

(No Model.)

D. A. ROBINSON.
MEANS FOR DRIVING ELEVATOR BELTS.

No. 511,212.

Patented Dec. 19, 1893.

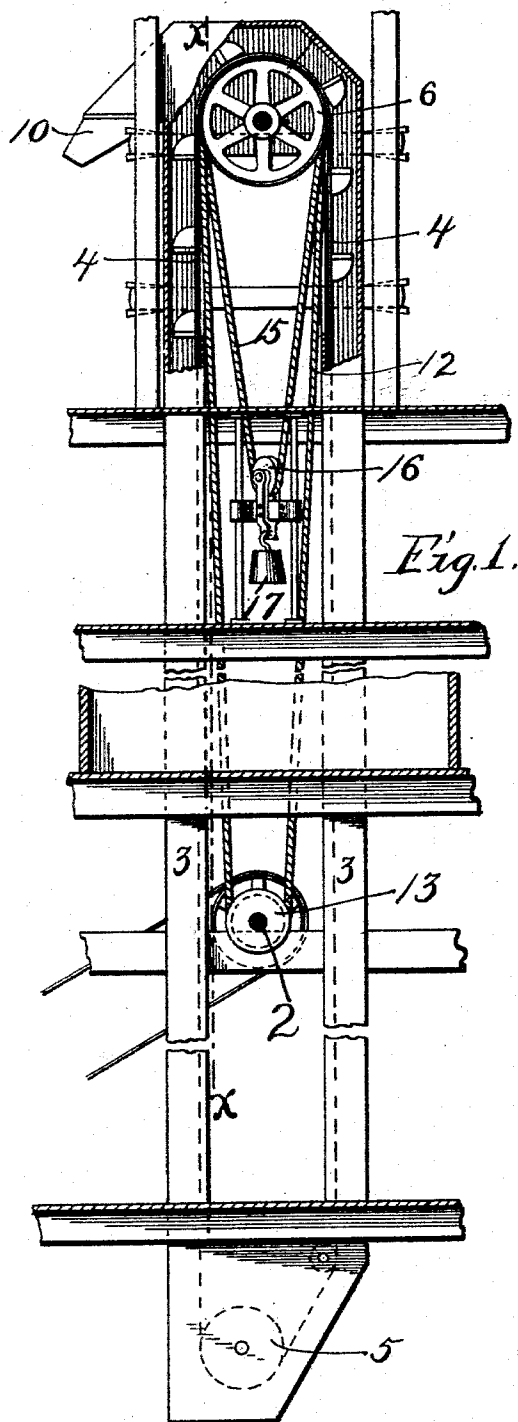


Fig. 1.

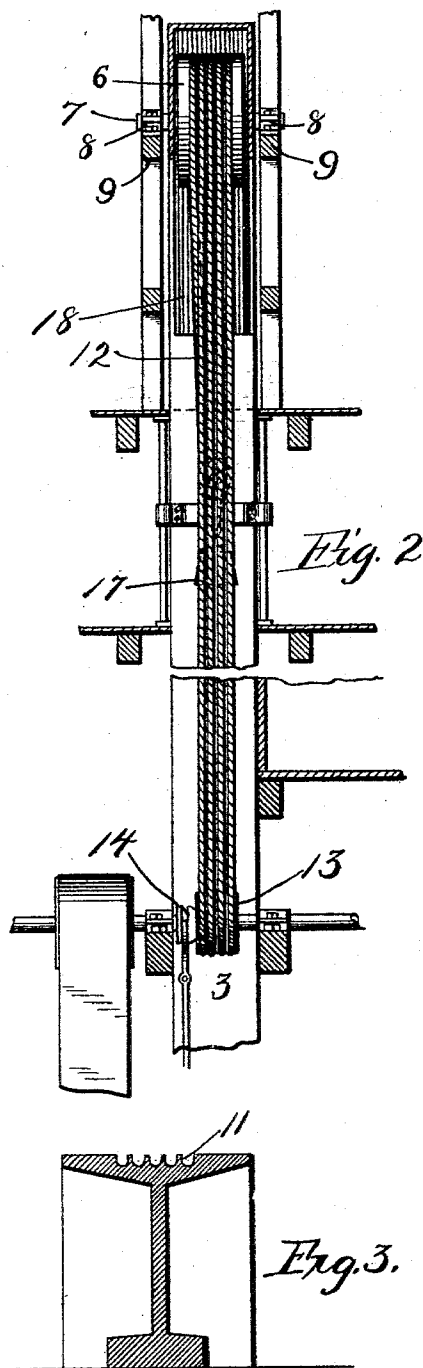


Fig. 2.

Fig. 3.

Witnesses
G. E. Purple
[Signature]

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MEANS FOR DRIVING ELEVATOR-BELTS.

SPECIFICATION forming part of Letters Patent No. 511,212, dated December 19, 1893.

Application filed September 27, 1892. Serial No. 447,026. (No model.)

To all whom it may concern:

Be it known that I, DIGHTON A. ROBINSON, of Minneapolis, county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Means for Driving Elevator-Belts, of which the following is a specification.

My invention relates to a simple, cheap and compact elevator drive adapted for employment in connection with the long drive shaft in the lower part of the building, and the principal object which I have in view is to render the arrangement of the driving belt more compact with respect to the elevator belt, thereby saving much bin room in the building.

To this end my invention consists in the combination with the elevator belt, and the head and boot pulleys thereof, of a shaft arranged in the lower part of the building and provided with the drive pulley arranged between the sides of the elevator belt, said head pulley provided with deep grooves, and a rope drive belt extending over said drive pulley and up between the sides of the belt, and accommodated in the grooves of the head pulley, whereby the rope belt is adapted to operate on said pulley beneath the wide elevator belt.

The invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a vertical elevation showing the elevator belts arranged to be driven by apparatus embodying my invention, portions being cut away to more clearly show the construction. Fig. 2 is a vertical elevation on the line $x-x$ of Fig. 1 the pulleys and belts being shown in full. Fig. 3 is a sectional detail showing the grooved head pulley.

As shown in the drawings, 2 represents the long shaft longitudinally arranged in the lower part of the building and extending between the casings 3 of the wide elevator belt 4, which belt passes beneath the boot pulley 5 and over the head pulley 6, arranged in the cupola of the building upon the short shaft 7, running in bearings 8, provided on the cross beams 9 of the cupola frame work. At the top the belt is inclosed in the usual head as shown, having the discharge spout 10. The head pulley in place of being smooth as usual, has the deep grooves 11 shown clearly in Fig.

3, and adapted to accommodate the several strands of the rope belt 12, which belt passes down between the casings of the elevator and over the grooved driving pulley 13, loosely journaled on the shaft 2 and adapted to be secured thereon by a suitable clutch mechanism 14. At the head pulley the outer and inner strands descend in the loop 15 to the angularly placed tension pulley 16 from which the weight 17 hangs. At the top the inner sides of the casings are cut away as shown by openings 18, to permit the approach of the ropes to the sides of the belt. The tops of the ropes on the head pulley thus complete its broad surface for the reception of the elevator belt 4, the movement of which is controlled by the position of the clutch 14 in the lower part of the building—one of which is arranged in connection with each elevator belt outfit in the building. Thus, it will be seen that I provide a rope drive which is confined within the space of the elevator belt and takes up no more of the bin room in the elevator building than must necessarily be employed for the elevator belt itself.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with an elevator belt, of the boot and head pulleys thereof, said head pulley provided with annular grooves, a drive shaft, a pulley thereon, and a rope drive belt passing therefrom over said head pulley and accommodated in the grooves thereof and beneath the elevator belt, substantially as described.

2. The combination, with an elevator belt, of the boot and head pulleys thereof, a main shaft arranged in the lower part of a building and extending between the running parts of said elevator belt, a grooved driving pulley provided on said shaft, a clutch in connection therewith, said head pulley provided with annular grooves in its surface, and a rope drive belt extending from said drive pulley up between the running parts of said elevator belt and accommodated in the grooves of said pulley and operating beneath the elevator belt thereon, substantially as described.

3. The combination, with the elevator belt, of the boot pulley thereof, the head pulley ar-

5 ranged in the upper part of the building and provided with the grooves 11, the short shaft thereof, the drive shaft arranged in the lower part of the building and between the running parts of said elevator belt, a clutch in connection therewith, the rope drive belt composed of several strands and extending from said drive pulley over said head pulley, being accommodated in the grooves thereof and

beneath the broad elevator belt, and a means for maintaining the tension of the rope drive belt, substantially as described.

In testimony whereof I have hereunto set my hand this 19th day of September, 1892.

DIGHTON A. ROBINSON.

In presence of—

C. G. HAWLEY,

F. S. LYON.