

(No Model.)

4 Sheets—Sheet 1.

J. O. WRIGHT.  
DUMPING INCLINE.

No. 528,753.

Patented Nov. 6, 1894.

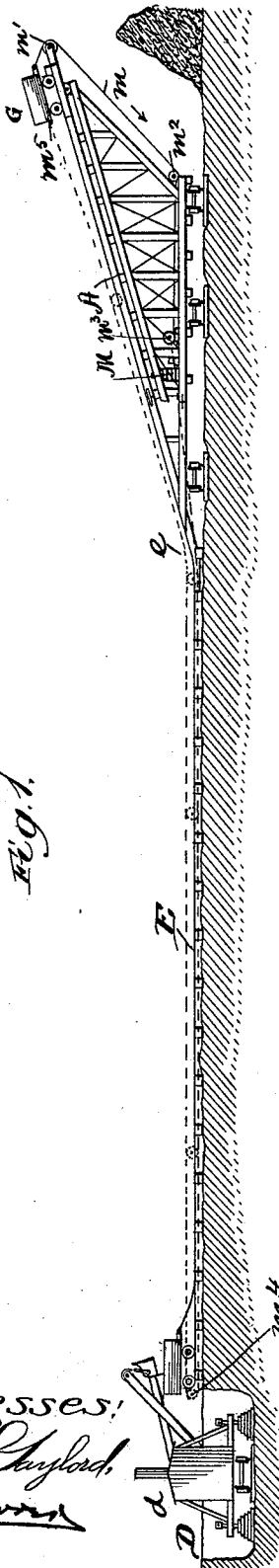
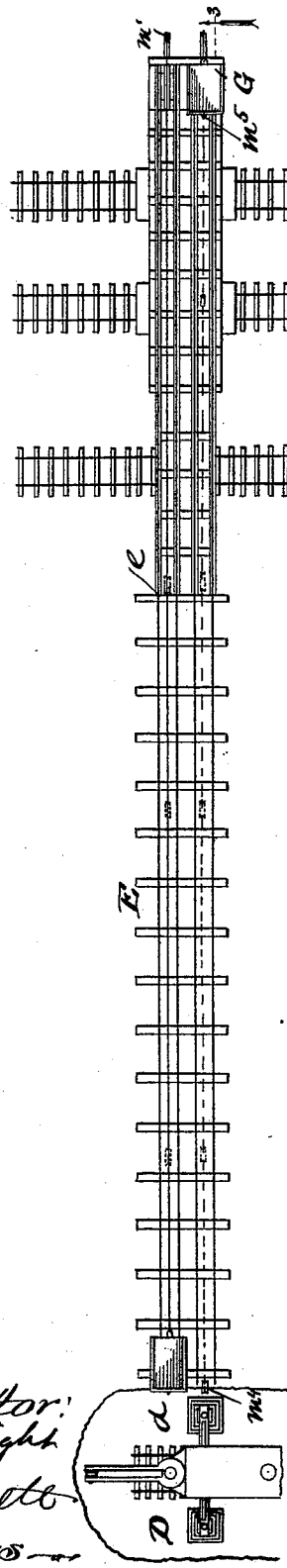


Fig. 1.

Fig. 2.



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*his Attys.*

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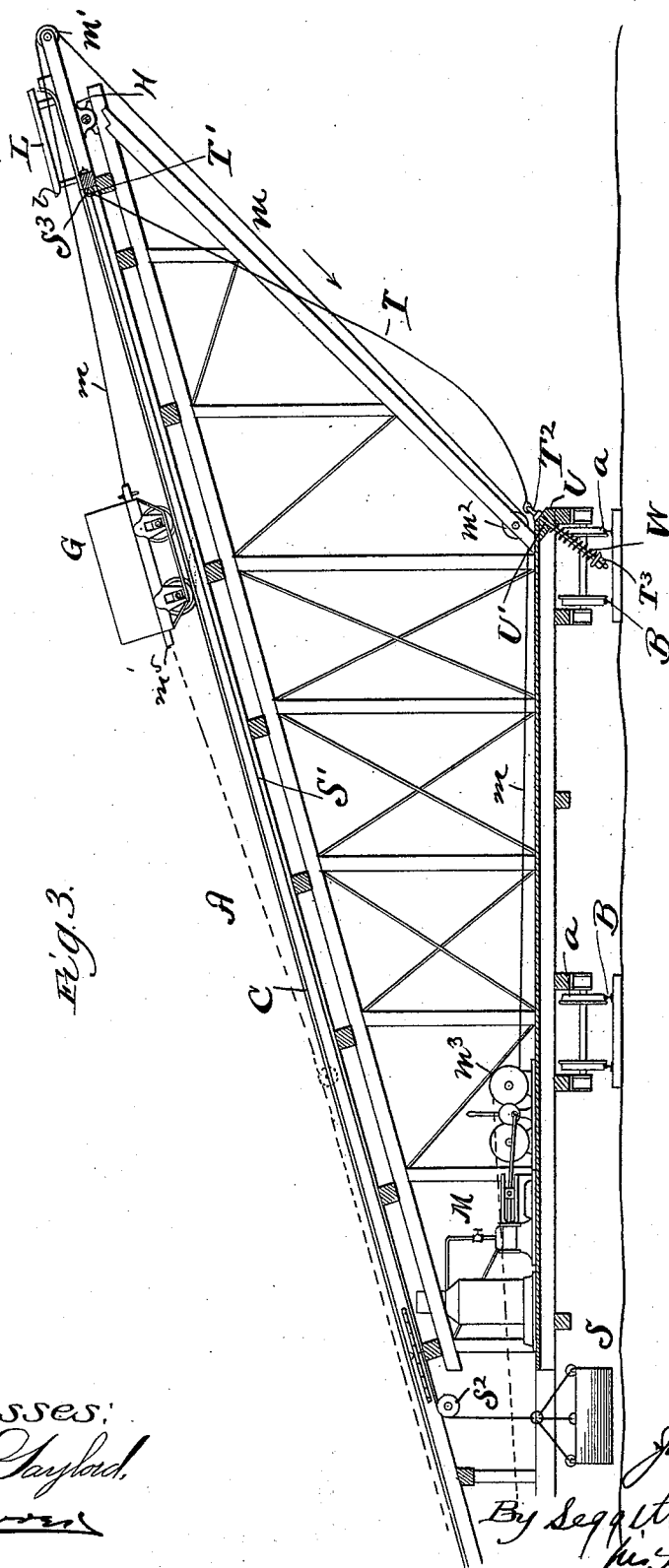


Fig. 3.

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Fig. 4.

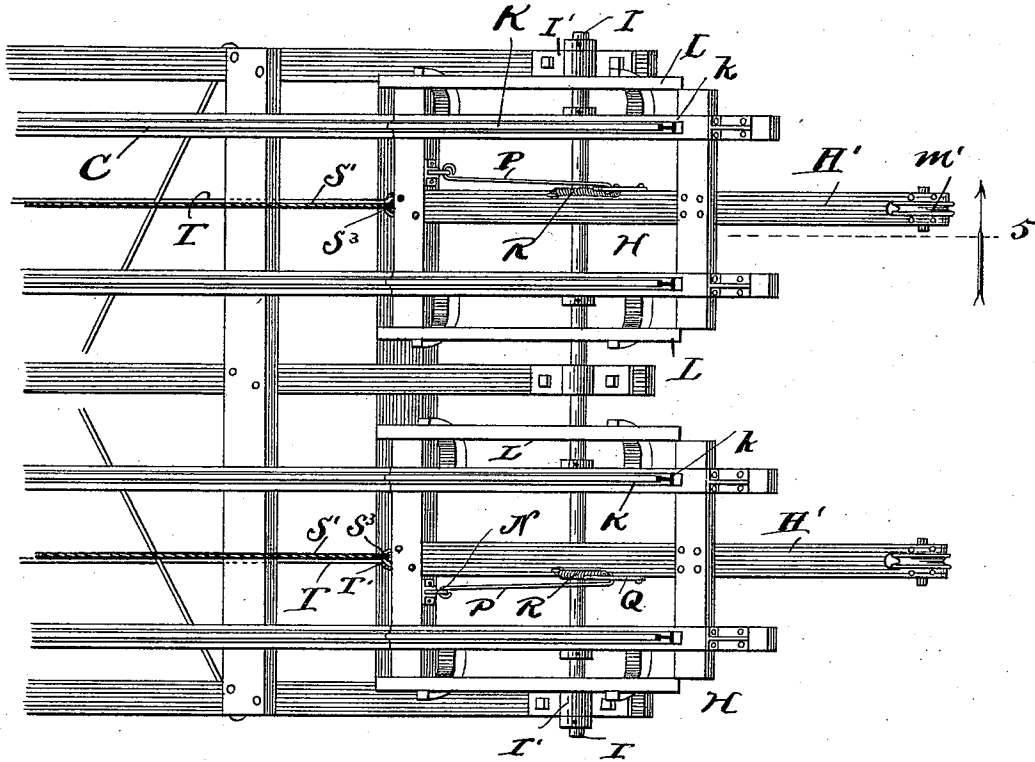
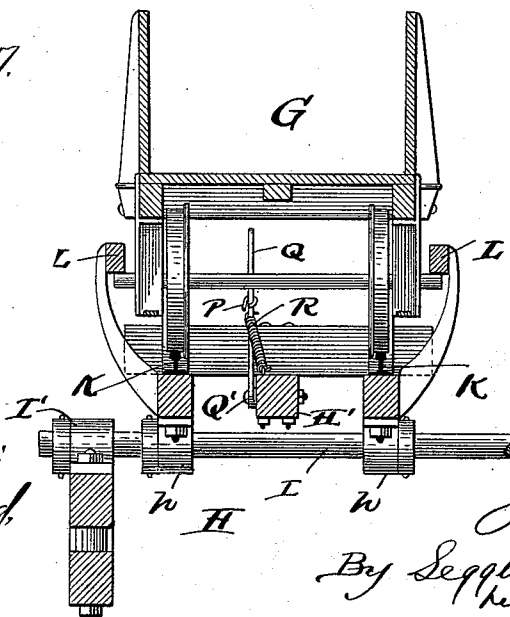


Fig. 7.



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Fig. 5.

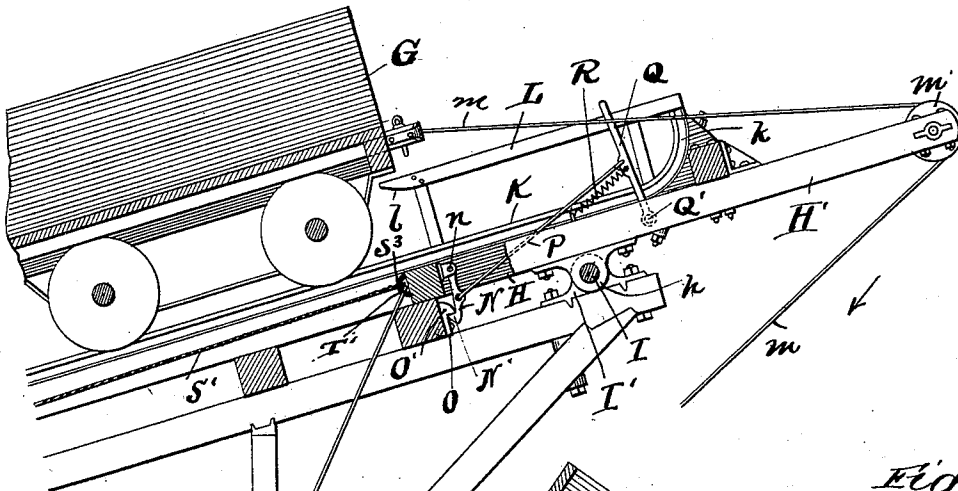
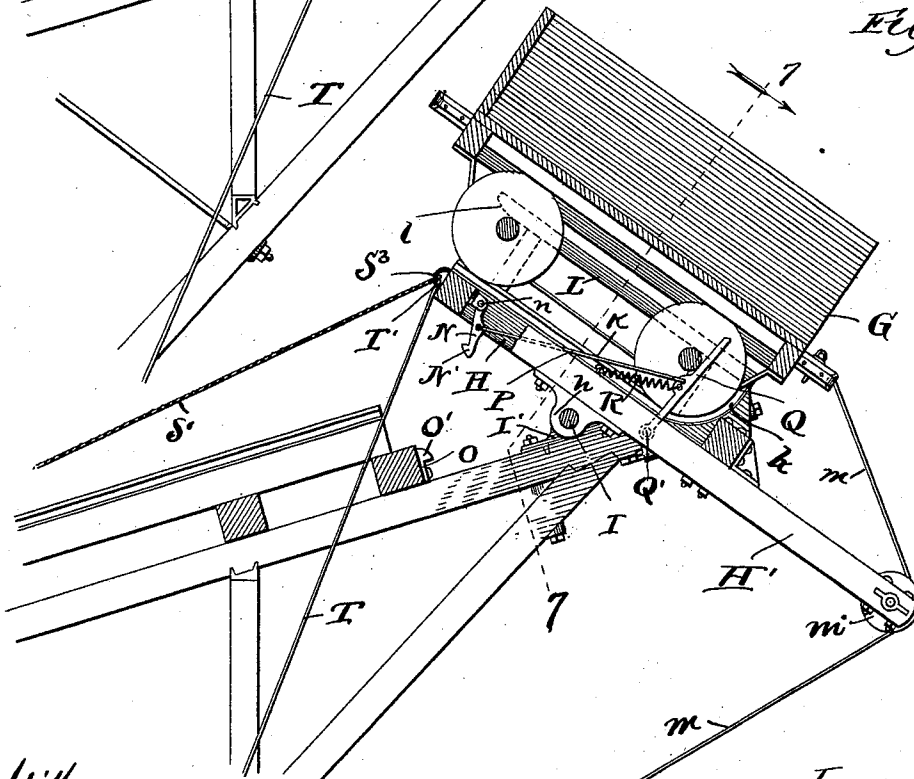


Fig. 6.



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# UNITED STATES PATENT OFFICE.

JAMES O. WRIGHT, OF LAFAYETTE, INDIANA, ASSIGNOR OF ONE-HALF TO  
THE MARION STEAM SHOVEL COMPANY, OF MARION, OHIO.

## DUMPING-INCLINE.

SPECIFICATION forming part of Letters Patent No. 528,753, dated November 6, 1894.

Application filed January 31, 1894. Serial No. 498,639. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES O. WRIGHT, of Lafayette, in the county of Tippecanoe and State of Indiana, have invented certain new and useful Improvements in Dumping-Inclines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to a dumping-incline to be used in connection with excavating machinery and to convey the material away from the excavator when the place of dumping the excavated material is, comparatively, a considerable distance from where the excavating is done.

In the accompanying drawings, Figure 1 is a side elevation of a portable incline embodying my invention. Fig. 2 is a top plan of the same. Fig. 3 is an enlarged side elevation of the main portion of the incline. Fig. 4 is an enlarged plan of the upper portion of the incline. Fig. 5 is a longitudinal section on line 5—5, Fig. 4, looking in the direction of the arrow, and showing the conveying car in position before passing onto the dumping-platform or frame at the upper end of the incline and Fig. 6 is a longitudinal section, showing the conveying car on the dumping-platform and in a dumping position, portions being broken away in Figs. 5 and 6 to more clearly show the construction. Fig. 7 is a section on line 7—7, Fig. 6, looking in the direction of the arrow.

Referring to the drawings, A represents the incline that is of any suitable construction and is shown mounted upon tracks, B, arranged transversely of the incline, the latter being provided with wheels *a* engaging the tracks.

The incline is provided with one or more inclined tracks C up and down which travel the cars employed to convey the excavated material from the excavating machinery to the place of dumping at the upper end of the incline.

The incline shown is provided with two inclined tracks C arranged longitudinally of the incline and parallel with each other.

D represents the place of excavation and *d*

the excavating machinery. The excavator is mounted upon a track arranged longitudinally of the cut to be made by the excavator, as shown in Fig. 2, said track and the cut made by the excavating machine being parallel, or approximately so, with the tracks upon which the movable dumping incline is mounted.

Tracks E are built leading from the excavating machinery to tracks C of the incline, the rails of tracks E meeting the rails of tracks C, as shown at *e*, Fig. 2, so that the cars G employed to receive and convey the excavated material from the excavating machinery to the place of dumping, can pass from tracks E onto tracks C, and vice versa.

The upper end of the incline is provided with a dumping-platform or frame, H, that is hinged or fulcrumed, at the bottom, and preferably between its central portion and inner end, to the incline preferably by means of ears *h*, on the platform, embracing a shaft I arranged transversely of the incline and journaled in boxes I' rigid with the incline. (See Figs. 3 to 7 inclusive.) In its normal position, the dumping-platform or frame forms an extension of the incline, platform or frame H being provided with a number of tracks K corresponding with the number of tracks C on the incline, tracks K being arranged lengthwise of the platform and the rails thereof being adapted to meet the rails of tracks C of the incline in the normal or untitled position of platform or frame H so that cars G can pass from tracks C onto tracks K and vice versa. The outer ends of tracks K terminate preferably near the central portion of platform or frame H where the rails of said tracks are bent or curved upwardly, as at *k*, said upwardly-bent members of the rails being adapted to be engaged by the forward wheels of cars G preparatory to dumping and constitute stops that prevent the cars from running off the platform during the dumping operation. The dumping-platform or frame is also provided with guards to prevent the cars from jumping the track during the dumping operation, said guards comprising preferably longitudinal bars L, L, arranged one at each side of each track on platform or frame H, said bars being arranged longitudi-

nally of and supported in any suitable manner from the platform or frame, and being so located relative to the axles of the cars as to have their under side engaged by said axles when the cars pass onto the platform. Bars L L, on their under side and inner end, are preferably beveled or gradually cut away toward their inner extremity, as at *l* to avoid any impediment to the passage of the axles in under said bars.

Cars G are operatively connected in any suitable manner, with suitable driving machinery. In the case illustrated the driving machinery M is located at the lower end of and suitably supported by the incline and a rope or cable *m* attached at one end to the forward end of the conveying car, leads from the car to and over a sheave *m'* suitably supported at the outer end of the dumping-frame or platform; thence, to and over a sheave *m*<sup>2</sup> at the bottom of the structure and thence to and secured to a winding-drum *m*<sup>3</sup> operatively connected with the driving-machinery. By, therefore, causing the winding-drum to be rotated in the direction of the arrow (see Fig. 3) the rope or cable is wound upon the drum and the car is actuated toward the place of dumping, and by rotating the drum in the opposite direction, after dumping the rope or cable is paid out by the drum permitting the car to descend the incline by gravity. If desired, however, the propelling-rope or cable, instead of being fastened to the operating drum, as hereinbefore indicated, might be coiled several times around said drum and thence lead to and over one or more sheaves *m*<sup>4</sup> located at the point of excavating where the car is loaded, and thence lead to and fastened to the other end of the car at *m*<sup>5</sup> so that the propelling-cable or rope would be adapted to actuate the car in both directions from end to end of the route.

The dumping-platform or frame is locked in its normal or untilted position by means of any suitable mechanism for the purpose. Preferable locking-mechanism for the purpose is exhibited in Figs. 5 and 6, and comprising a latch, N, pivoted at *n* to the inner end of the platform and provided with a toe or projecting-member N' adapted, in the normal or untilted position of the platform, to engage a notch O' or shoulder of a plate O suitably secured to the incline, and thereby lock the platform in its normal position. Latch N is operatively connected, by means of a link P, with an upright lever Q that is fulcrumed at its lower end, at Q', to centrally-located longitudinal member H' of the dumping-frame or platform. A spring R is provided to retain lever Q in its normal position, that is, to retain said lever in position holding latch N to the performance of its function, said spring being shown attached, at one end, to member H' and, at its other end, to the lever. Lever Q extends so far upwardly that when the loaded car passes onto the dumping-platform or frame the forward axle of the car shall en-

gage said lever and operate the same, against the action of the aforesaid spring, to actuate latch N to unlock, thereby permitting platform or frame H to tilt, as shown in Fig. 6, and dump the load of the car. The load having been dumped, the frame or platform H, with the empty car thereon, is tilted back into its normal position by the action of a poise, S, suspended, at the lower end of the incline (see Fig. 3) from a rope or cable S' that leads from the weight to and over a sheave S<sup>2</sup> suitably supported near the lower end of the incline and thence leads up the incline to and is secured to the inner end of the dumping-frame or platform, as at S<sup>3</sup>. Another rope or cable T is fastened to the inner end of the dumping-frame or platform at T' and thence leads downwardly and is attached to an eye-bolt T<sup>2</sup> that extends nicely through and is adapted to move endwise of a hole, U', in a beam or timber U of the structure, the head of the bolt engaging the one side of said timber or beam and a coil-spring, W, is confined upon the shank of bolt between the opposite side of the beam or timber and a nut T<sup>3</sup> mounted on the bolt-shank, the weight of poise S being sufficient to counterbalance the weight of the tilting-frame or platform and empty car. The tilting-frame or platform having been returned to its normal position, is automatically locked in such position by the latch-mechanism hereinbefore described. The length of rope or cable T is such that when the dumping-frame or platform is in its normal or untilted position said rope or cable shall be slack as shown in Fig. 3; but when the dumping-frame or platform shall have tilted the distance required in dumping, said slack shall have been taken up, when the rope or cable forms a stop to the further tilting of the frame or platform. The spring-bearing bolt T<sup>2</sup>, it will be observed, constitutes a yielding point of attachment for rope or cable T, and hence there is no liability of seriously straining or tearing said cable in the dumping operation.

I would remark that my improved incline hereinbefore described will be found very convenient in making large canals or in building levees; also, the incline can be mounted on pontoons or barges, and, in that way, employed in dredging out harbors and in the construction of docks.

What I claim is—

1. The combination with the excavator and a dumping-incline movable in the direction of the cut or line of excavation, said incline bearing a track arranged lengthwise thereof, a track leading from the place of excavation to the aforesaid track on the incline, a car movable upon said tracks adapted to convey material from the place of excavation to the upper end of the dumping-incline, a dumping-platform at the upper end of said incline, said dumping-platform being arranged in line with the track upon the incline and adapted to receive the laden car, and suitable apparatus for propelling the car from the place of exca-

vation to the incline and thence to and upon the dumping-platform at the upper end of the incline, substantially as shown and described.

2. The combination with the dumping-incline provided at its upper end with a tilting or dumping-frame or platform, of a rope or cable, T, suitably connected at one end with the inner end of said frame or platform, the bolt T<sup>2</sup> connected with the other end of said rope or cable and extending loosely through

any suitable object, and the spring W confined upon said bolt, substantially as shown, for the purpose specified.

In testimony whereof I sign this specification, in the presence of two witnesses, this 6th day of November, 1893.

JAMES O. WRIGHT.

Witnesses:

J. M. DRESSER,

J. M. DRESSER, Jr.