J. H. KERSEY.

Mechanical Movement.

No. 207,425. Patented Aug. 27, 1878.

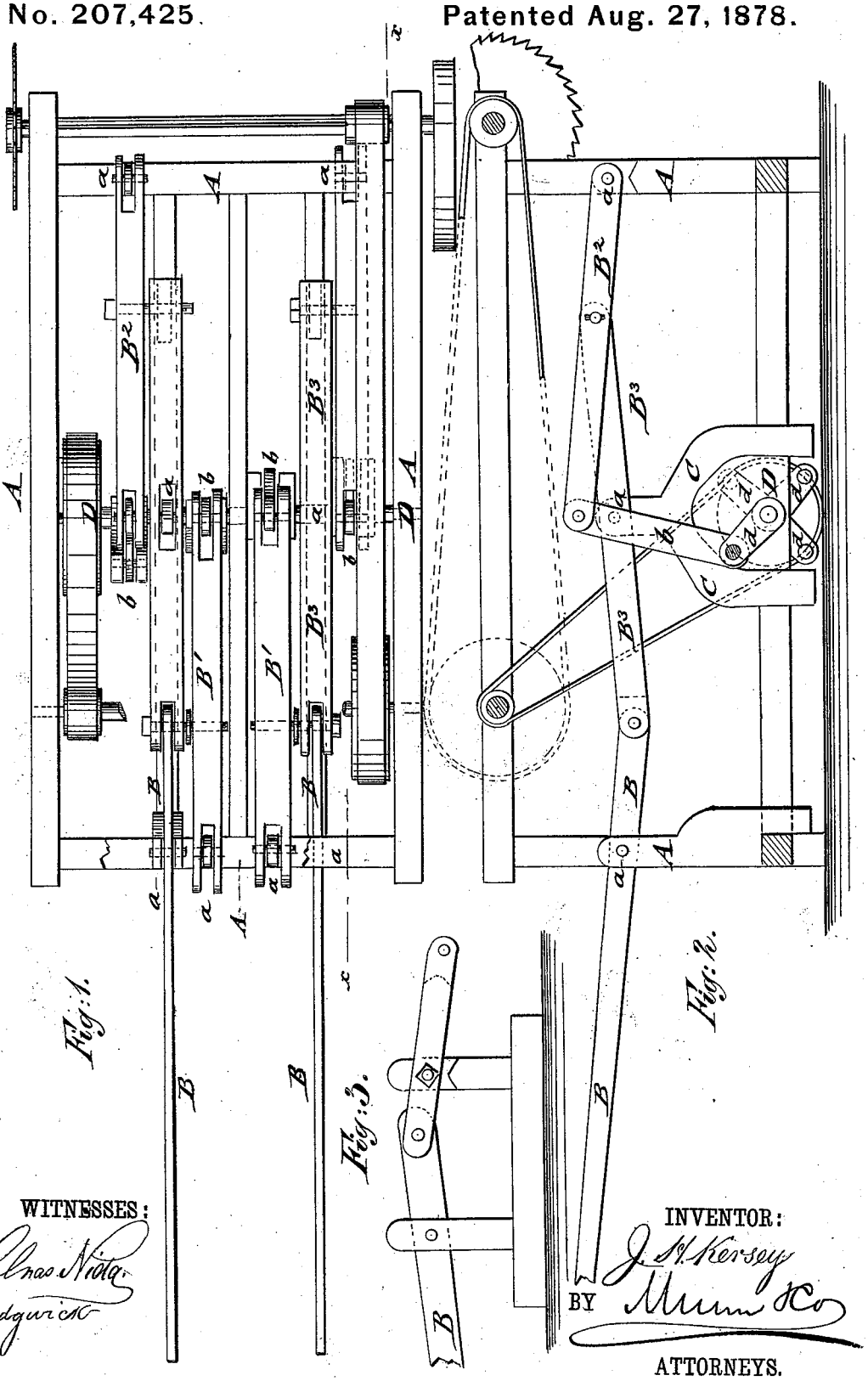

Fig: 1.

Fig: 2.

Fig: 3.

WITNESSES:

Chas. Nichols

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# UNITED STATES PATENT OFFICE.

JOHN H. KERSEY, OF COLUMBUS JUNCTION, IOWA, ASSIGNOR TO HIMSELF AND ALLEN W. HEFTON, OF SAME PLACE.

## IMPROVEMENT IN MECHANICAL MOVEMENTS.

Specification forming part of Letters Patent No. **207,425**, dated August 27, 1878; application filed July 29, 1878.

*To all whom it may concern:*

Be it known that I, JOHN H. KERSEY, of Columbus Junction, in the county of Louisa and State of Iowa, have invented a new and Improved Lever-Power, of which the following is a specification:

In the accompanying drawings, Figure 1 represents a top view of my improved lever-power; Fig. 2, a vertical longitudinal section of the same on line *x x*, Fig. 1; and Fig. 3, a side elevation, showing arrangement of auxiliary operating-levers to the machine.

Similar letters of reference indicate corresponding parts.

The invention relates to an improved compound lever-power for driving light machinery, such as circular saws, small thrashing-machines, churns, cider-mills, &c., or for propelling boats, vehicles, street-cars, &c.; and the invention consists of the combination of two or more operating and transmitting levers and crank-rods with a compound crank-shaft, and with means for transmitting the motion from the same.

Referring to the drawings, A represents the supporting-frame of my improved lever-power, which is arranged with four fixed pivotal points or fulcra, *a*, for the different transmitting parts of each lever system, one fulcrum being at one side of frame A for supporting the longer operating-lever B; the second fulcrum sidewise of the first for a transmitting-lever, $B^1$; the third at the opposite end of frame A for a second transmitting-lever, $B^2$; and the fourth fulcrum midway between the first and third on a center post, C, for supporting an intermediate lever, $B^3$, that forms the connecting-link between the actuating-lever B and the transmitting-levers $B^1$ and $B^2$. The transmitting-levers $B^1$ $B^2$ are pivoted to the central lever $B^3$ at equidistant points from the fulcrum of the same, the shorter end of the actuating-lever B being also pivoted to one end of the same. The transmitting-levers $B^1$ $B^2$ extend from the ends toward the center of frame A, their inner ends being in line with the fulcrum of the central lever and connected by crank-rods *b* with the crank-arms *d* of compound crank-shaft D, that turns in bearings of frame A. The transmitting-levers $B^1$ $B^2$ are connected to diametrically-opposite crank-arms of the crank-shaft D, while a second system of levers of exactly the same construction is arranged sidewise of the first and connected to a second set of diametrically-opposite cranks of the crank-shaft D, which latter crank-arms are, however, at right angles to the former, so as to overcome by the alternating working of the two systems of levers the dead-points of the crank-shaft D, and impart a uniform rotary motion to the same.

The power is transmitted from the crank-shaft, by belt-and-pulley gearing or otherwise, to the driving-shaft of the machine or vehicle, as required.

If still greater power is desired, another set of operating-levers may be applied to the ends of the intermediate central levers opposite to those to which the first set of levers is applied, in the manner shown in Fig. 3. This increases the power of the device, as it admits the working of four levers by four men at the same time. The crank-shaft is revolved in continuous manner, and may be reversed in an instant. As there are no dead-points to overcome, the lever-power may be started from any point, and is always under perfect control.

Two or four men may thus accomplish by means of the lever-power the work of as many horses, whether the power is applied for driving light machinery, vehicles, or other objects.

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

An improved lever-power consisting of two or more actuating hand-levers, centrally-fulcrumed intermediate levers, and symmetrically-pivoted transmitting-levers, in connection with a compound crank-shaft, whose crank-arms for each set of transmitting-levers are arranged diametrically to each other, while the crank-arms of one set of transmitting-levers are at right angles to those of the other set of levers, substantially as and for the purpose set forth.

JOHN HOLLAND KERSEY.

Witnesses:

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ELIAS W. his × mark. DUFFEY.