P. Groel,

Reversible Ratchet.

No. 41,574. Patented Feb. 9, 1864.

Fig. 2.

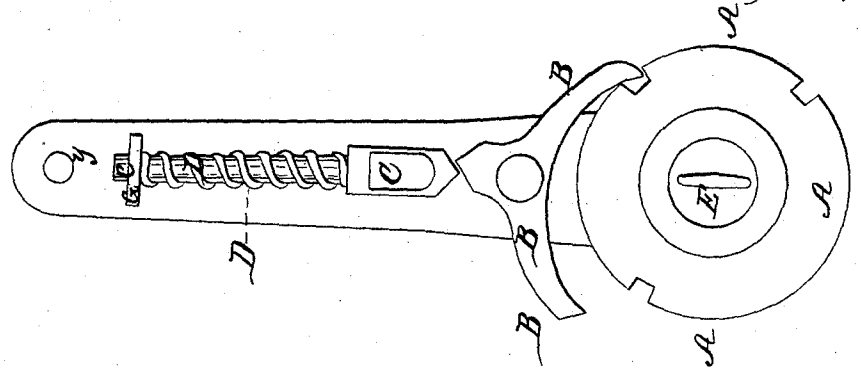
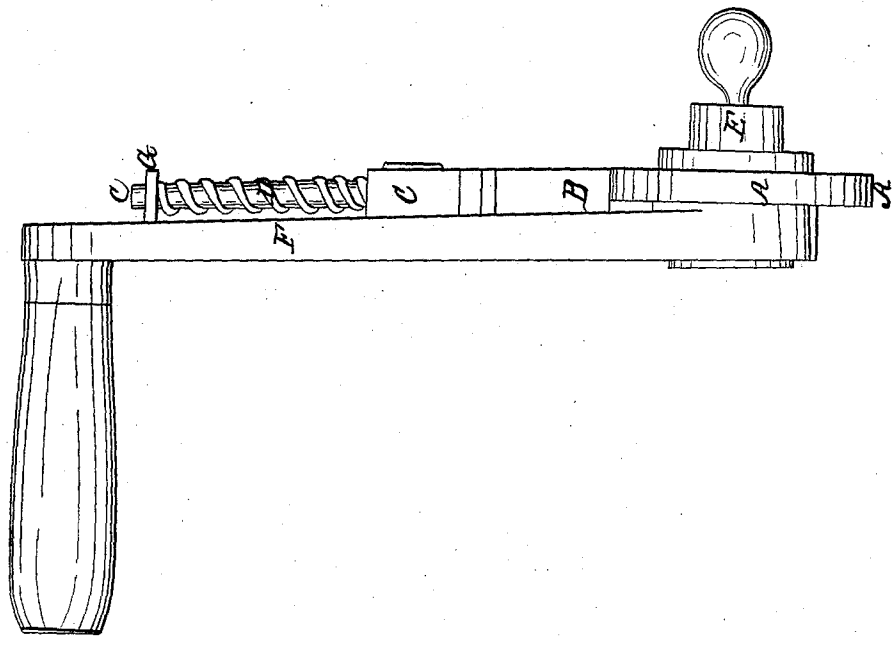


Fig. 1.



Witnesses.

W. D. Sackett
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Inventor.

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UNITED STATES PATENT OFFICE.

PHILIPP GROEL, OF MEADVILLE, PENNSYLVANIA, ASSIGNOR TO L. E. HOLDEN, OF CLEVELAND, OHIO.

IMPROVEMENT IN HAND-CAR CRANKS.

Specification forming part of Letters Patent No. **41,574**, dated February 9, 1864.

F.

To all whom it may concern:

Be it known that I, PHILIPP GROEL, of Meadville, county of Crawford, and State of Pennsylvania, have invented a new and useful Improvement in Hand-Car Cranks; and I do hereby declare that the following is a full and exact description of the same.

The object of this improvement is to retain the use of the crank in propelling hand-cars, and at the same time to avoid the danger and accidents to those running the cars. The danger in propelling hand-cars by means of cranks has long been known, and many persons have been injured and many killed by being struck by the crank, or by having their clothes caught by the crank while the cars were in motion. With all the danger the crank is acknowledged to be the most efficient means of propelling such cars.

This invention retains all the efficiency of the ordinary crank, and avoids all danger from the revolution of the crank while the car is in motion.

A crank like those in general use is so attached to the shaft that the person propelling the car can stop turning, and, with safety and ease, hold the crank in his hand while the car moves on by its acquired velocity. If by accident the person is struck by the crank, or it catches his clothes, it turns upon the shaft in the direction opposite to the motion of the car, and all injury is avoided. It is of great service where two cranks are used on the same car, for one man may stop turning while the other is at work, and there will be no danger from the revolutions of the unmanned crank.

I hereby declare that the following is a full, clear, and exact description and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a longitudinal side view; Fig. II, a longitudinal front view.

A A represents the notched flange fastened to the shaft E. B B is the reversible ratchet or catch. The upper end is made wedge-shaped, so as to fit the wedge-shaped end of the head of the piston C C, so that by striking the ratchet on one dog the other is thrown out of the notch, and the one thus struck is brought down upon the flange, and held there by the spring acting on the piston. By striking the ratchet on one dog the apex is brought to the side of the apex of the piston-head next to the dog struck, and the dog thus being held in contact with the notched flange, power can be communicated to the shaft. The other dog being clear, the crank can be held in the hand with safety while the car is in motion, while it is also easy to reverse the motion of the crank.

Figure II represents the piston with the spring attached. The piston plays through the socket G, and has in it a slot through the head, and is held in its place by the socket, which is fastened to the crank, and by a bolt or screw which goes through the slot into the crank. The spring is made fast between the socket-plate and the head of the piston, and thus holds the head of the piston down upon the reversible ratchet.

The crank and all other parts may be of any size to suit any purpose where a crank is needed by which motion is communicated by the crank, and it would be an advantage at times to have the crank stop its revolutions, while the machine moved by the crank moves on.

I do not claim any particular form or size of cranks, nor any of the well-known uses of cranks.

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

1. The reversible ratchet B B, made in the manner and for the purpose substantially as specified.

2. The piston C C, made in the manner and for the purpose substantially as specified.

3. A reversible hand-car crank composed of the following devices: the notched flange A A, the reversible ratchet B B, the piston C C, in combination with a spring, either elastic or metallic, a lever-arm or common crank connected with a shaft, to which power is to be communicated, substantially as specified.

PHILIPP GROEL.

In presence of—

WILLIAM HOPE,

W. R. SCOTT.