J. G. KURTZ.

ELEVATOR.

No. 181,077. Patented Aug. 15, 1876.

Fig. 1.

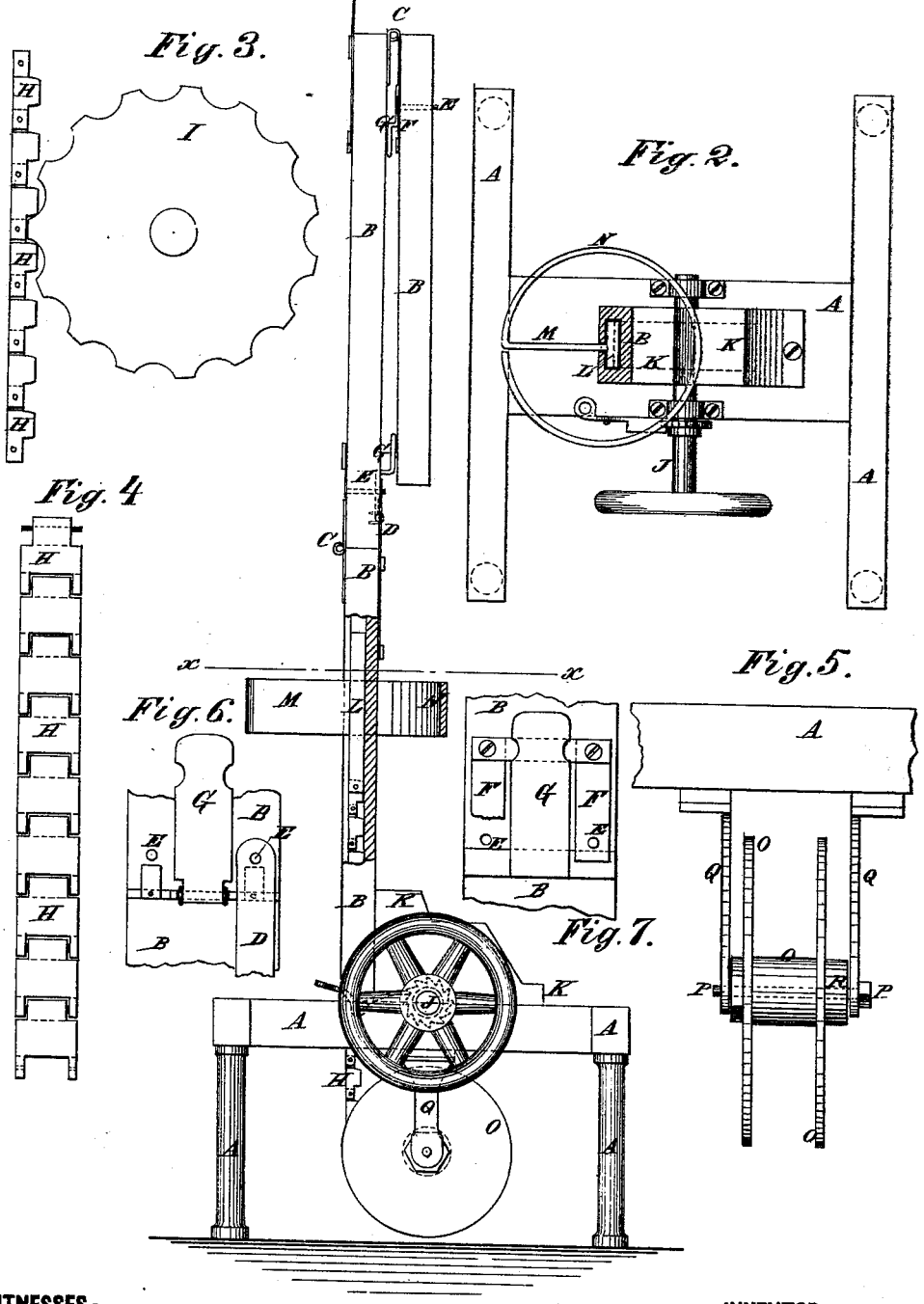

Fig. 3.

Fig. 2.

Fig. 4

Fig. 6.

Fig. 7.

Fig. 5.

WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN G. KURTZ, OF MILTON, PENNSYLVANIA.

IMPROVEMENT IN ELEVATORS.

Specification forming part of Letters Patent No. **181,077**, dated August 15, 1876; application filed July 22, 1876.

To all whom it may concern:

Be it known that I, JOHN GEORGE KURTZ, of Milton, in the county of Northumberland and State of Pennsylvania, have invented a new and useful Improvement in Elevators, of which the following is a specification:

Figure 1 is a side view of my improved elevator, part of the standard being shown as turned down, and part being broken away, to show the construction. Fig. 2 is a horizontal section of the same, taken through the line *x x*, Fig. 1. Fig. 3 is a detail view of the gear-wheel and a portion of the jointed or chain rack-bar. Fig. 4 is a front view of a portion of the jointed rack-bar. Fig. 5 is a detail view of the spool upon which the jointed rack-bar is wound when lowered. Figs. 6 and 7 are detail views of the device for locking the sections of the standards together.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved elevator for use by carpenters, masons, and painters for raising their materials and themselves upon buildings; for use in stores, hotels, and other buildings; for use by firemen and by others wherever an elevator is required; and which shall be simple in construction, strong, easily operated, and safe.

The invention consists in the standard made in sections, and provided with a T-groove, the jointed rack-bar, and the gear-wheel, in combination with each other and with the frame, and a mechanism for turning the said gear-wheel; in the combination of the springs, the pins, and the cam-levers, whether the second set of springs be used or not, with the hinged ends of the sections of the standards; in the combination of the bar, the arm, and a platform, gallery, or cage with the grooved standard, and with the jointed rack-bar and the gear-wheel; and in the combination of the spool and the coiled spring with the jointed rack-bar, as hereinafter fully described.

A is the base-frame, which may be stationary or mounted upon wheels, according to the purpose for which the elevator is to be used. B is the standard, which is made in sections connected to each other by hinges C. The lower section is rigidly secured to the base-frame A. To the upper end of each section of the standard are attached two strong springs, D, which project above said end to overlap the lower part of the next section, and have holes in their upper ends to receive pins E, attached to the lower ends of the said upper sections. The pins E pass through the sections, and may be rigidly attached to them, or they may be attached to springs F, secured to said sections. To the rear side of the standard are pivoted cross-head levers G, which have cams formed upon the arms of their cross-heads. The cams of the levers G are placed beneath the springs D when the pins E are rigid, and beneath the springs F when the pins E are movable, so that by operating the cam-lever G the springs D and pins E may be disconnected to allow the sections of the standard B to be folded together. In the forward side of the standard B is formed a T-groove to receive the jointed rack-bar H. Upon the end parts of the lower edge of the base of each tooth of the rack-bar H are formed two lugs, and in the middle parts of the upper edge of the base of each tooth is formed a single lug, so that the said teeth may be jointed to each other by pins or bolts passed through the said lugs. The teeth of the jointed rack-bar H mesh into the teeth of the gear-wheel I, which is attached to a shaft, J. The shaft J works in bearings attached to the frame A, in such a position that the wheel I may enter a slot in the forward side of the lower part of the lower stationary section of the standard B, to come in contact with the teeth of the jointed rack-bar H. The gear-wheel I is covered with a casing, K. Power may be applied to the shaft J by a double or single gearing in the same manner as power is applied to the shaft of a derrick, or in any other convenient manner. The shaft J is also provided with ratchet-wheels and pawls, in the usual way, to hold it securely in any position into which it may be turned.

To the upper tooth of the jointed rack-bar H is attached the lower end of a bar, L, which fits into the T of the groove in the standard B, and upon its middle part is formed, or to it is attached, an arm, M. The arm M passes out through the slot of the T-groove of the standard B, and to its outer end is attached a platform, gallery, or cage, N, upon

which men and materials may be raised and lowered. The lower end of the jointed rack-bar H is attached to the hub of the flanged wheel or spool O, which revolves upon an axle, P. The ends of the axle P are attached to brackets Q, secured to the base-frame A. R is a spring coiled around one end of the axle P. The inner end of the coiled spring R is attached to the axle P, and its outer end is attached to the hub of the spool O, so that as the jointed rack-bar H is raised by turning the gear-wheel I, the said rack-bar H, in unwinding from the spool O, will turn the said spool and coil up the spring R, and as the rack-bar is lowered the tension of the spring R will turn the spool O in the other direction, and again wind the rack-bar upon the spool.

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

1. The standard B, made in sections, and provided with a T-groove, the jointed rack-bar H, and the gear-wheel I, in combination with each other and with the frame A, and a mechanism for turning the said gear-wheel, substantially as herein shown and described.

2. The combination of the springs D, the pins E, and the cam-levers G, whether the springs F be used or not with the hinged ends of the sections of the standard B, substantially as herein shown and described.

3. The combination of the bar L, the arm M, and a platform, gallery, or cage, N, with the grooved standard B, and with the jointed rack-bar H, and the gear-wheel I, substantially as herein shown and described.

4. The combination of the spool O and the coiled spring R with the jointed rack-bar H, substantially as herein shown and described.

JOHN GEORGE KURTZ.

Witnesses:
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