(No Model.)

E. J. MULLER.

SAW MILL CARRIAGE.

No. 424,017. Patented Mar. 25, 1890.

Fig. 1.

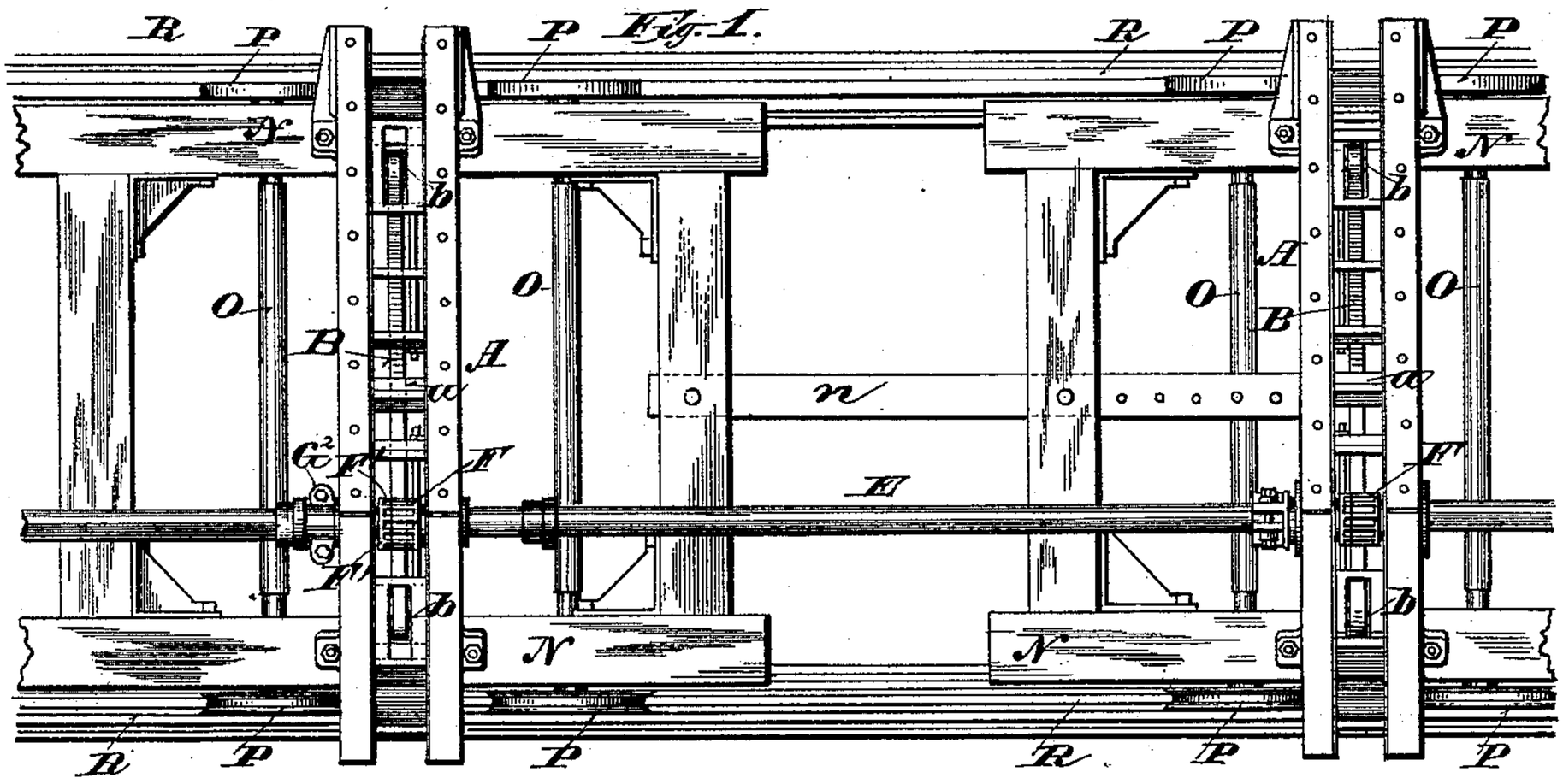


Fig. 2.

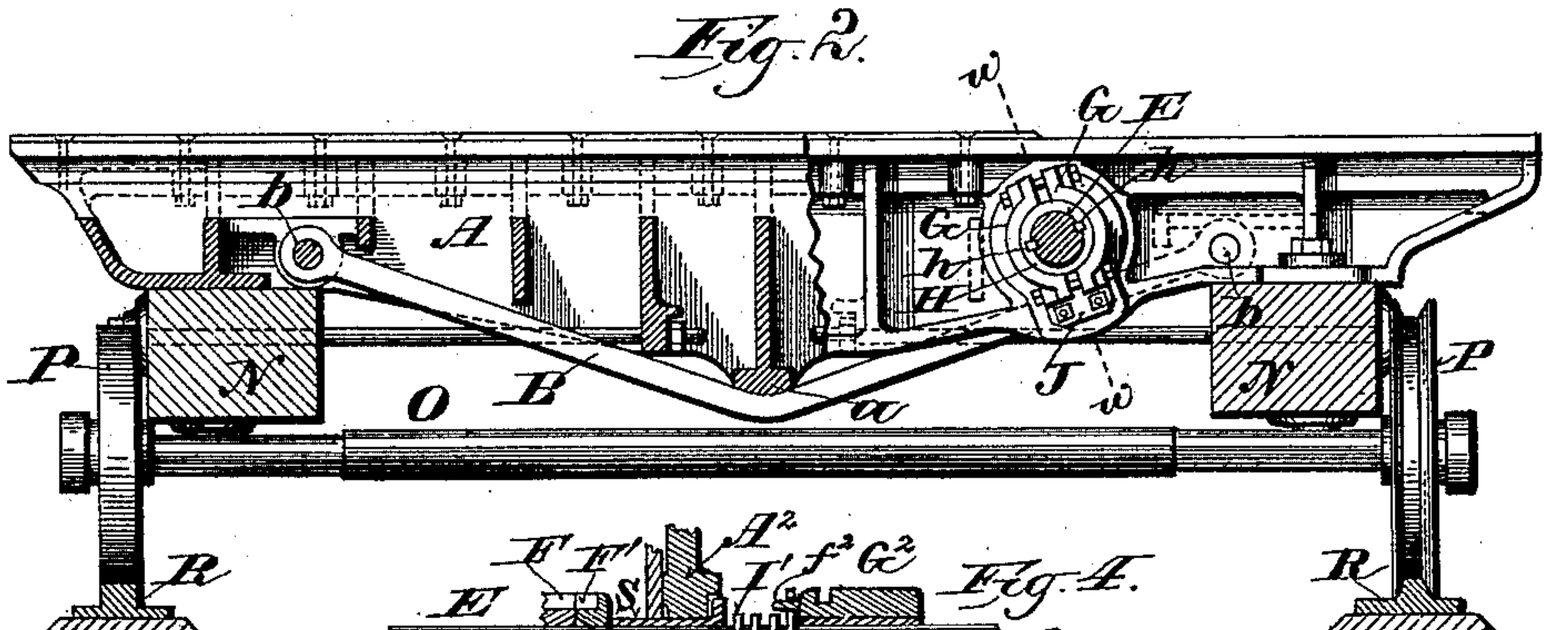


Fig. 4.

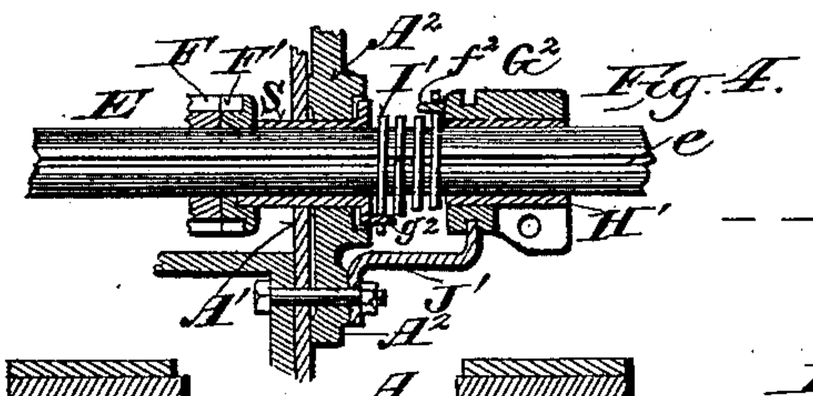


Fig. 3

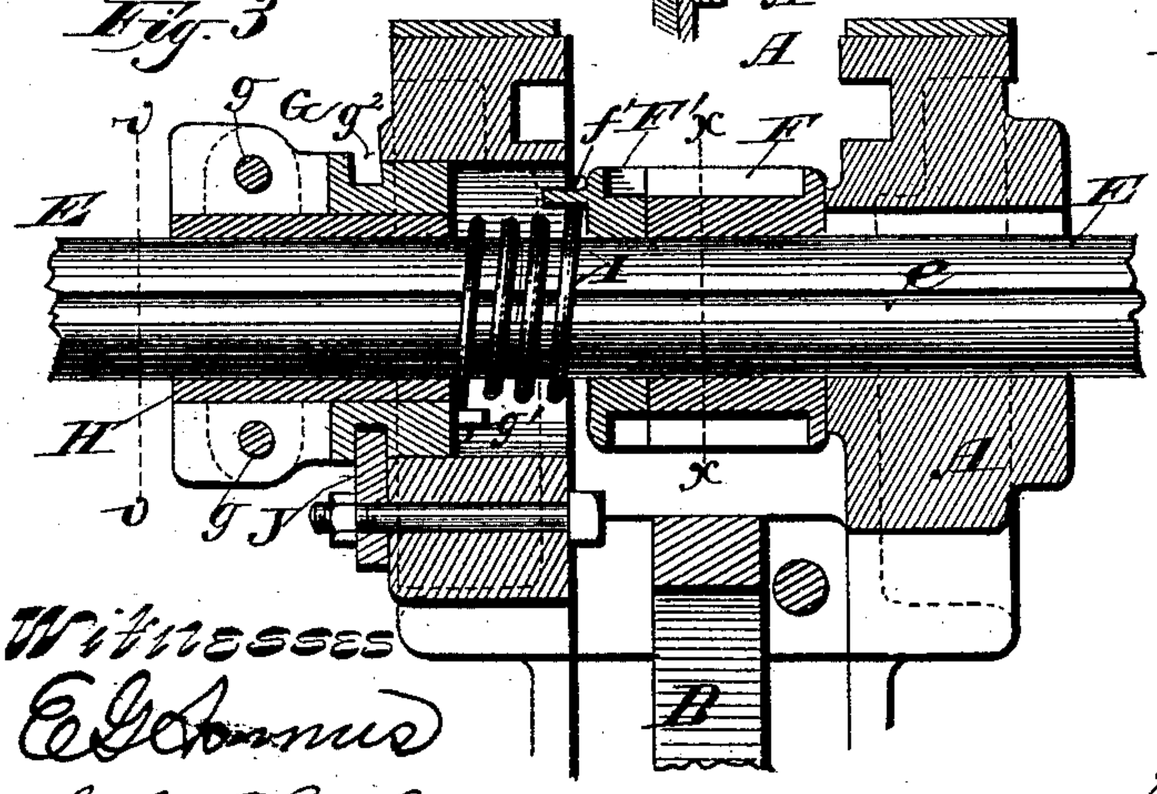


Fig. 5.

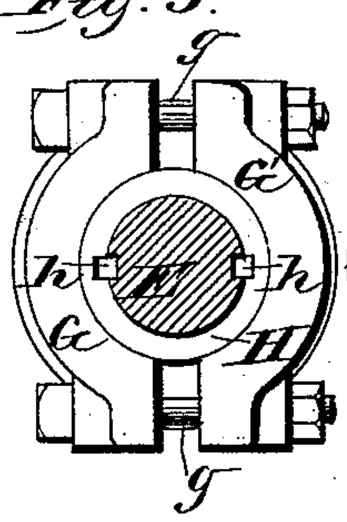
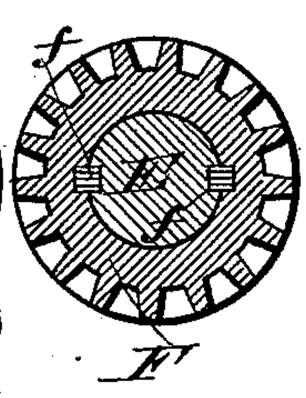


Fig. 6.



Witnesses
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UNITED STATES PATENT OFFICE.

ERNST J. MULLER, OF MILWAUKEE, WISCONSIN.

SAW-MILL CARRIAGE.

SPECIFICATION forming part of Letters Patent No. 424,017, dated March 25, 1890.

Application filed November 1, 1887. Renewed February 3, 1890. Serial No. 338,976. (No model.)

To all whom it may concern:

Be it known that I, ERNST J. MULLER, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Saw-Mill Carriages; and I do hereby declare that the following is a full, clear, and exact description thereof, 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 objects of my invention are, first, to diminish material and weight in the construction of cast-iron head-blocks without a diminution of strength, and, second, to facilitate the lateral adjustment of the head-block with the split pinion and its connections employed therewith.

It consists, essentially, of a light cast-iron head-block provided with a wrought iron or steel truss-rod, a split pinion and sleeve freely movable lengthwise of the shaft, a tension-collar adjustable on said sleeve, and a spring connecting the loose section of said pinion with said collar, and of other peculiarities of construction and arrangement hereinafter set forth.

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 embodying my improvements. Fig. 2 is a cross-section of the same. Fig. 3 is a longitudinal section, on an enlarged scale, of the split pinion and its connections. Fig. 4 is a similar view of a modified form of the device shown in Fig. 3. Fig. 5 is an end view of the tension clamping-collar, and Fig. 6 is a cross-section of the radially fixed section of the split pinion on the line *x x*, Fig. 3.

N N represent a sectional carriage-frame adjustably connected by means of a reach *n* and a set shaft E.

O O are the carriage-axles provided with wheels P P, which traverse the tracks R R, all of the usual or any suitable form and construction.

A A are light longitudinally slotted or recessed cast-iron head-blocks, provided at or near the ends with cross bars or pins *b b* and at or near the center of the lower side with cross-pieces or bridges *a a*.

B B are wrought iron or steel truss-rods formed at the ends with eyes, which are secured on the cross-pins *b b*, as shown in Fig. 2, and drawn taut under the bridges *a a*. The rods B B are preferably heated and shrunk upon the block A A, thereby producing the required tension or strain to support the blocks at the center; but the requisite tension or strain in the truss-rods may be produced by mechanical or other suitable means. By the employment of these truss-rods the head-blocks can be cast much lighter, said truss-rods giving them the requisite strength.

In sawing lumber of different lengths it is desirable to have one or more of the head-blocks with its attachments adjustable laterally or lengthwise of the set-shaft, whether the carriage-frame be of the sectional form illustrated in the drawings or of the usual form. To facilitate such adjustment of the head-block when a split pinion is employed therewith is the object of the construction shown in detail in Figs. 3, 4, 5, and 6.

Referring to Figs. 3, 5, and 6, F represents one section of the split pinion, which works with a rack in the base of the standard (not shown) in the usual manner. It is provided on opposite sides of its eye with keys *f f*, as shown in Fig. 6, which work with long seats *e* in the set shaft E, thus preventing the revolution of said section F upon said set shaft at the same time permitting its lateral movement thereon. F′, the other section of said split pinion, is freely revoluble upon said set shaft, and is also capable of lateral movement thereon together with the section F.

H is a sleeve provided on the inside with keys *h h*, as shown in Fig. 5, which work in the key-seats *e* in the set shaft E, thereby restraining said sleeve from revolving on said shaft, but permitting its endwise movement thereon.

G is a clamping-collar mounted upon said sleeve and adjustably secured thereon by means of the cap G′ and clamping-bolts *g g*. A part of said collar is made in an unbroken annular section, which is fitted on the outside and bears in a lateral opening in the head-block A, through which opening the split pin-

ion is inserted into the recess or slot in which it works in said head-block. An annular groove g^2, formed in said collar and working with a tongue or guide J, secured to the face of the head-block A, retains said collar in place with reference to said head-block, and at the same time permits its rotation for the purpose of its adjustment upon the collar H, and the straining of the spring I.

I is a spiral spring coiled around the set shaft and secured at one end to a projection f' on the loose section F′ of the split pinion and at the other end to a projection g' on the adjacent end of the clamping-collar G. By this arrangement the distance between the sections of the carriage may be readily changed, and the head-block, with the split pinion and its connections, moved bodily lengthwise of the set-shaft E without disturbing the relative adjustment of said head-block, the split pinion, the spring, and clamping-collar, which are all freely movable with the head-block. This construction is equally applicable to head-blocks which are employed with a single carriage-frame, upon which they are laterally movable.

Referring to Fig. 4, illustrating a modification of the device just described for use with a light wrought-iron head-block A′, and to avoid the large lateral opening in said head-block for the insertion of the split pinion, A^2 is a casting secured to the side of the head-block A′ and furnishing a bearing for a sleeve *s*, which is mounted upon the set-shaft E, inserted therewith through one side of said head-block, and engaging at its inner end with the loose section F′ of said split pinion. H′ is a sleeve keyed or feathered upon the set shaft E outside of said head-block, so as to be rotated with said set shaft, and at the same time to be freely movable lengthwise thereon. G^2 is a collar adjustably secured upon said sleeve H′, and I′ is a spiral spring coiled around the set-shaft and secured at one end to a projection f^2 on said collar and at the other end to a projection g' on the outer end of sleeve *s*. A tongue or guide J′, secured to the head-block and working in a circumferential groove in said collar, retains the latter in its proper relative position to said head-block.

I claim—

1. The combination, with a cast-iron head-block for saw-mill carriages, provided on the under side at or near the center with a bridge, of a truss-rod secured thereto at or near the ends and shrunk taut over said bridge, substantially as and for the purposes set forth.

2. The combination, with a cast-iron head-block for saw-mill carriages, which is provided at or near the ends with cross bars or pins and at or near the center with a cross-bar or bridge, of a steel or wrought-iron truss-rod, formed at the ends with loops or hooks, which are secured upon said cross-pins and drawn taut under said bridges, substantially as and for the purposes set forth.

3. The combination, in a saw-mill carriage, with the set shaft and a laterally-movable head-block, of a split pinion mounted upon said set shaft in a recess in said head-block, one section of said pinion being revoluble and the other section feathered on said shaft, and both movable lengthwise on said shaft, a sleeve feathered upon said set shaft, a collar adjustably secured upon said sleeve, and a spring connected at one end with said collar and at the other with the loose section of said split pinion, substantially as and for the purposes set forth.

4. The combination, in a saw-mill carriage, with the set shaft and a laterally-movable head-block, of a split pinion mounted upon said set shaft in a recess in said head-block, one section of said pinion revoluble with and the other section revoluble upon said set-shaft, and both movable lengthwise of said shaft, a sleeve feathered upon said shaft, a collar adjustably secured to said sleeve and formed with a circumferential groove, a guide secured to the head-block and working with said groove, and a spring attached at one end to said collar and connected at the other end with the loose section of said split pinion, substantially as and for the purposes set forth.

5. The combination, in a saw-mill carriage, with the set shaft and a laterally-movable head-block, of a split pinion mounted upon said set shaft, one section of said pinion being feathered and the other section revoluble upon said shaft, and both movable lengthwise thereof, a sleeve feathered upon said shaft, a collar provided with a clamping-cap, by which it is secured on said sleeve, and formed with a circumferential groove, a tongue or guide secured to the head-block and working with said groove, and a spring attached at one end to said collar and connected at the other end with one section of said pinion, 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.

ERNST J. MULLER.

Witnesses:
CHAS. L. GOSS,
M. E. BENSON.