

(No Model.)

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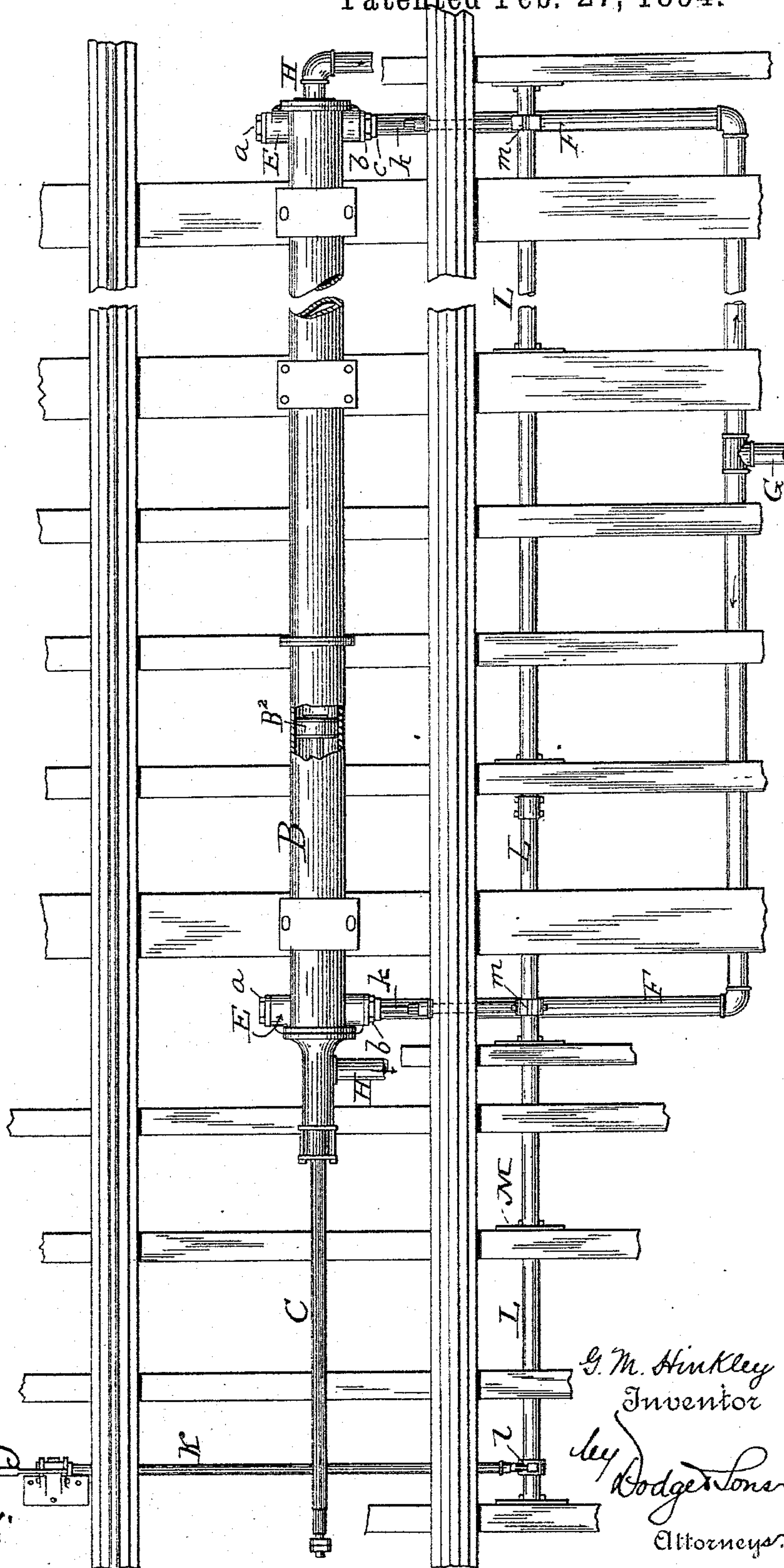
G. M. HINKLEY.

FEED MECHANISM FOR SAWMILL CARRIAGES.

No. 515,429.

Patented Feb. 27, 1894.

Fig. 1.



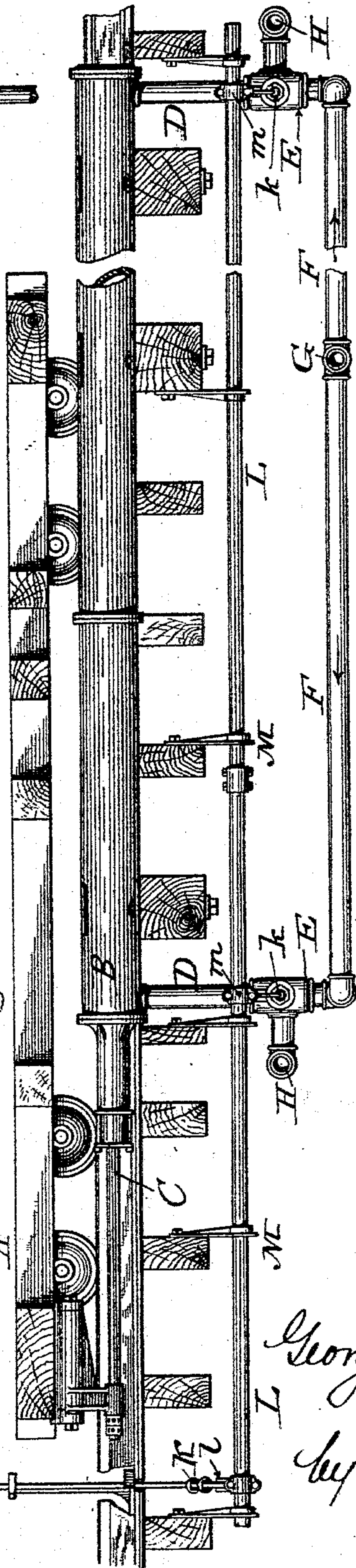
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3 Sheets—Sheet 2.

## FEED MECHANISM FOR SAWMILL CARRIAGES.

Patented Feb. 27, 1894.



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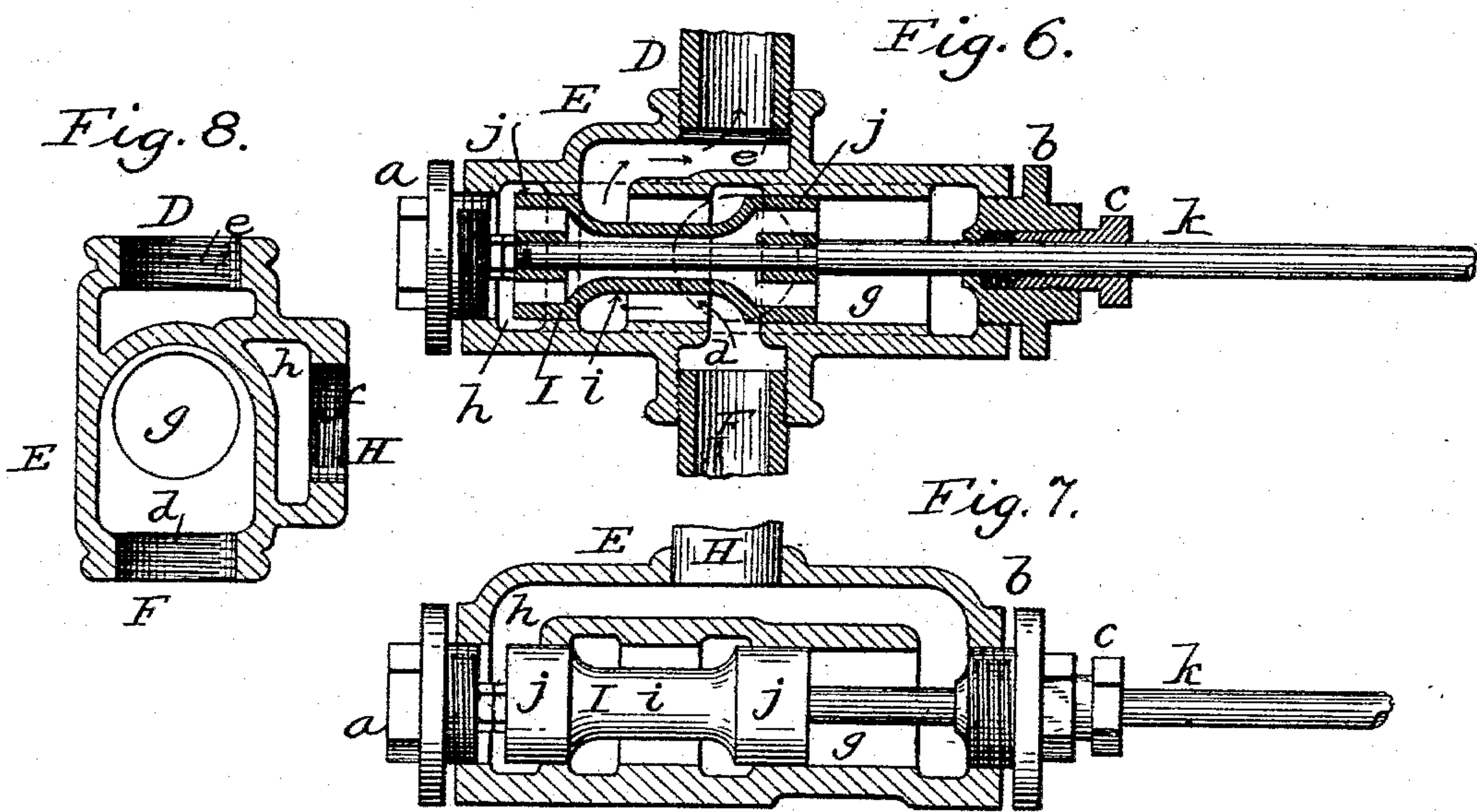
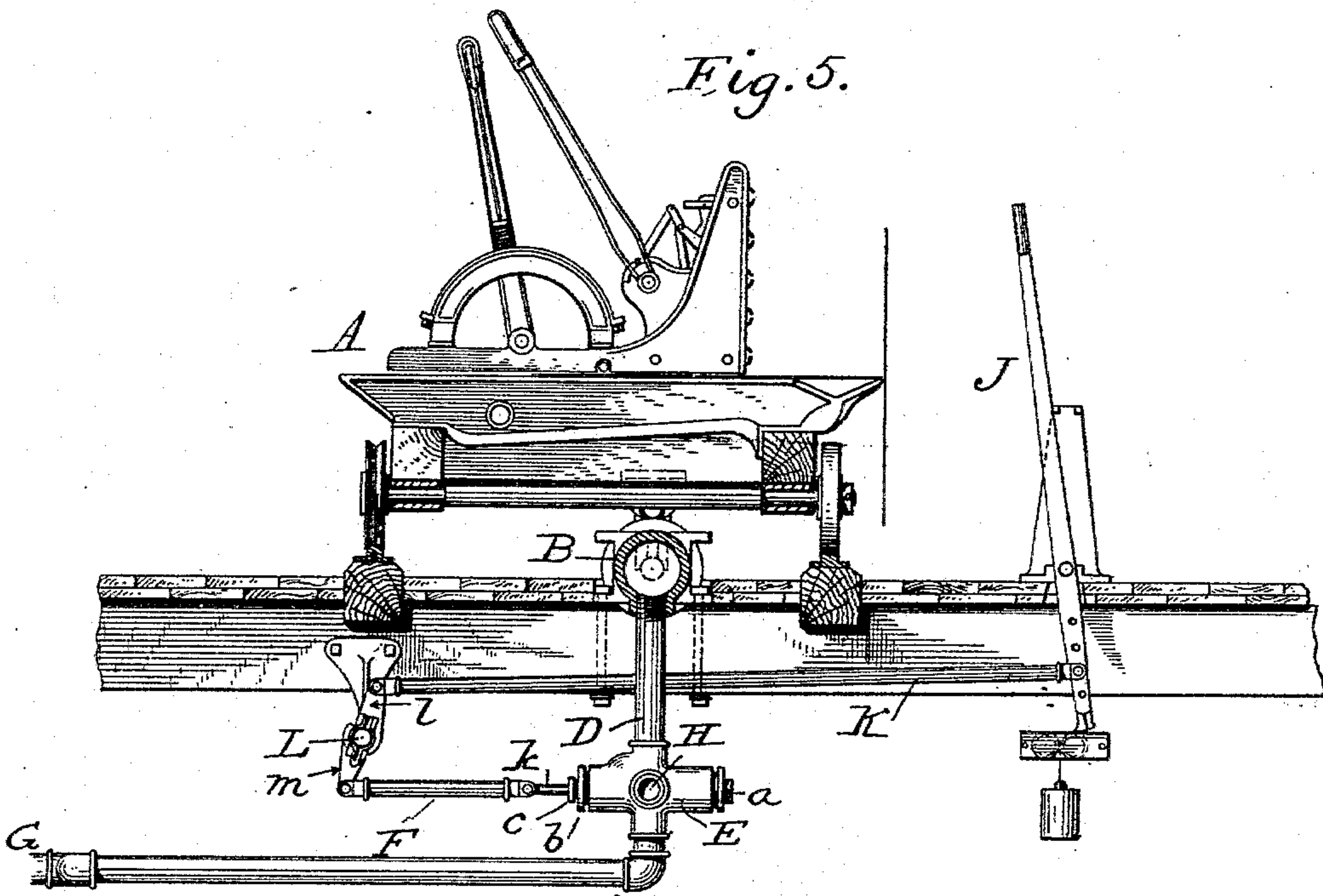
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# UNITED STATES PATENT OFFICE.

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

## FEED MECHANISM FOR SAWMILL-CARRIAGES.

SPECIFICATION forming part of Letters Patent No. 515,429, dated February 27, 1894.

Application filed November 1, 1893. Serial No. 489,755. (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 Feed Mechanism for Sawmill-Carriages, of which the following is a specification.

My invention relates to saw mill carriages, and consists in a novel feed mechanism for the same, all as hereinafter set forth and claimed.

In the drawings,—Figure 1 is a top plan view of the feed mechanism with the carriage removed; Fig. 2, a vertical longitudinal sectional view; Figs. 3 and 4, vertical longitudinal sectional views through the valve-casings at each end of the cylinder; Fig. 5, a vertical transverse sectional view through the feed mechanism; Fig. 6, a vertical longitudinal sectional view through one of the valves and its casing; Fig. 7, a horizontal sectional view of the same; and Fig. 8, a vertical transverse sectional view through the valve casing.

A indicates the saw mill carriage, and B a cylinder mounted upon suitable timbers between the rails or track upon which the carriage travels, said cylinder having its axis in the direction of travel of the carriage. Working within the cylinder is a piston B<sup>2</sup> the rod C of which is connected with the carriage as shown in Figs. 2 and 5.

At each end of the cylinder B, and connected therewith by pipes D D, are the valve casings E E, which latter also connect by means of the pipes F F with the steam or other fluid-supply pipe G, as shown in Figs. 1, 2 and 5. Each of the valve casings is further provided with an exhaust pipe H. The valve casings are duplicates of each other, and hence a description of one will answer for both. The casing is open from end to end, and fitting into one end is the plug or cap *a*, while fitting into the opposite end is the hollow plug *b* with its packing gland *c*. These plugs are interchangeable for a purpose presently explained. In each casing there is a steam inlet *d* and outlet *e* and an exhaust port *f*, as shown in Figs. 3, 4, 6, 7 and 8, which communicate, respectively, with the pipes F, D, and H, the arrangement being such that the steam

enters through pipes F and D into the cylinder, and exhausts from the cylinder through the pipes D and H.

It will be noticed upon reference to Figs. 4 and 6, that the steam that enters through pipe F passes into a cylindrical chamber *g* extending partly throughout the length of the casing, and thence upward over the end wall of the casing into the pipe D. When exhausting, however, the steam passes down through pipe D, thence to opposite ends of the casing, into a passage *h* behind the cylindrical chamber *g*, and finally out through the pipe H. To open and close these ports so as to insure the proper travel of the steam, I employ a valve I having a reduced neck *i*, and heads or enlarged ends *j*, said valve, which is made hollow from end to end, being fitted to slide or work within the chamber *g* in the valve casing. This valve is furnished with a stem *k* and reciprocated longitudinally by means hereinafter set forth. When the valve is in the open position shown in Figs. 4, 6, and 7, the steam will pass through pipe F into chamber *g* around the reduced neck *i*, and then escape upward into the cylinder through pipe D. While the valve is in this position, the steam cannot enter the exhaust passage, as the heads *j* of the valve confine the steam and prevent its passing to the end of the casing. When the valve is in the position shown in Fig. 3,—that is, with its heads *j* closing the ends of the chamber *g*, and thereby preventing the passage of steam through said chamber,—the exhaust steam from the cylinder passes down through pipe D into the end of the casing and finally into the exhaust passage *h*. As the valve is hollow, steam also passes through the valve to the opposite end of the casing and into the exhaust passage.

By making the valve hollow as just described, it is relieved of all end-pressure, and this too without extending the valve stem through both ends of the casing.

It is of course to be understood that when one valve is in such position as to admit steam to one end of the cylinder, the other valve is in such position as to permit the steam to escape from the opposite end of the cylinder. Under the present construction, it will be observed, the valves are arranged



crosswise or transverse to the cylinder, and it is also to be noted that the valves move in the same direction at the same time.

In order to effect the actuation of the valves, I employ a hand lever J, pivoted to a suitable support, and connected by a link or rod K to an arm *l* secured to a rockshaft L. This shaft L, which extends parallel with the cylinder, is carried in suitable brackets or hangers M, and is provided at each end with a radial arm *m* which is connected with the valve stem *k*, as shown in Figs. 1, 2 and 5.

From the foregoing it will be seen that when the lever is thrown toward the saw, both valves will move inward, but when the lever is reversed, both valves will be moved outward.

By making the valve chambers as described, I am enabled to employ the same kind of casing at each end of the cylinder,—it being only necessary to reverse the casing end for end, and to transpose the plugs *a* and *b*, as will be clearly understood upon reference to Figs. 3 and 4.

The simple means shown and described for connecting and operating the valves avoids any bad effect or action on the valves, which might be occasioned by the expansion and contraction of the cylinder.

Having thus described my invention, what I claim is—

1. In combination with a saw-mill-carriage and its cylinder and piston; valves arranged to move crosswise of the cylinder, between its ends; and means for actuating the valves to control the passage of fluid to and from the cylinder, substantially as shown and de-

scribed, whereby the expansion of the cylinder leaves the position of the valves unaffected.

2. In combination with a saw-mill-carriage and its cylinder and piston; the reversible valve casings connected to the cylinder, and provided each with a valve to move crosswise of the cylinder; and means for actuating the valves.

3. In a feed mechanism for saw mill carriages, the combination with the cylinder, of the valve casing E provided with steam passages *d e* and intermediate chamber *g*; outlet *f* and passage *h*; valve I having reduced neck *i* and heads *j*; and means for reciprocating the valve.

4. In a feed mechanism for saw-mill-carriages, the combination with the carriage and its cylinder and piston; of the two valves adapted to move crosswise of the cylinder and arranged out of line with the ends of the cylinder; and a valve-actuating shaft, extending lengthwise of the cylinder.

5. In a feed mechanism for saw mill carriages, the combination with the cylinder, carriage, and piston; of the cylindrical valves, adapted to move crosswise of the cylinder; and a valve-actuating shaft arranged lengthwise of the cylinder.

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

GEORGE M. HINKLEY.

Witnesses:

FRANK W. GREENLEAF,  
THEO. F. WAMBOLD.