

UNITED STATES PATENT OFFICE.

NEWELL ANTONY REEVES, OF ALVORD, TEXAS, ASSIGNOR OF ONE-HALF
TO J. W. HUTCHINS, OF SAME PLACE.

DRAG-SAW.

SPECIFICATION forming part of Letters Patent No. 555,884, dated March 3, 1896.

Application filed June 25, 1895. Serial No. 554,005. (No model.)

To all whom it may concern:

Be it known that I, NEWELL ANTONY REEVES, a citizen of the United States, residing at Alvord, in the county of Wise and State of Texas, have invented a new and useful Drag-Saw, of which the following is a specification.

This invention relates to an improvement in drag-saws, and has for its object to provide a simple and efficient construction of portable drag-saw which may be easily and quickly moved from place to place and adjusted to the desired relation to the log or material to be operated upon.

The invention also contemplates providing superior means for lifting the saw at any time and while the same is in operation, if need be.

Other objects and advantages of the invention will appear in the course of the subjoined description.

The invention consists in a drag-saw embodying certain novel features and details of construction and arrangement of parts whereby advantages in point of simplicity and efficiency are attained, as hereinafter specifically pointed out, illustrated in the drawings, and finally embodied in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a portable drag-saw constructed in accordance with this invention. Fig. 2 is an end elevation of the same. Fig. 3 is an enlarged detail perspective view of the reciprocating pitman-head, showing also portions of the pitman and saw-carrying arm and the manner in which the same are connected to the pitman-head. Fig. 4 is a similar view of the grooved guide in which the pitman-head reciprocates. Fig. 5 is a detail view of the vertically-adjustable bracket in which the saw-carrying arm reciprocates. Fig. 6 shows the form of the vertically-sliding stirrup for lifting the saw-carrying arm, and the guiding-bracket in which the stirrup slides. Fig. 7 is a detail view of one end of the saw-lifting lever.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

The portable drag-saw contemplated in this invention comprises a suitable frame con-

structed, for the most part, of wood. The rear portion of this frame consists of an upper and a lower transverse timber 1, between which are interposed three uprights or standards 2, preferably mortised at their ends into said transverse timbers and spaced sufficiently apart to permit the driving mechanism to be arranged between the same and supported thereon in a manner that will hereinafter appear. From this framework a pair of longitudinal timbers 3 extend forwardly any desired distance, and are connected at their front ends by means of a transverse cross-bar 4, secured thereto in any convenient manner, thus forming a rectangular horizontal frame between which and the outside standards 2 are interposed a pair of inclined braces 5.

6 represents a pair of uprights secured to this horizontal frame and extending upwardly, being connected at their upper ends to a transverse timber 7. The lower ends of the uprights 6 are extended beneath the horizontal timbers 3 and are provided at their lower ends with bearing-boxes for the reception of a transverse shaft or axle 8, upon the opposite ends of which are arranged carrying-wheels 9, upon which the entire saw-frame is adapted to be trundled from place to place. The upper transverse timbers 1 and 7 are connected by one or more longitudinal frame-bars 10, one of which is extended a considerable distance in advance of the plane of the forward uprights 6 and has secured to its forward extremity a pendent metal saw-guide 11, which is formed with a vertical slit 12, the purpose of which is to guide and steady the saw in its movements in a manner that will appear.

13 designates a reciprocating saw-carrying arm, which is arranged upon one side of the machine and has secured to its front end the reciprocating frame in which the saw-blade is mounted and is pivoted at its rear end to a pitman-head. The frame in which the saw-blade is mounted resembles in its general construction the ordinary fire-wood drag-saw, comprising a central horizontal bar 14, having secured to either end thereof standards 15 and 16, which are formed at their lower ends with slits in which are received the ends of the saw-blade. The saw-blade (indicated at 17) is

is perforated and secured within the lower ends of the standards 15 and 16 by means of bolts, and the blade has its rear end extended sufficiently to enter a slit in the forward end of the saw-carrying arm 13, to which it is also bolted. The upper ends of the standards 15 and 16 are connected by means of a thin flat metal strap 18, the rear end of which is let into a slit in the upper end of the standard 16 and bolted, while the forward end of said strap passes through the upper end of the standard 15, where it is rounded and screw-threaded, thus adapting it to receive an adjusting-nut, by means of which the upper ends of the standards may be drawn toward each other for distending and stretching the saw-blade. The metal guide 11 is disposed in such relation to the saw-frame that the strap 18 reciprocates within the slit 12 of said guide, which thereby serves to guide and steady the movements of said saw-frame.

19 indicates a metal strap, which is pivotally connected at one end to the saw-carrying arm 13, as shown, its opposite end being longitudinally slotted and adapted to be clamped by means of a bolt 20 passing through the saw-frame for holding the latter in rigid relation to its carrying-arm. By loosening the bolt 20 the angle of the saw-frame with relation to the carrying-arm may be regulated to suit the character of the work to be performed.

21 designates an arm or bracket, which has its upper end bifurcated, as shown, to receive and support the reciprocating saw-carrying arm 13, the lower portion of said bracket being formed with a vertically-elongated slot 22, through which a clamping-bolt passes for binding said bracket against a pendent leg or extension 23 on the main frame of the machine. By means of this construction the bracket 21 may be adjusted vertically for enabling the saw to operate at any desired elevation and for limiting the downward movement of the reciprocating arm 13, which slides therein.

24 designates the pitman-head, which comprises a relatively broad base portion and a narrower upwardly-projecting portion 25, which is recessed at opposite ends to receive pivotally the adjacent ends of the reciprocating arm 13 and the driving-pitman 26. This pitman-head reciprocates within a grooved guiding plate or bracket 27 secured to one of the longitudinal frame-timbers 3 in any convenient manner. This guiding-bracket is formed with inwardly-projecting flanges or ribs 28, which overlap the broadened base of the pitman-head and serve to effectually prevent the accidental displacement of said head. The pitman-head is further provided with a forwardly and upwardly inclining arm 29, the extremity of which overhangs the adjacent end of the saw-carrying arm and between which and said arm is interposed a spiral spring 30, the tension of which is exerted to depress the saw-carrying arm and thereby

hold the saw-blade to its work. The saw-blade is thus held down by spring-pressure, but is allowed to yield upwardly upon its coming in contact with any hard or unusual substance.

The pitman 26, at its rear end, is pivotally connected with a crank or wrist pin 31 on a wheel 31' mounted upon the end of a transverse shaft 32, journaled in suitable bearing-boxes 33 secured to the uprights 2, above referred to. This shaft 32 also carries a fly-wheel 34 for adapting the saw to operate smoothly and evenly, and is further provided with a spur-pinion 35 keyed thereto.

36 indicates a crank-shaft which may be also journaled in the boxes 33, and extends in parallel relation to the shaft 32, said shaft carrying at one end a hand-operating crank 37 and at its opposite end a spur-gear 38, which meshes with a pinion 39 interposed between the same and the pinion 35.

By means of the construction just described it will be seen that a rapid reciprocal motion may be imparted to the saw by a comparatively slow movement of the operating-crank.

40 designates a pair of pivoted dogs which are made from metal bars of the required length and provided with hooked and pointed extremities for engaging the log being operated upon, said dogs having their inner ends looped and pivotally connected with staples 41, secured preferably to the forward cross-bar 4 of the horizontal machine-frame. It will be understood that when these dogs are engaged with the log all relative movement between said log and the machine-frame is obviated, thereby adapting the saw to operate more effectively.

42 indicates a saw-lifting lever, which is centrally supported and fulcrumed upon the horizontal arm of an inclined standard 43, secured to the machine frame. At its forward end this lever has secured thereto a pendent stirrup 44, the same being slotted to receive and permit the reciprocation of the saw-carrying arm 13. This stirrup 44 slides vertically within a vertically-slotted bracket 45, secured to any convenient point upon the machine-frame, by means of which the stirrup is held against endwise movement and prevented from partaking of the reciprocal movements of the arm 13. By vibrating the lever 42 it will be seen that the stirrup 44 will be raised or lowered for throwing the saw into or out of engagement with the log being operated upon, the lever 42 engaging at its rear end with a vertically-disposed rack-bar 46 for retaining the saw-carrying arm at any desired elevation.

If desired, the bracket 45 may be dispensed with and the bracket 21 may be grooved or slotted to receive and permit the vertical adjustment of the stirrup 44, or the bracket 45 may be slotted at its lower end and substituted for the bracket 21, thus simplifying the construction and reducing the number of parts in a manner that will be readily understood. A pair of rearwardly-projecting han-

dies 47, secured to the uprights or standards 2, provide for lifting the rear end of the machine-frame and trundling the same like a wheelbarrow to the point of operation.

5 The saw herein-above described, while especially adapted for cutting up fire-wood, &c., is well adapted for use by carpenters in sawing out the framework of houses, &c., as it may be readily carried from place to place.

10 A saw constructed as herein-above described is very light running, may be manufactured at slight cost, and will effect a great saving of time and labor over the ordinary hand-saws in common use.

15 It will be apparent that changes in the form, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

20 Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. The combination in a drag-saw, of a portable machine frame, a longitudinally-grooved
25 guiding-bracket secured thereto, a reciprocating pitman-head sliding therein, a crank-shaft for operating said pitman-head, a saw-carrying arm having a pivotal connection with said pitman-head and having a saw-frame
30 pivotally secured to its outer end, an adjust-

able strap interposed between said saw-carrying arm and the saw-frame for adjusting the angle of the latter, and a spring interposed between the saw-carrying arm and the pitman-head, all arranged for joint operation
35 substantially as and for the purpose specified.

2. The combination in a drag-saw, of a suitable frame, a longitudinally-reciprocating saw-carrying arm, the reciprocating pitman-head to which said arm is pivoted, an operating crank-shaft, a pitman interposed between the same and said pitman-head, a saw-lifting lever fulcrumed intermediate its ends upon the machine-frame, a pendent stirrup carried by said lifting-lever and slotted to receive and
45 permit the reciprocation of the saw-carrying arm, and a guiding-bracket formed with a vertical slot in which said stirrup is adapted to slide and also formed with an intersecting, right-angularly-disposed slot in which the
50 said arm moves, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

NEWELL ANTONY REEVES.

Witnesses:

JOSEPH BEYETT,
G. H. REDWINE.