(No Model.) 2 Sheets—Sheet 1.

G. M. HINKLEY.

SAW MILL CARRIAGE.

No. 467,007. Patented Jan. 12, 1892.

Fig. 1.

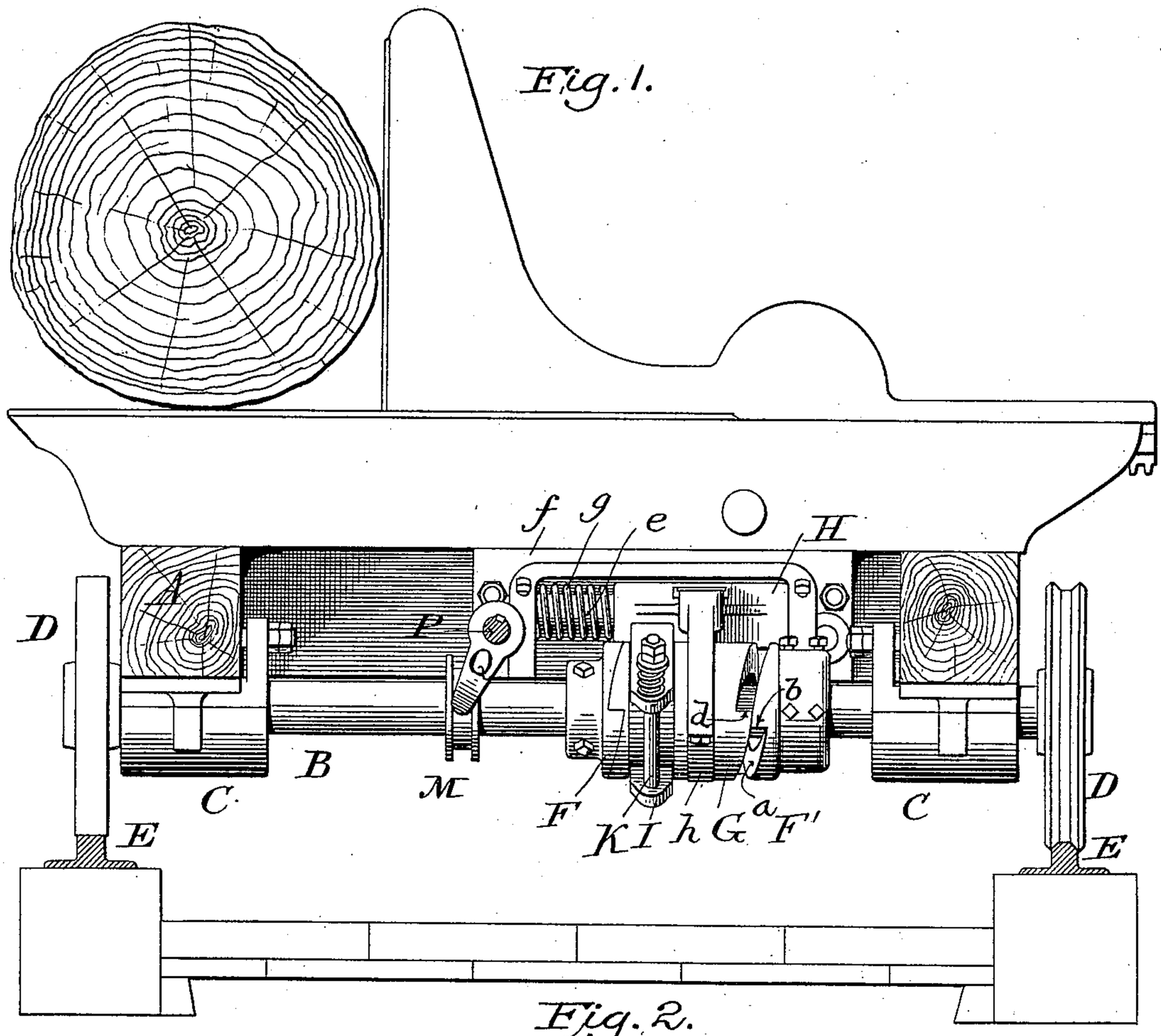
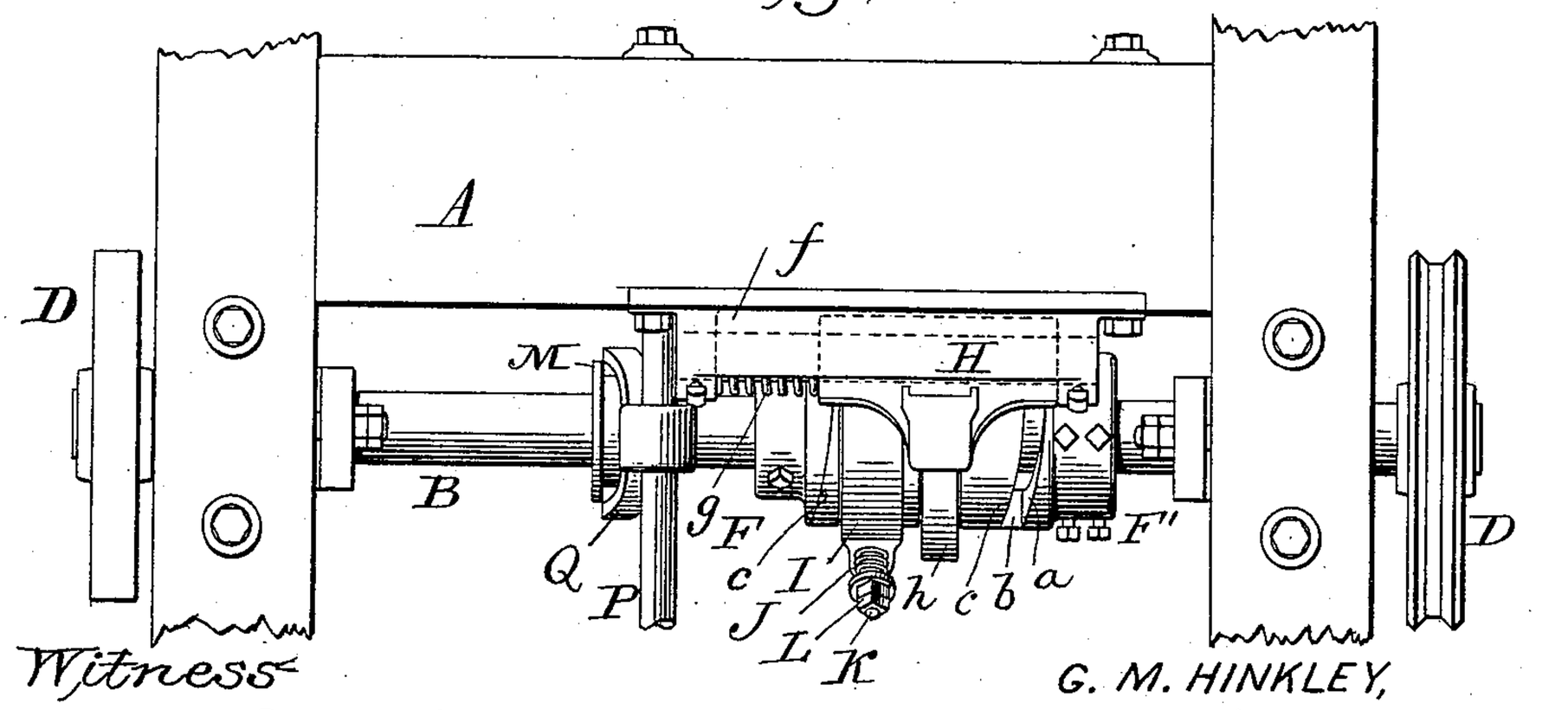


Fig. 2.



Witness:
James F. Duhamel.
Horace A. Dodge.

G. M. HINKLEY,
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Attys.

(No Model.) 2 Sheets—Sheet 2.

G. M. HINKLEY.

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Fig. 3.

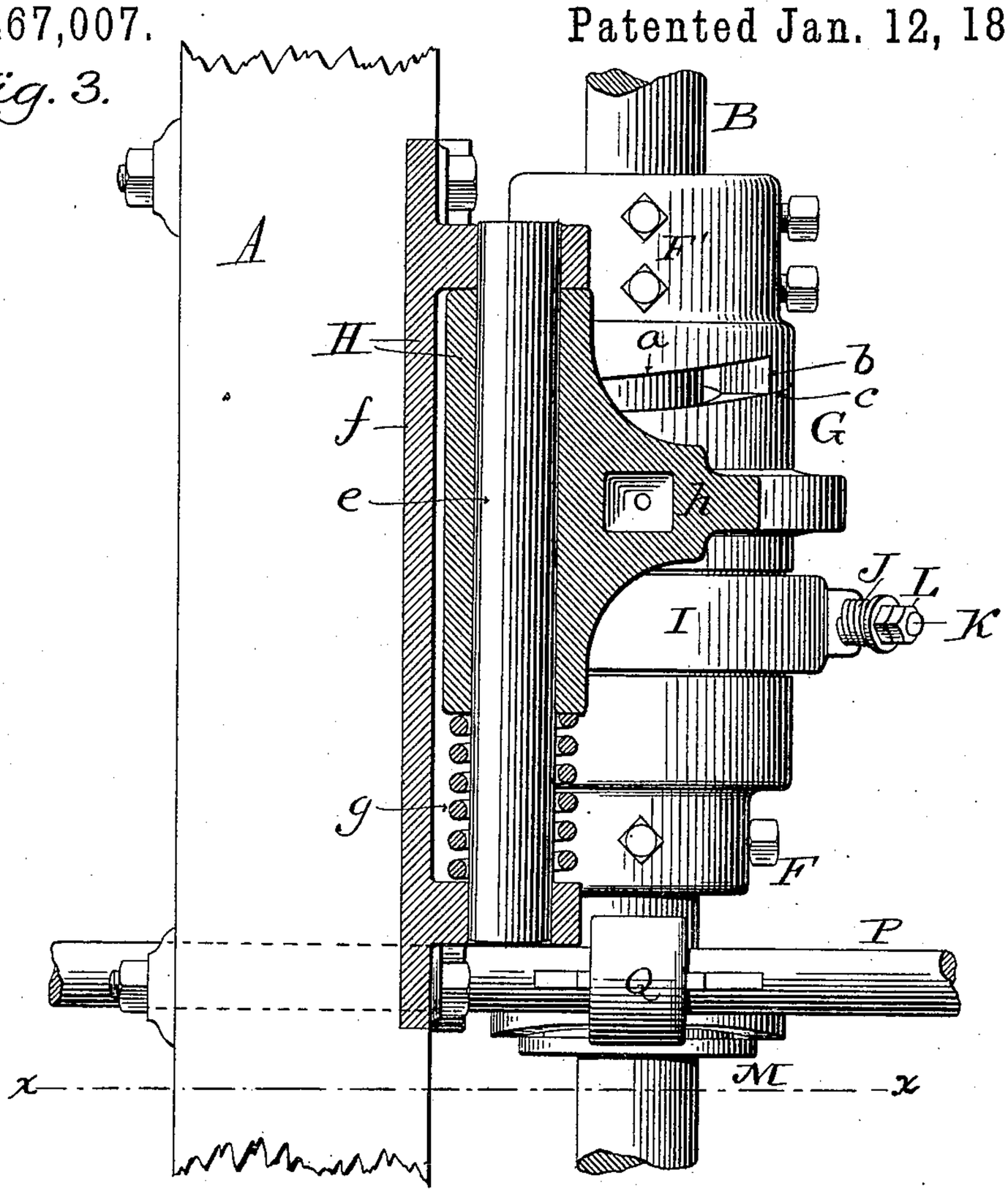
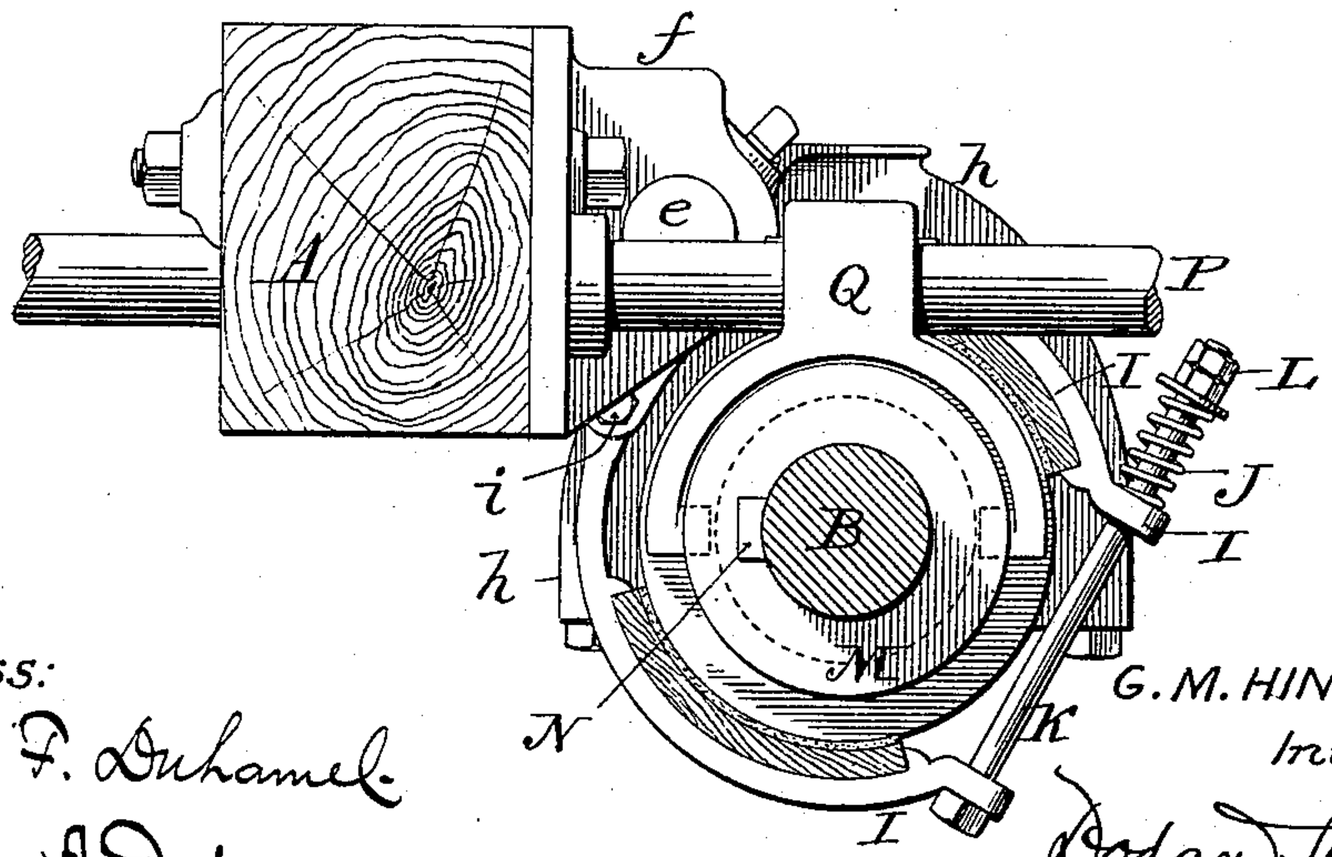


Fig. 4.



Witness:
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Inventor,
BY Dodge & Sons,
Attys.

UNITED STATES PATENT OFFICE.

GEORGE M. HINKLEY, OF MILWAUKEE, WISCONSIN, ASSIGNOR OF ONE-HALF TO THE EDWARD P. ALLIS COMPANY, OF SAME PLACE.

SAW-MILL CARRIAGE.

SPECIFICATION forming part of Letters Patent No. 467,007, dated January 12, 1892.

Application filed June 1, 1891. Serial No. 394,657. (No model.)

To all whom it may concern:

Be it known that I, GEORGE M. HINKLEY, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Saw-Mill Carriages, of which the following is a specification.

My invention relates to saw-mill carriages; and it consists, broadly, of a carriage having a spring or other cushion or yielding connection interposed between the frame-work and the trucks, whereby the lateral jar or shock incident to the rolling of logs onto the carriage is avoided, or, more properly speaking, taken up or absorbed by the spring.

The invention has reference more particularly to that class of carriages known as "offsetting," in which the frame-work moves at right angles to the line of travel of the carriage toward and from the saw upon and relatively to the carriage-trucks.

In a patent, No. 433,681, granted to me August 5, 1890, jointly with R. Schofield, there is shown a mechanism for causing this offsetting action to occur automatically, according to the direction of travel of the carriage, such mechanism comprising in its general construction two collars fast upon the axle and an intermediate collar carried by a bracket secured to the carriage-frame, said collars having beveled or inclined faces, which cause a shifting of the frame toward and away from the saw, according to the direction in which the carriage travels.

It is found in practice that as the logs are rolled onto the head-block and strike against the knee they have a tendency to move the carriage-frame away from the saw or move it lengthwise of and upon its axles. This outward movement is resisted, however, by means of the outer collar secured to the axle and bearing against the intermediate collar carried by the carriage-frame; but, owing to the continuous jarring, the outer axle-collar will yield or else the bracket carrying the intermediate collar is liable to break. I overcome these difficulties by interposing between the carriage-frame and the intermediate collar a spring or cushion or any suitable yielding connection which will take up or absorb the jar or shock incident to the rolling of logs onto the carriage, this combination comprising the second part of my invention.

I wish to here make plain the fact that I do not limit myself to the employment of the special offsetting devices herein shown, as it is obvious that the broad principle underlying the present invention may be applied to any of the various styles of offsetting-carriages heretofore devised without departure from my invention.

The third part of my invention comprises the combination, with the frame-work and trucks, of a yielding offsetting mechanism, the interposition of a spring or cushion between the yielding members constituting the fourth part of the present invention.

The drawings forming a part of this application show what changes would be necessary to apply my invention to the offsetting mechanism shown and described in the patent hereinbefore referred to.

In the drawings, Figure 1 is a vertical transverse view of a saw-mill carriage provided with my improvements; Fig. 2, a top plan view of the offsetting mechanism; Fig. 3, a similar view, on a larger scale, with portions in section; and Fig. 4, a sectional view on the line *x x* of Fig. 3.

A indicates the frame-work of the carriage, mounted upon the axles B, which turn freely in boxes or bearings C on the carriage, the axles being provided with supporting-wheels D to run upon a track E, as usual.

The width of the carriage is slightly less than the space between the inner faces of the wheels, thereby permitting a limited movement of the carriage upon the axles toward and from the saw.

Secured rigidly upon the axle are collars F and F′, which on their opposing faces are provided with inclined faces *a* and abrupt faces *b*, while mounted loosely upon the axle, between the collars F F′, is a third collar G, which, as shown, is provided at each end with inclined faces *c* and abrupt faces *d*, corresponding to those formed on the collars F F′. This collar G is grooved circumferentially to receive the bracket H, which, instead of being bolted rigidly to the carriage, as in the prior patented construction referred to, is made in two parts, one part *h* being mounted

loosely upon a rod or shaft *e*, rigidly secured to a plate *f*, constituting the other part of the bracket and bolted to the carriage-frame A. The part *h* is made narrower than the part or plate *f*, so as to afford space for a coiled spring *g* or other elastic or yielding cushion, the said spring bearing at one end against the part *h* and at the other end against a lug on the plate *f*. When now a log is rolled onto the carriage against the upright face of the knee, the carriage-frame, with its attached plate *f* and shaft *e*, will be forced backward slightly, and were the bracket carrying the intermediate collar made rigid and affixed to the carriage the objections heretofore urged would attach; but inasmuch as the two parts of the bracket have a sliding connection one with the other the jar or shock will be taken up by the coiled spring, which will be compressed as the part or plate *f* and shaft *e* (secured to the carriage-frame) move relatively to the part *h*, in which the collar G is mounted. The movement thus imparted to the carriage-frame is very slight in any event; but whatever its extent it will be taken up or absorbed by the spring without throwing any appreciable strain upon the collars. This construction and arrangement forms in effect a yielding offsetting mechanism that may be subjected to jars or shocks without liability of breakage.

I I indicate two curved plates hinged or pivoted by a bolt *i* to the part *h* of the bracket H, as shown in Fig. 4, the plates being faced with suitable material to bear upon the periphery of the collar G. The plates are held in contact with the collar by means of a spring J, encircling a rod K, which latter passes through the free ends of the plates, the force of the spring being regulated or controlled by means of the nuts L, screwing on the threaded end of the rod.

In Figs. 1 and 2 the parts are in the position they occupy just after making a cut preparatory to reversing the direction of movement or travel of the carriage. Now when the direction of travel of the carriage is reversed the collar F nearest the saw, being fast to the shaft or axle, will turn, and its inclined faces will ride up the inclined faces on that end of the collar G adjacent to the said collar F, and as the axle or shaft cannot move lengthwise the collar G must of necessity be moved away from the saw; but inasmuch as the bracket H, secured to the carriage, partakes of the longitudinal movement of the collar G the carriage-frame will be shifted bodily away from the saw. During this initial movement of the carriage the friction-plates I will bear with sufficient force upon the collar G to prevent the latter turning upon the shaft, so that by the time that the collar G has been moved endwise sufficiently far to offset the carriage the required distance and throw the abrupt faces on the outer end of the collar G into engagement with the abrupt faces of the outer collar F′ the force of the spring J will be overcome by reason of the engagement of the collar G with the outer collar F′. After the carriage has been "gigged back" and reversed preparatory to making a new cut it will be seen that the inclined faces on the collar F′ will ride against the inclined faces on the outer end of the collar G and move said collar lengthwise upon the axle and will carry the carriage-frame toward the saw. During this longitudinal movement of the collar the friction-plates again come into action and hold the said collar against rotation until the inner end of the collar G comes into engagement with the abrupt faces of the collar F. There will advisably be a set of these devices at opposite ends of the carriage, so as to move both ends of the carriage uniformly and equally and prevent any binding upon the axles.

It sometimes happens that it is necessary to "gig back" before the cut has been completed, and this, too, without offsetting the carriage, for it is clear that if the carriage be offset while the saw is still in the log the result will be a destruction of the saw. To prevent this automatic offsetting of the carriage upon the reversal of the direction of travel of the same, each of the axles B is provided with a grooved collar M, which carries a key or feather N, concaved to fit surface of shaft or axle and passing through suitable recesses or seats formed in the collars F and G, as clearly shown and described in the patent hereinbefore referred to. It will be seen that when this key or feather is moved inward and the collars F and G locked together said collar G will be prevented from rotating independently of the shaft, and of course the inclined faces upon the ends of said collar will be rendered inactive and the carriage prevented from being offset. In order to actuate the collar and the spline carried thereby, a rock-shaft P and yoke Q are employed; but as these features form no part of the present invention further reference to them is unnecessary.

Having thus described my invention, what I claim is—

1. In a saw-mill carriage, the combination of trucks, a log-frame laterally movable upon said trucks, and a spring between the trucks and the log-frame and serving to take up the lateral thrust or concussion imparted to the log-frame by rolling logs onto said frame.

2. A saw-mill carriage in which the frame-work is movable toward and from the saw upon the axles or trucks, in combination with devices for thus moving the frame-work, and a spring or cushion independent of such devices, yielding in the direction of said movement, interposed between the carriage-frame and the trucks.

3. A saw-mill carriage in which the frame-work is movable toward and from the saw, in combination with a spring or cushion tending to normally hold the frame-work in working position, and offsetting devices for positively advancing and receding the carriage-frame.

4. In a saw-mill carriage, the combination, with trucks, of a frame-work laterally movable thereon, and a yielding support to hold the frame-work normally against lateral movement, but adapted to take up the lateral thrust due to rolling logs onto the frame-work.

5. In a saw-mill carriage, the combination of trucks, a frame-work laterally movable thereon, a yielding support to hold the frame normally against lateral movement and to take up the lateral thrust due to rolling logs onto the frame-work, and offsetting mechanism for moving the frame independently of the action of the yielding support.

6. In combination with the frame-work and the trucks of a saw-mill carriage, an offsetting mechanism, and a take-up spring interposed between the members of the offsetting mechanism and serving to take up the lateral thrust upon the frame due to rolling logs thereupon.

7. In combination with the trucks and frame-work of a saw-mill carriage, an offsetting mechanism extending from the trucks to the frame-work for moving the frame toward and from the saw, said offsetting mechanism being formed in two parts capable of movement one in relation to the other, whereby the frame-work is adapted to be moved by the offsetting mechanism and also to move independently thereof when subjected to lateral pressure.

8. In combination with the trucks and frame-work of a saw-mill carriage, an offsetting mechanism extending from the trucks to the frame-work, and a yielding connection between the frame-work and the offsetting mechanism.

9. In combination with the frame-work and the trucks, an offsetting mechanism extending from the trucks to the frame-work and having one part adapted to slide with the frame-work relatively to the other part, and a spring or cushion interposed between the two parts.

10. In combination with frame-work A, axle B, having collars F F′, a collar G, adapted to coact with collars F F′ to effect the offsetting of the carriage, substantially as described, a two-part bracket H, secured to the carriage and carrying the collar G, and a spring interposed between the two parts of the bracket.

11. In combination with frame-work A, axle B, and collars F, F′, and G, constructed and arranged substantially as shown and described, the part or plate *f*, secured to the frame-work of the carriage and provided with rod or shaft *e*, the part *h*, carrying the collar G and adapted to slide lengthwise of the rod or shaft *e*, and a spring *g* between the parts *f* and *h*.

In witness whereof I hereunto set my hand in the presence of two witnesses.

GEORGE M. HINKLEY.

Witnesses:
HARRY A. DUCAT,
FRANK W. GREENLEAF.