(No Model.)

E. B. JONES.

MECHANICAL POWER.

No. 307,308. Patented Oct. 28, 1884.

Fig 1.

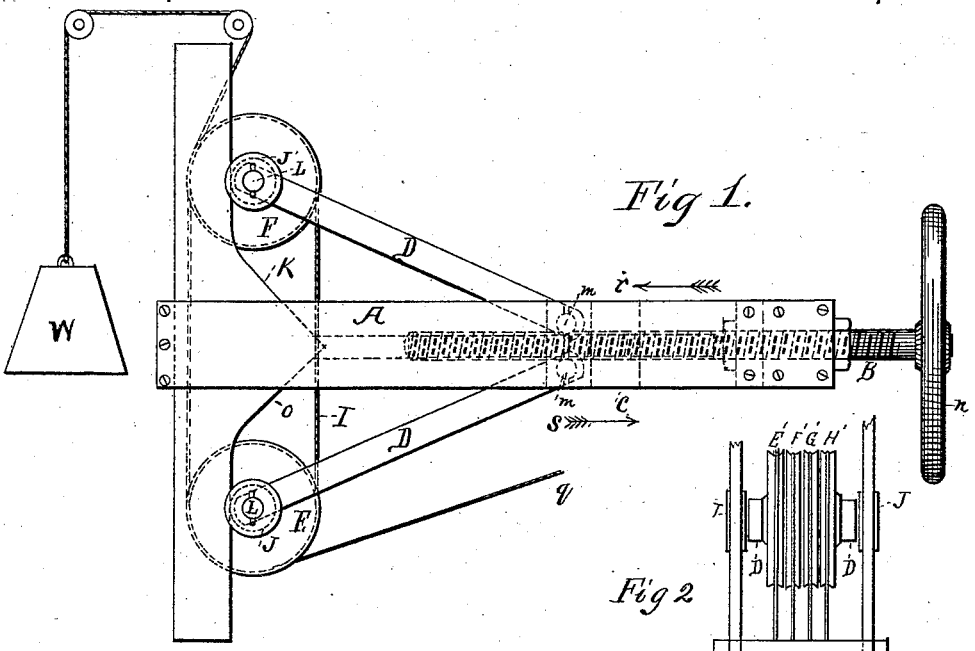


Fig 2

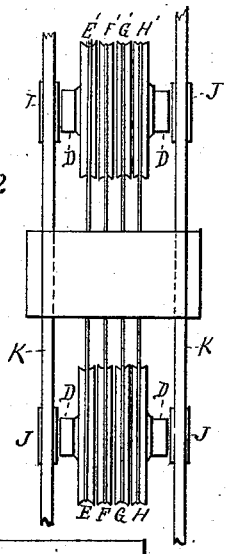
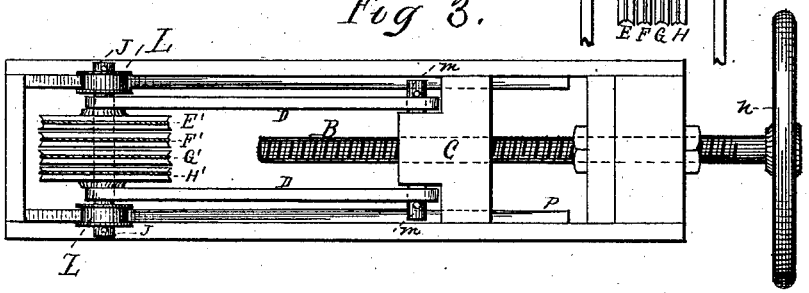


Fig 3.



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UNITED STATES PATENT OFFICE.

EPHRAIM B. JONES, OF PITTSBURG, PENNSYLVANIA.

MECHANICAL POWER.

SPECIFICATION forming part of Letters Patent No. 307,308, dated October 28, 1884.

Application filed May 22, 1884. (No model.)

To all whom it may concern:

Be it known that I, EPHRAIM B. JONES, of Pittsburg, in the county of Allegheny, State of Pennsylvania, have invented a new and useful Improvement in Mechanical Power for Elevators; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in the combination of two series of pulleys, rope or chain, toggle-levers, sliding head, and operating-screw, said mentioned parts constructed, arranged, and operating with relation to each other as will hereinafter more fully and at large appear.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 is a side elevation of my improvement. Fig. 2 is an end elevation of the same. Fig. 3 is a top view or plan of the same.

Reference being had to the accompanying drawings, A represents the frame for the mechanical power, which consists of the screw B or other motor, for imparting motion to a sliding head, C, said screw being fitted to screw-threads in said sliding head. On each side of the sliding head C are two trunnions, *m*, on which are pivoted levers D D D D, two of said levers being arranged on each side of said sliding head. In the forward end of the upper and lower pairs of the levers D D are journaled shafts L and L′. On the shaft L is arranged on the outside of the levers D D loose flanged pulleys J, and between said levers loose grooved pulleys E F G H. In the forward end of the upper pair of levers D D is journaled shaft L, on which in like manner is arranged loose flanged pulleys J′ and loose grooved pulleys E′ F′ G′ H′. The vertical bars K K of the frame A on their inner edge are provided with inclines *o o*. (Clearly shown in Fig. 1.) The screw B is provided with a hand-wheel, *n*, for turning said screw, and the sliding head C is provided on each side with recesses, into which is fitted guides *p*, secured to the side pieces of the frame A. The rope or chain *g* is attached to the frame A or other stationary thing, and is then passed under the pulley E, up over the pulley E′, and then down under the pulley F, and then up and over pulley F′, then down and under the pulley G, and then up and over the pulley G′, and then down under the pulley H, and then up and over the pulley H′, and attached to the elevator or other thing to be manipulated. In the present case a weight, W, is represented attached to the rope.

The skillful mechanic will be enabled from the foregoing description and reference had to the accompanying drawings to construct my improvement in mechanical power. I will therefore proceed to describe its operation, which is as follows: The screw B is revolved through the medium of the hand-wheel *n*. The revolving of the screw B will cause the sliding head C and toggle-levers D D D D to move forward, as indicated by the arrow marked *r*. The pulleys J J, moving on the inclines *o o*, will cause the toggle-levers to spread, thereby causing the shafts L L′ to move in opposite direction. By moving the screw B in opposite direction said shaft and pulleys will be moved toward each other. By these two movements of the screw B the weight W will be elevated by the first-mentioned movement and lowered by the second-mentioned movement of said parts, and said weight or other thing will be elevated sixteen times the distance that the screw B travels—that is to say, for every foot of travel of the sliding head C the weight W will be elevated or lowered sixteen feet.

By the combination of the inclines *o o* with the toggle-levers D D D D the power of the wedge will be combined with that of the toggle-lever and screw B, so that in the starting off of the machine or power herein described the inclines *o o* will greatly increase the power of the machine at the starting-point, so that the lost power common to the employment of toggle-levers when the levers are brought together is obviated, it being a well-known fact that the toggle-levers increase in power as they approach a straight line, and lose power as they recede from a straight line; hence the advantage of the inclines *o o*. In elevating

or lowering, the travel of the pulleys on shaft J between the toggle-levers D D increases in speed consecutively.

Having thus described my improvement, what I claim is—

The combination of a screw, sliding head, pulleys, inclines, and rope or chain, combined, arranged, and operating with relation to each other substantially as herein described, and for the purpose set forth.

E. B. JONES.

Witnesses:
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