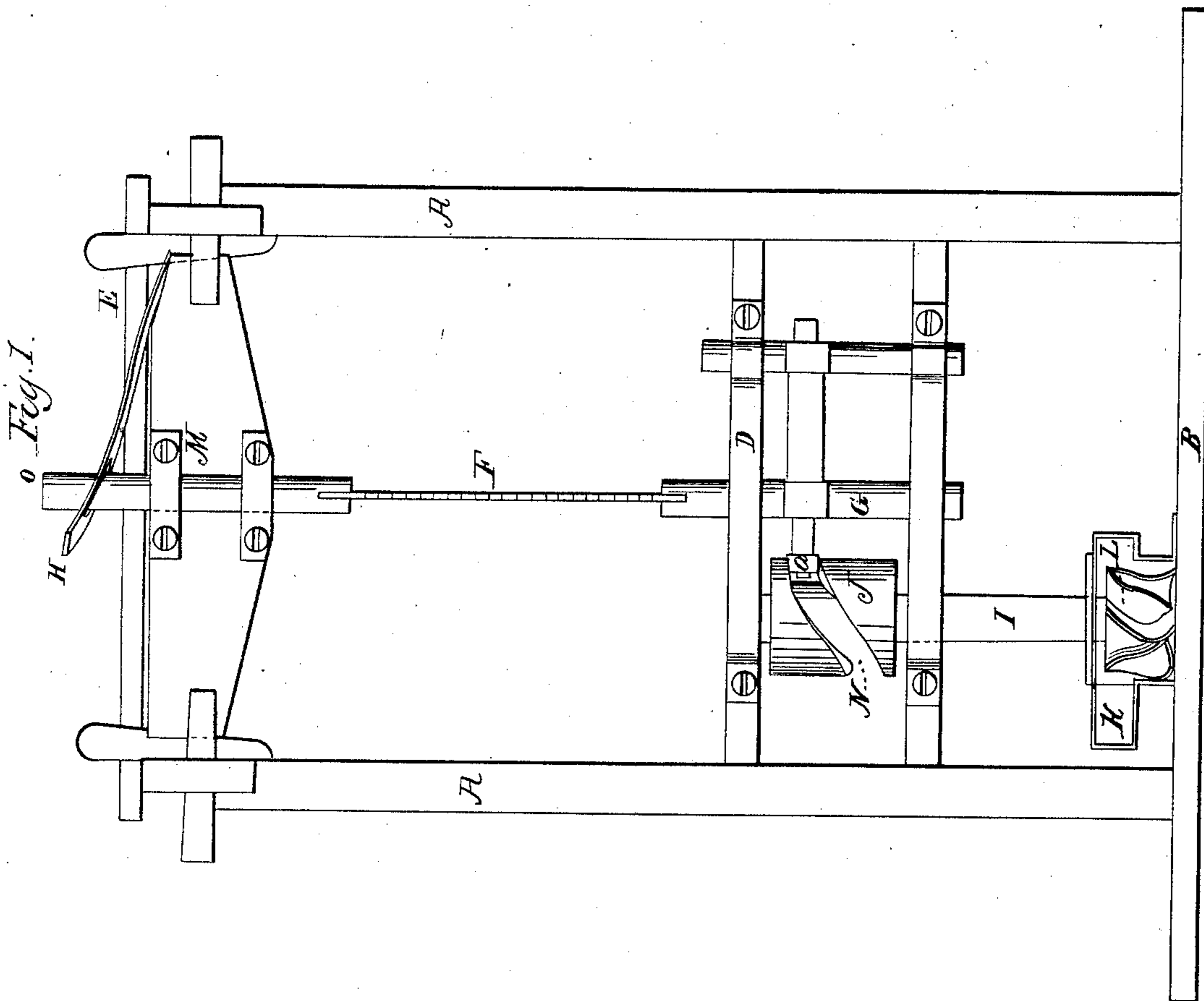


*J. J. Watson,*  
*Reciprocating Saw Mill.*  
*N<sup>o</sup> 30,523.                      Patented Oct. 23, 1860.*



*Witnesses.*  
*A. A. Yeatman.*

*Inventor.*  
*John J. Watson.*

# UNITED STATES PATENT OFFICE.

JOHN J. WATSON, OF BUFFALO, NEW YORK, ASSIGNOR TO HIMSELF, AND SOLON DIKE, OF COLUMBIA, SOUTH CAROLINA.

## METHOD OF ADJUSTING THE RAKE OF RECIPROCATING SAWS.

Specification of Letters Patent No. 30,523, dated October 23, 1860.

*To all whom it may concern:*

Be it known that I, JOHN J. WATSON, of Buffalo, in the county of Erie and State of New York, have invented certain new and  
5 useful Improvements in Attaching Saws to Water-Wheels; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and to the let-  
10 ters of reference marked thereon.

The nature of my invention consists in attaching or connecting the saw to the water wheel shaft directly, in the manner herein represented.

15 In the annexed drawings A represents the frame, in which the wheel and saw are placed, B, being a bottom sill upon which the wheel rests.

20 C, D, and E, are cross pieces or ties which hold the frame together, and which serve as guides and supports for the wheel shaft and the saw.

25 L, represents the water wheel, which is inclosed in a case K, said wheel being secured upon a shaft I, as represented.

J, represents an enlargement upon the shaft I, in which is cut a cam groove N.

30 M represents a movable head timber placed at the top of the frame, which is so secured between the frame pieces A, that it can be moved and adjusted to suit the circumstances of the case, at the will of the operator. The top of the saw, may be moved forward of the bottom, or back of it, or the  
35 saw may be differently set by moving up one end of the head timber while the other end is stationary or is moved back. The timber M is moved and regulated by means of wedges as shown in the figure.

40 F, represents the saw, which is connected at its top to a guide O, said guide being connected to the timber M, and having its bearings in proper boxes secured to it.

45 G, represents a guide to which the lower end of the saw is attached—this guide passes through and has its bearings in the cross pieces D, and C. Connected to the guide G, is a pin, upon which is secured a friction roller *a*. This friction roller runs in the  
50 cam grove N, upon the projection J.

When the water wheel turns and the shaft I, and enlargement J, are thus made to revolve, a reciprocating motion is communicated to the saw by means of the friction roller and cam groove N, the roller being  
55 made to move up and down by traversing the groove, as shown. It will be seen that by this arrangement I connect my saw almost directly to the shaft of the water wheel.

In connecting saws to water wheels, or in  
60 driving saws by water wheels, it has always been necessary to use a series of bevel, and other cogged gear wheels for transferring the power. It will be seen that I clearly avoid all of this extra expense, and at the  
65 same time I dispense with the friction consequent upon multiplied gear wheels and bearings. I thus save expense of wheels and a loss of power by friction.

H, is a spring which acts upon the saw  
70 keeping it down and making the roller *a* to fit snugly in the groove N.

The head timber M, as has been stated, is adjustable, and the boxes in which the guide O play or have their bearings being firmly  
75 secured to said timber it will be seen that the saw may be adjusted so as to clear itself on the upward stroke and not change its relation to the timber. The timber being solid, and firmly secured to the frame by means of  
80 the wedges which pass through mortises in the said frame the saw will have a firm stroke and will not be liable to wobble or shake from insecure bearings.

I do not claim broadly adjusting the top  
85 of the saw to give it proper rake. I make it clear itself, but

What I do claim is—

The movable head timber M, to which the top of the saw is connected by means of  
90 the guide O, said timber being provided with tenons which pass through openings in the frame pieces A, A, and being adjusted by wedges or keys substantially as and for the purpose herein specified.

JOHN J. WATSON.

Witnesses:

C. M. ALEXANDER,  
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