

(No Model.)

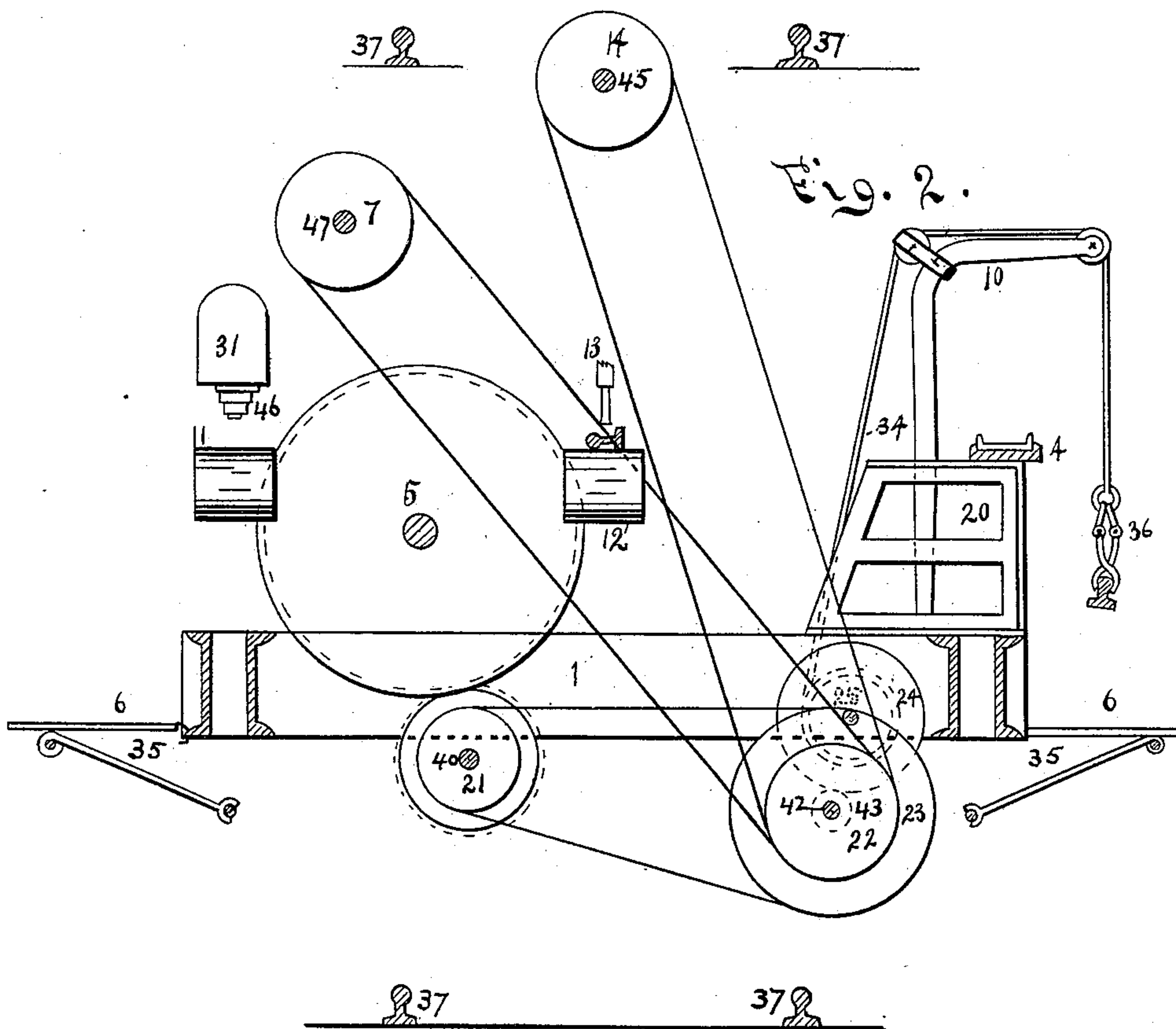
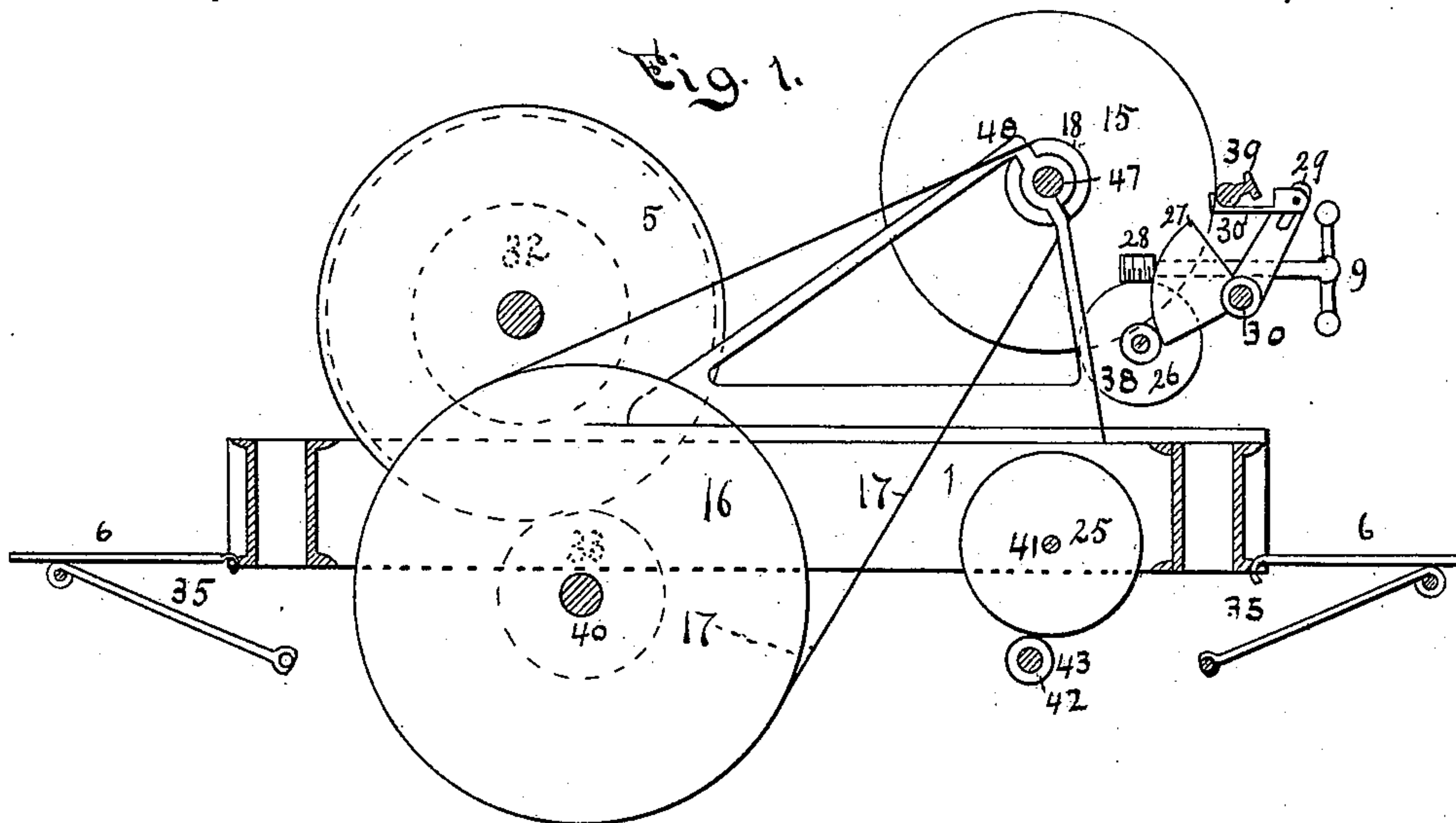
2 Sheets—Sheet 1.

W. L. CLEMENTS.

PORTABLE RAIL SAW PLANT.

No. 353,922.

Patented Dec. 7, 1886.



Witnesses:
C. M. Mason
H. B. Lothrop

Inventor:
William L. Clements
Geo. H. Lothrop
Attorney:

(No Model.)

2 Sheets—Sheet 2.

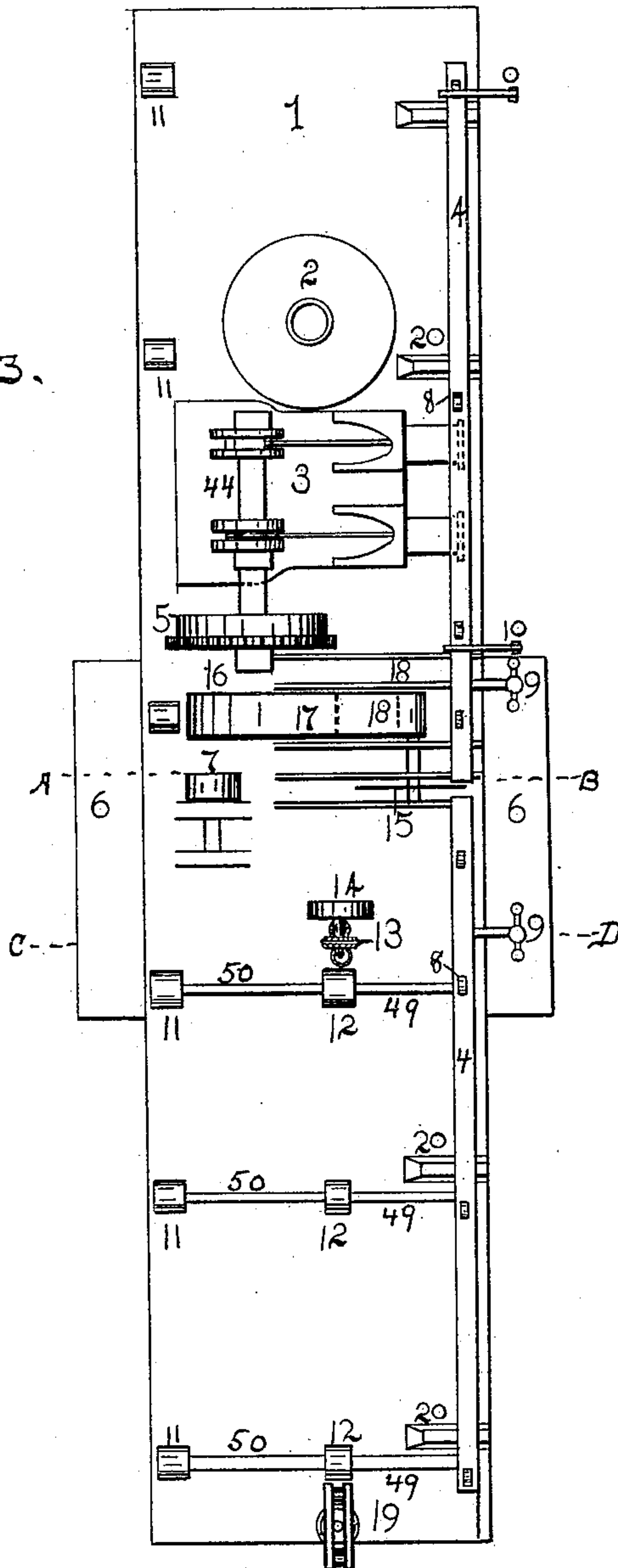
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Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM L. CLEMENTS, OF BAY CITY, MICHIGAN.

PORTABLE RAIL-SAW PLANT.

SPECIFICATION forming part of Letters Patent No. 353,922, dated December 7, 1886.

Application filed September 17, 1886. Serial No. 213,821. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. CLEMENTS, of Bay City, in the county of Bay and State of Michigan, have invented a new and useful Improvement in Portable Rail-Saw Plants, of which the following is a specification.

My invention consists of a portable plant for sawing off the battered ends of railway-rails, drilling holes for the fish-plate bolts, and straightening the rails, when necessary, by which the plant can be taken to the place along a line of the railway where the work is to be done, instead of transporting the rails to a shop, as is now necessary.

Figures 1 and 2 are vertical sections on the line A B and C D, respectively, of Fig. 3, which is a plan view of the complete apparatus.

The length of the rail as compared with the length of a car requires a complete reorganization of the stationary rail-sawing plant, in order that the same may be placed upon a car, in such manner as to permit both ends of the rail to be presented to the different mechanisms of the plant, and to avoid the necessity of turning the rail end, because this can only be done without interfering with mechanism by a turn-table located at the end of the car.

1 represents the platform of a car, the running-gear of which is not shown, and which would rest, if shown, on the track-rails 37.

2 represents a boiler, and 3 an engine, of any desired type located on the car, near one end thereof.

5 represents a gear-wheel, which may be a friction-gear, preferably with V-teeth, mounted on the crank-shaft 44 of the engine, and meshing with a smaller gear-wheel, 33, mounted on the counter-shaft 40, journaled in bearings under the car, as shown in Fig. 1. 16 represents a belt-pulley journaled on this counter-shaft.

17 represents a belt running from pulley 16 to a smaller pulley, 18, secured on the arbor 47, of a rail-saw, 15, journaled in suitable supports, 48, upon the car, the arrangement being such as to run the saw 15 at great speed, and also bring it in or nearly in the center of the car longitudinally and at one side of the car laterally.

4 4 represent two feed-tables—one on each side of the saw—in each of which are feed-

rollers 8, on which a rail can be moved, and each of which is supported on slides 20, and provided with gear by which they can be moved bodily (but separately) to and from the saw, said mechanism being as follows:

29 represents a slotted arm, and 27 a toothed segment, both secured to a rock-shaft, 30, which extends along under one of the tables, and is provided, near the other end of the table, with another slotted arm like 29, each of said slotted arms being connected with the table by means of a pin, as shown in Fig. 1, and which will be readily understood by mechanics.

9 represents a lever and shaft, on the inner end of which is secured a worm, 28, which meshes in a worm-wheel, 26, mounted on a short counter-shaft, and having secured there-to a pinion, 38, which meshes with the toothed segment 27, so that by turning worm 28 in one direction or the other rock-shaft 30 is so rocked as to force table 4 toward or away from the saw, and thus carry a rail, 39, on said table into contact with the saw, the two tables 4 being independent, and each having like means of actuating it.

10 10 represent two swinging cranes fastened in the side of the car, each provided with a hoisting-chain, 34, and tongs 36, or similar apparatus, by which a rail can be grasped and raised up onto one of the tables 4.

24 represents a drum mounted on a counter-shaft, 41, journaled in bearings under the car and extending under both cranes, there being a drum like 24 for each crane, and the rope or chain 34 of each crane 10 is led to its winding-drum 24.

25 represents a friction-pulley or gear-wheel mounted on shaft 41, and connected therewith by any desired form of clutch, so as to be locked on said shaft or wheel.

42 represents a counter-shaft journaled in bearings under said car, bearing thereon a friction pinion or gear-wheel, 43, which operates friction-pulley or gear-wheel 25.

23 represents a belt-pulley secured to counter-shaft 42, and 21 represents a belt-pulley secured to counter-shaft 40, said two pulleys being connected with each other by a belt, so that shaft 42 is driven by the motion of shaft 40.

22 represents either a single pulley or two pulleys, as preferred, on shaft 42, on which run two belts to the pulleys 14 and 7, to oper-

ate the drill 13 and the pump of the hydraulic straightening-machine 31, respectively.

6 6 represent two platforms hinged to the opposite sides of the car, each supported by
5 braces 35, which bear against the truss-rods of the car.

12 12 12 represent three rollers, nearly in the longitudinal center of the car, in line with each other and in line with a double-spindle drill,
10 13, driven in the usual manner by a double-pivoted gear on shaft 45, which is driven through pulley 14.

11 11 represent a series of rollers along the side of the car, opposite the feed-table 4 4.

15 19 represents a turn-table, consisting of an upright post pivoted in the car-body and bearing at its upper end a grooved T to receive the rail. It is placed at the end of the car farthest from the boiler, so that when a rail is
20 balanced thereon it can be swung around without striking any of the machinery on the car.

31 represents a cylinder having therein a piston, 46, located above the line of rollers 11 and between two of the said rollers, and con-
25 nected with a small pump (not shown) driven by a crank on shaft 47, this part of the device not being illustrated, as it is a common hydraulic rail-straightener well understood.

By this arrangement of mechanism a rail
30 can be deposited by cranes 10 on the table 4 and moved easily, because of the rollers 8, along said table to bring the right point for making the cut opposite the saw. It can then be forced against the saw by the mechanism for
35 operating the table and cut. The table being brought back to position, the rail is run along on rollers 8 onto the other table 4, so as to present its other end to the saw. It is again cut,
40 as before, thus obviating all necessity of turning a rail end from end to saw both ends. After being sawed the rail is slid on skids 49 from the table 4 to the rollers on end, and slid along said rollers until it comes under the drill 13, as indicated in Fig. 2, when it is
45 drilled. The rail is now balanced on turn-table 19, turned around, and run back on rollers on 2 to present its other end to the drill. After being drilled the rail is slid on skids 50 to the rollers 11, on which, if it needs straight-

ening, it is rolled under the straightener 31, is
50 straightened, and then is run off onto another car or thrown down onto the ground.

It will be seen that by this arrangement I avoid all necessity for turning the rail to saw
55 both ends, and only turn any rail for the purpose of drilling, and in this case so place the drill and turn-table that the rail is free to turn.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination with a car, a boiler and
60 engine mounted thereon, and a rail saw and drill mounted on the car and connected with said engine, substantially as shown and described.

2. In combination with a railroad-car and a
65 rail-saw mounted on said car near the longitudinal center thereof, and near one side, two independent movable feed-tables, one on each side of said saw, whereby the two ends of a rail can be successively presented to said saw
70 without turning the rail around, substantially as and for the purposes described.

3. In combination with a railroad-car, a rail-
75 saw mounted on said car and driven by suitable power carried on the car, two independent feed-tables, actuating mechanisms for moving said tables, a drill located at the lateral center of the car, and a turn-table located at
80 the end of the car, substantially as shown and described.

4. In combination with a railroad-car, a rail-
85 saw mounted in suitable supports thereon, two independent feed-tables running along one side of the car, a crane supported on the car over one of said feed-tables, and hoisting mechanism with said crane, substantially as shown and described.

5. In combination with a railroad-car, a rail-
90 saw mounted on one side of the car near the longitudinal center thereof, a drill mounted nearly in the lateral center of the car, and a straightening-press on the other side of the car, substantially as shown and described.

WM. L. CLEMENTS.

Witnesses:

BETHUNE DUFFIELD,
SUMNER COLLINS.