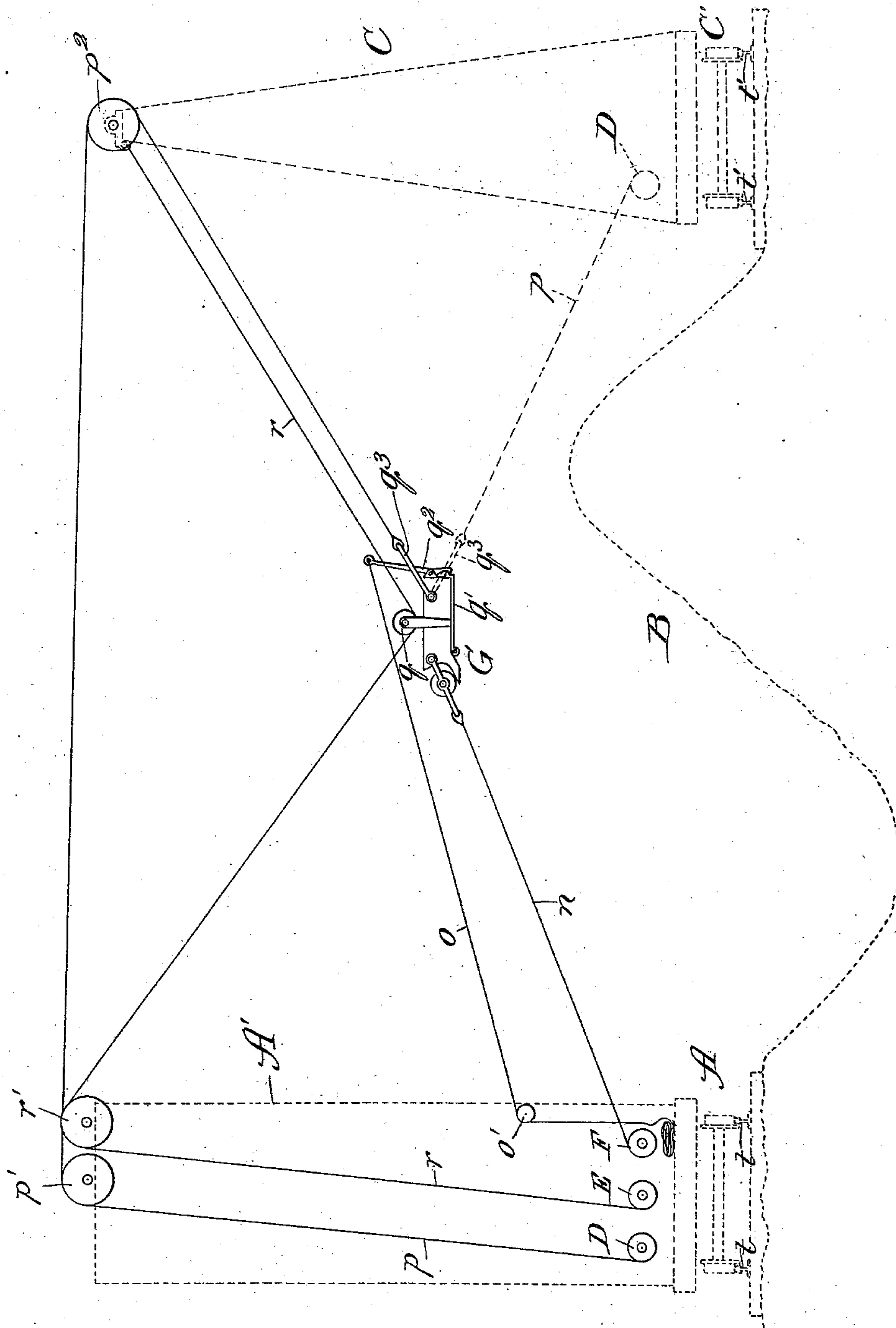


(No Model.)

H. G. BUTLER.
SCRAPER OPERATING APPARATUS.

No. 543,332.

Patented July 23, 1895.



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY G. BUTLER, OF KENOSHA, WISCONSIN.

SCRAPER-OPERATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 543,332, dated July 23, 1895.

Application filed August 11, 1894. Serial No. 520,065. (No model.)

To all whom it may concern:

Be it known that I, HENRY G. BUTLER, a citizen of the United States, residing at Kenosha, in the county of Kenosha and State of Wisconsin, have invented a new and useful Improvement in Scraper-Operating Apparatus, of which the following is a specification.

My invention relates to an improvement in the class of apparatus involving cable-winding mechanism for operating a scraper, dredge, or other form of conveying means, such as would be employed in railroad-grade and levee construction, dredging, excavating for foundations and sewers, for feeding clay to the "fire" in burning clay to make ballast, and in stone-quarries, coal-mines, and the like; and it relates, more definitely stated, to an improvement in the class of such mechanism in which the winding mechanism involves winding-drums supported on a preferably locomotive-base, such as a car or boat, and driven by a suitable engine and controllable to produce the three filling, hoisting, and conveying operations of the scraper.

My improved apparatus is advantageously applicable to any of the uses referred to; but for the sake of convenience and to avoid prolixity I confine the description hereinafter contained mainly to the use thereof in connection with ballast-burning; and illustrate it in the form best adapted thereto in the accompanying drawing, which shows my improvement by a view diagrammatic in its nature and as operating upon a ballast-burning fire.

A is the support for my improved mechanism, indicated as a car movable on a track t , which may be considered, for the purpose of the further description, to extend along a pile of burning clay or ballast-burning fire B, toward which a boom may extend as usual from the support, though I may also employ, instead of a boom, a tower (indicated at C) at the side of the fire opposite that at which the car A is provided, and which, like the latter, is on a car C' movable upon a track t' extending lengthwise along the side of the pile B.

At A', I indicate a mast on the car A as a medium for supporting the guide-pulleys for cables, as hereinafter described, and the car A also carries the winding mechanism comprising drums D, E, and F. These drums should,

as is usual in apparatus of the class to which my improvement relates, be driven by suitable machinery, (though it were within my invention to rotate them by hand or animal power.) A cable r is fastened at one end to the drum E, proceeds thence upward over a guide-pulley r' , journaled on the upper end of the mast A', to the tower C, (corresponding to the outer end of the boom hereinbefore referred to,) at which its opposite end is fastened, and on the cable r a scraper G is suspended at its bail q , the scraper shown being of the variety open at one end where it is adapted to scrape by cutting and plowing the soil, and having a bottom q' hinged near the open end of the scraper to dump the contents by swinging downward and being held in closed position by a catch q^2 controlled to release it through the medium of a rope o passing over a guide-pulley o' on the mast to the car A, where it is accessible for manipulation, and whence it is adapted to pay out with the outward travel of the conveyer or scraper G, as hereinafter described.

A cable p fastened at one end to the drum D proceeds thence over a guide-pulley p' journaled on the top of the mast (and which may, if desired, be loose on the same shaft with the guide-pulley r') about a pulley p^2 on the upper end of the tower C (which corresponds with the outer end of the aforesaid boom) from which it extends and is fastened at its opposite end to the yoke q^3 extending rearward on the scraper.

From the forward drag-bar of the scraper it is connected by a cable n with the winding-drum F.

The operation is as follows: Supposing the scraper G to be down on the ground in position to be dragged toward the car A to fill, by turning the drum F to wind the cable n upon it, and at the same time allowing the cable p to pay out or unwind from the drum D, the scraper will be dragged up the incline adjacent to the car and filled with the soil it cuts therefrom. Then by stopping the winding operation of the drum F and turning the drums E and D to wind upon them their respective cables the scraper is quickly hoisted to an elevated position by the cable r and carried outward by the cable p to the fire B, upon which, when reaching a desired position

with relation thereto, the contents of the scraper are dumped by tugging the rope n to release the catch q^2 and permit the bottom q' to drop on its hinge. Thereupon the drums 5 D and E are stopped and permitted to be reversed to allow their cables to pay out for lowering the scraper to the ground again, turning of the drum F to wind up its cable n meantime producing the return of the scraper 10 to the incline in the ground toward the car, up which it is dragged to refill while the cable p still pays out, though the drum E may then be stopped from permitting further paying out of the cable r . Thereupon the hoisting, 15 carrying, and dumping operations of the scraper are repeated, as described.

I have indicated by dotted lines in the drawing how the drum D may be located on the car C', thus behind the scraper and connected 20 with the latter by the cable p , which would be practically the same as providing the drum D on the car A and passing the cable about the pulleys p' and p^2 to the scraper, according to the full-line representation on the drawing. 25

By providing the supports A and C' in the form of cars on tracks they may be readily

moved from place to place with relation to the fire B for filling and dumping the scraper at desired points thereon. 30

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

In an apparatus of the nature set forth, the combination of winding drums D, E and F on a movable support A carrying a mast A', a 35 tower C on a movable support C' distantly located from the support A, guide-pulleys p' and r' on the mast and a guide-pulley p^2 on said tower, a cable r extending from the drum E over said pulley r' fastened to the tower, a 40 traveling conveyer G suspended on said cable between its ends, a cable p extending from the drum D over said pulleys p' and p^2 and fastened to the conveyer, a cable n connecting the conveyer with the drum F, and a 45 dumping-rope o leading from the conveyer-catch to said support A, the whole being constructed and arranged to operate substantially as described.

HENRY G. BUTLER.

In presence of—

W. U. WILLIAMS,
J. N. HANSON.