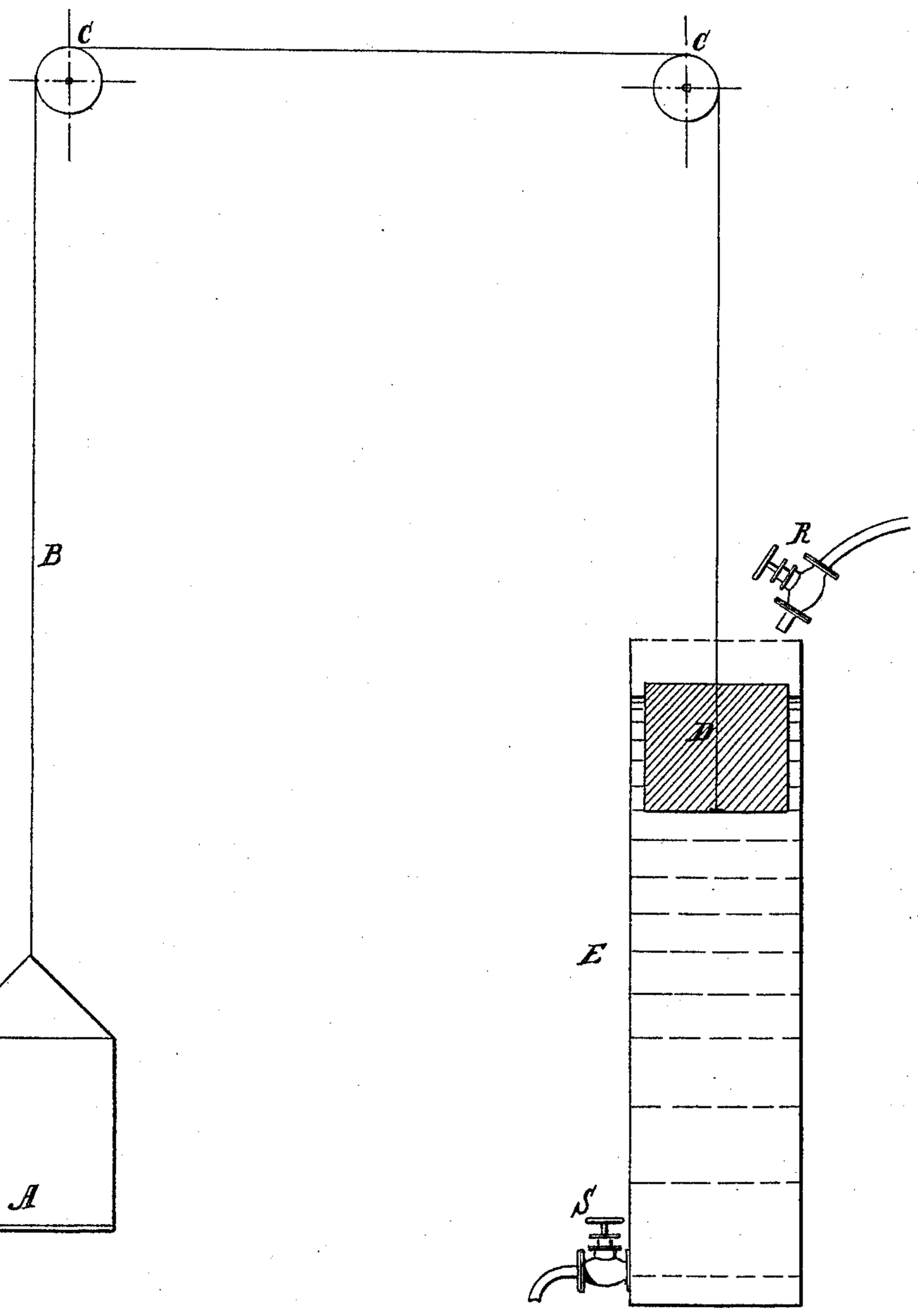
(No Model.)

G. WINCQZ & H. MACHEPY.

HYDRAULIC LIFT.

No. 581,799. Patented May 4, 1897.



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UNITED STATES PATENT OFFICE.

GRÉGOIRE WINCQZ AND HUBERT MACHEPY, OF SOIGNIES, BELGIUM.

HYDRAULIC LIFT.

SPECIFICATION forming part of Letters Patent No. 581,799, dated May 4, 1897.

Application filed December 2, 1896. Serial No. 614,218. (No model.) Patented in Belgium October 28, 1896, No. 124,452.

To all whom it may concern:

Be it known that we, GRÉGOIRE WINCQZ, a citizen of Belgium, and HUBERT MACHEPY, a citizen of France, residing at Soignies, Belgium, have invented certain new and useful Improvements in Hydraulic Lifts, (for which we have obtained a patent in Belgium, No. 124,452, dated October 28, 1896;) and we 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 appertains to make and use the same, reference being had to the accompanying drawing, and to letters of reference marked thereon, which forms a part of this specification.

Elevators, whether for the public or for merchandise, have heretofore generally been operated by mechanical instrumentalities, as by winch or steam or electrically or by means of simple or compound hydraulic pistons. An absolutely regular function is not attainable by the use of these mechanisms, because the precision of the function is dependent upon the arrangement of the mechanical appliances and upon the intelligence, attention, and care of the operator. In hydraulic elevators, on the other hand, a simple leakage may suffice to start the elevator without possibility of stopping it.

The object of our invention is to avoid these difficulties by the substitution for the mechanical appliances of a hydrostatic balance device.

In order that our invention may be fully understood, we will describe the same in detail in conjunction with the accompanying drawing, which illustrates an elevator embodying our invention by a sectional more or less schematic elevation.

As shown in said drawing, a chain or cable B, running over the pulley C, has secured to one end the elevator cage or platform A and to the other end a counterbalancing-weight D in a body of liquid, as water, contained in a reservoir E, that is provided with a discharge cock or valve S, means being provided to supply water to such reservoir, as from a valved pipe R, connected with a suitable source of water-supply, the arrangement being such as to form a hydrostatic balance—that is to say, the counterweight equilibrates or balances the weight of the cage or platform when the former is not completely immersed in the water, and therefore performs the function of a float, so to speak. If the weight of the load placed in the cage or on the platform A is less than that of the volume of water displaced by the counterweight D, it will simply be necessary to destroy the equilibrium of the hydrostatic balance by opening the stop-cock S of the reservoir E and allowing the water therein to flow out, when the balancing-weight will descend and the cage or platform ascend, the reverse being the case when water is again admitted to reservoir E through pipe R, the stop S being of course closed.

Although we have shown in the drawing a single cable or chain for the sake of simplicity, yet we desire it to be understood that differential or multiplying hoisting or power-transmitting appliances can be used with a view to reducing the height of the reservoir E, so that the speed of the cage or platform will be a multiple of the speed of the counterbalance-weight, as will be readily understood, and as these appliances do not *per se* form a part of our invention we have deemed it unnecessary to illustrate the same. So, also, will the number of pulleys C depend upon the uses or application of our invention, these pulleys acting simply as a means for transmitting the power utilized by the interruption of the equilibrium of the hydrostatic balance.

The power, as is readily seen, is a cheap one wherever a liquid of any kind is available, the installation is a simple and cheap one as compared with that for elevators now in general use, and the system is applicable to all purposes and practically in all locations, does not entail great expenditures in repairs, can be operated by any one of ordinary intelligence, while its perfect function is assured at all times.

The uniformity of the speed of the cage or platform is, as will also be readily understood, established by the hydrostatic equilibrium, so that a brake or other safety appliance, now absolutely indispensable, is not indispensable to the safe operation of elevators embodying our invention.

Having thus described our invention, what we claim as new therein, and desire to secure by Letters Patent, is—

The combination with the cage or platform of an elevator and a vessel for containing a body of water, of a counterbalancing-weight freely suspended in such body of water, means for varying the volume of water in said vessel to cause the counterbalancing-weight to ascend or descend, and a rope connection between the weight and cage or platform, and suitable guide-pulleys for said rope, for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

GRÉGOIRE WINCQZ.
H. MACHEPY.

Witnesses:
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