

Edmund Quinn's Crank-Motion

PATENTED JUN 27 1871

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Fig. 1.

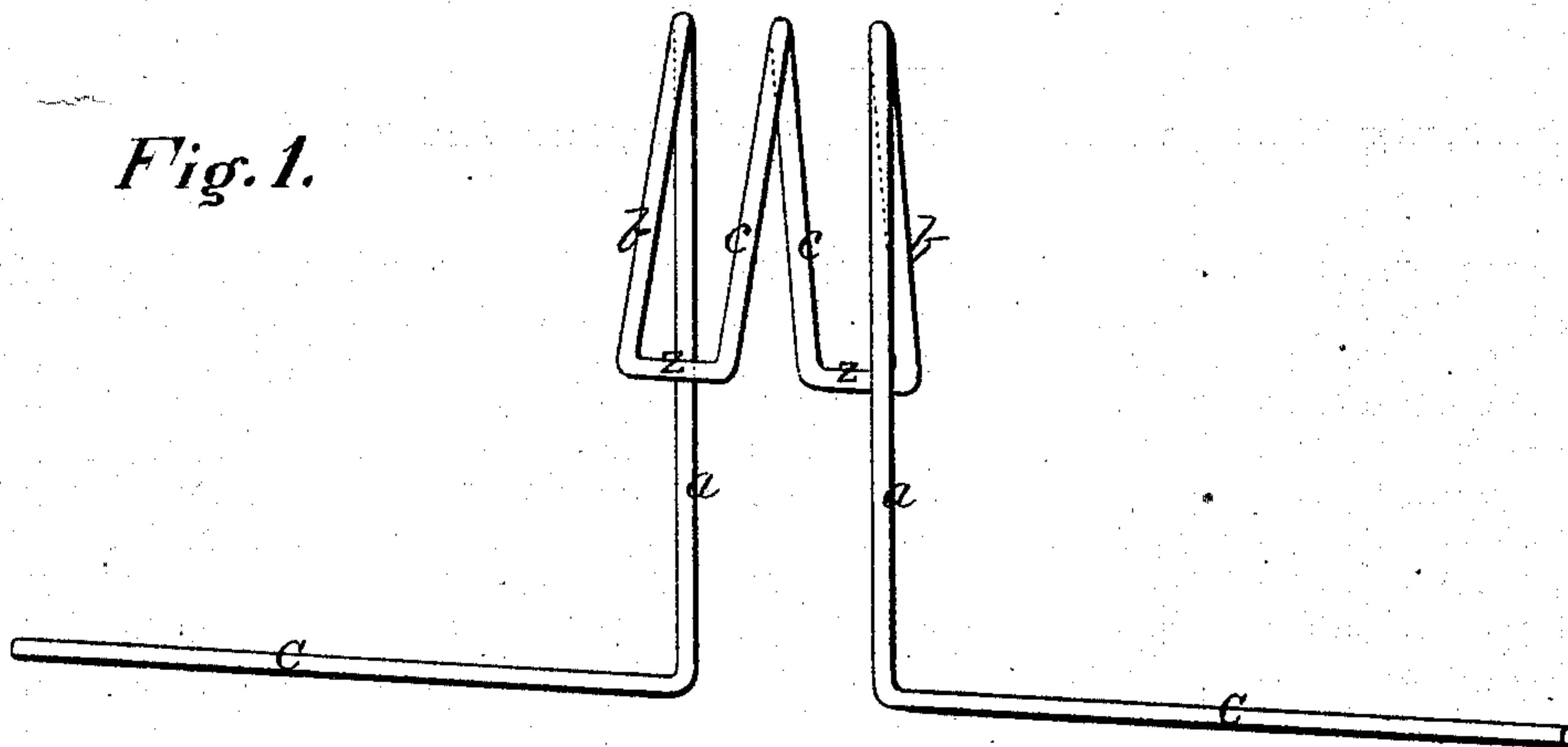
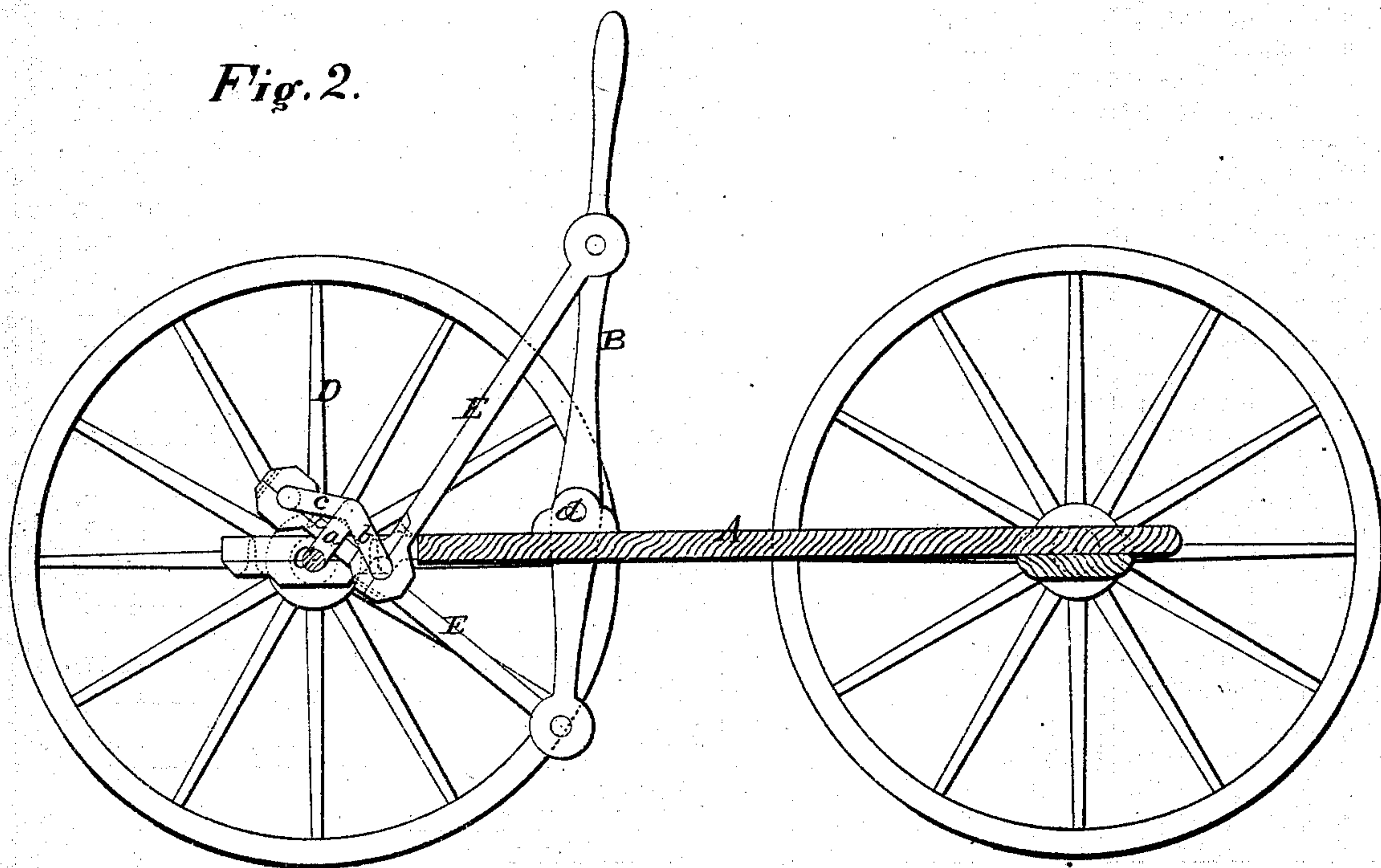


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

EDMUND QUINN, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN CRANK-MOTIONS.

Specification forming part of Letters Patent No. 116,487, dated June 27, 1871.

To all whom it may concern:

Be it known that I, EDMUND QUINN, of Brooklyn, in the county of Kings and State of New York, have invented a new and valuable Improvement in Crank-Motion; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a perspective view of my crank. Fig. 2 is a central vertical section, showing its application.

My invention has relation to an improvement in means for communicating motion to shafts and other axes; and it consists in the construction and novel arrangement of the double crank hereinafter described.

In the drawing the crank is shown applied to a wagon or car. A represents the car-frame, to which is pivoted, in any suitable manner, the operating-lever B. C designates the shaft of the driving-wheels D D, in which is arranged the double anchor-shaped crank, now to be described. In order to form this crank the shaft is bent or shaped so as to form parallel arms *a a*, which, for convenience of description, will be conceived as turned vertically upward, in the manner shown at Fig. 1 of the drawing. From the upper ends of the arms *a a* extend outward and downward, in opposite directions, the arms *b b*, in planes perpendicular to the shaft C. Each of these arms *b* makes an angle with the arm *a* of sixty degrees. These arms *b b* turn at their outer ends, and, after running parallel with the shaft far enough to admit of the connection of the pitman-heads, bend again, and, running upward and inward at *c c*, parallel with the arms *b b*, join, making an angle of one hundred and twenty degrees with each other. It is apparent that the arms *b c* are of

equal length, which is equal to the distance from the shaft to the outer end of the arm *b*, so that when viewed from the side in the direction of the shaft the general effect is that of two equilateral triangles joined base to base. E E represent the connecting-rods or pitmen, pivoted to the lever B, respectively, above and below its fulcrum *d*, and connected with the bends of the crank or the wrists *z z*. These rods are pivoted at about equal distances from the fulcrum *d*, and they are very nearly of the same length, the lower pitman being usually a little shorter than the upper. When the crank is pendent the lower pitman is joined to the wrist nearest the operating-lever, and the upper pitman to the wrist furthest therefrom.

It will be observed that the wrists *z z*, to which the piston-heads are attached, are placed with relation to the shaft or axis at an angle of one hundred and twenty degrees with each other, this position being the necessary result of the construction. Hence the double crank is neither a quarter-crank nor a half-crank, but between the two, with, it is thought, the disadvantages of neither, the dead-centers being almost if not entirely obviated.

I claim as my invention—

1. The double crank herein described, substantially as specified.

2. The combination with the double crank, having its wrists placed, with reference to the shaft, at or about one hundred and twenty degrees of the lever B, and the pitmen E E, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

EDMUND QUINN.

Witnesses:

FRANK. B. CURTIS,
J. M. HYNE.