H. W. Farley.

Sheet 1, 2 Sheets.

Excavator.

No. 48,669.

Patented Jul. 11, 1865.

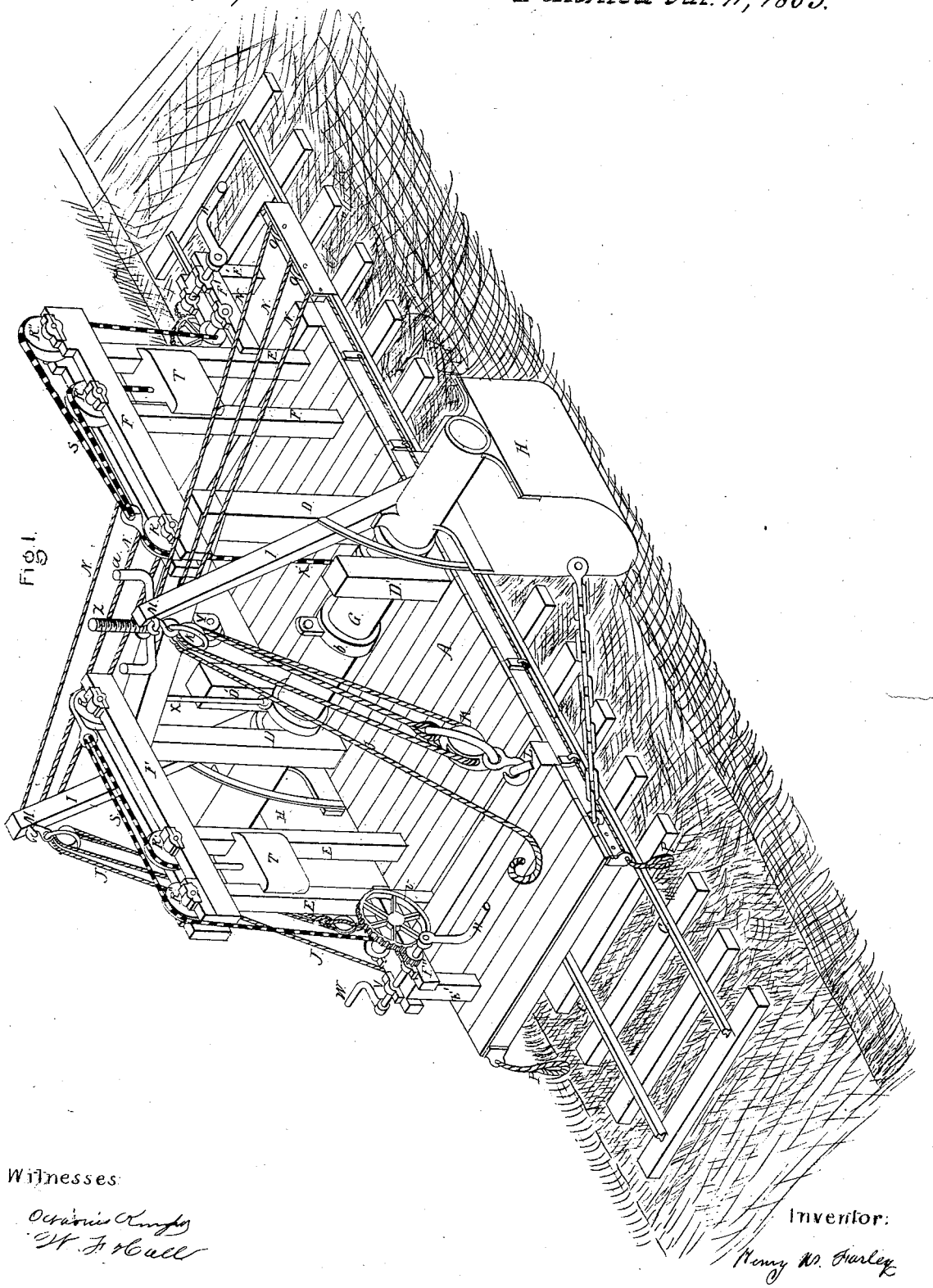

Fig 1.

Witnesses:

Octavius Knight

W. F. Hall

Inventor:

Henry W. Farley

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

Sheet 2, 2 Sheets.

H. W. Farley.

Excavator.

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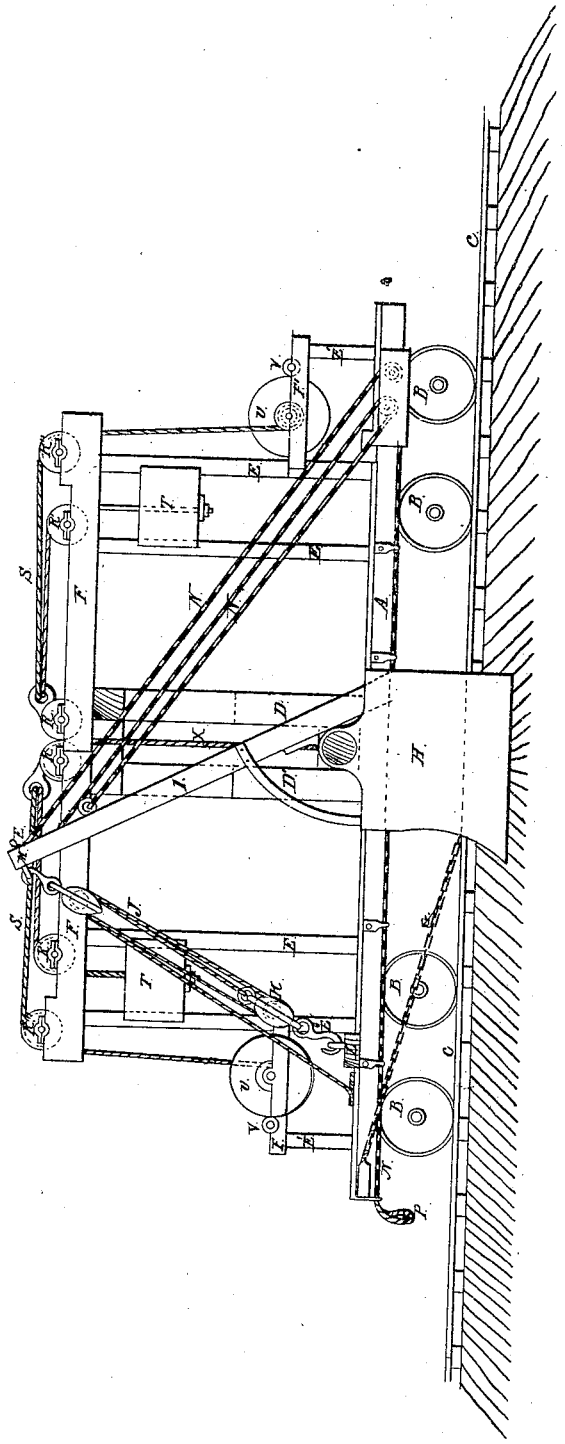
Fig. 2.



Witnesses:

Octavius Knight

F. A. Hall

Inventor:

Henry W. Farley

UNITED STATES PATENT OFFICE.

HENRY W. FARLEY, OF HANNIBAL, MISSOURI.

IMPROVED EXCAVATORS.

Specification forming part of Letters Patent No. **48,669**, dated July 11, 1865.

To all whom it may concern:

Be it known that I, HENRY W. FARLEY, of Hannibal, in the county of Marion and State of Missouri, have made certain new and useful Improvements in Excavators; and I do hereby declare the following to be a full, clear, and exact description of the nature, construction, and operation of the same, reference being had to the accompanying drawings, which are made part of this specification, and in which—

Figure 1 is a perspective view of my improved machine. Fig. 2 is a side elevation.

The same letters refer to like parts in the different figures.

My invention is shown as consisting of a railroad platform-car carrying a shaft armed with scoops to excavate on the side of the track. It may, however, be employed for ditching or dredging in connection with appropriate carriage or decked boat.

To enable one skilled in the art to which my invention appertains to construct and use the same, I will proceed to describe it.

A is the platform of the car, whose wheels B run on the rails C. Erect upon each side of the car stand the posts D E E and the short post D′. The three former support the beam F, and the posts D D′ form bearings for the transverse shaft G, which is provided at its ends with the scoops H H. Of the shape of the latter the drawings will give a correct idea; but it may be varied according to the work to be performed and the nature of the material to be moved. Stiff clay, loose sand, prairie-soil, and river or harbor mud may be presumed to require a different kind of scoop for raising and retaining the earthy matter.

In the connection shown in the drawings the machine is represented as adapted for ditching at the side of the railroad-track, which is especially necessary in cuttings where the soil from the banks on each is continually being carried down by the agencies of time and weather, and encroaches upon the water-way or ditch, or even upon the track itself.

The scoops, as has been observed, are supported by the shaft G. From the latter project levers I, by which the rotary motion of the shaft, or of the scoops upon the shaft, is attained in a manner to be described, and for the purpose of giving the proper presentation of the cutting-edge of the scoops to the ground and of elevating them in such a manner as to dump their contents when required.

The forward motion of the levers, which depresses the cutting-edge of the scoops, is given by the blocks and tackles J K, which are secured at L M to the platform and to the lever respectively. The backward motion of the levers by which the scoops are so rotated as to discharge their contents is attained by the ropes and pulleys N O, the sheaves being set in the platform and the lever and the rope being passed around them and drawn by attaching power to the loops P P at the front end of the car. The scoops are secured to the car during their effective stroke by the chains Q, which prevent their backward rotation while being impelled into the soil.

I propose in the case illustrated in my drawings to work the machine with a locomotive, and the scoops having been properly adjusted to their working position the car is advanced until the scoops have filled themselves with earth. It is now necessary to raise them, so that the earth may be removed to the spot where it is to be dumped. For this purpose I bring a winch and tackle into action, which will be seen mounted upon the beams F F′, which are supported upon the posts D E E E′. The raising arrangement is the same on either side of the car, and I will describe one, as they are exactly similar, and the corresponding parts of each are indicated by the same letters.

R R′ R″ are sheaves mounted in the beam F. Over the two latter run the ropes S, one of which sustains the weight T, which partially counterbalances the weight of the shaft G and scoops H, the other rope S passing to the winch V V W, which is mounted on the short beam F and is of a common character, not requiring special detailed description. The ropes S from the winch and the weight unite at the rope X, which runs over the sheave R and at its lower end is attached to the shaft G. I have stated that this arrangement is provided on each side of the car, and the scoops being filled the

winches are worked so as to raise the shaft G squarely upward between the posts D D′ until it is at an elevation to enable the scoops to clear the obstacles on the roadside when the the car is advanced to the spot where the earth is to be dumped, when by means of the tackle N O and the draft of the engine (which had been previously uncoupled) upon the loops P P of the ropes N N the shaft is rotated, or the scoops rotated on the shaft, and the earth discharged.

When it is required to put the machine in traveling order or to lay it up in ordinary the shaft is lifted by the described means until it is above the top of the short posts D′, and may be reached by the knuckle Y on the end of the screw Z, which is pinned to the ring *b* in the center of the shaft. The lifting-nut *a* is then rotated so as to bear the weight of the shaft and its attachments, the tackle loosened or cast off, and the shaft rotated horizontally, so as to place it in line with the platform and bring the scoops on board.

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

1. The shaft G with its scoops H, in combination with the block-and-tackle devices for raising, substantially in the manner and for the purpose described.

2. The partially-rotating scoops operated by a lever or levers on the shaft to adjust their position or discharge their load.

3. The combination of the crank W and its connected gearing with the rope S and counterbalance-weight T, for raising the shaft G and its scoops.

HENRY W. FARLEY.

Witnesses:

EDWARD H. KNIGHT,

W. F. HALL.