

H. T. & D. R. GROVES.
 SPUD LOWERING AND HOISTING MEANS FOR DREDGES.
 APPLICATION FILED APR. 29, 1914.

1,169,396.

Patented Jan. 25, 1916.

2 SHEETS—SHEET 1.

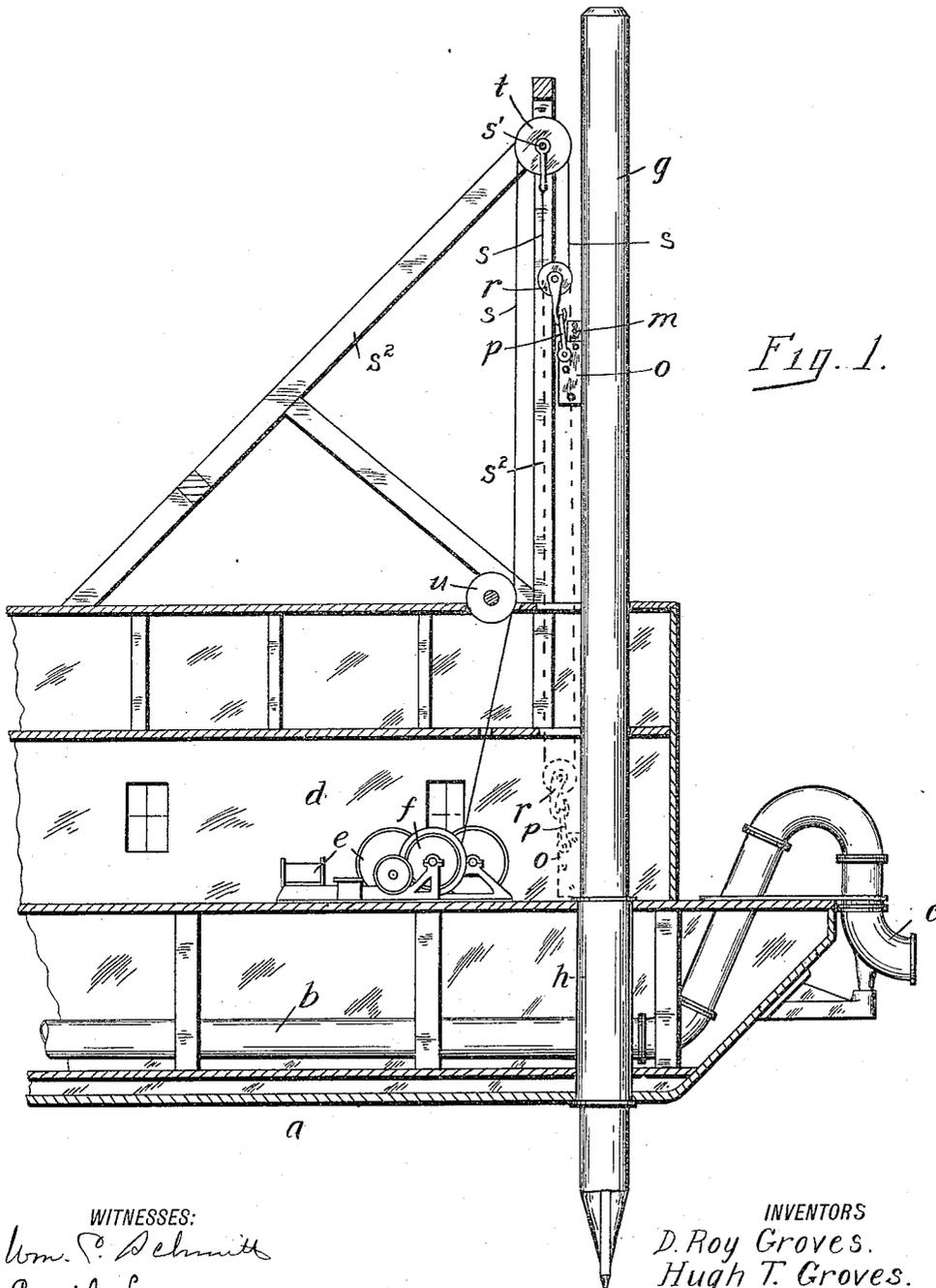


Fig. 1.

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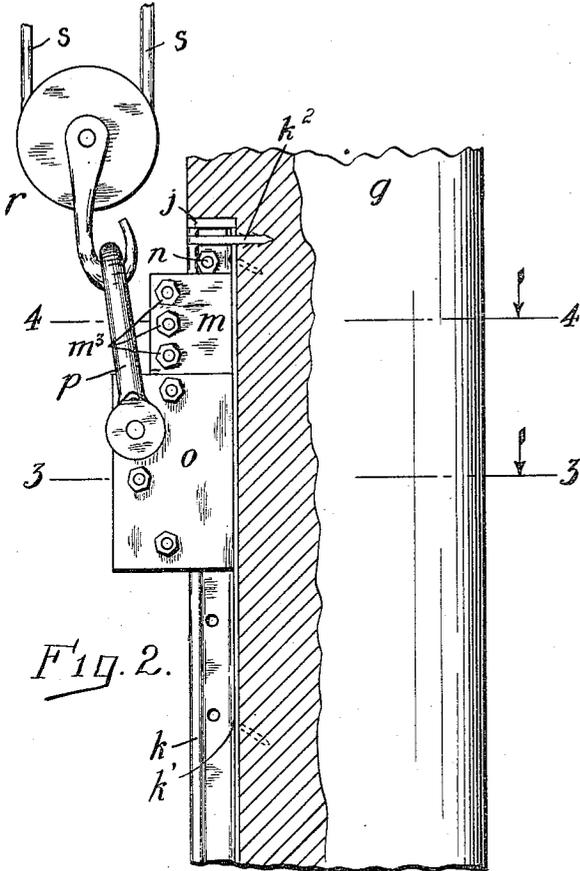


Fig. 2.

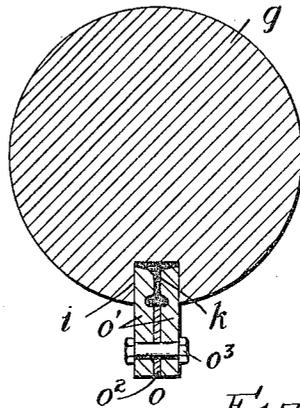


Fig. 3.

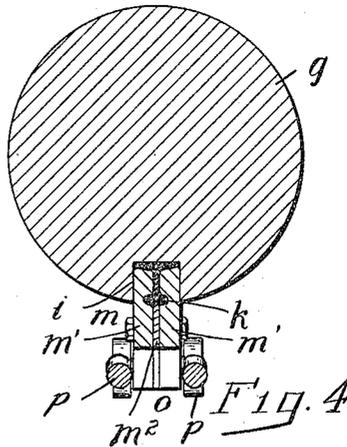
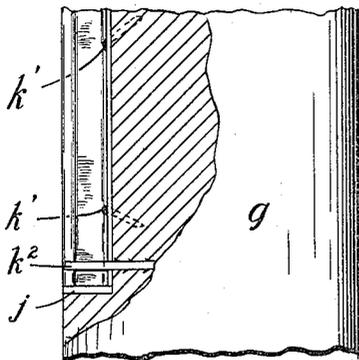


Fig. 4.

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SPUD LOWERING AND HOISTING MEANS FOR DREDGES.

1,169,396.

Specification of Letters Patent.

Patented Jan. 25, 1916.

Application filed April 29, 1914. Serial No. 835,297.

To all whom it may concern:

Be it known that we, HUGH T. GROVES and D. ROY GROVES, citizens of the United States, and residents of the city of Portland, county of Multnomah, State of Oregon, respectively, have invented a new and useful Improvement in Spud Lowering and Hoisting Means for Dredges, of which the following is a specification.

Our invention relates to improvements in the means now commonly used for hoisting the spuds of dredges. The common means provided on dredges for advancing the same while at work consist of two spuds on the aft end of the dredger; and by using the spuds alternately as pivots the dredge may be advanced along the channel being dredged. The present practice is to lift these spuds by hoisting cable. This mode works satisfactory when the spud is being hoisted; but, when the spud is dropped, the force of momentum and the inability of the engine operator to throw in the clutch instantaneously will cause the hoisting cable to continue unwinding from the winding drum after the spud has stopped its descent; and in consequence a number of coils will run loose off the drum. Then when later the spud is again to be hoisted, these coils will not wind evenly on the drum, but will overlap each other, and the shearing stress thrown on the crossed coils by the weight of the spud will have a tendency to cut and break the cable, thus imposing a loss of time in addition to the expense of repairing the cable, all of which is very costly.

One of the main objects of my invention is to provide a device for taking care of the slack cable after the required length has been "paid off", as mentioned. To this end I provide a sliding connection between the hoisting cable and the spud, so that when the spud is dropped, the sliding connection will remain free to drop still farther, and thereby keep the unwinding cable taut until the operator has had time to stop the drum of the engine.

The details of construction and mode of operation of my improvement is hereinafter fully described.

In the accompanying drawings: Figure 1 is a side elevation of a spud hoisting means embodying my improvement; a portion of the dredge is shown in section so as to illustrate the operation of my invention more definitely; Fig. 2 is a larger-scale fragmental

view showing a portion of the spud and the sliding connection therewith of the hoisting cable; Fig. 3 is a cross sectional view taken approximately on the line 3—3 of Fig. 2; and Fig. 4 is a cross sectional view taken approximately on the line 4—4 of Fig. 2.

a represents a dredge, *b* is the suction pipe, and *c* is the swivel end of same.

d is the engine room of the dredge and *e* is the engine used for operating the unwinding drum *f*. Each spud, *g*, may be raised and lowered through openings provided in the body of the dredge, the fixed sleeve *h* serving as a bearing to prevent the spud from moving laterally. As shown in Figs. 2, 3 and 4, a longitudinal groove, *i*, is made in the spud *g*, and end-thrust plates *j* are fixed therein, as shown in Fig. 2. A steel rail *k* is fixed in the groove *i* between the end-thrust plates, being held in place by the barbed drift bolts *k'* and the barbed U-bolts *k''*. Firmly clamped, at some convenient point, on the rail *k* is the stop *m*. This stop comprises side-plates *m'* and the wedge plate *m''*; the side plates are adapted to fit snugly around the rail (see Fig. 4) and bolted together through the wedge plate by the bolts *m'''*. By this clamping arrangement the stop may be adjusted to any point on the rail. An auxiliary stop *n*, consisting of a bolt threaded in the upper end of the rail, acts as an emergency or safety stop in case the stop *m* should ever work loose and slip up when the spud is being hoisted. A traveler, *o*, is slidably mounted on the rail *k* below the stop *m*, and comprises two side plates *o'* and a spacer plate *o''*, clamped together by the bolts *o'''*. This traveler is adapted to slide freely on the rail, being limited in its upward movement by abutting against the stop *m*. A shackle *p* is pivotally attached to the traveler *o* and a block *r* is hooked into such shackle. The hoisting cable *s* has one end made fast to a clevis supported by the transverse shaft *s'* at the upper end of the standards *s''*, and passes through the block *r* and up over a pulley *t*, the latter being also located on the shaft *s'*. The cable then runs over the pulley *u* and thence to the winding drum.

The operation of my device is as follows: Let it be assumed that the spud is in its elevated position, as shown in Fig. 1. When the engine operator releases the clutch on the winding drum the spud will drop until it strikes the bed of the stream; but on account

of the length of rail, the traveler *o* will continue sliding down after the spud has stopped, thereby keeping the cable *s* taut until the operator has had time to throw in his clutch to hold the engine drum against revolving. When the spud is to be hoisted, the traveler *o* will slide freely up the rail until it contacts with the stop *m*, and then will grip and carry the spud up with it to the elevation desired.

We claim:

1. In a device of the character described, a spud provided with a longitudinal groove, a rail secured in such groove, a traveler mounted on said rail, a stop on the rail at the top, in combination with hoisting means including a cable fastened to said traveler.

2. In a device of the character described, a spud provided with a longitudinal groove, a rail secured in such groove, a traveler mounted on said rail, a stop adjustably fastened on the rail at the top, in combination with hoisting means including a cable fastened to said traveler.

3. In a device of the character described, a spud provided with a longitudinal groove, a rail secured in such groove, a traveler mounted on said rail, a stop on the rail at the top, an auxiliary stop, in combination with hoisting means including a cable fastened to said traveler.

4. In a device of the character described, a spud provided with a longitudinal groove, a rail secured in such groove, a traveler mounted on said rail, a stop adjustably fastened on the rail at the top, an auxiliary stop fastened on the rail above said other stop, in combination with hoisting means including a cable fastened to said traveler.

5. In a device of the character described, a spud provided with a longitudinal groove, a rail secured in such groove, thrust-plates affixed in the ends of the groove, a traveler

mounted on said rail, a stop on the rail at the top, in combination with hoisting means including a cable fastened to said traveler.

6. A spud, for the purpose mentioned, provided with a longitudinal groove, a rail secured in such groove, a traveler mounted on said rail, a stop on the rail at the top, in combination with hoisting means including a cable fastened to said traveler, and the traveler adapted for attaching a cable thereto.

7. A spud, for the purpose mentioned, provided with a longitudinal groove, a rail secured in such groove, a traveler mounted on said rail, a stop adjustably fastened on the rail at the top, in combination with hoisting means including a cable fastened to said traveler, and the traveler adapted for attaching a cable thereto.

8. A spud, for the purpose mentioned, provided with a longitudinal groove, a rail secured in such groove, a traveler mounted on said rail, a stop adjustably fastened on the rail at the top, an auxiliary stop, in combination with hoisting means including a cable fastened to said traveler, and the traveler adapted for attaching a cable thereto.

9. A spud, for the purpose mentioned, provided with a longitudinal groove, a rail secured in such groove, thrust-plates affixed in the ends of the groove, a traveler mounted on said rail, a stop adjustably fastened on the rail at the top, an auxiliary stop fastened on the rail above said other stop, in combination with hoisting means including a cable fastened to said traveler, and means on the traveler for attaching a cable thereto.

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