

(No Model.)

J. S. FRENCH.
WAGON SCRAPER.

No. 367,751.

Patented Aug. 2, 1887.

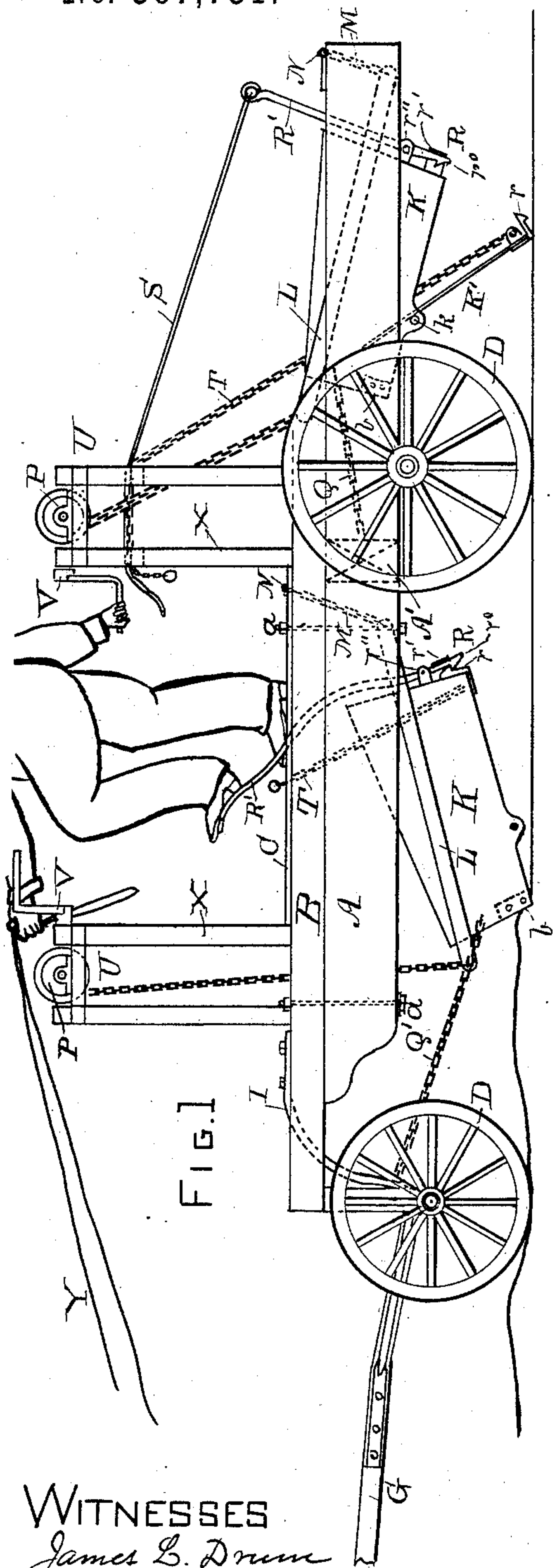


FIG. 1

WITNESSES
James B. Drum
Wm. P. Drum

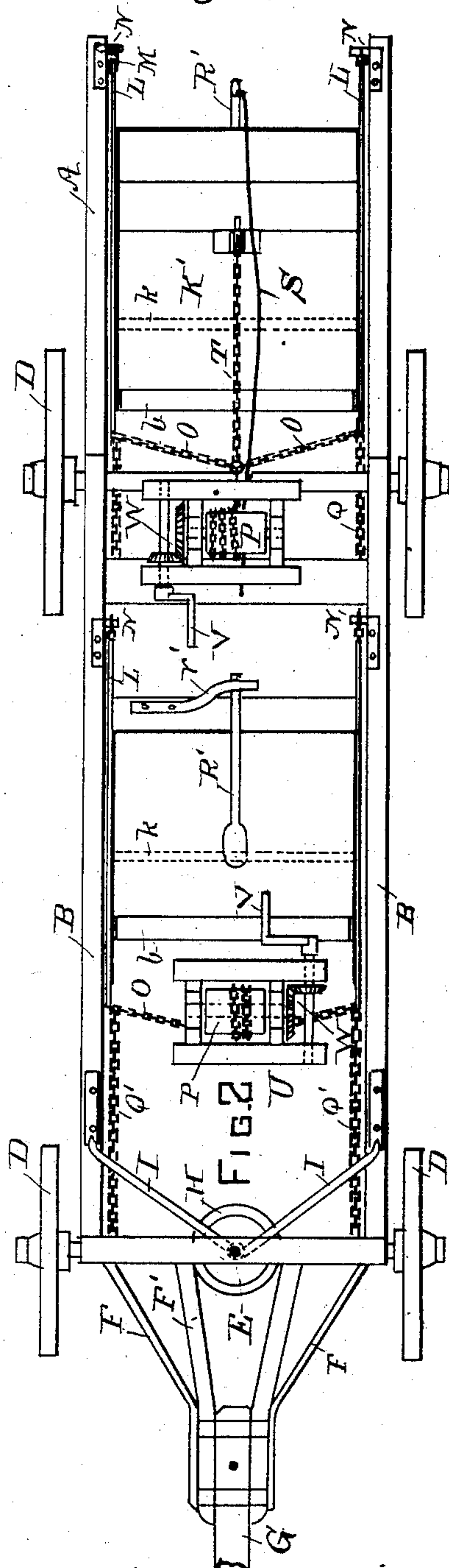


FIG. 2

INVENTOR

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UNITED STATES PATENT OFFICE.

JOHN S. FRENCH, OF KNIGHT'S LANDING, CALIFORNIA.

WAGON-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 367,751, dated August 2, 1887.

Application filed December 16, 1886. Serial No. 221,800. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. FRENCH, of Knight's Landing, Yolo county, State of California, have invented a new and Improved Grading-Machine, of which the following is a specification.

The invention relates to a grading-machine consisting of two large shovels or scrapers mounted in a frame carried upon wheels; and it consists in a certain peculiar manner of supporting the frame upon the wheels and the arrangement and forms of construction of the scrapers and operating devices connected therewith, as hereinafter more fully set forth, by which the machine acquires great capacity in operating and may be handled with great facility and economy of labor.

In the accompanying drawings, forming part of this specification, Figure 1 is a side view of the machine with the scrapers shown in the position they occupy both in the act of loading and unloading. Fig. 2 is a plan of the same.

In all the figures the same letters of reference represent the same parts.

In the drawings, A is a wooden frame composed of two deep and narrow side members and a cross-piece, A', shown a little forward of the rear axle. This frame extends from a point in front which just escapes the swing of the forward wheels as they are turned about the king-bolt to a point back of the fulcrum-supports of the rear scraper, as shown. A lighter frame, B, rests on top of the frame A, and extends from a point over the forward axle to a point about over the rear axle. The two frames are firmly bolted together by bolts *a a*. The frame B will be high enough to permit the forward wheels to swing under it, and it will have a board flooring, C, for the operator to stand on. This flooring is removed in the plan view, the better to show the parts beneath. These frames A and B are mounted upon the four wheels D in the ordinary way, excepting that, inasmuch as the forward axle cannot be connected to the rear axle by the ordinary reach or coupling pole, a substitute therefor is adopted.

The forward axle, like an ordinary wagon, will turn on a king-bolt, E, and there will be the usual braces, F F', for the tongue or pole G and the fifth-wheel H. No change in these

parts will be made. There will be provided, however, two braces, I I, which will be securely fastened on top of the frame B, at each side, and converge downward to the king-bolt, where they will terminate in a boss, through which the king-bolt will pass. The braces I I will be so curved as to allow the forward wheels to swing under them.

The whole frame is mounted on four wheels, as stated, and ordinarily a couple of horses are harnessed to the pole in front to draw it.

K K are two large scrapers, made of plate iron or steel, of dimensions which will give them the capacity of carrying about a half cubic yard of soil. These scrapers have bars L firmly fastened to their sides, which extend beyond their front and rear ends a distance about as indicated in the drawings. From the rear ends of these side bars chains M, extend upward to hook one of their links over a fulcrum-pin, N, which projects inwardly from the surface of the frame above, to which the pin is fastened. There are numerous other ways, however, of fastening the chains M, which will easily suggest themselves. All that is necessary to provide for in adopting a method of hanging is that the rear end of the scrapers may be raised or lowered by shortening or lengthening the hanging of these chains to suit. The front end of each bar L on each scraper has a chain, O, which joins the chain from the opposite bar in the center of the machine and passes upward as a single chain to wind upon the windlass-barrel P above. These chains support the front ends of the scrapers. A chain, Q, extends from each side of the rear scraper to link into staples or stirrup-bolts passing through the cross-timber A'. A similar pair of chains, Q', in like manner connect the forward scraper to the front of frame over axle. These are called the "draft-chains;" and it is by these chains that the scrapers are dragged over and into the ground in the act of filling. The scrapers in front will have narrow blades *b*, with ends upturned, riveted to the sides. Each scraper has a tilting bottom, K', supported upon a rod, *k*, which passes underneath at a point nearer to the front end than the rear end and rests in holes in the side of the scraper; or, if preferred, a strip of iron may be riveted on the side rather thicker than the plates forming the scraper, through which a hole

may be bored to carry these rods. These tilting bottoms are held closed when the scrapers are being loaded by the spring-catch R at the back, which consists of a hook-shaped piece, 5 *r*, riveted to the bottom K, and a hook-ended lever, *r*⁰, pressed forward to keep it engaged with the hook *r* by a flat spring, *r*¹, behind it. The lever has its fulcrum-support consisting of two little ears or lugs, *r*², projecting from 10 a plate which is riveted to the back of the scraper. The flat spring *r*¹ is also riveted to the back of the scraper by a couple of rivets.

To disengage the catch and let the bottom drop to dump the load, the upper part of the 15 lever is drawn forward by the rope S, leading to the hand of the operator in respect to the rear scraper, and pushed forward by the operator's foot in respect to the forward scraper. After the load is dumped the bottoms of the 20 scrapers are pulled up to close them by means of the chains T.

U U are a couple of simple windlasses consisting of a barrel to wind upon supported upon a spindle resting in bearings, a crank- 25 shaft, V, set at a right angle with the winding-barrel, and a pair of bevel-gears, W, transmitting motion from the crank-shaft to the barrel-shaft.

X is the frame supporting the windlass.

30 In the drawings the operator is shown with the driving-lines Y in his left hand, while he operates the rear windlass with his right.

It is obviously permissible to construct a machine embodying part of these improve- 35 ments with but one scraper; but two are deemed preferable.

The operation, which will have been suggested by the foregoing, is briefly as follows: The horses being hitched to the machine, the 40 driver and operator stands upon the platform between the windlasses. One or other, it is immaterial which, of the scrapers is lowered sufficiently to scoop up its load. When it is properly filled, it is hoisted up and the other 45 scraper dropped to scoop up its load. Both being filled and hoisted clear of the ground, the team is driven to the dumping-ground,

which may be a mile away, where the spring-catches of the tilting bottoms are tripped and the loads drop out. Afterward the tilting 50 bottoms are closed by pulling upward on the chains T, and the machine driven back to the operating-ground to repeat the action.

I am aware that scrapers have been mounted on wheels and dragged by horses, and I do not, 55 therefore, broadly claim the machine as novel in that respect.

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

1. A four-wheeled-scraper grading-machine 60 consisting, essentially, of the frame A, resting upon and secured to the axle of the rear wheels, the frame B, resting upon and secured to the frame A, a swinging axle for the forward wheels turning on a king-bolt, and the iron 65 braces I I, passing from the sides of the frame B to the king-bolt as a means of completing a connection between the rear and front axles without obstructing the space needed for the operation of the forward scraper, substantially 70 as herein shown and described.

2. A wagon-scraper consisting, essentially, of a carrying-frame supported on a pair of forward steering-wheels and a pair of rear wheels, as shown, a scraper hung centrally between 75 these two pairs of wheels, a second scraper hung from the frame behind the rear wheels, and two elevated windlasses arranged to be operated by the driver from his stand upon a platform on the carrying-frame between the 80 pairs of wheels, substantially as herein shown and described.

3. In wheeled grading-machines having forward and rear scrapers, the combination of hoisting-windlasses to connect therewith, and 85 elevated supporting-frames so arranged that the driver may with one hand drive his horses and with the other raise or lower either scraper, substantially as described.

JOHN S. FRENCH.

Witnesses:

GEO. PARDY,
JAMES L. DRUM.