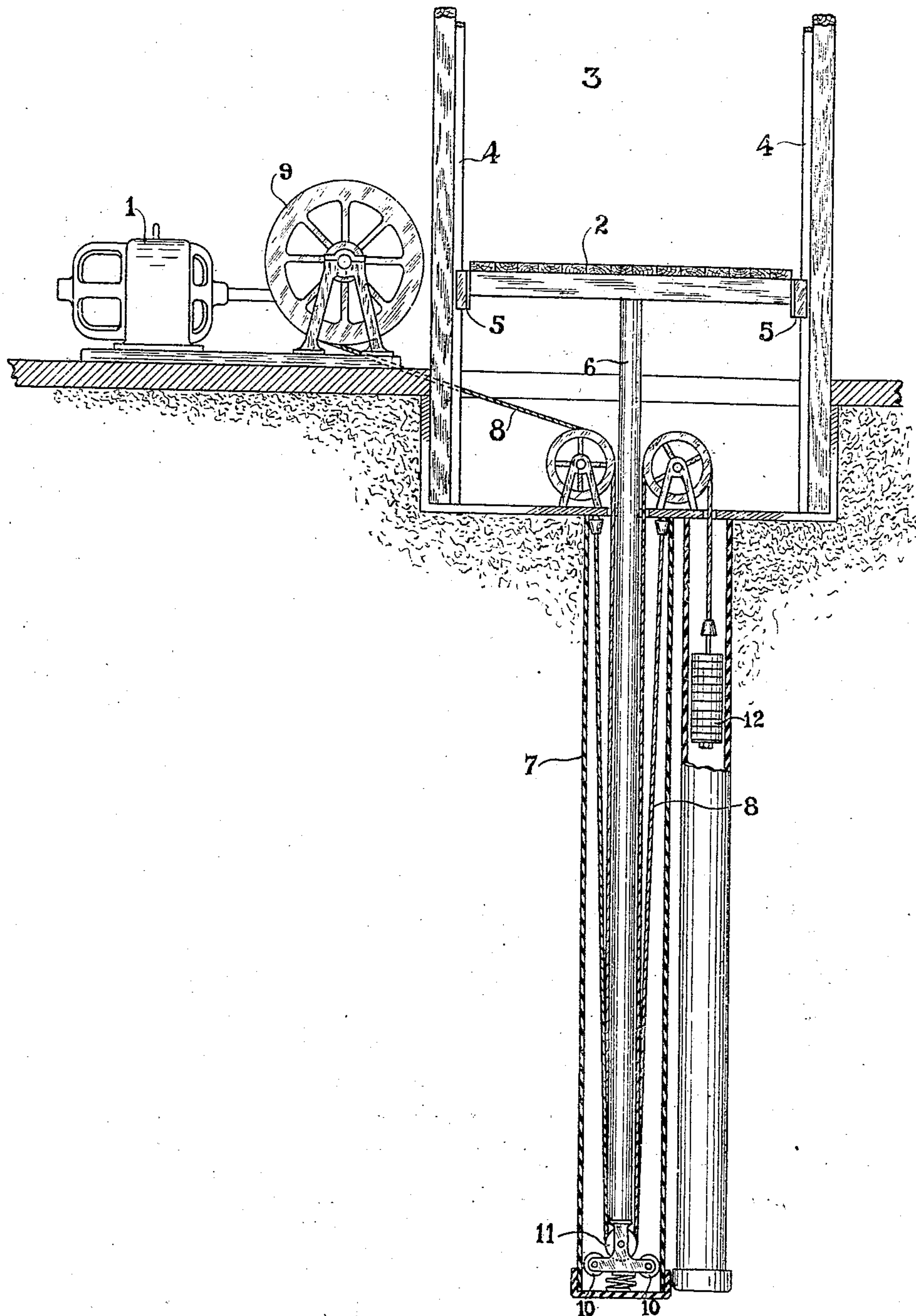


H. C. ANDERSON.  
HOISTING APPARATUS.  
APPLICATION FILED SEPT. 26, 1907.

917,919.

Patented Apr. 13, 1909.



WITNESSES:

J. C. Anderson  
Paul H. Woodruff

INVENTOR.

Henry Carl Anderson



# UNITED STATES PATENT OFFICE.

HENRY CARL ANDERSON, OF CHICAGO, ILLINOIS.

## HOISTING APPARATUS.

No. 917,919.

Specification of Letters Patent.

Patented April 13, 1909.

Application filed September 26, 1907. Serial No. 394,640.

*To all whom it may concern:*

Be it known that I, HENRY CARL ANDERSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Hoisting Apparatus, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to hoisting apparatus and has for its object the provision of an improved device in which various successful features are combined into one and the same machine through the agency of the improved apparatus aforesaid.

More particularly does my invention relate to an elevator system in which a car may be operated by electric means without the use of ropes fastened to the top of the car.

I herewith describe my invention more in detail by reference to the accompanying drawing which illustrates one embodiment of my improved system.

I here represent a prime mover 1 which may of course in suitable cases, consist of manual mechanism, and which prime mover is advantageously placed to operate a hoisting device. The hoisting device, as I show it, consists of a platform 2 which operates in a shaft 3. Guide rails or guides 4 4 longitudinally of the shaft are engaged by shoes 5 5, thereby to define the vertical movement of the platform. A plunger or ram 6 is fastened to the platform 2 and projects into a cylinder 7.

To obtain the desired advantage of eliminating the use of water power and eliminating the use of over head cables to suspend the car, I provide a hoisting chain or cable 8 which through the interposition of suitable hoisting mechanism 9 raises and lowers the platform 2 through the agency of the prime mover 1. The chain or cable forms a sort of flexible driving connection between the platform and ram on the one hand and the prime mover on the other.

The plunger 6 is provided with guide rollers 10 10 so that the platform 2 with its shoes 5 5 in connection with the plunger 6 and its rollers 10 10 is maintained in the desired vertical position. The rollers 10 10 serve to maintain the ram in a vertical position by engaging the ram tube or guide as shown.

It will be seen that no overhead ropes are necessary to raise the car and no guides are necessary other than those specified. In some instances it will of course be found desirable to use the construction shown in the drawing wherein the cable 8 passes through a sheave 11 and is fastened to the floor of the shaft. Likewise a counter-weight 12 may be provided connected to the platform and plunger similarly to the connection of the cable 8 or otherwise.

It will be seen from the illustration that by means of my improved device no piston or pumping mechanism is needed at the bottom of the ram tube which ram tube in fact need be nothing more nor less than a guide for the proper operation of the rollers 10 10, but which is preferably inclosed to avoid the entrance of dust and grit to the interior. For the same reason as small openings as possible are provided where the cables enter said cylinder.

While I have herein shown and particularly described the preferred embodiment of my invention, I do not wish to limit myself to the precise construction and arrangement as herein set forth, but

Having thus described the preferred embodiment thereof what I claim as new and desire to secure by Letters Patent is:

1. An elevator comprising a suitable platform for receiving articles to be hoisted, a ram extending downwardly from said platform, a prime mover, a guide for said ram, guides for said platform, and a flexible tension member extending from said prime mover and to the lower portion of said ram for the purpose of moving said platform and ram.

2. An elevator comprising a platform adapted to receive articles which are to be removably placed thereon to be raised and lowered, a ram extending downwardly from said platform, a flexible tension member a prime mover associated by means of the flexible tension member with the lower portion of said ram for the purpose of raising and lowering said ram and platform, and suitable guides both for the ram and the platform limiting them to a substantially vertical movement.

3. An elevator comprising a suitable platform for receiving articles removably placed thereon, guides for said platform, a ram extending downwardly from said platform and firmly fixed thereto, guides for defining the



motion of said ram, a prime mover for raising and lowering said platform and ram, sheave mechanism and a flexible tension member operating through said sheave mechanism to  
5 transmit power from the prime mover to the platform and ram in a substantially vertical plane, said tension member being connected to the lower portion of said ram.

4. An elevator comprising a platform  
10 adapted to receive articles removably placed thereon which are to be raised or lowered, a ram permanently fixed to said platform and extending downwardly therefrom, a guide for the lower portion of said ram, a prime  
15 mover elevated above the bottom of said guide, a sheave mechanism whereby power

from said prime mover is exerted upon said ram and platform substantially vertically, and a flexible tension member for transmitting power from the said prime mover to said  
20 ram and platform, said tension member being associated with the lower portion of said ram, and said prime mover being elevated above the lowermost portion of said ram when in its highest position.

In witness whereof, I hereunto subscribe my name this 17th day of September, A. D. 1907.

HENRY CARL ANDERSON.

Witnesses:

J. C. A. ANDERSON,

PAUL H. WOODRUFF.

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