(No Model.)

O. O. KRAVIK.

GEARING.

No. 386,594. Patented July 24, 1888.

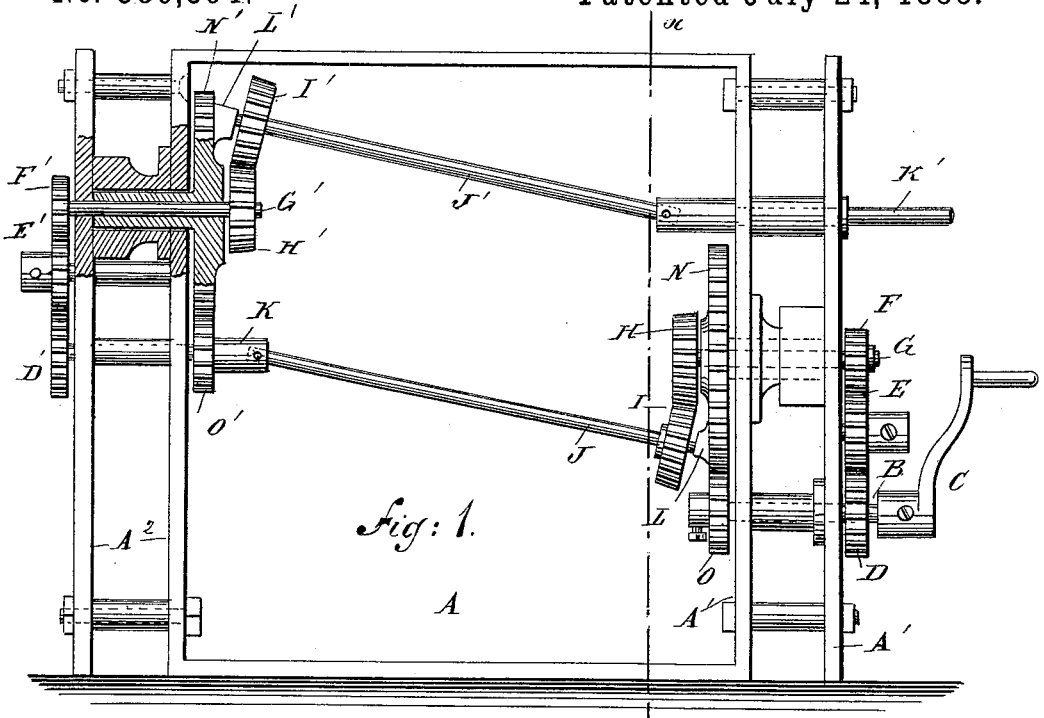

Fig: 1.

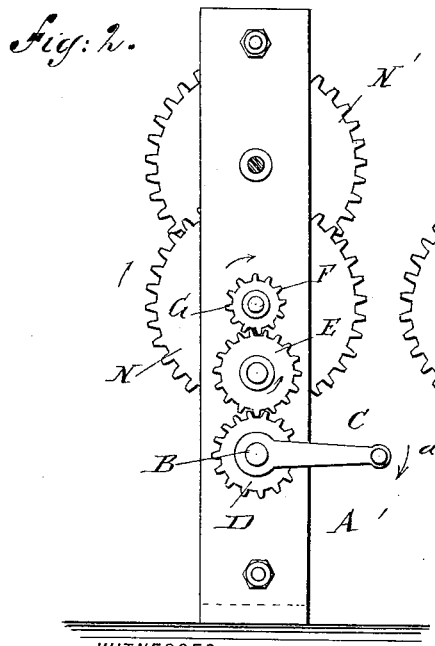

Fig: 2.

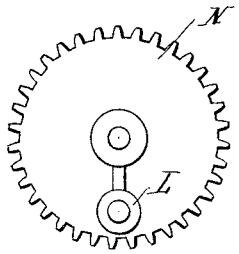

Fig: 4.

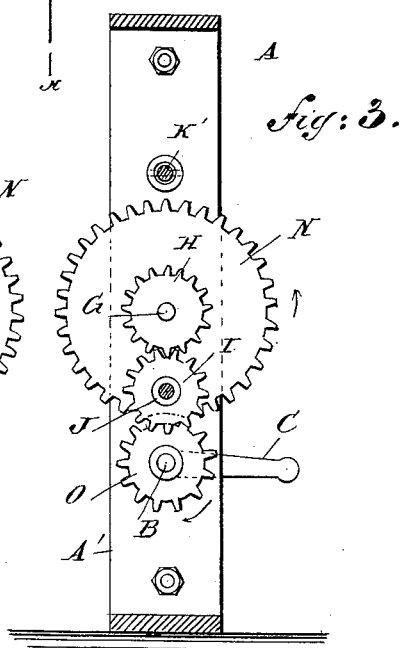

Fig: 3.

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GEARING.

SPECIFICATION forming part of Letters Patent No. 386,594, dated July 24, 1888.

Application filed March 17, 1888. Serial No. 267,503. (No model.)

To all whom it may concern:

Be it known that I, OLE O. KRAVIK, of St. Carl, in the county of Ward and Territory of Dakota, have invented certain new and useful Improvements in Gearing, of which the following is a full, clear, and exact description.

The object of the invention is to provide a gearing for rapidly transmitting motion.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement, parts being in section. Fig. 2 is an end elevation of the same. Fig. 3 is a transverse sectional elevation of the same on the line *x x* of Fig. 1, and Fig. 4 is a face view of one of the gear-wheels.

A suitably-constructed frame, A, is provided with the standards A′, on which is mounted to rotate the main shaft B, provided on its outer end with a crank-arm, C, for imparting a rotary motion to the said shaft B. On the latter is secured a gear-wheel, D, which meshes into an intermediate gear-wheel, E, mounted to rotate on a stud projecting from one of the standards A′. The intermediate gear-wheel, E, meshes into a gear-wheel, F, secured on a shaft, G, mounted to rotate in the standards A′, and carrying on its inner end a bevel gear-wheel, H, which meshes into a bevel gear-wheel, I, secured to a shaft, J, held in an inclined position and secured at one end to a shaft, K, mounted to rotate in suitable bearings in the standards A^2 of the main frame A. The shaft K is in axial line with the shaft G.

The other end of the shaft J has its bearing in a lug, L, secured to the face of a large gear-wheel, N, mounted to rotate loosely on the shaft G and meshing into a gear-wheel, O, secured to the inner end of the main shaft B.

The operation is as follows: When the operator turns the handle or crank-arm C, he imparts a rotary motion to the main shaft B, and the said rotary motion is transmitted to the shaft G by the gear-wheels D, E, and F, and at the same time a rotary motion is imparted to the large gear-wheel N by the gear-wheel O, secured on the main shaft B and meshing into the said large gear-wheel N. The rotary motion of the large gear-wheel N causes the shaft J to travel with the said gear-wheel, as the bearing of one end of the said shaft J is in the lug L on the said large gear-wheel N, while the other end of the shaft J is fastened to the shaft K in axial line with the said large gear-wheel N. The shaft G, on which the large gear-wheel N turns loosely, imparts its rotary motion, by means of the bevel gear-wheel H, to the bevel gear-wheel I, secured on the said inclined shaft J, so that the latter receives a double rotary motion, first, by turning with the rotating gear-wheel N, and, second, by being in gear by the bevel gear-wheel I with the bevel gear-wheel H on the rotating shaft G. Thus it will be seen that a very rapid rotary motion is given to the shaft J, and the said rotary motion is transmitted to the shaft K.

The rotary motion of the shaft K may be directly used for driving suitable machinery; or the same arrangement, as above described and illustrated to the right of Fig. 1, may be duplicated and connected with the said shaft K, which will then have the same function as the main shaft B—that is, the shaft K will then carry a gear-wheel, D′, which will mesh into a gear-wheel, E′, mounted to rotate on a stud secured to one of the standards A^2 and meshing into a gear-wheel, F′, secured to the shaft G′, which carries a bevel gear-wheel, H′, meshing into the bevel gear-wheel I′, secured to the inclined shaft J′, connected at one end with the shaft K′, the shafts K′ and G′ being placed in axial line with each other in the same manner as the shafts K and G above described. The inner end of the shaft J′ has its bearing in a lug, L′, formed on the face of the gear-wheel N′, mounted to rotate loosely on the shaft G′ and meshing into a gear-wheel, O′, secured on the shaft K.

The device above described and shown on the left of Fig. 1 is a duplication of the device above described and shown on the right of Fig. 1. The operation is precisely the same, the only difference being that the accelerated speed of the shaft K is increased and transmitted to the shaft K′ in the same manner as above described in reference to the transmission of the rotary motion of the main shaft B to the shaft K.

It will be seen that any number of such devices, as shown to the left of Fig. 1 and as above described, can be connected with each other, so as to obtain any desired rate of speed.

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

1. In a gearing, the combination, with a main shaft adapted to receive a rotary motion, of the gear-wheel D, secured on the said shaft and meshing into the intermediate gear-wheel, E, the shaft G, carrying the gear-wheel F, meshing into the said intermediate gear-wheel, E, the bevel gear-wheel H, secured on the said shaft G, the inclined shaft J, carrying the bevel gear-wheel I, meshing into the said bevel gear-wheel H, the shaft K, held in axial line with the said shaft G and on which one end of the said shaft J is pivotally connected, the gear-wheel N, mounted to rotate loosely on the said shaft G, and having a bearing on the other end of the said inclined shaft J, and the gear-wheel O, secured on the main shaft B and meshing into the said gear wheel N, substantially as shown and described.

2. In a gearing, the combination, with two shafts, B and G, rotating in the same direction, of a bevel gear-wheel, H, secured to the said shaft G, an inclined shaft, J, carrying a bevel gear-wheel, I, meshing into the said bevel gear-wheel H, a large gear-wheel, N, mounted to rotate loosely on the said shaft G and forming the bearing for one end of the said shaft J, and the gear-wheel O, meshing into the said large gear-wheel N and being secured to the said shaft B, substantially as shown and described.

3. In a gearing, the combination, with two shafts, B and G, rotating in the same direction, of a bevel gear-wheel, H, secured to the said shaft G, an inclined shaft, J, carrying a bevel gear-wheel, I, meshing into the said bevel gear-wheel H, a large gear-wheel, N, mounted to rotate loosely on the said shaft G and forming the bearing for one end of the said shaft J, a gear-wheel, O, meshing into the said large gear-wheel N and being secured to the said shaft B, and the shaft K, mounted to rotate and placed in axial line with the said shaft G, said shaft K forming the bearing for the other end of the said shaft J, substantially as shown and described.

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Witnesses:
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