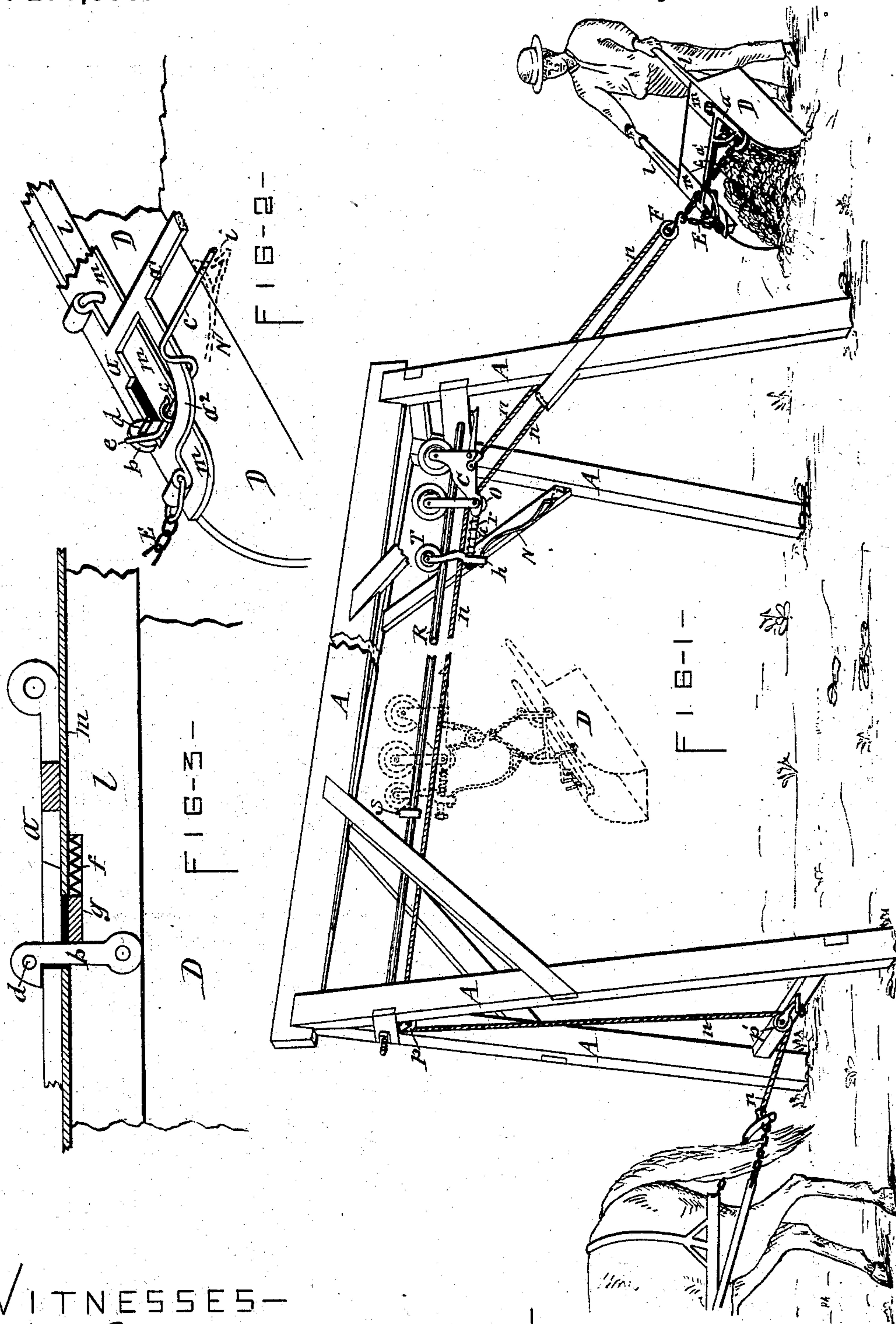


(No Model.)

D. I. CALHOUN.  
EXCAVATOR AND LOADER.

No. 278,399.

Patented May 29, 1883.



WITNESSES—  
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# UNITED STATES PATENT OFFICE.

D. IRVING CALHOUN, OF WEEDSPORT, NEW YORK.

## EXCAVATOR AND LOADER.

SPECIFICATION forming part of Letters Patent No. 278,399, dated May 29, 1883.

Application filed February 13, 1883 (No model.)

*To all whom it may concern:*

Be it known that I, D. IRVING CALHOUN, of Weedsport, in the county of Cayuga, in the State of New York, have invented new and useful Improvements in Excavators and Loaders, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

The purpose of this invention is to expeditiously gather earth and other substances and elevate and dump the same onto a suitable vehicle for conveying it away or onto an embankment in process of construction or other place of deposit.

The invention consists, first, in the combination of a scraper or other suitable device for gathering earth or other substance, said device having thereon back of the center thereof draft-arms for the attachment of the draft chains or cable, a catch for holding said draft-arms stationary in their position, and a tripping-lever adapted to throw the catch out of its said engagement.

The invention also consists in a novel construction and combination with a carriage mounted on an elevated track of an arm connected with said carriage and adapted to engage the aforesaid tripping-lever, all as hereinafter more fully described, and specifically set forth in the claims.

In the annexed drawings, Figure 1 is a perspective view of my invention, illustrating its operation in gathering earth from the ground and the means for elevating and depositing said earth either onto a vehicle or onto an embankment in process of construction. Fig. 2 is an enlarged isometric detail view of my invention as applied to an earth-scraper; and Fig. 3 is a longitudinal section of the latter, taken along the side of that portion of the handle which is attached to the scraper.

Similar letters of reference indicate corresponding parts.

A represents a stout portable horse or trestle, provided at or near its top with a longitudinal track-rail, R, on which is mounted a carriage, C, of any suitable form and construction.

In front or in advance of the carriage C, I place on the track R a runner, T, in the form of a circumferentially-grooved roller traversing said track, and having suspended from its axle a hanger, h, the foot of which is connect-

ed with the frame of the carriage C by a rod, r, which is adapted to slide lengthwise in its connection with the hanger. A spiral spring, u, surrounding the rod r, between the carriage-frame and hanger, and exerting an expansive force against said parts, serves to normally hold them asunder. A stop, s, is adjustably secured to the track R, and adapted to be set at different points in the length thereof, according to the location of the place where the scraper D, hereinafter described, is to be dumped.

To the foot of the hanger h is attached an arm, N, which is inclined toward the carriage C, and terminates with a vertically-elongated face, i, for the purpose hereinafter explained.

D denotes a dirt-scraper, preferably constructed of sheet iron or steel and of the ordinary form. The handles l of the scraper I secure along the top edge of the interior of the scraper-body and cover said attached portion of the handle by a web or flange, m, attached to the top edge of the scraper. On top of the two flanges m, at opposite sides of the scraper, are hinged two draft-arms, a a, which are united by a cross-bar, a', and braced laterally by braces a<sup>2</sup>. Said hinge-connection of the arms a is arranged back of the center of the scraper, so that a draft on the arms a will tilt the scraper forward.

To the inner side of the attached end of the scraper-handles is pivoted a hook or catch, b, the free end of which projects through a slot in the web m, and engages with its hooked end the top of the free end of the arms a, when the latter are relieved of the draft and laid down upon the scraper, as illustrated in Figs. 2 and 3 of the drawings. A spring, f, arranged under the web m, back of the catch b, and pressing against the interposed slide g, holds the catch in a position for interlocking with the draft-arms a.

c is a bail extended across the top of the scraper and hinged on the web m. The end of said bail is formed into a lever or crank, e, which lies in front of a pin, d, which projects from the side of the catch b.

To the forward end of the arms a are connected the draft-chains E, or a bail or rods, on which is hung a tackle-block, F. Around the block runs a cable or chain, n, one end of which is firmly attached to the carriage C, before described, the opposite end passing over



a loose pulley, *o*, pivoted to the forward end of the frame of the carriage *C*, from whence said cable or chain is extended to the forward end of the upper portion of the trestle *A*, where it passes over a pulley, *p*, connected to the upper part of the trestle, and thence passes around a pulley, *p'*, connected to the lower part of the trestle. The horse or horses, being hitched to said end of the cable and traveling in line with the trestle, draws the scraper *D* along the ground toward the trestle, the operator in the meantime guiding the scraper by the handles *l*, in the usual manner. The scraper thus becomes loaded in its approach to the trestle, and is then lifted and carried along in a suspended position by the carriage *C*, traveling on the track *R*, before described. The travel of said carriage is finally arrested by the collision of the advance runner *T* with the stop *s*. By this collision the carriage *C* is caused to approach the runner *T*, and this approach causes the lower end of the arm *N* to throw back the bail *c*. This movement of the bail *c* causes the lever end *e* thereof to strike the pin *d* of the catch *b*, and thus throws the latter out of its engagement with the draft-arms *a*. This releases the front or open end of the scraper and allows it to tilt forward and discharge its contents, as illustrated by dotted lines in Fig. 1 of the drawings. The empty scraper can then be moved back and lowered by backing the horse hitched to the cable *n*, and the operation of filling and lifting the scraper can be repeated in the manner before described.

It is obvious that the trestle *A* can be placed astride of a pit or other place to be filled or over a roadway to dump the load of the scraper into carts or wagons for carrying the substance to a distant locality; or the trestle may be dispensed with and the track-rail *R*, with the carriage *C*, secured to some other structure—such

as a barn or store-house—and a rake or other suitable implement used in lieu of the scraper, said implement being rigged with draft-arms *a*, held by a catch, *b*, and tripped by a lever, *e*, as hereinbefore described.

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

1. The scraper *D*, provided with hinged arms *a*, a catch, *b*, for holding said arms stationary, and a tripping lever or bail, *c*, for throwing the catch off the arms *a*, in combination with an elevated track provided with a stop, *s*, and a carriage having an arm, *N*, adapted to encounter the bail *c*, substantially as and for the purpose set forth.

2. In combination with the elevated rail *R*, provided with the stops *s*, the carriage *C*, mounted on the rail *R*, and the advance runner *T*, provided with the hanger *h*, and connected with the carriage by the sliding rod *r*, the spring *u*, interposed between the hanger and carriage, and the arm *N*, extended from the hanger, substantially as and for the purpose set forth.

3. The combination, with the scraper *D*, of the arms *a*, hinged thereon back of the center thereof, the pivoted hook *b*, provided with the projecting pin *d*, the spring *f*, back of the hook, and the bail *c*, having the lever *e* in the front of the pin *d*, all constructed, combined, and operating substantially in the manner described and shown.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 27th day of January, 1883.

D. IRVING CALHOUN. [L. S.]

Witnesses:

C. H. DUELL,  
FREDERICK H. GIBBS.