

W. J. McDOUGALL.  
Gearing.

No. 207,430.

Patented Aug. 27, 1878.

Fig. 1.

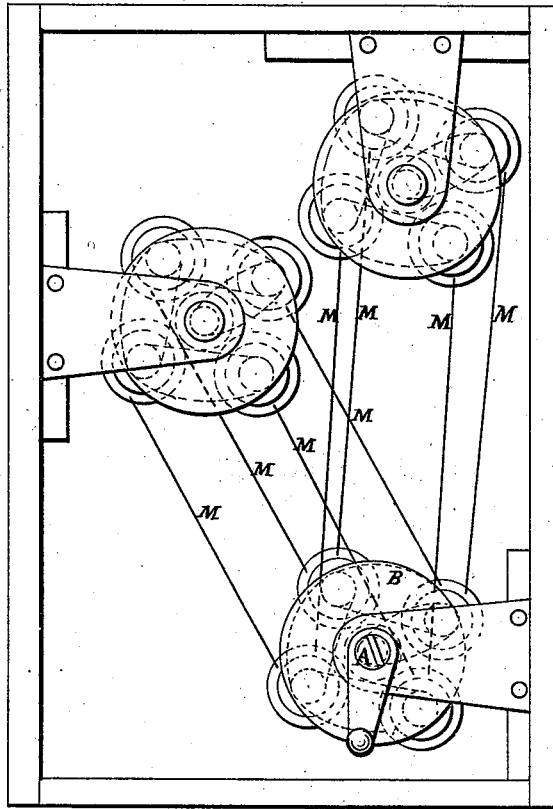
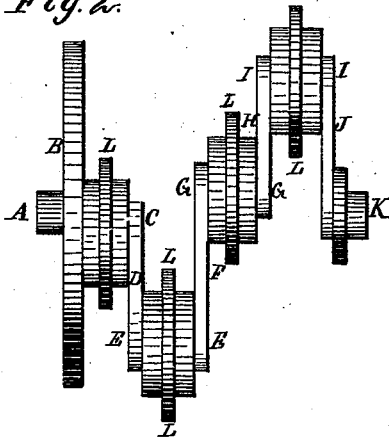


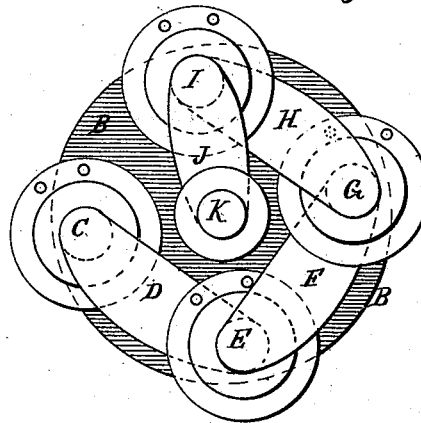
Fig. 2.



WITNESSES:

*Henry N. Miller*  
*C. Sedgwick*

Fig. 3.



INVENTOR:

*W. J. McDougall*  
BY *Munn & Co.*

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

WILLIAM J. McDOUGALL, OF KENDALL CREEK, PENNSYLVANIA, ASSIGNOR  
TO HIMSELF AND JAMES KNOPPENBERGER, OF SAME PLACE.

## IMPROVEMENT IN GEARING.

Specification forming part of Letters Patent No. **207,430**, dated August 27, 1878; application filed  
July 22, 1878.

*To all whom it may concern:*

Be it known that I, WILLIAM JAMES McDOUGALL, of Kendall Creek, in the county of McKean and State of Pennsylvania, have invented a new and useful Improvement in Mechanical Movements, of which the following is a specification:

Figure 1 is a plan view of my improved device. Fig. 2 is a side view of one set of cranks. Fig. 3 is a plan view of the same.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved device for transmitting rotary motion long distances, so as to avoid the use of a number of engines and the necessity of transporting engines up high hills and into other inconvenient places, and which, at the same time, shall be simple in construction and reliable in use.

The invention consists in the combination of two or more sets of three or more cranks, the loose wheels, and flexible connecting-wires or wire cords with each other for transmitting motion from the driving-power to the machinery to be driven, as hereinafter fully described.

A represents a shaft, to which motion is given by a steam-engine or other desired or convenient power. To the end of the shaft A is attached a crank-wheel or crank, B, to which is rigidly attached the upper end of a crank-pin, C. To the lower end of the crank-pin C is rigidly attached the end of an arm, D. To the other end of the arm D is rigidly attached the upper end of a crank-pin, E, to the lower end of which is rigidly attached the end of an arm, F. To the other end of the arm F is rigidly attached the upper end of a crank-pin, G, to the lower end of which is rigidly attached the end of an arm, H. To the other end of the arm H is rigidly attached the upper end of a crank-pin, I, to the lower end of which is attached the end of an arm, J. The other end of the arm J is attached to

a pin, pivot, or shaft, K, placed in line with the driving-shaft A.

In this way four cranks are formed, which are so arranged that the four crank-pins C E G I may be equally distant from each other and equally distant from the axes of the shafts A K. Three, four, or more cranks may be formed; but in each case all the crank-pins must be equally distant from each other and equally distant from the axis of the driving-shaft A.

Upon each of the crank-pins C E G I is placed a loose wheel, L, which is connected by a wire or wire cord, M, with the corresponding wheel of a similar set of cranks and crank-pins, the shaft of which is connected with the machinery to be driven.

Any desired number of sets of cranks, crank-pins, and wheels may be connected in the same way with the first or driving set.

The drawings show two sets connected with the first set. With this construction, as the first set is revolved by the driving-power, exactly the same motion will be given to the other set or sets connected with the said first set.

This device is especially useful in the oil regions, as it enables several drills and pumps to be worked by a single large engine, and renders it unnecessary that each should be driven by its own engine.

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

The combination of two or more sets of three or more cranks, B C D D E F F G H, &c., the loose wheels L, and the flexible connecting-wires or wire cords M with each other, for transmitting motion from the driving-power to the machinery to be driven, substantially as herein shown and described.

WILLIAM JAMES McDOUGALL.

Witnesses:

ALLEN A. CRAIG,  
JNO. G. PURPLE.