(No Model.)

W. A. BENNETT.

DRAG SAW.

No. 291,277. Patented Jan. 1, 1884.

Fig. 1.

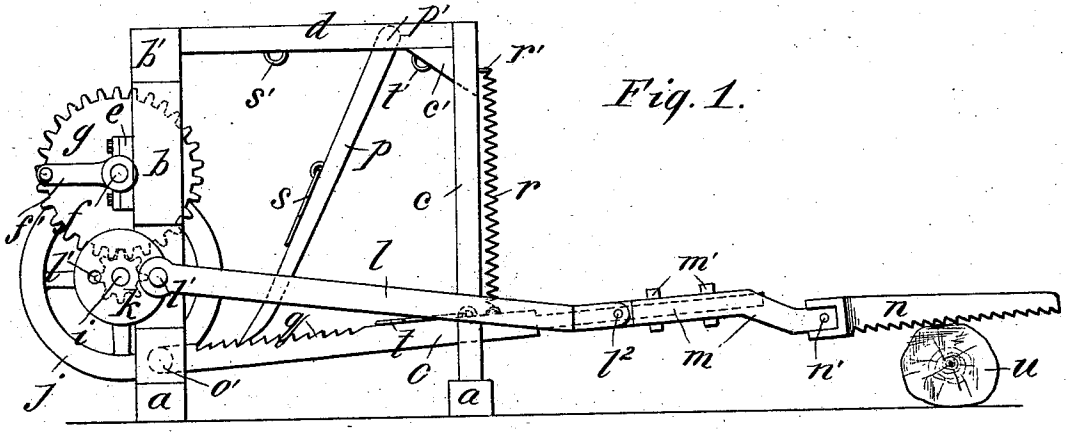


Fig. 2.

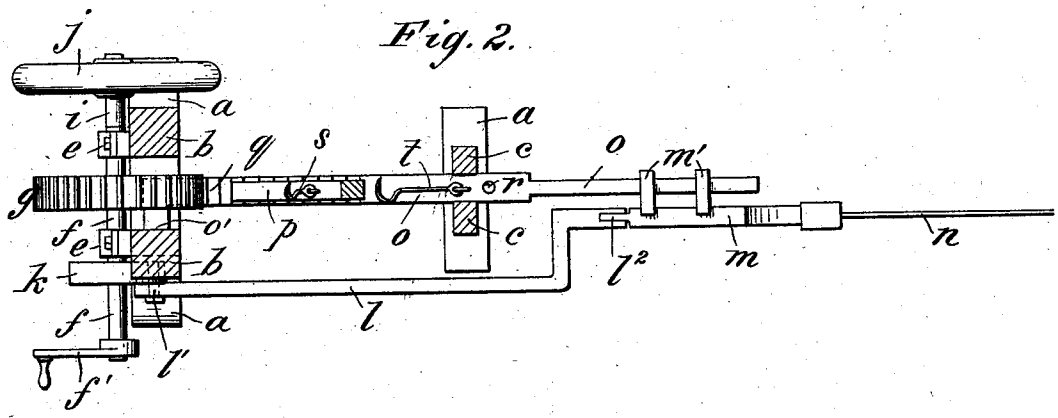
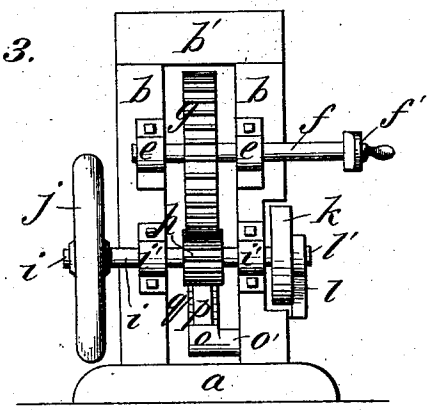


Fig. 3.



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WILLIAM A. BENNETT, OF DALLAS, TEXAS.

DRAG-SAW.

SPECIFICATION forming part of Letters Patent No. 291,277, dated January 1, 1884.

Application filed September 10, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. BENNETT, of Dallas, in the county of Dallas and State of Texas, have invented a new and Improved Sawing-Machine, of which the following is a full, clear, and exact description.

The object of my invention is to provide a simple, inexpensive, durable, and easily-operated machine for cross-cutting timber for railway-ties and material, or for cord-wood, stove-wood, or other uses.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improved sawing-machine. Fig. 2 is a sectional plan view, and Fig. 3 is an end elevation thereof.

I make a light but strong frame of sills, *a*, rear posts, *b*, tied together at the top by the cross-bar or plate, *b'*, and front posts, *c*, spaced apart at the top by a bracket-block, *c'*, and tied to the cross-bar *b'* by the longitudinal bar *d*. The posts *b c* are suitably framed or boxed into the sills *a*, and may be further braced therefrom or from each other, as may be desired.

In bearings *e*, fixed to posts *b*, I journal the primary driving-shaft *f*, which has any approved hand-wheel or crank, *f'*, and a fixed main driving gear-wheel, *g*, which meshes with the pinion *h*, fixed on a shaft, *i*, which is journaled in bearings *i'* on posts *b*, and carries at one end the balance-wheel *j*, and at the other end the crank-disk *k*, by a wrist-pin, in which disk the saw-driving pitman *l* has a pivotal connection at *l'*, and at the front end said pitman is bent inward nearly to the space between posts *c c*, and then forward, and finally connects by a pivot-joint at *l²* with the saw-carrying rod *m*, to which I rigidly connect the saw *n* by any approved tongue and groove or other suitable joint and bolt, as at *n'*.

The letter *o* represents a bar or rod, which is pivot-jointed to one or both rear posts, *b*, as at *o'*, and extends forward between and beyond the front posts, *c c*, by which latter posts bar *o* is held so as to have free vertical play, but no lateral movement. The saw-carrying rod *m* carries one or more fixed eye-bars or yoke-plates, *m'*, which are apertured to fit loosely upon the forward end of bar *o*, so as to slide thereon for a guide to the saw as the saw is operated. A bar or pawl, *p*, pivoted at *p'* at any convenient point at the head of the saw-frame—preferably to the bar *d*—engages by its lower pointed end or toe and by gravity with a rack, *q*, formed on or fixed to bar *o*, for holding the saw *n* down to its work as it cuts through the log. A spring, *r*, is fixed to the frame at *r'*, and below to the bar *o*, for the purpose of balancing the weight of the bar *o*, saw *n*, and its connections *m l*, these parts *l m n o* rising and falling together; and in practice the tension of spring *r* will be regulated so as to sustain the saw at about its lowermost position, the object being to relieve the cutting edge or teeth of the saw of excessive weight and avoid an undue crowding of the saw, and thereby facilitate its free and easy cutting action.

To more conveniently move the machine from place to place, I provide on pawl-bar *p* a hook, *s*, to engage an eye, *s'*, on the frame, to hold the bar *p* raised, and a hook, *t*, on bar *o*, for engaging an eye, *t'*, above, to hold the parts *l m n o* in a fixed raised position, thereby relieving the spring *r* of strain, and avoiding damage to the saw.

In operation the machine will be placed to bring the saw *n* above a log or timber, *u*, at any desired point of its length, when the fastenings *s t* will be released and the saw will rest on the timber, and the pawl-bar *p* will fall into engagement with one of the rear teeth of the rack *q*. The handle *f'* will now be rotated to rapidly reciprocate the saw by the gearing and connections above described. As the cut through the log deepens, the toe of the pawl-bar *p* drops forward into successive teeth of the rack *q*, and prevents all rising or jumping of the saw while at work, thereby insuring a smooth, steady cut without excessive strain or wear of the saw and its connected parts.

Two or more holes for wrist-pins *l'* may be provided at varying distances from the center of crank-disk *k*, for changing the length of stroke of the saw at will, as may be required for heavy or light timber.

My improved machine may be built cheaply in various sizes, may be safely worked by unskilled labor, and by its use time may be economized and better work assured.

Having thus described my invention, I claim

as new and desire to secure by Letters Patent—

1. The saw-carrier *m* and pitman *l*, jointed together at l^2, in combination with a rod, *o*, pivoted to rear posts, *b*, passing through yoke-plates *m'* on the saw-carrier, and laterally secured against posts *c c*, whereby the saw may be prevented from a lateral movement, but permitted a free downward movement, as described.

2. The combination, with the pivoted bar *o*, having a rack thereon and connected with the saw-carrier by yoke-plates *m'*, of the pawl *p*, pivoted at *p'*, whereby the saw may be held down to its work, as described.

3. The combination, with a pivoted saw-carrier, of the pivoted rack-bar *o*, connected therewith by yoke-plates *m'*, and the spiral spring *r*, the latter attached to said rack-bar and to the upper part of the frame, as shown and described.

4. The combination, in a sawing-machine, of the saw-frame, shafts *f i*, balance-wheel *j*, crank-disk *k*, pitman *l*, saw-rod *m*, having guide-eyes *m'*, pivoted bar *o*, having rack *q*, the gravity-pawl *p*, and the balancing-spring *r*, substantially as shown and described.

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Witnesses:
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