

(No Model.)

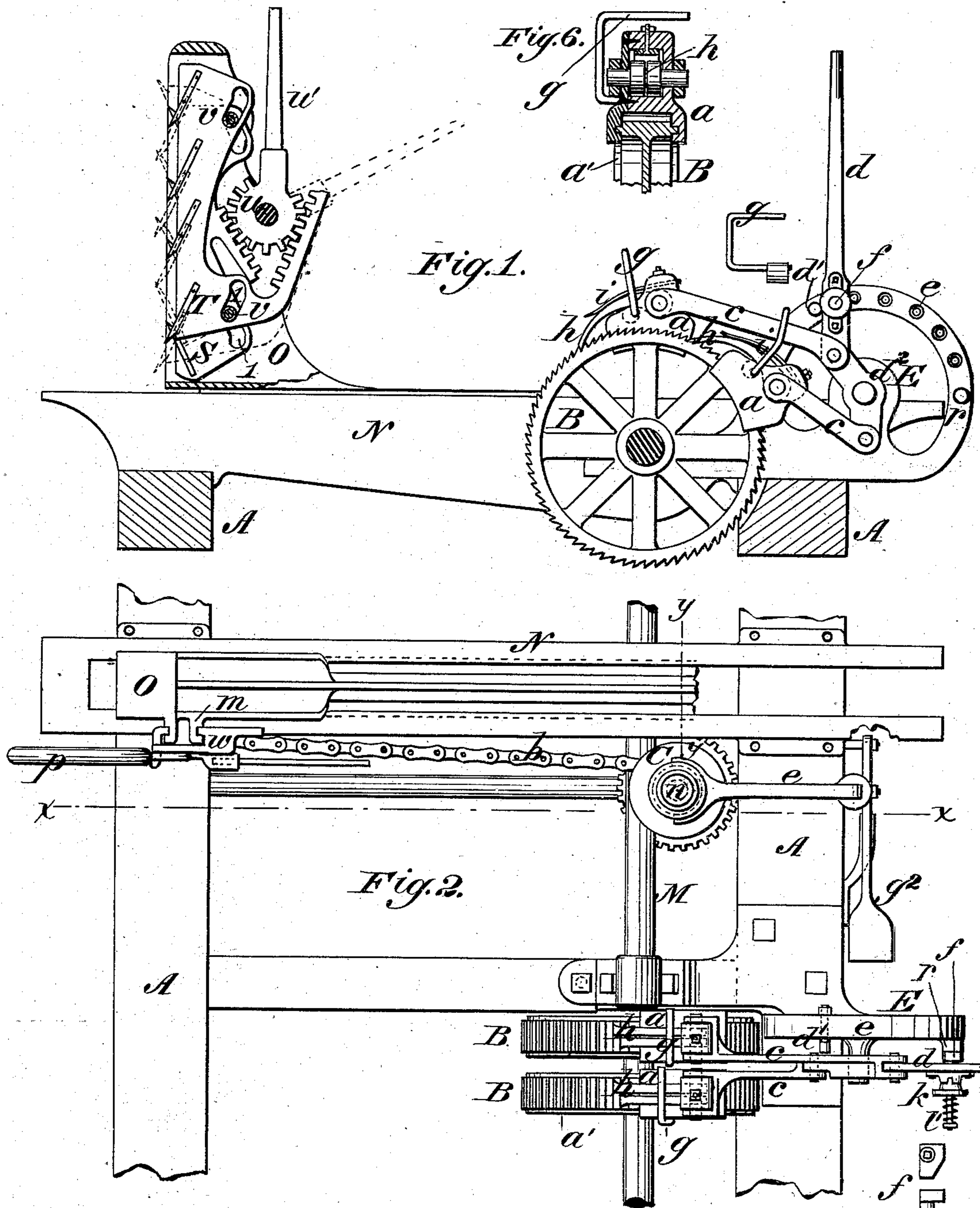
2 Sheets—Sheet 1.

S. WHITE.

Head Blocks for Saw Mills.

No. 235,833.

Patented Dec. 21, 1880.



WITNESSES:

Donn J. Twitchell.
C. Sedgwick.

INVENTOR:

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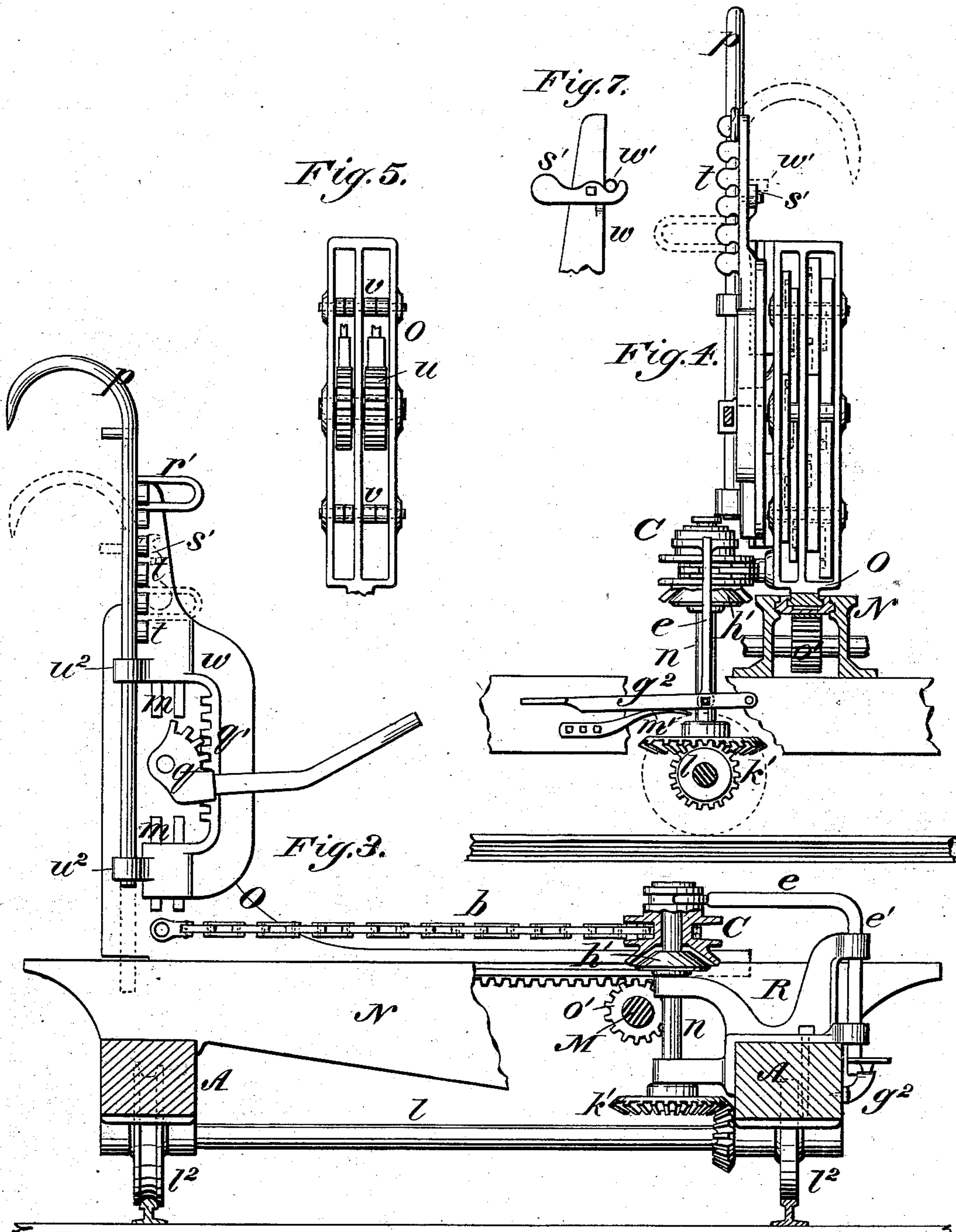
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UNITED STATES PATENT OFFICE.

SAMUEL WHITE, OF EAU CLAIRE, WISCONSIN, ASSIGNOR TO PHOENIX MANUFACTURING COMPANY, OF SAME PLACE.

HEAD-BLOCK FOR SAW-MILLS.

SPECIFICATION forming part of Letters Patent No. 235,833, dated December 21, 1880.

Application filed September 21, 1880. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL WHITE, of Eau Claire, in the county of Eau Claire and State of Wisconsin, have invented a new and useful Improvement in Head-Blocks for Saw-

My improvements relate to the jacks or standards of the head-blocks, the dogs for holding the logs upon the carriage, and the means for receding the jacks upon the head-blocks; and the invention consists in certain novel features of construction and combinations of parts, whereby great facility is given in operating the mill. The construction and operation are set forth hereinafter in detail, with reference to the accompanying drawings, forming part of this specification.

In the drawings, Figure 1 is a side elevation of a saw-mill head-block fitted with my improved set-works and dogs, with the side of the standard removed to show the dogs more clearly. Fig. 2 is a plan view of the head-block and its imposed parts. Fig. 3 is a vertical transverse section on line *x x* of Fig. 2. Fig. 4 is a vertical section on line *y y* of Fig. 2, showing the standard in elevation. Fig. 5 is a rear elevation of the standard separately. Fig. 6 is a detail cross-section of the ratchet-wheel and dog for operating the set-works. Fig. 7 is a detail view of the catch for holding the dog used for large logs.

Similar letters of reference indicate corresponding parts.

A A are the longitudinal sill-pieces of a saw-mill carriage, supported on a track, as usual, by an axle or shaft, *l*, and wheels *l'*.

N is the head-block or bed-plate, upon which the log rests while being worked up, which head-block is fixed across the sills A.

O is the jack or standard for moving the log upon the head-block or plate N, and carrying the dogs, as hereinafter described, for fastening the log. The block N is formed with an undercut groove or slideway upon its upper surface, in which the standard O is fitted, so that it may slide lengthwise of the block, the construction being shown most clearly in Fig. 4.

M is the set or actuating shaft of standard O, sustained in suitable bearings on the car-

riage, and extending lengthwise of the carriage through block N. Upon this shaft M, as shown in Fig. 3, is a pinion, *o'*, meshing with a rack that is formed on the under side of standard O. There is also fixed upon this shaft M, at one side of the head-block, two ratchet-wheels, B B, which are arranged for operation to turn the shaft and set the head-block, as next described.

The wheels B are fitted with shoes or pawl-carriers *a*, which, as shown in Fig. 6, are formed with side flanges that are grooved to fit upon side flanges, *a'*, of the ratchet-wheels, so that the shoes are held clear of the teeth and can slide upon the wheels. Upon the shoes *a* pawls *h* are hung, and above the pawls springs *i* are fitted to bear on the pawls and press them into contact with the ratchet-wheels. There is also fitted on the shoes *a* cross-pins *g*, that carry eccentrics beneath the pawls and have their outer ends bent upward. These pins *g* and eccentrics are for raising the pawls out of action.

Upon a bracket, E, fitted on the carriage, a hand-lever, *d*, is hung by a fulcrum-pin, *d'*. From this lever, at opposite sides of the fulcrum, arms *c c* extend to and connect with the shoes *a*, one arm being connected to the shoe on one wheel B, and the other arm to the shoe on the other wheel. The arms *c* are forked at each end for connection to the lever and shoes by pins. Upon bracket E is a curved plate, *e*, having holes that receive pins *d'*, for limiting the upward movement of lever *d* by contact therewith of a stop-pin, *f*, that is fitted in the lever. The downward movement of the lever is limited by a lug, *r*, formed on plate *e*, against which the lever strikes. The pins *d'* are double headed, so that they will be held in the plate *e* whether pushed in or pulled out.

The pin *f* has a head with unequal sides, and is fitted, at the outside of lever *d*, with a disk, *k*, and spring *v*. The disk has a projection (see Fig. 2) arranged for engagement with a fixed projection on lever *d*, so that the pin *f* can be set with either of the unequal sides of its head in position for contact with either pin *d'* that may be pulled out on the plate *e*, thus varying the travel of lever *d* from the lug *r* upward, and consequently varying the extent

of movement given to the pawl-carriers. By this construction the movement of lever d in either direction gives a forward movement to shaft M, by means of the shoes a , pawls h , and ratchet-wheels B, and by engagement of pinion o' with the rack on the standard O the standard is moved forward on the head-block. This movement of standard O carries the log forward, so that the thickness of the lumber sawed is regulated by movement of lever d .

The shoes or pawl-carriers a are made in two pieces, as shown in Fig. 6, which parts are secured together by screws after they are placed on wheels B, so that they can be conveniently attached upon the wheels and are held securely. One portion of the shoes is recessed to receive the pawls and the eccentric of pins g . The shoes may be formed with teeth for their operation by gearing instead of the connections shown.

In place of two ratchet-wheels, B, there may be a single wheel with two sets of ratchet-teeth separated by a plain portion for the shoes a to work on.

The mechanism for receding the standard O upon the bed-plate or head-block N is constructed and operated as follows:

R is a bracket fixed on one of the rails A, and formed with bearings at the inside of the rail, in which a short vertical shaft, n , is fitted. On the lower end of shaft n is a bevel-pinion, k' , that meshes with a similar pinion on the axle l of the carriage, and on the upper end of shaft n is a loose winding-drum, C, above a conical friction-wheel, h' , that is fixed on the shaft. The under side of drum C is recessed to set upon wheel h' and receive rotation therefrom by friction. The bracket R is formed also with bearings e' for a shipper-rod, e , the upper end of which is forked to set in an annular groove in the hub of drum C, while the lower end connects with a foot-lever, g^2 , that is hung at the side of rail A and sustained by a spring, m' . By means of lever g^2 the drum C is thrown down into contact with wheel h' , the spring m' sustaining the drum normally in the raised position. From the drum C a chain, b , passes to and is connected with standard O.

When the saw-carriage is reversed to receive a log the shaft n is revolved by its connection to axle l , so that by pressing down the lever g^2 the drum C is revolved, chain b wound, and standard O drawn back on the head-block. The movement of the standard will be arrested as soon as the pressure on lever g^2 is relieved by the spring m' acting to throw up the lever, and thus raise drum C out of contact with wheel h' .

Geared wheels may be substituted for the friction-wheels, if desired, and two winding-drums and chains may be used, if required.

The standard O carries the dogs for holding the log on head-block N. The standard is formed with two chambers, in each of which plates S and T are sustained on rollers v , which are upon cross-pins fixed in the standards and

passing through slots in the plates. There is also in the standard a cross-pin, on which is a segmental pinion, u , that engages with racks formed on plates S T. The pinion is provided with arm u' , for its operation by hand to move the plates. The teeth on one plate project downward at an angle of about forty-five degrees to the face of the standard, while those on the other plate project upward, and the slots receiving the rollers v are suitably shaped, so that as the pinion u moves one plate up and the other down the teeth are projected beyond the face of the standard or withdrawn within the standard, according to the direction the pinion is turned. There is one set of these devices in each chamber of the standard, the construction and arrangement being the same, except that one set is heavier and stronger than the other, and provided with longer teeth, for the purpose of holding round logs, while the lighter set is for holding sawed cants.

The slots l of the plates S T, instead of being straight, are slightly curved or formed with an offset at the ends, which the rollers v enter when the plates complete the forward movement. This has the effect to draw the plates back slightly, thus pulling the log or cant, into which the teeth have entered, firmly and evenly against the standard.

It will be observed that these dogs are simple in construction, and have no joints which will interfere with their operation in case they become worn; also, that the wearing-surfaces are comparatively small.

For logs too large to be secured by these dogs I use the long-hooked dog p . (Shown in Figs. 2, 3, and 4.) This dog p is fitted in bearings u^2 on a casting, w , secured at the side of standard O.

m are grooved ribs on the standard, with which the casting w engages by tongues, as shown in Fig. 2, so that the casting is capable of vertical movement on the standard. The standard is also fitted with a segmental pinion, q , engaging with a rack, q' , formed on the casting and provided with a handle for its operation.

r' is a bail fastened to the dog p , for engagement with either of knobs t , that are formed on the side of casting w , whereby the dog is secured to the casting as adjusted.

S' is a catch pivoted on the casting for engagement with a lug, w' , on the side of the dog to sustain the latter when not in use.

The dog p being adjusted in the casting and secured by bail r' , the movement of segment q , by pressing its handle down, will carry the casting w down, and the point or beak of the dog will be forced into the log or cant. When not required for use the dog p is to be turned to the position shown in dotted lines in Fig. 4, and as this movement disengages the bail r' from the knobs t the dog will slide down in its bearings u^2 until the projection w' is caught by the catch S' , which arrests the dog and holds it.

If desired, the casting *w* can be operated by levers, or by an eccentric, instead of as shown.

The parts constructed as described can be operated with great facility, and are durable in all their parts.

While I have necessarily shown some features that are common in most head-blocks, and which I do not claim, I do not limit myself to the details of construction exactly as described, as they may be varied within the scope of my invention.

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

1. The hand-lever *d*, provided with a stop-pin, *f*, having unequal sides to its head, outside disk, *k*, and a spring, *l'*, in combination with the curved plate *e*, having holes, double-headed push or pull pins *d'*, and a lug, *r*, the lever and disk having corresponding projections, whereby the pin *f* may be set with either of the unequal sides of its head in position for contact with either pin *d'*, as described.

2. The lever *d*, having the forked arms *c c*, and fulcrumed on the carriage-bracket *E*, in combination with the shoes *a*, connected with said arms, the pawls *h*, ratchet-wheels *B B*, pinion *o'*, and the rack on standard *O*, whereby the thickness of the lumber is regulated, as described.

3. In saw-mill head-blocks, the shaft *n*, revolved by connections to the axle of the carriage, friction-wheel *h'*, drum *C*, chain *b*, shipper-rod *e*, and foot-lever *g'*, combined together and with block *N* and standard *O*, substantially as described, for operation as specified.

4. In saw-mill head-blocks, the hooked dog *p*, provided with bail *r'*, and the adjustable casting *w*, provided with knobs *t* and bearings *u'*, combined together and with the standard *O*, substantially as and for the purposes set forth.

SAMUEL WHITE.

Witnesses:

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F. H. GRAHAM.