIDGE, a subject of the Queen of Great Britain, residing in Oakland, Alameda county, State of California, have invented an Improvement in Automatic Offset Mechanism for Sawmill-Carriages; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of mechanisms for automatically offsetting the carriages of band-saw mills, and it consists of the constructions and combinations of devices which I shall hereinafter fully describe and claim.

The object of my invention is to provide a simple, durable and accurately operating, effective offset mechanism for saw mill carriages, the particular advantage of which is that not being dependent upon the carriage axles, its operation can be relied upon to take place at proper times.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a view of the bottom of the carriage showing the working mechanism. Fig. 2 is a side view of the same. Figs. 3 and 4 are enlarged details of construction.

A is the log carriage mounted upon axles B in such manner that it can be moved thereon between the hubs of the wheels C, in the usual manner of these offsetting carriages. The wheels travel on the tracks D as usual. Under the carriage and supported therefrom is a transverse shaft E, having a screw-thread *e*, which is seated in a nut *a* of carriage A. Upon the shaft E is firmly set a cam or segment F, which is adapted to impinge upon some fixed surface, either the mill floor, or a specially located rail, or as here shown upon the rail D. The length of the circular or full round portion of the cam or segment is proportioned to the amount of movement of the screw-thread required for the offsetting and return of the carriage. In operation, as the carriage feeds forward, the then lowest point of the cam or segment moves forwardly over the rail upon which it impinges, thus transmitting no movement. But at the end of the feed, and just as the carriage starts to gig back, the traction of the cam or segment on the rail D, will turn it upon its full round portion, until its other point is reached, which being presented forwardly will move over the rail on the return. But in thus turning, the screw-shaft E, operating in the nut *a*, will immediately offset the carriage, and the latter will be held offset until the return limit is reached. Then the cam or segment will, upon the starting of the feed, turn again and will thus, through screw shaft E return the carriage to the saw line. In practice, a shaft E and cam F will be placed near each end of the carriage, and in order to operate them in unison, they will be connected by the rod G, secured to an arm *g* extending downwardly from the shafts.

It is obvious that in case it be deemed advisable to employ a traction cam or segment on each side of the carriage, the shafts E may be extended across the entire width of the carriage. The cams or segments are limited and cushioned in their movements and accurately returned and held to their impingement on the rail by reason of their ends coming in contact with the spring-controlled buffer rods or rubber cushions I mounted in the carriage. I have found in practice that if the cams are allowed to slide upon the rails, there will be an injurious wear, I therefore journal rollers *b* in the ends of the segments. These rollers may have grooved peripheries to fit the rails and when the segments have been turned so as to offset the log carriage in either direction, and the carriage is then moved along the track, these rollers travel upon it and rotate so that there is no frictional wear upon the segment or the rail. When the segment is to be turned to rotate the screw, it is necessary to lock the wheels so that there will be the necessary frictional contact with the rails to turn the segment. This is effected by pawls *c* pivoted so that the ends touch the peripheries of the wheels, and are pressed against them by springs *d* with sufficient force to lock the wheels when the carriage commences to move in the direction which should rotate the segment. This insures sufficient friction between the wheel and rail to begin the rotation of the segment, and when its own periphery forms contact with the rail, it completes the movement.

The wheels at each end of the segments thus form a bearing upon the track, and rotate freely when the segments have turned the length of their arcs, but are locked as soon as a movement of the carriage in the opposite direction commences so as to insure a rotation of the segments in the opposite direction.

In order to take the side strain off the segments and rails, I have shown the nut *a* in which the screw *e* turns, connected with an arm *m*, the ends of which have sleeves *n* fitting and turning loosely upon the wheel axles. Collars *o* are fixed to the axles upon each side of the sleeves so as to prevent their moving longitudinally upon the axles. When the screw turns in the nut, the carriage will be moved sidewise sufficiently to offset it to and from the saw as previously described.

In order to accurately adjust the cams or segments to their traction on the rails, the shafts E near their outer ends are mounted in adjustable boxes J, the lower sections of which are adapted to be raised or lowered by means of the screws *j*.

To lock the cams or segments at any time, as, for example, when it is necessary to back the saw out of the cut, the swinging links K on the carriage are dropped down over arms *g'* extending upwardly from, and secured firmly to, the shafts E. In practical construction, the arms *g* and *g'* will be formed together with a hub g^2 as a single casting and secured to the shaft.

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

1. An offsetting mechanism for saw mill carriages consisting of a cam or segment mounted on the carrier and having rollers mounted within it, said rollers being freely rotatable in one direction and locked against rotation in the opposite direction, and power transmitting connections from said cam or segment to effect the offset and return of the carriage at the beginning of the gigging and feeding movements respectively.

2. An offsetting mechanism for saw mill carriages, consisting of a shaft mounted on the carriage, a cam or segment fixed on the shaft and provided with anti-friction rollers freely rotatable in one direction and locked against rotation in the reverse direction, said rollers adapted to impinge against a fixed surface whereby the cam or segment is oscillated by traction, and the shaft turned, and power transmitting connections from said shaft to effect the offset and return of the carriage at the beginning of the gigging and feeding movements respectively.

3. An offsetting mechanism for saw mill carriages, consisting of a shaft mounted on the carriage and provided with a cam or segment having anti-friction rollers mounted therein to freely rotate in one direction and to be held against rotation in the opposite direction whereby the cam or segment is oscillated by traction, and the shaft turned, and power transmitting connections from said shaft to effect the offset and return of the carriage at the beginning of the gigging and feeding movements respectively, consisting of a screw thread on the shaft and a nut on the carriage in which the thread is seated.

4. In an offsetting mechanism for saw mill carriages, the combination, of a traction cam or segment carrying anti-friction rollers adapted to rotate freely in one direction and to be held against rotation in the opposite direction, and to engage a fixed track surface, the screw shaft upon which the cam or segment is mounted, the nut on the carriage in which said shaft is seated, and the adjustable box in which the shaft is mounted whereby the cam or segment may be adjusted.

5. In an offset mechanism for saw mill carriages, the combination, of the traction cam or segment provided with anti-friction rollers freely rotatable in one direction and held against rotation in opposite direction, and the buffer rods or rubber cushions for limiting the movement of the cam or segment and returning it to its traction impingement.

6. In an offsetting mechanism for saw-mill carriages, the combination, of the screw shaft seated in a nut on the carriage, the traction cam or segment provided with anti-friction rollers freely rotatable in one direction and locked against rotation in the reverse direction, the arm *g'* of the shaft, and the drop-link for engaging the arm and locking the shaft and its cam or segment.

7. An offsetting mechanism for saw-mill carriages consisting of shafts transverse to the carriage with screw threads turning in a nut upon the carriage, segments fixed to the shafts adapted to impinge upon a fixed track or surface whereby they are rotated the length of their arcs and the screws advanced in the nuts when the carriage travels in either direction along the track, and wheels journaled in the segment ends to impinge and travel upon the track after the segments reach the limit of their oscillation whereby wearing friction upon the segments is prevented.

8. In an offsetting mechanism for saw-mills, transverse screw shafts turning in nuts upon the carriage and adapted to move it to one side or the other with relation to the saw, segments fixed to the screw shafts and having their circular peripheries traveling upon fixed tracks so that the longitudinal movements of the carriage rotate them and the screws a fixed distance, wheels journaled in the segment ends and adapted to travel freely upon the tracks and prevent friction when the segments have completed their rotation in either direction, and locking pawls or devices whereby the wheels are prevented from rotation when the carriage begins a reverse movement, substantially as described.

9. In an offsetting mechanism for saw mill carriages, transverse screw shafts having circular segments fixed to them, anti-friction

rollers mounted in the segments and freely rotatable in one direction, and adapted to impinge upon a fixed track by the friction on which said segments are rotated the length of their arcs by the movements of the carriage along the track, means for preventing the rotation of the rollers in a reverse direction, nuts through which the screws pass, bars to which the nuts are fixed, having sleeves loosely surrounding the axles, and collars upon the axles between which the sleeves are held and prevented from end movement when the screws turn in the nuts.

In witness whereof I have hereunto set my hand.

CHARLES ELVIDGE.

Witnesses:
LINCOLN SONNTAG,
J. STURGEON.