J. B. PHILLIPS.

LEVER CONTROLLED DEVICE FOR HOISTING MECHANISM.

APPLICATION FILED DEC. 26, 1912.

1,091,160. Patented Mar. 24, 1914.

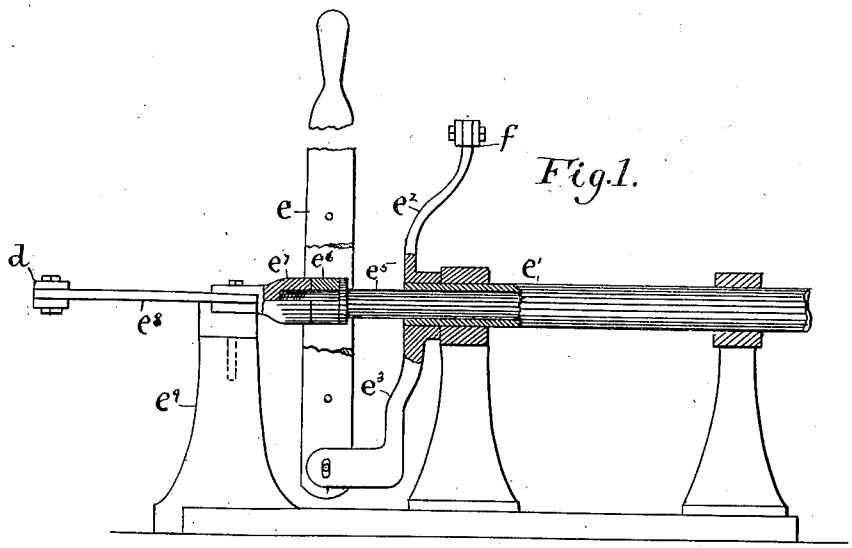


Fig. 1.

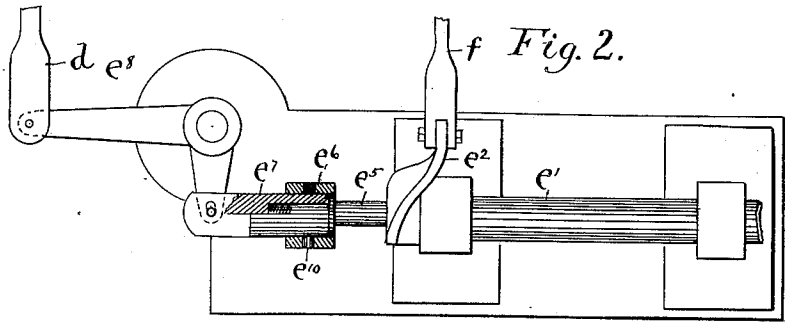
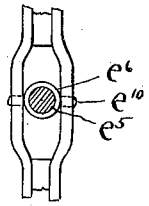


Fig. 2.

Fig. 3.



Witnesses:
B. M. Hunter
C. B. Creighton

Inventor:
James B. Phillips
by S. W. Bates
Atty.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES B. PHILLIPS, OF PORTLAND, MAINE.

LEVER-CONTROLLED DEVICE FOR HOISTING MECHANISM.

1,091,160. Specification of Letters Patent. **Patented Mar. 24, 1914.**

Application filed December 26, 1912. Serial No. 738,562.

To all whom it may concern:

Be it known that I, JAMES B. PHILLIPS, of Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Lever-Controlled Devices for Hoisting Mechanism, of which the following is a specification.

My invention relates to a two motion control for hoisting, dredging and other like mechanism where it is desirable that one man shall with one hand control two motions.

In the use of what are called "one man diggers" for hoisting coal, for steam shovels, dredgers and other like mechanism the single operator is called upon to control in some cases as many as five different motions. It thus becomes important that he should control two different motions with one hand, as for instance hoisting the bucket and running the trolley in and out.

It is to controlling mechanism by which with one hand the operator may easily control two different motions that my invention is directed and it consists in the combination of parts as hereinafter set forth and claimed.

My invention may best be understood by reference to the accompanying drawing in which is shown the preferred form of my invention constructed to be used in connection with hoisting mechanism of any well known type.

In the drawing, Figure 1 is a front elevation with portions in section, Fig. 2 is a plan of the same likewise partly in section, and Fig. 3 is a section on the line x x of Fig. 2.

The two motions which my mechanism is designed to control are effected by means of a hand lever adapted to swing in two different paths at right angles to each other, its motion in each path serving to operate a reach rod or other equivalent connecting device connecting with that portion of the hoisting mechanism which it is desired to control.

As here shown, I provide a hollow shaft e' journaled in suitable bearings and carry an arm e^2 to which is connected means for operating one of the controls of the hoist as the reach rod f and carrying also a fulcrum arm e^3 to the end of which is pivoted the split hand lever e. The connection between the lever e and the shaft e' is made by means of a spindle e^5 which fits in the hollow shaft e' and is longitudinally slidable and rotatable therein. Means are provided by which the lateral movement of the lever e on the fulcrum arm as a center will operate a reach rod or other like connection which is connected with the other element of the hoisting mechanism which is to be controlled. As here shown, the end of the spindle passes through a ring e^6 and is screwed into the hub of a bracket e^7 to the end of which is pivoted a bell crank lever e^8 and this is in turn pivoted by a vertical pivot to the standard e^9. The ring e^6 is pivoted between the two parts of the split lever by trunnions e^{10} so that as the lever is moved laterally on the arm e^3 as a center it works the bell crank lever e^8 to which is connected the reach rod d. It will be seen that when the lever is moved straight ahead or at right angles to its main shaft it operates the reach rod f, the arm e^3 revolving with the lever and the ring turning with the spindle e^5. When the lever is moved laterally the ring e^6 is made to move the bell crank lever and the reach rod. It is evident that either of the motions of the lever e may be utilized for operating one of any two of the motions of the hoisting mechanism as for instance, the straight motion of the lever may be used for operating the hoisting and lowering or the opening and closing drum, leaving the lateral motion to be utilized for traversing the trolley.

It will be understood that in using the term "reach rod" I intend to include a cord rope or any like means by which pull may be exerted on an operative part.

It is evident that the lateral motion of the lever may be communicated to any of the controls of the hoist by other means than the bell crank lever and reach rod herein illustrated.

It will be seen that the connection between the lever e and the shaft e' is essentially a universal joint so the lever may be moved in any plane and this connection may be made otherwise than herein shown, so long as the lever is capable of motion in two planes at right angles to each other.

I claim:—

In a lever controlled device for hoisting mechanism, the combination of a hollow shaft, a spindle in said shaft and longitudinally movable therein, a ring on said spindle, a split lever embracing said ring

and pivoted thereto, a bell crank lever, a bracket connecting the same with said ring, an arm secured on said shaft and pivoted to the end of said lever, a reach rod connected with said bell crank lever and a reach rod connected with and operated by the rotation of said shaft.

In testimony whereof I have affixed my signature, in presence of two witnesses.

JAMES B. PHILLIPS.

Witnesses:
S. W. BATES,
C. B. CREIGHTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."