L. COBB.

CABLE HOIST.

APPLICATION FILED JUNE 19, 1911.

**1,104,964.** Patented July 28, 1914.

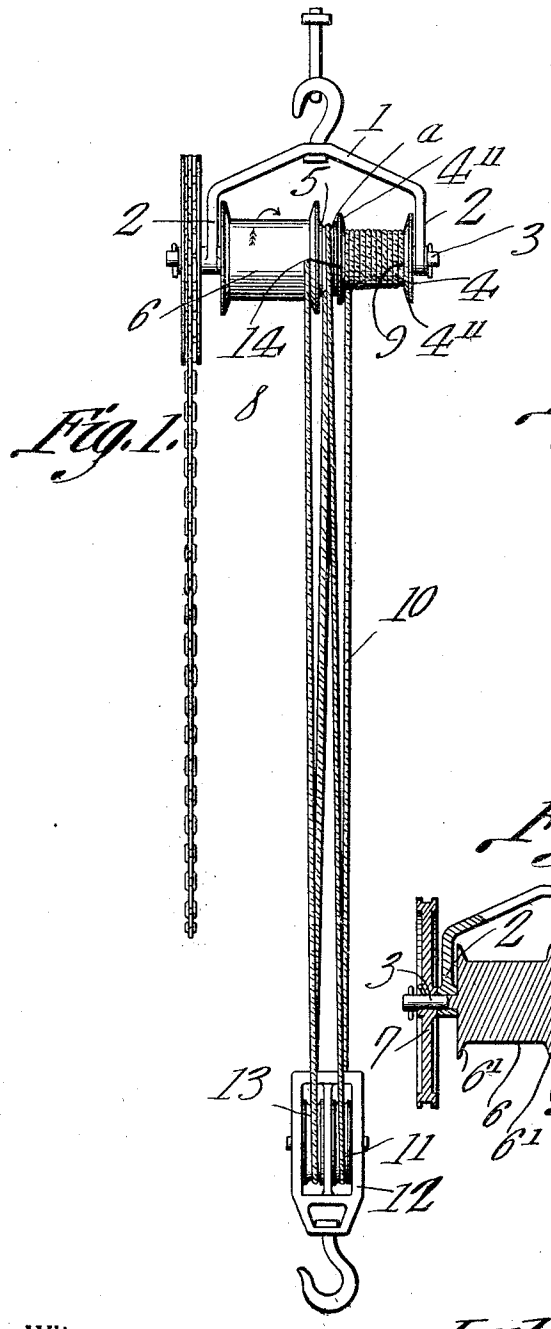



Fig. 1.

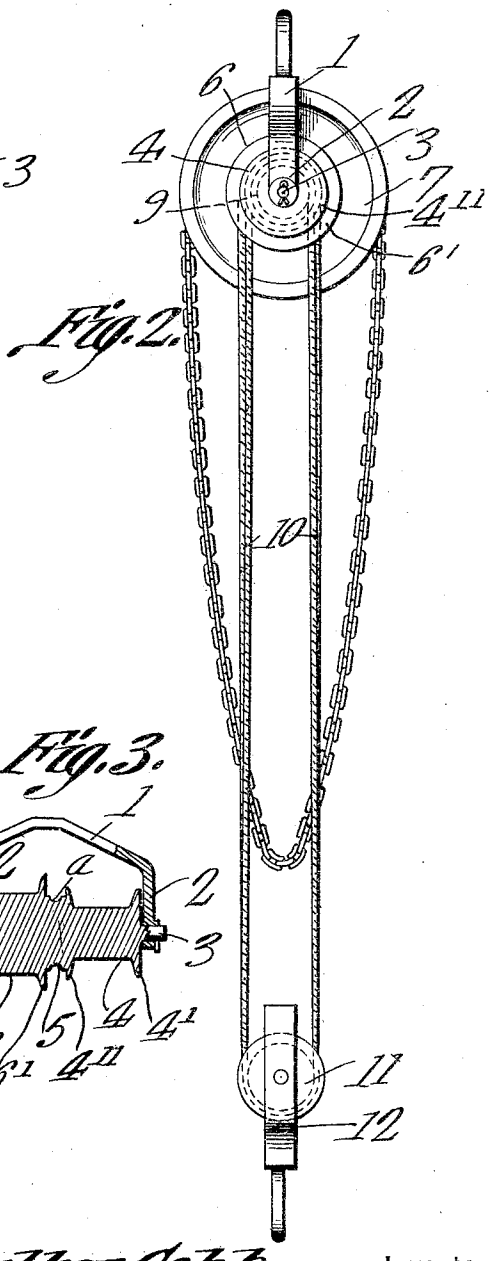



Fig. 2.




Fig. 3.

Witnesses

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# UNITED STATES PATENT OFFICE.

LUTHER COBB, OF OOLITIC, INDIANA, ASSIGNOR OF ONE-FOURTH TO WILLIAM E. CLARK, ONE-FOURTH TO ASA C. CLARK, AND ONE-HALF TO CURTIS TODD, OF LAWRENCE COUNTY, INDIANA.

## CABLE-HOIST.

1,104,964. Specification of Letters Patent. Patented July 28, 1914.

Application filed June 19, 1911. Serial No. 633,969.

*To all whom it may concern:*

Be it known that I, LUTHER COBB, a citizen of the United States, residing at Oolitic, in the county of Lawrence and State of Indiana, have invented a new and useful Cable-Hoist, of which the following is a specification.

This invention relates to improvements in cable hoists, the primary object of the invention being the provision of a gearless cable hoist, in which the main lifting member comprises a series of integral or keyed drums, said drums having the same axis but being of different diameters, the drums being preferably three in number and with the tread of the central one just sufficiently large to guide a single strand of rope or other flexible cable.

A further object of this invention is the provision of a gearless hoist, having a main frame in which is journaled a series of three different diametered drums, keyed together for simultaneous rotation and provided with a drive chain receiving pulley for rotating the same, the outer drums of the series having the ends of the flexible connection or rope connected thereto while the inner drum is of only a sufficient size to accommodate the passage of a single strand of said flexible connection, the said flexible connection being so threaded as to pass from one of the drums around a single pulley of a double sheave upwardly and over the central drum and down and around the remaining pulley of the sheave and up to the other outer drum of the hoisting mechanism. By this mechanism the heavy gears and heavy chains used in connection with most of the cable hoists is dispensed with, and a very light, simple and durable mechanism is provided.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings—Figure 1 is a front elevation of the complete device in operable position, the cable being wound upon the smaller drum and ready for movement to be unwound therefrom upon the larger drum. Fig. 2 is an end view taken from the direction of the arrow in Fig. 1. Fig. 3 is a transverse cross sectional view through the three drums and operating pulley thereof.

Referring to the drawing, the numeral 1 designates a main supporting frame or yoke provided with the downwardly projecting eyed arms 2 for the reception of the cylindrical shaft 3 of the main hoisting device. This main hoisting device, as clearly shown, comprises the outer or smaller diametered drum 4 provided with the circumferential rims or flanges 4 and 4′, the main or larger drum 6 which is of a larger diameter, but of substantially the same length as the drum 4, and is provided with its circumferential peripheral flanges or rims 6′ the inner flanges 6′ and 4′ of the respective drums or spools, providing the inner or clamping drum 5, provided with a single groove as at *a* for the reception of a single strand of the hoisting cable or rope 10. As clearly shown in Figs. 1 and 2 of the drawings, the cable 10 has one end connected first to the body of the spool or drum 4, as at 9, and sufficiently of the cable is wound thereon to fill the same as indicated in Fig. 1. The cable is now passed downwardly, and over the sheave or pulley 11 journaled in the sheave frame 12, and then passed upwardly, as indicated by the arrows and over the intermediate grooved pulley 5 and down again where it is threaded over the pulley 13, mounted in the sheave 12, and again carried upwardly and connected at 14 centrally of the body of the drum 6 near the inner rim or flange 6′.

Mounted upon, so as to rotate the shaft 3 and exterior of the frame 1, is a chain actuated pulley 7 over which passes the operating and controlling chain 8.

In constructing this device, the drum 6 is preferably of substantially the same diameter as it is of length between the flanges 6′, while the drum 4 is substantially one half of the diameter of the drum 6. The diameter of the drum 5 is intermediate of the diameters of the drums 4 and 6, that is should the drum 6 be six inches in diameter the drum 4 three inches in diameter, the drum 5 would be approximately four inches in diameter.

The object to be lifted or hoisted is connected to the hooked end of the sheave 12 and the cable 8 is operated so as to rotate the shaft and drums in the direction of the arrow Fig. 1 thus winding the cable 10 upon the drum 6 and simultaneously unwinding the same from the drum 4, the portion of the cable between the two drums 4 and 6, and upon the drum 5 moving relatively fast, and as the drum 6 is of twice the diameter of the drum 4, one rotation thereof, will take twice as much cable up upon the said drum 6 as will be unwound from the drum 4, thus gaining each rotation of the shaft the difference between the amount wound upon the drum 6 and that wound from the drum 4, that is the pulley sheave 12 would be lifted one fourth the height of the amount of cable wound upon the drum 6, thus gaining each rotation thereof so that the sheave 12 may be lifted to the desired height. By means of the drum 5, the sheave 12 with its weight may be retained in any desired position, and when it is desired to lower the said weight carried by the sheave 12, it is simply necessary to rotate the chain 8 in the opposite direction to the arrow shown in Fig. 1 and the respective drums will be rotated so that the sheave will be lowered and the weight or article carried thereby deposited at the desired place.

From the foregoing description taken in connection with the drawings it is evident that an extremely simple device for hoisting is provided and one wherein the services of gears and heavy chains is dispensed with, the simple employment of a series of three horizontally disposed and different diametered drums, accomplishing the same results and providing a means easily moved about.

What is claimed is:

In a hoist, a supporting frame having two apertured terminals; an integral rotatable member forming two drums of varied diameters, an intermediate pulley of an average diameter, each of the drums being provided with two circumferential rims, the rims adjacent the pulley acting as the rims for the pulley to assist in maintaining a cable therein, and two oppositely disposed journaling studs, one stud being longer than the other; a block; two independently rotatable pulleys journaled in the block; a cable having its intermediate portion trained over the intermediate pulley and over the two latter pulleys, the terminals of the cable being attached to the respective two drums and designed to be wound upon and unwound from the respective drums; and an actuating pulley keyed upon the longer stud for rotating the integral rotatable member.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

LUTHER COBB.

Witnesses:
JOHN H. UNDERWOOD,
THOS. C. UNDERWOOD.

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