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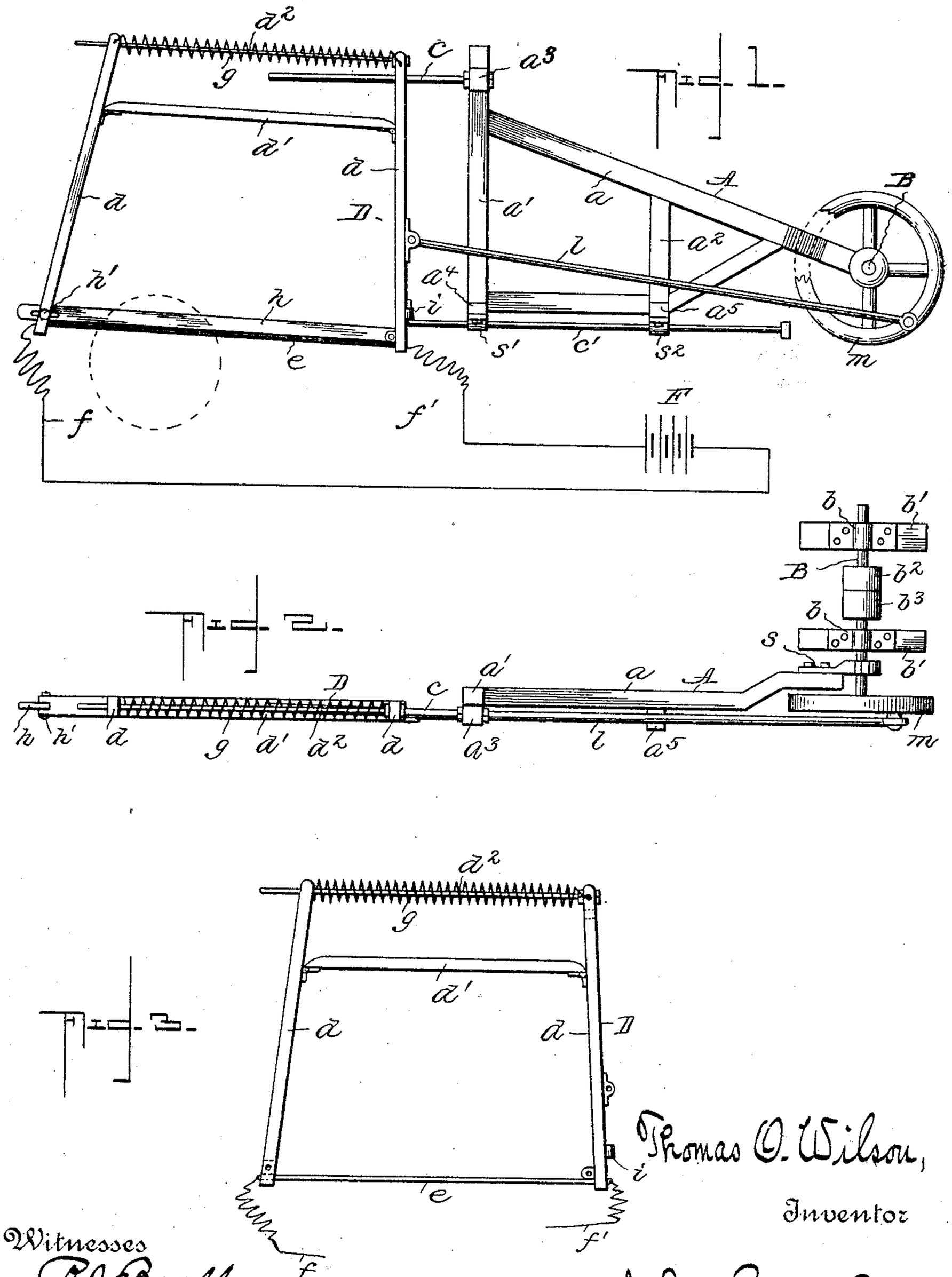
T. O. WILSON.

ELECTRIC APPARATUS FOR FELLING TREES OR SAWING WOOD.

APPLICATION FILED JAN. 30, 1904.

NO MODEL.



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UNITED STATES PATENT OFFICE.

THOMAS O. WILSON, OF LITTLE ROCK, ARKANSAS.

ELECTRIC APPARATUS FOR FELLING TREES OR SAWING WOOD.

SPECIFICATION forming part of Letters Patent No. 771,518, dated October 4, 1904.

Application filed January 30, 1904. Serial No. 191,311. (No model.)

To all whom it may concern:

Be it known that I, THOMAS O. WILSON, a citizen of the United States, residing at Little Rock, in the county of Pulaski and State of Arkansas, have invented an Electric Apparatus for Felling Trees, Sawing Wood, &c., of which the following is a specification.

The primary object of this invention is to provide a portable apparatus for sawing up logs and contemplates the utilization of an electrically-heated wire carried by a reciprocating frame and operated so that said wire will burn its way through the log in a comparatively short time.

The invention also contemplates a construction of apparatus which will permit the wire-carrying frame to be readily removed and operated manually for the purpose of felling trees, in which latter application the device is operated after the manner of an ordinary bucksaw.

With the above objects in view the invention consists of a supporting-frame pivoted at one end to swing vertically from said pivot, a frame reciprocally mounted in the supporting-frame and carrying the electrically-heated wire, and means for reciprocating the wire-carrying frame.

The invention further consists in details of construction of parts constituting the apparatus and the particular arrangement of such parts, all as hereinafter fully described, and specifically set forth in the appended claims.

In the drawings, Figure 1 is a side elevation of an apparatus constructed in accordance with my invention. Fig. 2 is a plan view. Fig. 3 is a detail side elevation of the saw-carrier removed for manual operation in felling trees.

Similar letters of reference indicate similar parts in all the figures of the drawings.

In carrying out my invention I employ, in the first instance, a pivoted supporting-frame A for the wire-carrier, hereinafter described, the pivot end of said supporting-frame being on a shaft B, which latter is suitably mounted in bearing-boxes b b on bolsters b' b', and this shaft, in addition to pivotally supporting the frame A, also forms the driving-shaft for operating the saw-carrier. The frame A consists of a main beam a, pivoted at one end upon the shaft B, as aforesaid, by means of a fixture s and provided at its outer end with a vertical post a' and intermediately with a shorter post a^2, said posts being suitably braced to each other and to the beam. Near its upper end the post a' is provided on one side with a block a^3, supporting a horizontally-disposed fixed guide-rod c, and at its lower end is a block a^4, having an eye-plate s', in which slides a guide-rod c', said latter rod being also slidably supported in an eye-plate s^2, attached to a block a^5 at the lower end of the post a^2. By providing the blocks the rods c and c' are disposed on a vertical plane to one side of the supporting-frame, so that a direct connection may be had between the reciprocating wire-carrier and its operating means, which parts I shall now proceed to describe.

D designates the wire-carrier, which is similar in construction to an ordinary bucksaw—that is, comprises side pieces d d, connected intermediately by a bar d', and at their upper ends by a rod d^2, which latter is attached to one of the side pieces and is slidably connected to the other. To the lower end of the side pieces d d is attached a wire e, preferably a platinum wire, which is electrically connected by the conducting-wires f and f' to a battery F, whereby said platinum wire may be heated sufficiently to burn its way through the log it is desired to cut. It may be here stated that instead of using a platinum wire I may use any other wire found suitable for the purpose, and also instead of using a battery the electric current may be taken from a dynamo. Inasmuch as the platinum wire expands to some extent when heated, I propose to take up this expansion by means of a compression-spring g, mounted on the connecting-rod d^2, and attached at its ends to the side pieces of the wire-carrier. I also propose to reinforce the platinum wire by means of a steel plate h, which at one end is pivoted between ears on one of the side pieces of the wire-carrier and at its other end passes through a slot in the other side piece, being connected by a pin h', passing through a slot in said plate. The wire-car-

rier is at its upper end mounted on the guide-rod c, which passes through an opening in one of the side pieces thereof, and at its lower end is connected to the guide-rod c', a bent end of which latter engages a perforated ear i on said wire-carrier. The wire-carrier is reciprocated by means of a connecting-rod l, detachably connected thereto at one end, and at its opposite end connected to a wrist-wheel m on the shaft B, said latter having the usual belt-pulleys b^2 and b^3. The shaft is driven by an engine (not shown) of any suitable pattern, preferably a portable engine, so that the entire apparatus may be moved from place to place to saw up a tree after it has been felled.

In the operation of sawing a tree or log the apparatus is arranged as shown in Figs. 1 and 2, and after the saw-carrier is placed across the log, with the platinum wire resting thereon, said wire is heated by turning on the electric current, and the shaft B is then started up to reciprocate the saw-carrier and cause the heated wire to more quickly burn its way through the log.

For the purpose of felling a tree with the apparatus the saw-carrier is removed by sliding it beyond the rod c and then disengaging it from the rod c'. The saw-carrier is then operated after the manner of a bucksaw, first cutting a notch in one side of the tree to determine the direction of fall and then cutting through from the other side.

I claim as my invention, and desire to fully protect by Letters Patent of the United States, as follows:

1. An electric apparatus for felling trees, sawing wood, &c., which consists of a frame adapted to be reciprocated, a wire forming a part of such frame and by means of which wire the wood is cut, and electric connections for heating such wire.

2. An electric apparatus for felling trees, sawing wood, &c., which consists of a wire in circuit with a source of electric supply by which such wire is heated, and means for supporting and reciprocating said wire.

3. An electric apparatus for felling trees, sawing wood, &c., which consists of a platinum wire in circuit with a source of electric supply and by which latter said wire is heated, a frame supporting the wire, and mechanism for reciprocating the frame.

4. An electric apparatus for felling trees, sawing wood, &c., which consists of a wire in circuit with a source of electric supply by which such wire is heated, a frame in which the wire is supported, a rotatable shaft, a rod reciprocated by said shaft and connected to the frame, and means for supporting the frame so that the latter may be reciprocated.

5. An electric apparatus for felling trees, sawing wood, &c., which consists of a frame slidably supported, wires mounted in said frame and connected to a source of electric supply, a crank-shaft, and a rod connecting said crank-shaft to the slidable frame; together with a portable frame in which the aforesaid slidable frame is mounted.

6. An electric apparatus for felling trees, sawing wood, &c., which consists of a supporting-frame pivoted at one end to have a swinging movement vertically from such pivot, a frame slidably mounted at the free end of the supporting-frame, an electrically-heated wire carried in the slidable frame, and means for reciprocating the wire-carrying frame.

7. An electric apparatus for felling trees, sawing wood, &c., which consists of a supporting-frame pivoted at one end to have a swinging movement vertically from such pivot, rods projecting from the outer end of the supporting-frame, a wire-carrier slidably mounted on said rods, an electrically-heated wire at the lower end of the wire-carrier, and means for reciprocating the wire-carrier on the rods, substantially as shown and described.

8. An electric apparatus for felling trees, sawing wood, &c., which consists of a supporting-frame pivoted at one end to have a swinging movement from such pivot, a horizontal rod secured to the upper end of the supporting-frame to project outwardly therefrom on a line therewith, a second horizontal rod slidably mounted in the lower end of the supporting-frame, a wire-carrier slidably mounted on the first-mentioned rod and detachably connected to the last-mentioned rod, an electrically-heated wire in the lower end of the wire-carrier, and means for reciprocating said wire-carrier.

9. In an apparatus for felling trees, sawing wood, &c., the combination with the supporting-frame pivoted at one end, of a wire-carrier slidably and removably mounted at the outer or free end of the supporting-frame and comprising side pieces connected intermediately by a bar, a rod connected to the upper end of one of the side pieces and passing loosely through the other side piece, a compression-spring mounted on said rod and attached at its ends to the aforesaid side pieces, an electrically-heated wire extending between the lower ends of the side pieces, and a reinforcing-plate extending between the side pieces above said wire; together with means for reciprocating the wire-carrier and detachably connected thereto, substantially as shown and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS O. WILSON.

Witnesses:
JOHN B. JONES,
JOHN H. CARMICHAEL.