

915,947.

S. F. EVANS.  
ELEVATOR LEG DRIVE.  
APPLICATION FILED NOV. 1, 1906.

Patented Mar. 23, 1909.  
2 SHEETS—SHEET 1.

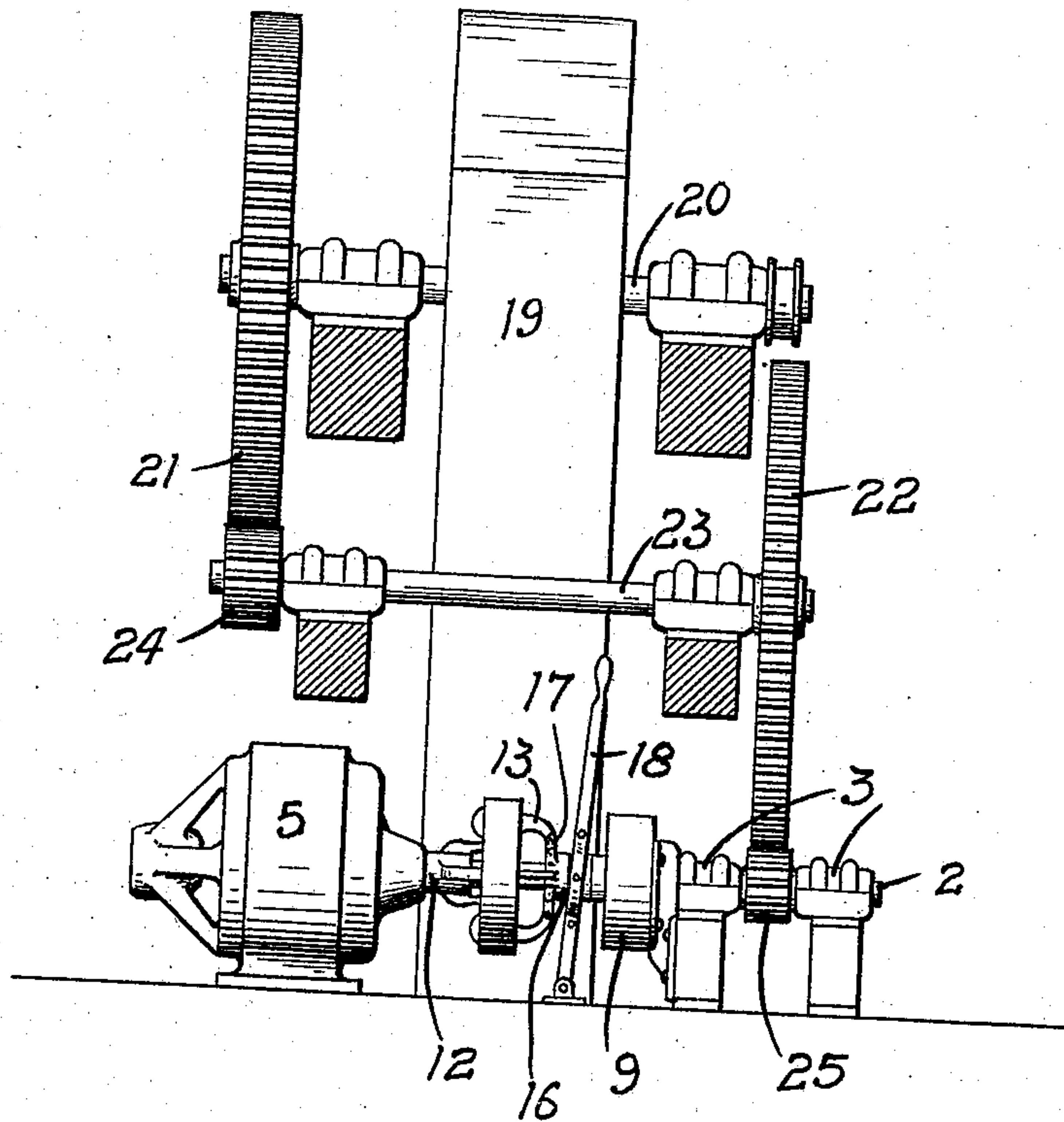


Fig 1.

WITNESSES  
*W. H. Johnson*  
*W. E. Greener*

INVENTOR  
SCOTT F. EVANS  
BY *Paul Paul*  
HIS ATTORNEYS

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# UNITED STATES PATENT OFFICE.

SCOTT F. EVANS, OF MINNEAPOLIS, MINNESOTA.

## ELEVATOR-LEG DRIVE.

No. 915,947.

Specification of Letters Patent.

Patented March 23, 1909.

Application filed November 1, 1906. Serial No. 341,538.

*To all whom it may concern:*

Be it known that I, SCOTT F. EVANS, of Minneapolis, Hennepin county, Minnesota, have invented certain new and useful Improvements in Elevator-Leg Drives, of which the following is a specification.

In handling grain in an elevator an electric motor is usually employed as a motive power and a non-reversing friction stop which forms the subject matter of a pending application for Letters Patent of the United States, Serial No. 335,600, filed by me September 21, 1906, prevents backward movement of the mechanism, and choking of the elevator leg, but I have found that when the motor stops by the cutting off of the power temporarily or for any reason, and the non-reversing mechanism holds the load and prevents choking of the leg, that the motor after stopping cannot again start the load until it has been previously operated up to its normal working speed. The turning of the current on the motor with the full load attached obviously having the effect only of burning out the motor.

The object, therefore, of my present invention is to provide means whereby a motor used in connection with a non-reversing stop mechanism can be operated independently of the stop and its connections until speeded up to the desired point, and at that time connected or coupled to the drive shaft to release the non-reversing stop mechanism and lift the load.

My invention consists generally in a shaft having a driving connection with an elevator leg and a non-reversing friction stop, a motor operating independently of said driving shaft and a clutch device whereby said driving shaft and the motor shaft can be coupled together.

Further, the invention consists generally in various constructions and combinations, all as hereinafter described and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a view illustrating the application of my invention to an elevator leg, Fig. 2 is a side view partially in section showing the construction of the apparatus.

In the drawing, 2 represents a driving shaft having bearings 3 and a pulley 4 for connection with an elevator leg (not shown).

5 is an electric motor mounted on a base 6

and having its shaft 7 concentric preferably with the shaft 2.

8 is a disk secured to the support of the bearings 3 and having a peripheral flange 9 and forming with the arms 10 and their bearing blocks a friction stop device covered by the pending application above referred to. I make no claim therefore in this case to the friction stop device except in combination with other elements.

11 is one member of a friction clutch secured on the shaft 2.

13 represents arms pivoted on the member 11 and having bearing blocks 14 to engage the surfaces 15 on the member 12.

A collar 16 is slidably mounted on the shaft 2 and pivotally connected with the arms 13 by links 17. An operating lever 18 is provided for the said collar.

19 represents the elevator leg, 20 the drive shaft for the elevator operatively connected with the shaft 2 through gears 21 and 22, shaft 23 and pinions 24 and 25.

The operation of the device is as follows: The lever 18 is operated to throw the clutch into its working position and the motor started to revolve the shaft 2 and transmit its motion to the elevator leg. In case the motor for any reason stops, the non-reversing device will automatically prevent backward movement of the mechanism. At that time the operator will throw the clutch out of its working position and release the motor shaft from its connection with the driving shaft. The motor can then be speeded up to the desired point running without any load, the stop mechanism holding it automatically and when the speed of the motor is sufficiently high, the clutch will be thrown to its working position again and the driving shaft coupled to the motor shaft. In this way a large amount of time and labor which are frequently wasted in getting the motor and its connections in running order again after the choking of the elevator leg, can be saved.

I do not in this application claim to have invented a motor, a friction clutch or a non-reversing means but I do claim a new and improved result obtained by the novel combination of these elements.

I claim as my invention:—

The combination with an elevator leg of a driving shaft having an operative connection with said leg, a non-reversing stop mechan-



ism provided in connection with said shaft  
and arranged to permit the free revolution  
of said shaft in one direction but positively  
locking it against movement in the opposite  
5 direction, a motor having a shaft and a  
clutch mechanism arranged to couple said  
motor shaft and said driving shaft together,  
and means for operating said clutch mechanism,  
said non-reversing mechanism preventing  
10 backward movement of said driving  
shaft and said motor shaft and said clutch

mechanism permitting said motor shaft to  
be disconnected from said driving shaft and  
the motor operated to its normal speed and  
connected while so operating, to said driving 15  
shaft.

In witness whereof, I have hereunto set  
my hand this 24th day of October 1906.

SCOTT F. EVANS.

Witnesses:

RICHARD PAUL,  
J. B. ERA.