

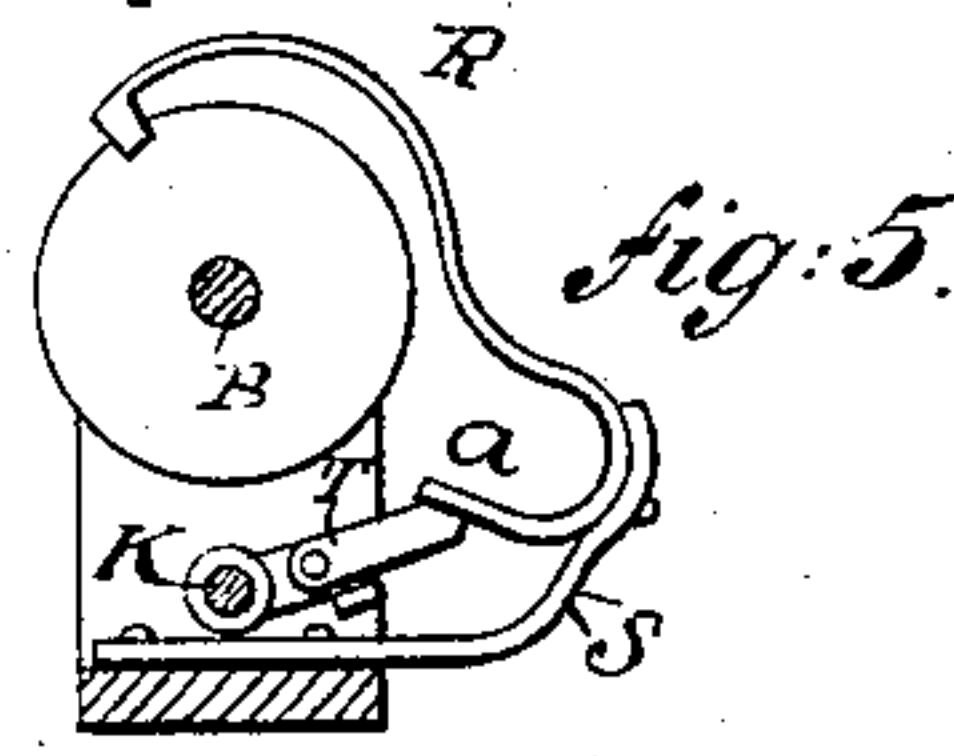
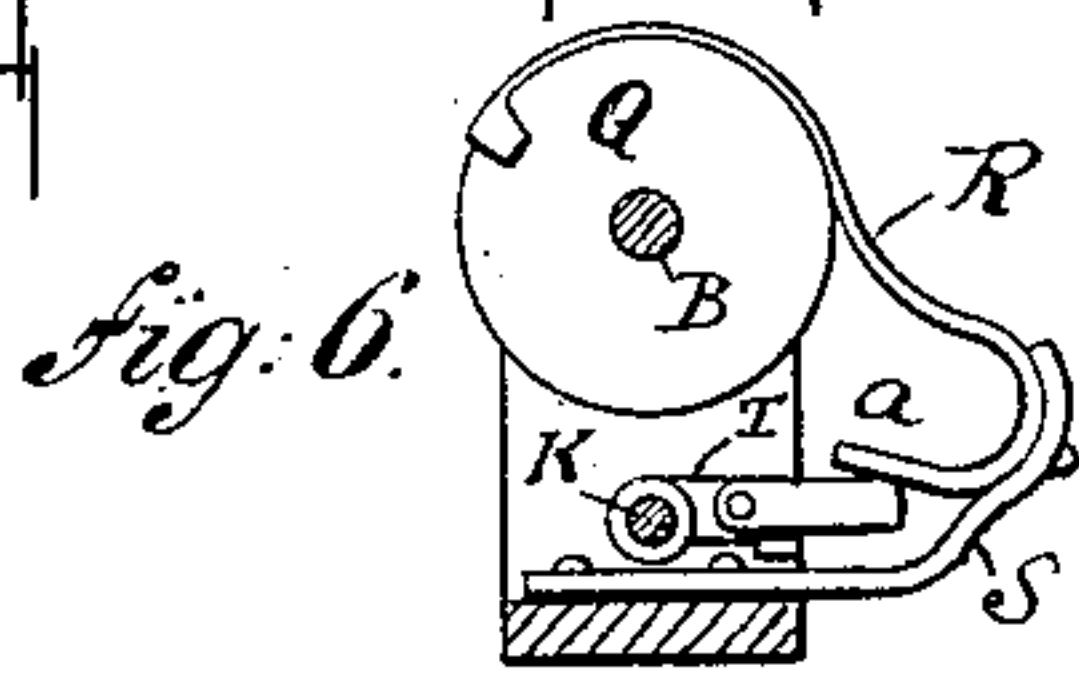
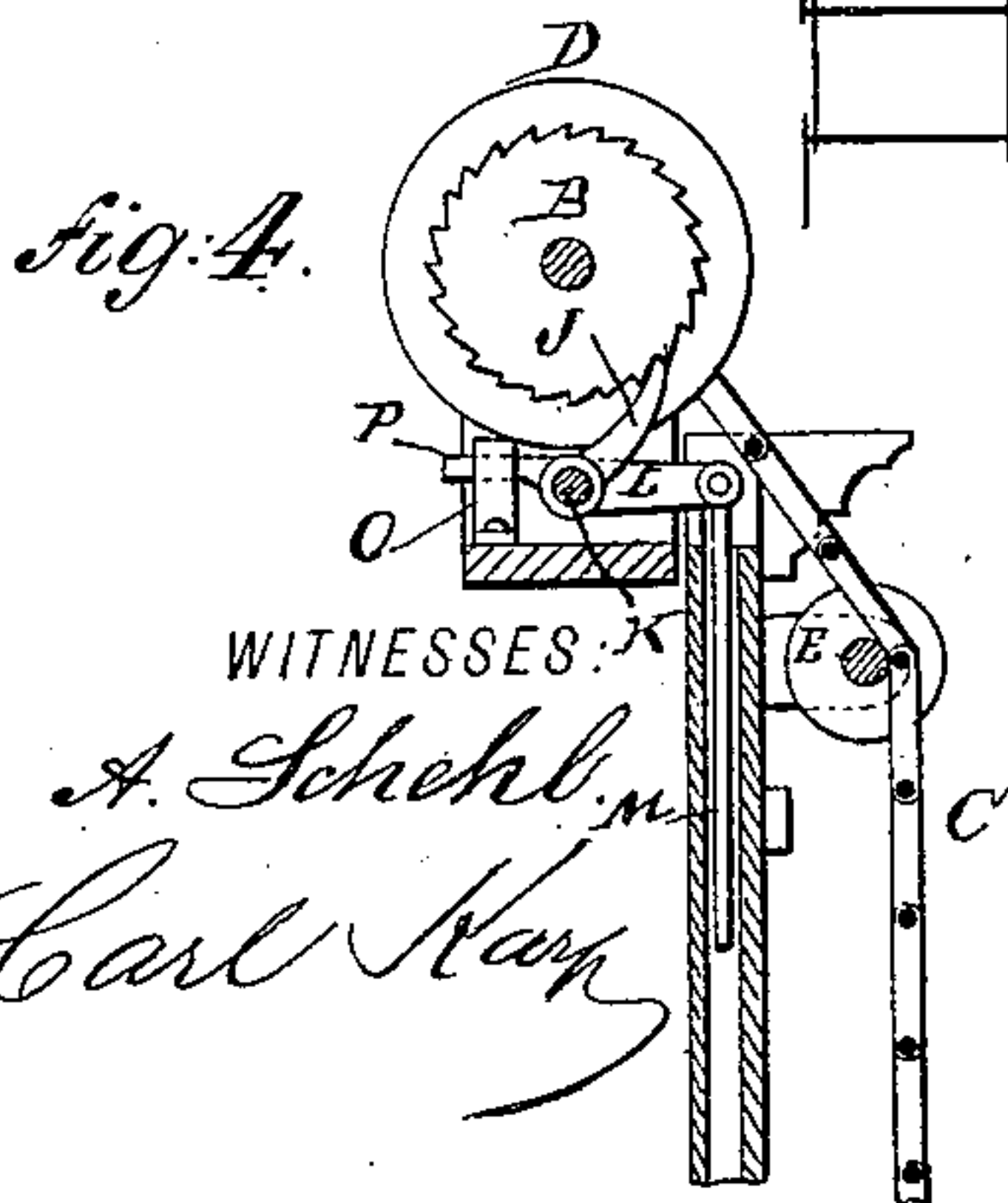
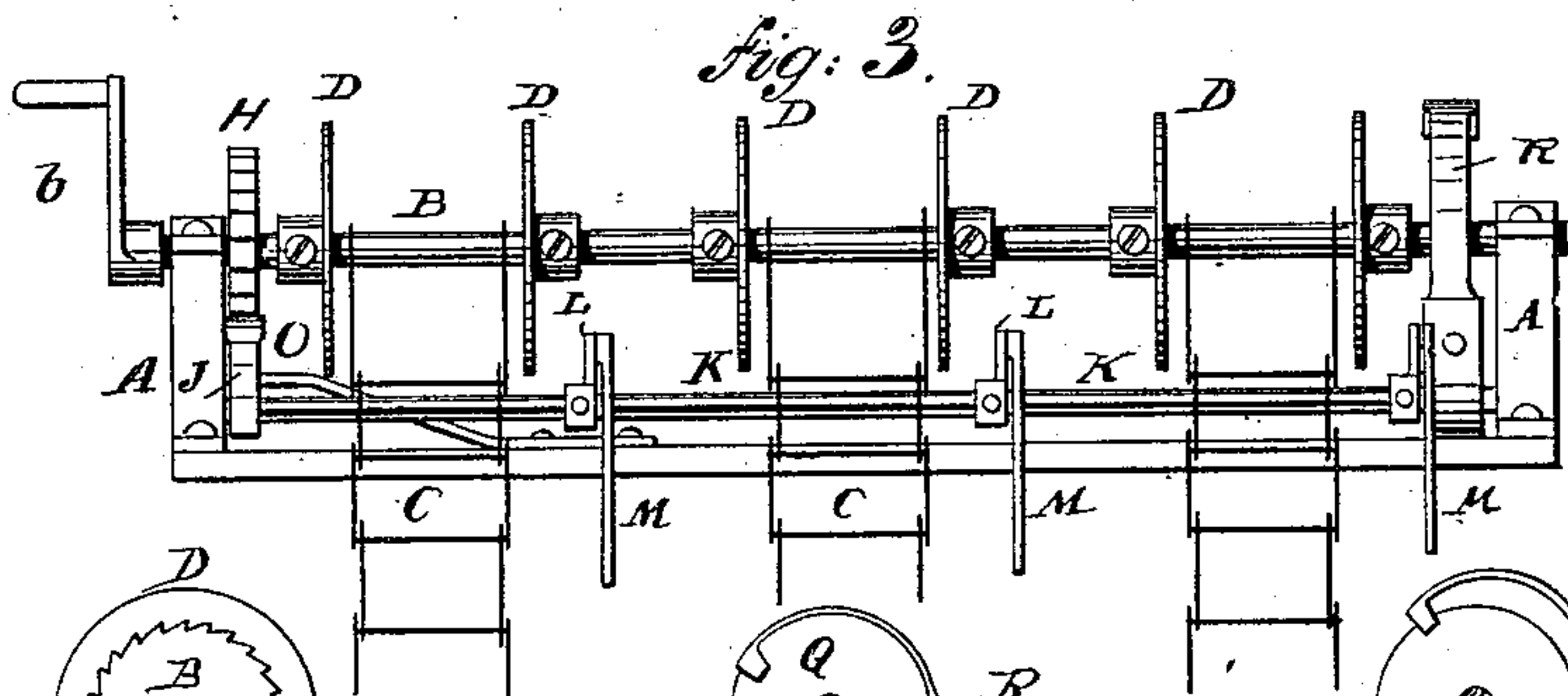
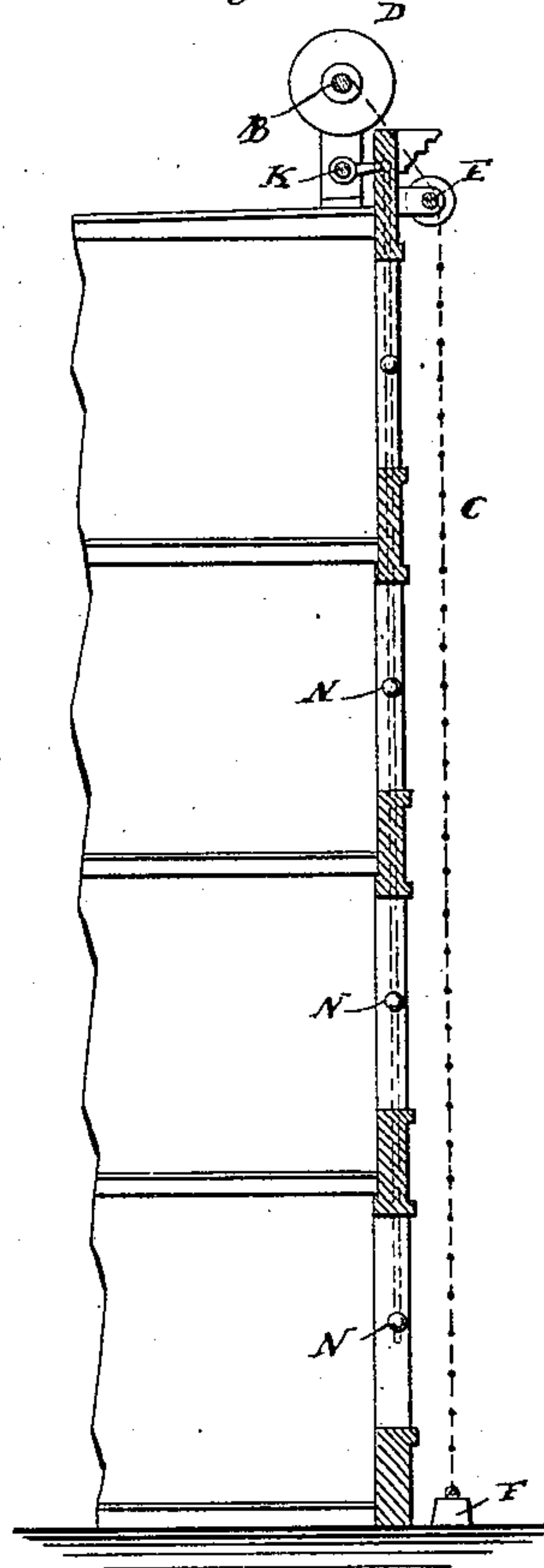
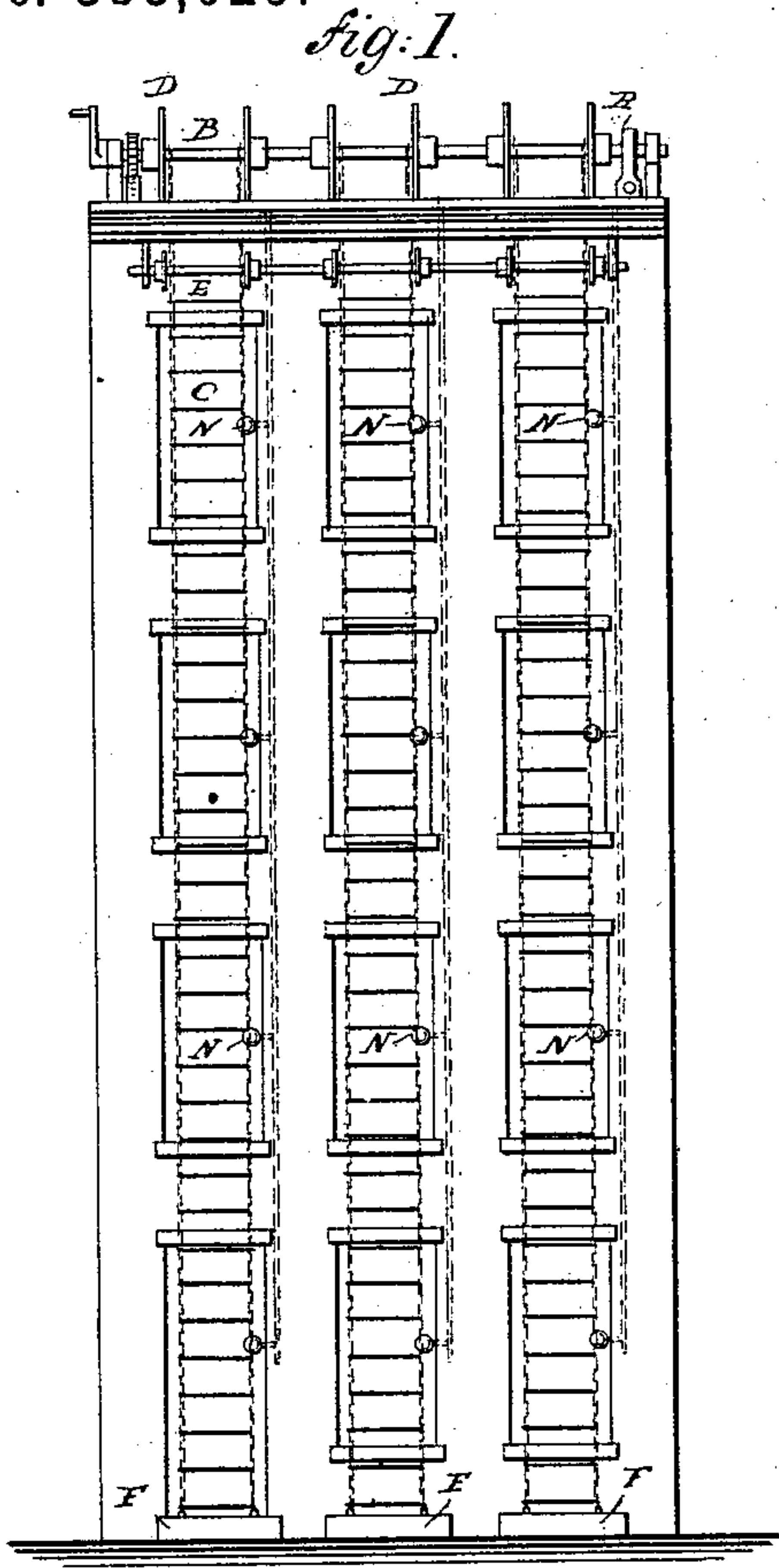
(No Model.)

L. HIRSCH.

FIRE ESCAPE.

No. 353,029.

Patented Nov. 23, 1886.



WITNESSES:

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UNITED STATES PATENT OFFICE.

LEON HIRSCH, OF NEW YORK, N. Y.

FIRE-ESCAPE.

SPECIFICATION forming part of Letters Patent No. 353,029, dated November 23, 1886.

Application filed June 7, 1886. Serial No. 204,319. (No model.)

To all whom it may concern:

Be it known that I, LEON HIRSCH, of the city, county, and State of New York, have invented certain new and useful Improvements in Fire-Escapes, of which the following is a specification.

The object of my invention is to provide a new and improved fire-escape which is out of view when not in use, and which can be lowered for use at any time from any room at the wall above which the fire-escape is provided.

The invention consists in a shaft journaled in bearings on standards on the roof of the house, parallel with one of the street or yard walls, a series of flexible ladders secured to and wound on the said shaft, a ratchet-wheel on the shaft, a locking-pawl on a rock-shaft connected with vertical rods extending through the different stories, a brake-wheel on the main shaft, a brake-lever for holding the brake at the same time that the locking-pawl is released from the ratchet-wheel, all as will be fully described hereinafter, and set forth in the claim.

In the accompanying drawings, Figure 1 is a front view of a building provided with my improved fire-escape, the ladders being lowered. Fig. 2 is a cross-sectional view of the same. Fig. 3 is an enlarged longitudinal sectional view of the shaft to which the flexible ladders are secured. Fig. 4 is a cross-sectional view of the same, showing the ratchet-wheel and locking-pawl. Fig. 5 shows a cross-sectional view of the brake disengaged; and Fig. 6 is a cross-sectional view of the same, showing the brake locked.

Similar letters of reference indicate corresponding parts.

On the standards A A, secured on the roof of the house behind the cornice, and parallel with the rear or front wall, the shaft B is journaled, to which the upper ends of a series of flexible ladders, C C, are fastened, preferably one ladder for each vertical row of windows. At the sides of the upper ends of the ladders disks D D are fastened on the shaft B, or in place of said disks drums having end pieces may be fastened on the shaft and the ladders secured to said drums. The ladders are passed over an anti-friction shaft or roller, E, provided on the front directly below the cornice, for the

purpose of holding the ladders a short distance from the said wall. A weight, F, of metal, stone, or other suitable material, is attached to the lower end of each ladder. The ladders may be made of rope, rods, wire rope, links, or in any other well-known manner of constructing flexible or rope ladders. The ladders may be made of any suitable width.

On one end of the shaft B a ratchet-wheel, H, is fastened, with which a pawl, J, engages, said pawl being fixed on a rock-shaft, K, journaled below the shaft B, and provided with one or more arms, L, connected with the vertical rods M, extending downward in suitable grooves or recesses, preferably in the jambs of the windows, from which rods M knobs N project into the window-openings, as shown in Figs. 1 and 2. If desired, said knobs may project from the inner side of the wall; but I prefer to provide the knobs in the jambs of the windows.

A spring, O, fastened on the roof of the house acts on a fixed arm, P, of the rock-shaft K, thereby keeping the pawl J engaged with the ratchet-wheel H. At one end of the shaft B a brake-disk, Q, is fixed, on the rim of which the brake-lever R rests, which is fastened to a spring-arm, S. The lower end of the brake-lever is provided with a projection, a, on which the arm T of the shaft K can act. The shaft B is provided with a crank-arm or detachable key on one end for turning it.

The operation is as follows: When the fire-escape is not in use, all the ladders C C are wound on the shaft B, the weights F being below the shaft E. In case of a fire or any other accident requiring the use of the ladders to permit the persons to escape, the knob N at any one of the windows is pulled downward, whereby one of the arms L is drawn down and the pawl J is disengaged from the ratchet-wheel H. The weights and ladders now descend and revolve the shaft B, as the pawl J does not lock the ratchet-wheel H. The brake R is to prevent the ladders from unwinding too rapidly, and when the ladders unwind the brake must be applied to prevent the ladders from descending too rapidly. When the pawl J is swung from the ratchet-wheel H, the arm T is also swung down, thus permitting the spring-arm S to press the brake-lever R on the

rim of the brake-disk Q, as shown in Fig. 6, thus checking the speed. When the ladders are wound on the shaft B and the pawl J is engaged with the ratchet-wheel H, the arm T is
5 held raised by the action of the arm T on the projection a, so as not to interfere with the uncoiling of the flexible ladders in the beginning of the descent. The cornice has suitable openings through which the rope ladders can pass.

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

The combination, with a shaft journaled in standards on the roof of the house, of flexible ladders secured to the shaft, a ratchet-wheel
15 on the shaft, a rocking shaft below the one to which the ladders are fastened, a pawl on the rocking shaft, which pawl engages with the ratchet-wheel on the shaft to which the ladders

are fastened, a spring acting on a projection of the rocking shaft, rods connected to the
20 rock-shaft and extending through the several stories, knobs on the rods at the several stories, a brake-disk on the shaft to which the ladders are fastened, a brake-lever resting on
25 the rim of the disk, and provided with a projection, and an arm on the rock-shaft, which arm engages a projection of the brake-lever, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name in pres-
30 ence of two subscribing witnesses.

LEON HIRSCH.

Witnesses:

OSCAR F. GUNZ,
MARTIN PETRY.