S. V. TRENT.

ELEVATOR.

APPLICATION FILED JAN. 16, 1907.

900,237.

Patented Oct. 6, 1908.

2 SHEETS—SHEET 1.

Fig. 1

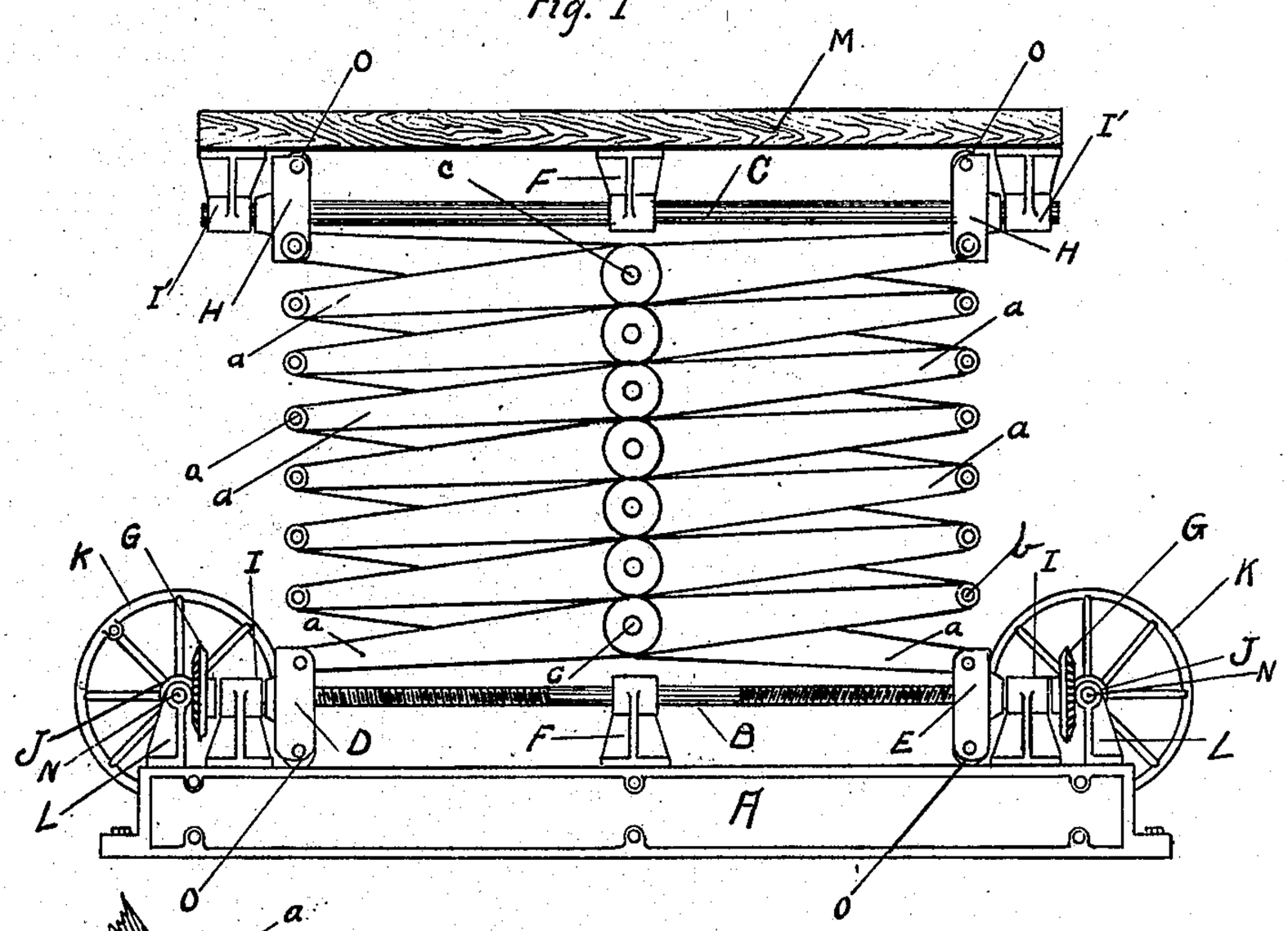


Fig. 3.

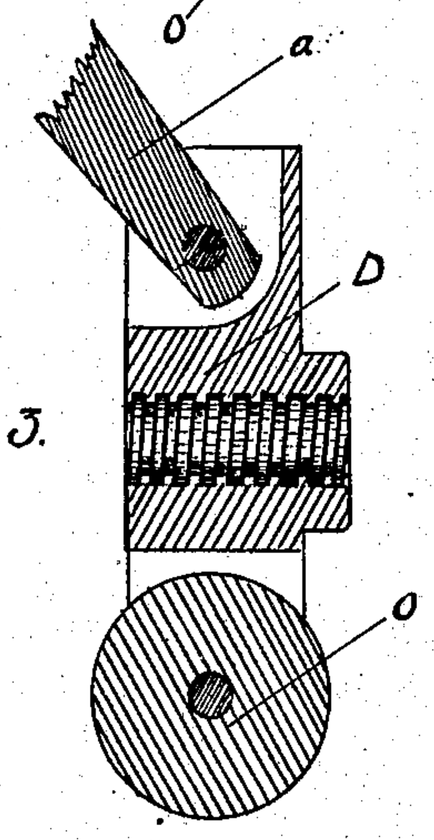


Fig. 5.

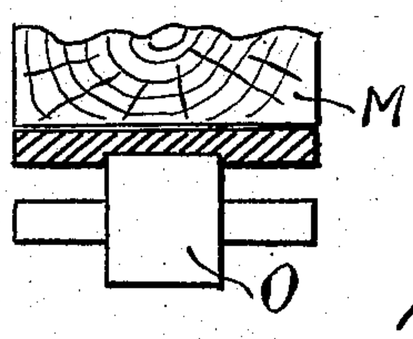


Fig. 6.

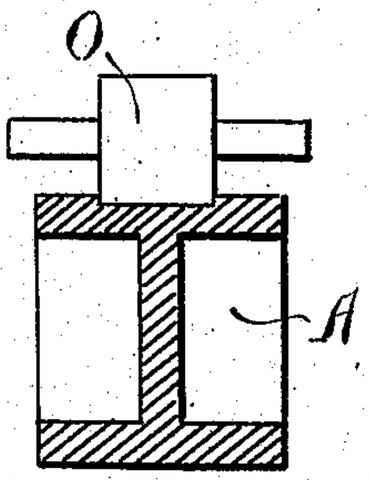
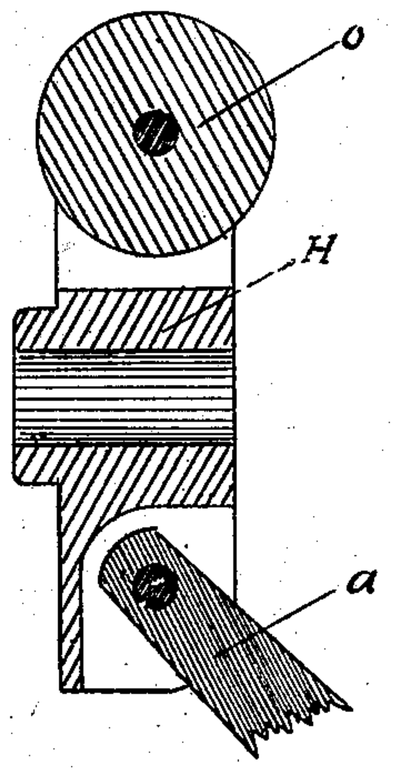


Fig. 4.



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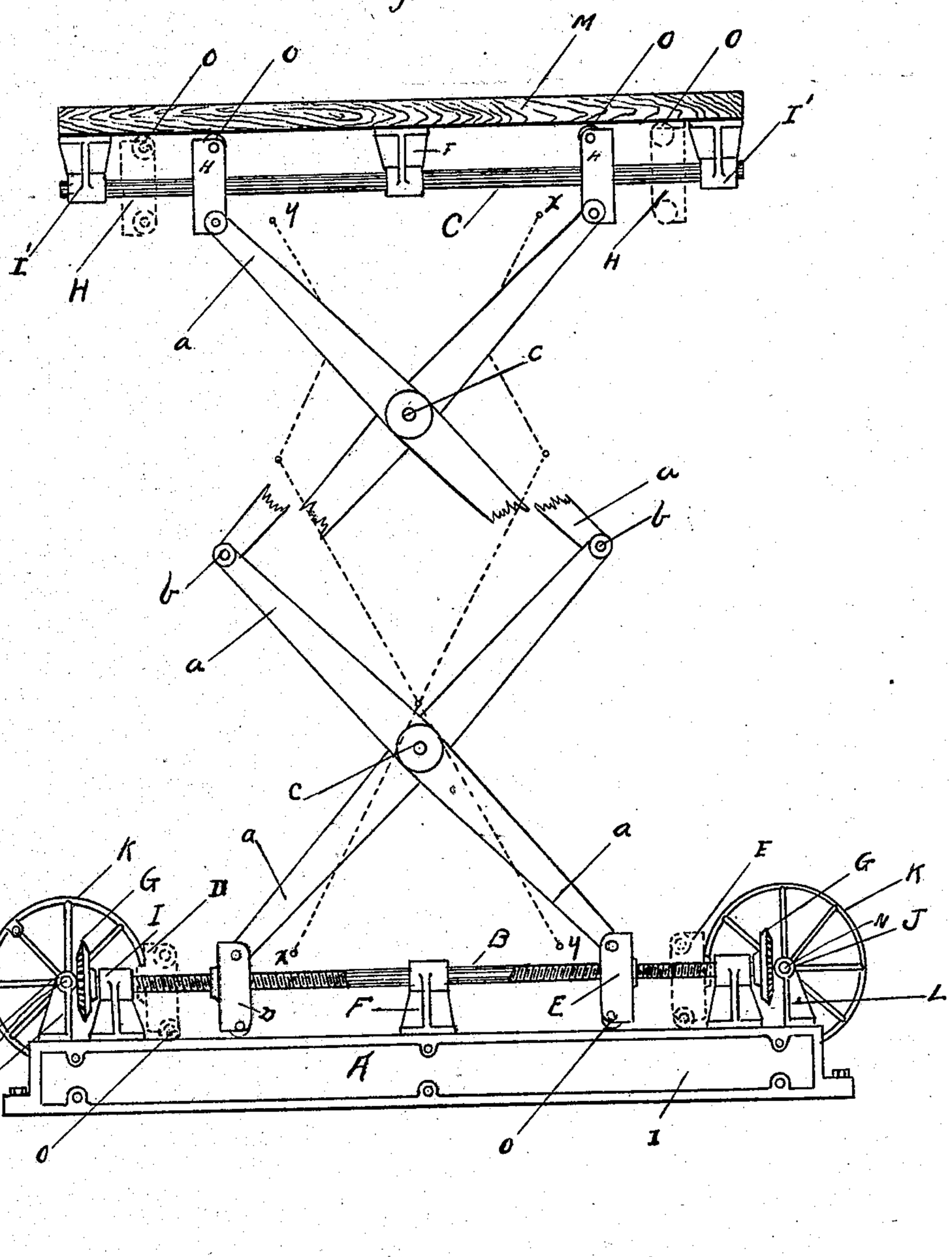
2 SHEETS—SHEET 2.

Fig. 2.



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ELEVATOR.

No. 900,237. Specification of Letters Patent. Patented Oct. 6, 1908.

Application filed January 16, 1907. Serial No. 352,633.

To all whom it may concern:

Be it known that I , SIMEON V. TRENT, a resident of Salt Lake City, Salt Lake county, and State of Utah, have invented a new and useful Improvement in Elevators Used for Raising or Lowering Heavy Articles, of which the following is a specification.

My invention relates to that class of elevators or lifts that handle heavy and cumbersome articles, where the elevator may or may not be stationary, and for which the change in position is vertical and of limited distance. I attain these objects by the improvements shown in the accompanying drawing, in which similar letters of reference indicate like parts throughout the several figures:

Figure 1 is a side elevation with the elevator at its lowest point. Fig. 2 is a side elevation with the elevator partially extended. Fig. 3 is an enlarged sectional view of one of the traveling nuts. Fig. 4 is an enlarged sectional view of one of the reciprocating blocks. Fig. 5 is an enlarged transverse section of the platform M, showing roller O in position. Fig. 6, is a transverse section of the base A, with one of the rollers O in position.

The base or frame A, has mounted thereon in bearings I, I, a threaded horizontal shaft B, one end threaded with right hand, and the other with left hand threads. On each end of the shaft A, is secured a bevel-gear wheel G, the teeth of which mesh with beveled pinions J, J, that are carried by short shafts N, N, that are mounted in bearings L, L. The shafts N, N, are provided with hand wheels K, K. The threads on the shaft B engage the traveling threaded nuts D, and E, that are alike in construction, except that D has right hand, and E has left hand threads; to the lower end of each of said nuts, is fitted a roller O that is made to operate in a groove or run-way in the top of the base A. The grooves with which the rollers O coöperate prevent any tendency of the nuts D and E to rotate or the blocks H to be displaced laterally, whereby the joints of the toggle arms would operate improperly if not be broken.

To the upper end of the traveling nuts D, and E, are pivoted one end of the toggle arms that are made to operate on a center fulcrum *c*, and pivoted together by pins *b*. The upper ends of the upper pair of arms *a* are pivoted to the lower ends of slidable blocks H, H, that are made to operate on a horizontal shaft C, that is carried by the depending bearings I′, I′, on which is secured the platform M.

The slidable blocks H, H, are provided with rollers O, O, that operate within a grooved recess in the under side of the platform M.

The threaded shaft B, and horizontal shaft C, are each supported near the middle by bearings F, F.

Any form of motive power may be used, that of hand power being shown.

Power being applied to the shafts N, N, motion is imparted through the bevel pinions J, J and bevel - gear wheels G, G, to the threaded shaft B, the threads on which engage the threads in the traveling threaded nuts D and E, that are drawn together and the arms *a*, *a*, etc. assume the different angles shown in Fig. 2, and the slidable blocks H,H, are drawn together and the platform M, raised upwardly. The arms *a*, *a*, etc. may be forced to assume the positions and angles shown by dotted lines *x*, *x*, *y*, *y*, and the rollers O, O, aid in supporting the shafts B, and C.

The drawings shown, are for a stationary elevator with a guided platform.

For a portable elevator, the parts shown are to be duplicated, except the platform M, which, in that case, is supported by duplicate mechanism, and each side receives the action of the mechanism of its respective side, both sides acting in unison; and the whole mounted on trucks, wheels and other means of conveyance.

Having thus described my invention, I claim and desire to secure by Letters Patent:

A lazy tongs elevator comprising a base having a groove on its upper surface, end and intermediate bearings supported upon said base, a right and left threaded power shaft journaled in said bearings, traveling nuts mounted upon the threaded portions of said shaft, anti-friction rollers journaled in the lower ends of said nuts and operating in said groove to prevent tendency of the nuts to rotate, a series of pairs of toggle arms pivoted

to the upper ends of said nuts, a vertically movable platform having a groove on its lower surface, end and intermediate supports secured to the lower surface of the platform, a stationary shaft supported by said supports, blocks slidable on said shaft, means whereby said blocks coöperate with said platform groove, said blocks being pivotally connected to the upper ends of the toggle arms, and means to rotate the power shaft.

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Witnesses:
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