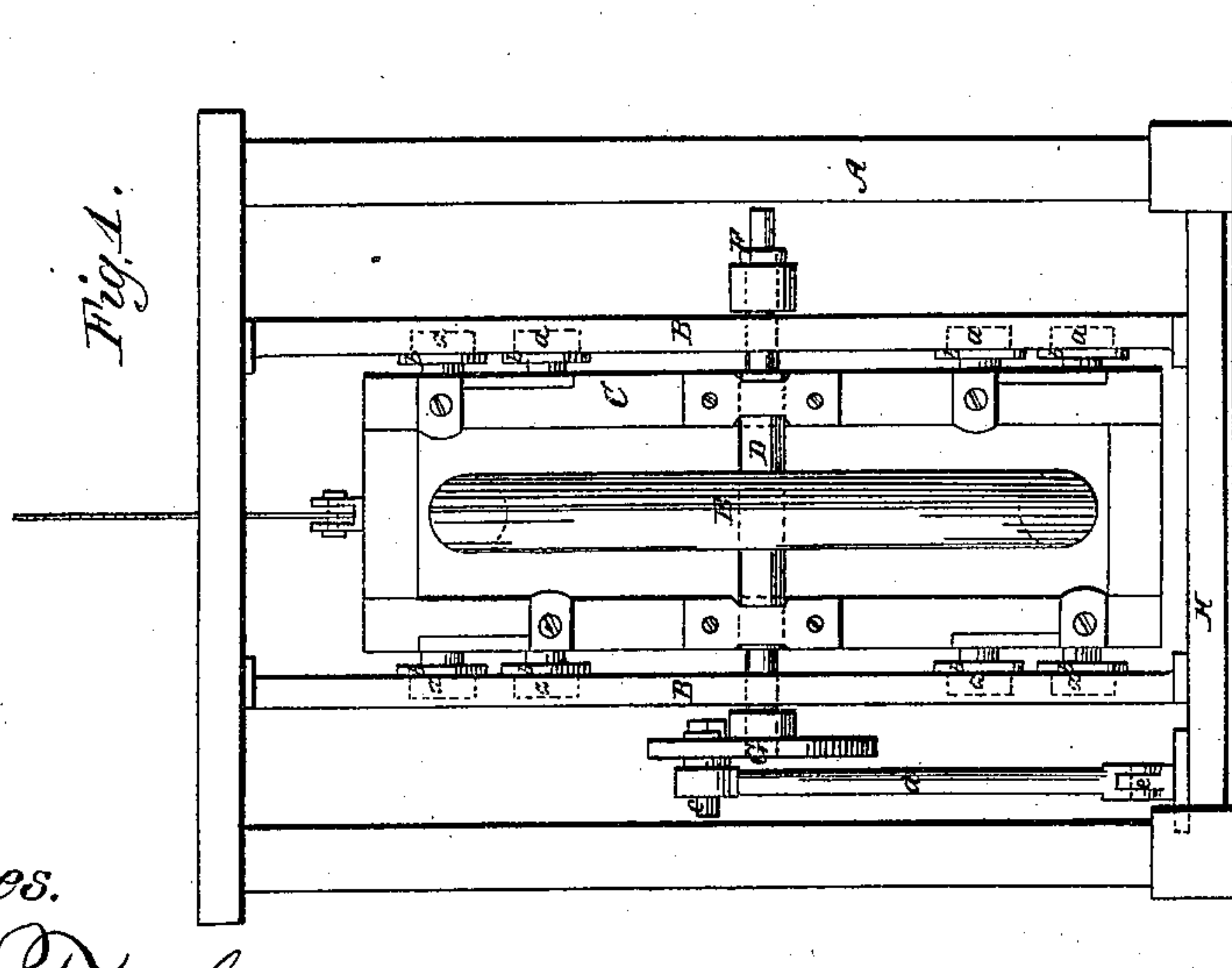
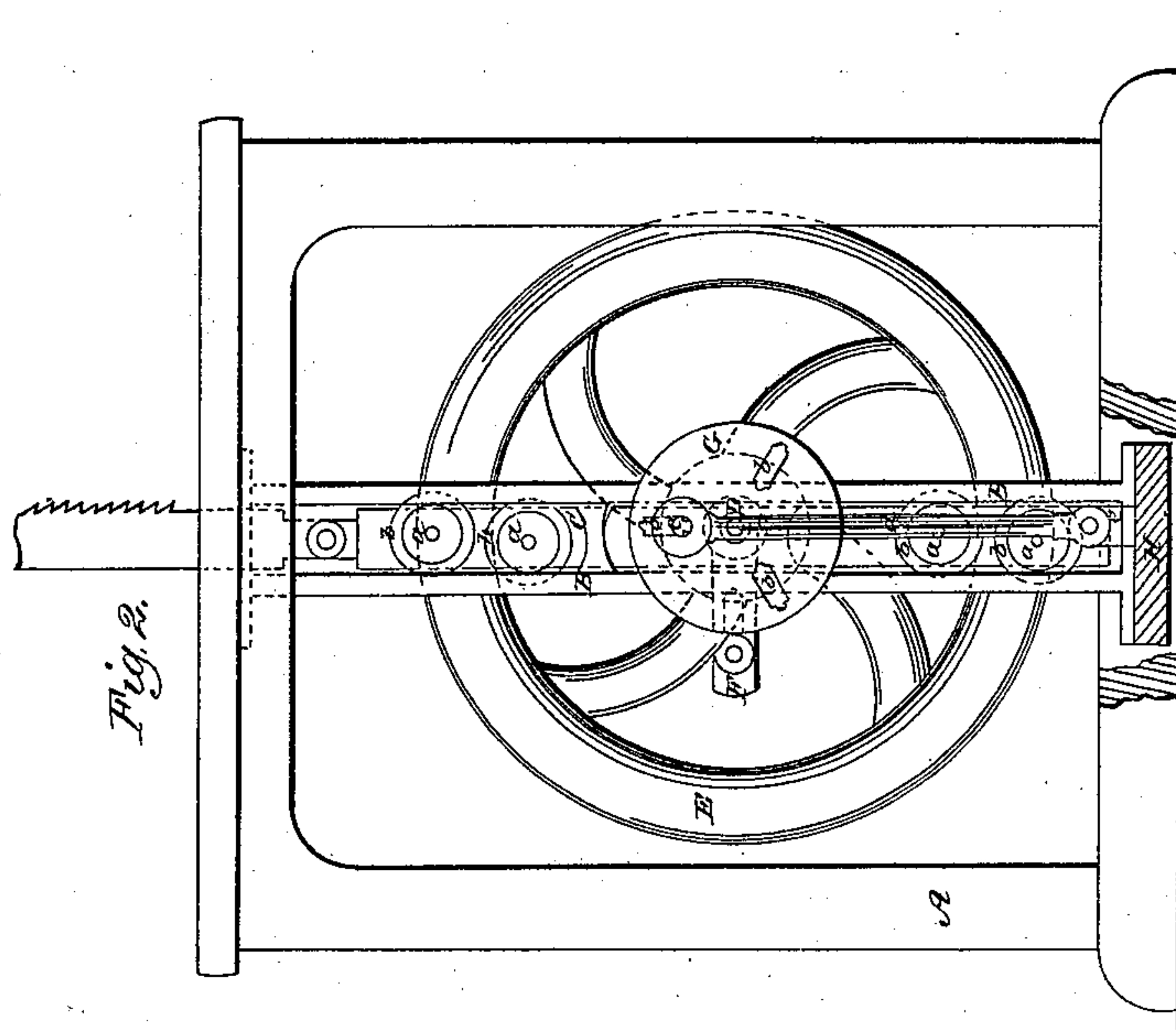


M. Kaefler,

Converting Motion.

N^o 24,218.

Patented May 31, 1859.



Witnesses.

*Wm. Tusch.
R. S. Spencer.*

Inventor.

Mathias Kaefler.

UNITED STATES PATENT OFFICE.

MATHAUS KAEFER, OF NEW YORK, N. Y.

MACHINERY FOR TRANSMITTING MOTION.

Specification of Letters Patent No. 24,218, dated May 31, 1859.

To all whom it may concern:

Be it known that I, MATHAUS KAEFER, of the city, county, and State of New York, have invented a new and Improved Device
5 for Transmitting Motion; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in
10 which—

Figure 1 represents a front elevation of my device. Fig. 2 is a side elevation of the same.

Similar letters of reference in both views
15 refer to corresponding parts.

This invention relates to certain improvements in transmitting motive power, for which a patent was granted to me on the 5th day of May 1857; and it consists in arranging the fly-wheel in a sliding carriage in such
20 a manner that the weight of the fly wheel and of the frame itself assists in carrying the crank over the dead points, and that by the action of this weight the crank is always
25 kept in a position most favorable for the motive power to act on the same, and the whole is so arranged that the reciprocating motion of the piston of a steam engine, or of some other source of power can be transmitted as
30 such for the purpose of working upright saws, pumps, etc., in which case the weight of the fly wheel and of the sliding carriage not only carries the crank over the dead points but it also assists to overcome a certain
35 resistance in that direction in which the power is most needed.

To enable those skilled in the art to make and use my invention I will proceed to describe its construction and operation.

40 A represents a frame constructed of wood and in the proper place and relation to an upright saw or pump, or some other working machine, and arranged in this frame; and rigidly attached to the same are the
45 metallic bars, B, which form the guides for the sliding carriage C. This carriage moves up and down on friction rollers, *a*, and the bars, B, are slotted so that the friction rollers work freely up and down and these rollers
50 are provided with flanges, *b*, which by working against the bars, B, form the guides for the carriage C, in a lateral direction.

The carriage, C, forms the bearings for

a shaft, D, which extends beyond the bars, 55
B on each side of the carriage and to which the fly wheel, E, is rigidly attached between the carriage. Secured to the shaft, D, on one side of the carriage and beyond the bars, B, is the crank, F, which connects with
60 the piston of a steam engine or with some other source of power, and fastened on the opposite end of the shaft, D, is a plate or disk, G, which is provided with slots, *b*, in one of which a wrist pin, *c*, is secured,
65 which connects by means of a rod, *d*, with a lug, *e*, which is fastened to the cross timber, H, of the frame, A, or to some other suitable spot on the ground and the wrist pin, *c*, is attached to the disk, G, in a position
70 most favorable for the transmission of the power. With heavy machines it will be necessary to employ two rods, *d*, one on each side of the carriage, so as to prevent it from binding or sinking down on one side.
75

The operation is as follows:—When no power is applied to the crank, F, the carriage, G, will sink down to its lowest position as represented in the drawing, in which it is supported by the rod or rods, *d*, and
80 it is obvious that in this case the wrist pin, *c*, will be in its highest position, and the crank, F, is so positioned upon the shaft, D, as most favorably to receive its motion in whatever direction communicated, for in-
85 stance, if the piston acts in a horizontal direction, the wrist pin, *c*, must be changed to another one of the slots, *d*, at right angles with the position occupied by the same in the drawings, but, from this it will be easily
90 understood, that said pin can always be brought in such a position, that the crank remains on its half center when no power is applied to the same, and consequently the machine will always be in the proper position
95 to be started. And if a saw is connected to the sliding carriage, C, or if this carriage is connected with the frame of an upright saw or with the piston of a pump, or with some other similar part of a machine,
100 the operation of which takes more power in one direction than in the other, the weight of the carriage and its appendages assists in overcoming the resistance of the saw or pump pistons or another similar
105 part of a machine in its descent and the power to be exerted by the motion is more equalized. It must, however, be remarked

that the momentum of the fly wheel assists in raising the carriage and the power necessary to raise the same is not of so much account as would appear when my device is
5 judged from its state of rest.

The principal point of difference between my present application and between the device secured to me by Letters Patent dated May 5th., 1857, is, that I dispense entirely
10 with the weight employed in my former device for the purpose of enabling the fly wheel to pass its dead center, and that, with my new device the weight of the carriage and of the fly wheel, independent from the
15 momentum of the same when it is in motion, places the crank on its half center so that

the motor can be started at all times without any difficulty.

I do not claim, therefore, any of those parts which have been secured to me in my
20 former patent, but

What I do claim as new and desire to secure by Letters Patent is:—

The arrangement of the carriage, C, and fly-wheel, E, in such relation to the crank, 25 F, that the weight of the carriage and of the fly-wheel acts on the crank, substantially in the manner herein specified.

MATHAUS KAEFER.

Witnesses:

WM. TUSCH,

R. S. SPENCER.