H. W. SHERRILL.

Elevator.

No. 223,397. Patented Jan. 6, 1880.

Fig 1.

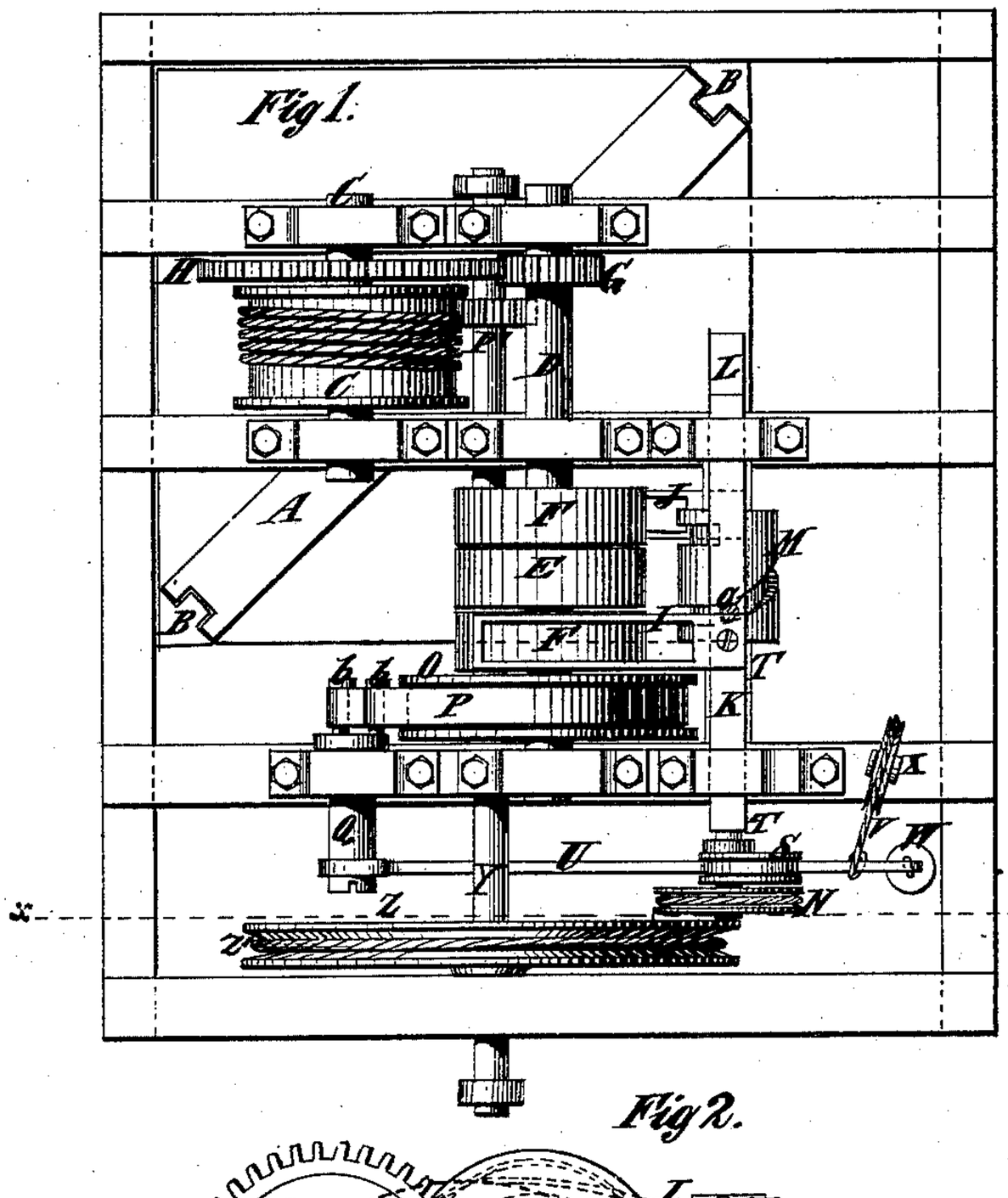
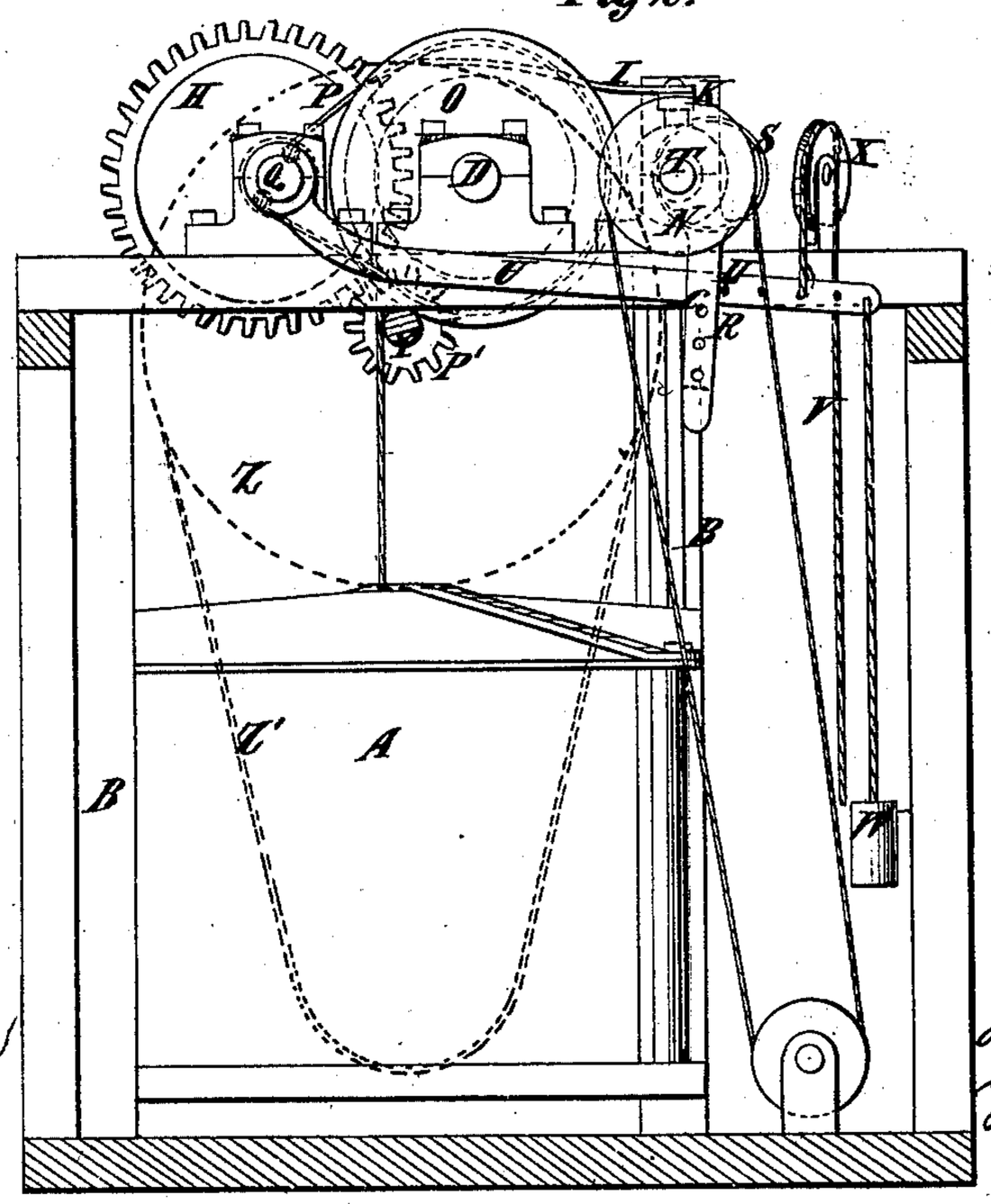


Fig 2.



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UNITED STATES PATENT OFFICE.

HENRY W. SHERRILL, OF JERSEY CITY, NEW JERSEY.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 223,397, dated January 6, 1880.

Application filed May 6, 1879.

To all whom it may concern:

Be it known that I, HENRY W. SHERRILL, of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Elevators, of which the following is a specification.

One improvement consists in the combination, with an elevator-car, of a hoisting-shaft, a shaft for operation by an engine geared thereto, and a shaft independent of the said engine-shaft, operated by a band, rope, or tackle, and carrying a pinion capable of being shifted into or out of engagement with a gear-wheel on the hoisting-shaft, whereby I provide for operating the elevator by the engine or by hand-power, at pleasure.

Another improvement consists in the combination, with an elevator, a shaft whereby the same may be operated from an engine, and a shaft independent of said engine-shaft, whereby it may be operated by hand-power, of a brake and means whereby the latter may be controlled for operation in connection with either of said shafts.

Other improvements consist in details and in combination of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a top view of an elevator and appurtenances embodying my improvements; and Fig. 2 is a central vertical section of the same, taken at the plane of the dotted line *x x*, Fig. 1.

Similar letters of reference designate corresponding parts in both figures.

A designates an elevator-car, of any desirable kind, traveling up and down a hoistway along guide-posts B, which may be of any suitable form, and provided with any suitable safety-stops. C designates what I term a "hoisting-shaft," provided with a drum, on which and from which a cord or tackle connected with the elevator-car is wound and unwound to effect the hoisting and lowering of the said car. D designates a shaft operated by a steam-engine or other motor through belts applied to a fast pulley, E, and loose pulleys F, and carrying a toothed pinion, G, which engages with a gear-wheel, H, on the hoisting-shaft C, and thereby transmits motion to the latter. I J designate belt-shifters attached, respectively, to horizontally-moving bars K and L, and serving to shift the belts employed for rotating the shaft in different directions for hoisting and lowering onto the fast or driving pulley E, or onto the loose pulleys F. These bars K and L are shifted by a cam, M, on a shaft, T, acting on stud *a*, projecting from them, and operated through a cord or tackle arranged in proximity to the elevator-car, and running around a pulley, N, with which the said shaft is provided.

O designates a brake-pulley arranged on the hoisting-shaft, and P designates a brake-strap passing around the same and attached at the ends to studs *b*, projecting from a rock-shaft, Q, so that on shifting the latter in one direction said studs are brought more nearly into a horizontal plane and tighten the strap on the pulley, or on shifting it in the other direction said studs are brought more nearly into a vertical plane and loosen the strap on the pulley. On this rock-shaft is affixed a brake-lever, U, which passes through a bifurcated arm, R, depending from a hoop or band fitting on an eccentric, S, arranged on the belt-shifter shaft T. The weight of the lever U, or of a weight, W, suspended therefrom, serves to adjust the shaft Q so as to tighten the brake-strap, and the arm R serves to raise the lever so as to loosen the brake-strap.

In the arm R is an adjustable cross-pin, *c*, whereby the lever is lifted. It may be inserted in any of a series of holes with which the arm is provided, so that even after wear of the parts it may be shifted, so as not to interfere with the downward motion of the brake-lever. The shaft T is designed to have just motion sufficient to bring the eccentric S to its highest position when it is desirable to hold the brake off the hoisting-shaft, so that there will be no tendency exerted by the brake-lever U to rotate the shaft backward.

A cam or other device may be employed in lieu of an eccentric with good results.

V designates a rope or tackle attached to the brake-lever U and passing over a pulley, X, where it may be reached from the elevator-car or any floor of the building. By pulling on it the brake-lever may be actuated so as to loosen the brake-strap.

It is obvious that the belts may be shifted from one to another of the pulleys on the shaft

D and the brake applied to the said shaft, all at one operation.

Y designates a shaft independent of the said engine-shaft, and capable of being operated by hand-power. It is provided with a wheel or pulley, Z, over which passes a cord or tackle, Z′, in proximity to the hoistway, and whereby said shaft may be rotated. It is supported in bearings, so as to be capable of being adjusted longitudinally to cause a pinion, P′, with which it is provided to engage with or disengage from the gear-wheel H of the hoisting-shaft.

The shaft may be shifted and held in position by a cam, or in various other ways; or, indeed, the pinion, P′, may be adjustable relatively to the shaft to accomplish the same result.

It will be seen that by my invention I provide in a simple way for operating an elevator-car by either hand or an engine, that I provide for applying a brake simultaneously with the adjustment of a belt-shifter, and that I, moreover, provide for applying the brake independently of the belt-shifter.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with an elevator-car, of a hoisting-shaft, a shaft geared thereto for operation by an engine, and a shaft independent of the said shaft, for operation by a band, rope, or tackle, carrying a pinion capable of being shifted into or out of engagement with a gear-wheel on the hoisting-shaft, substantially as and for the purpose specified.

2. The combination, with an elevator and a shaft for operation by an engine, of a device for shifting a belt or belts from one to another of pulleys arranged on said shaft, a cam for shifting said belt-shifting device, a brake for controlling said shaft, a lever for operating said brake, and an eccentric for controlling said lever, substantially as specified.

3. The combination, with an elevator and a shaft for operation by an engine, of a brake for controlling said shaft, a lever for actuating said brake and serving to apply the brake by weight, an eccentric and an arm depending from the eccentric, for shifting the lever in the opposite direction so as to remove the brake, and means for shifting said lever independently of said eccentric and arm, substantially as specified.

4. The combination of a shaft, a brake therefor, a lever for actuating said brake, an eccentric and an arm for shifting said lever, and an adjustable cross-pin in said arm, substantially as specified.

5. The combination, with an elevator, a shaft whereby the same may be operated from an engine, and a shaft independent of the engine-shaft, whereby the same may be operated by hand-power, of a brake and means whereby the latter may be controlled for operation in connection with either of said shafts, substantially as specified.

HENRY W. SHERRILL.

Witnesses:
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