

(No Model.)

2 Sheets—Sheet 1.

J. K. GRIFFIN.

HORSE POWER.

No. 365,436.

Patented June 28, 1887.

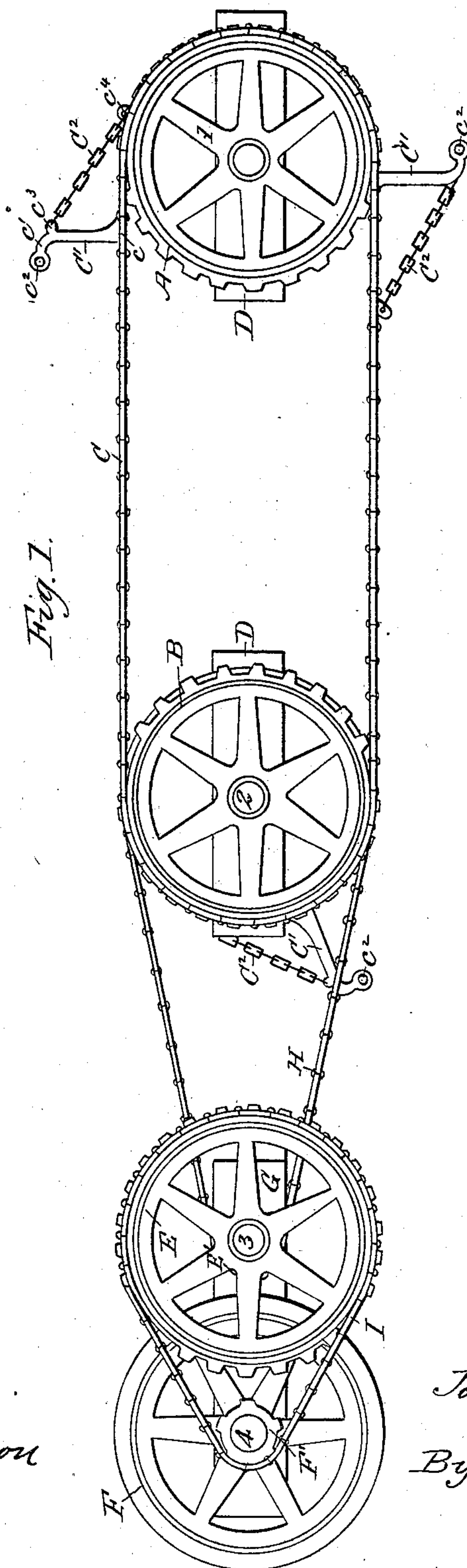


Fig. 1.

Witnesses:
Tom R. Stuart
L. Sward Bacon

Inventor:
James K. Griffin,
By *Quinn*
Atty.

(No Model.)

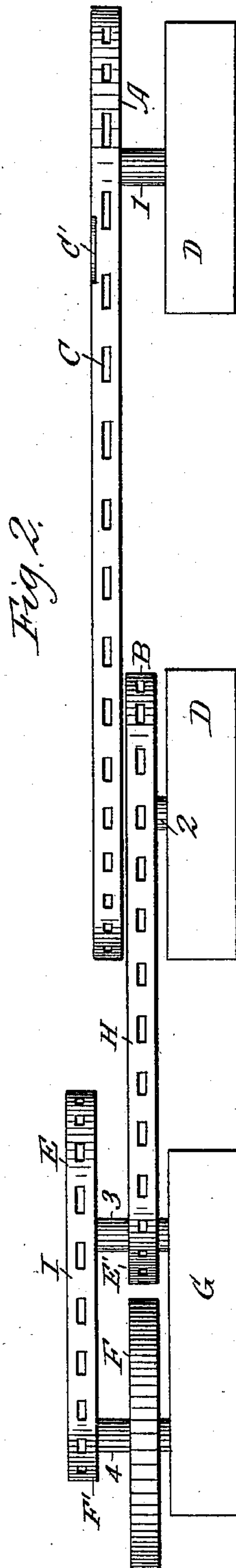
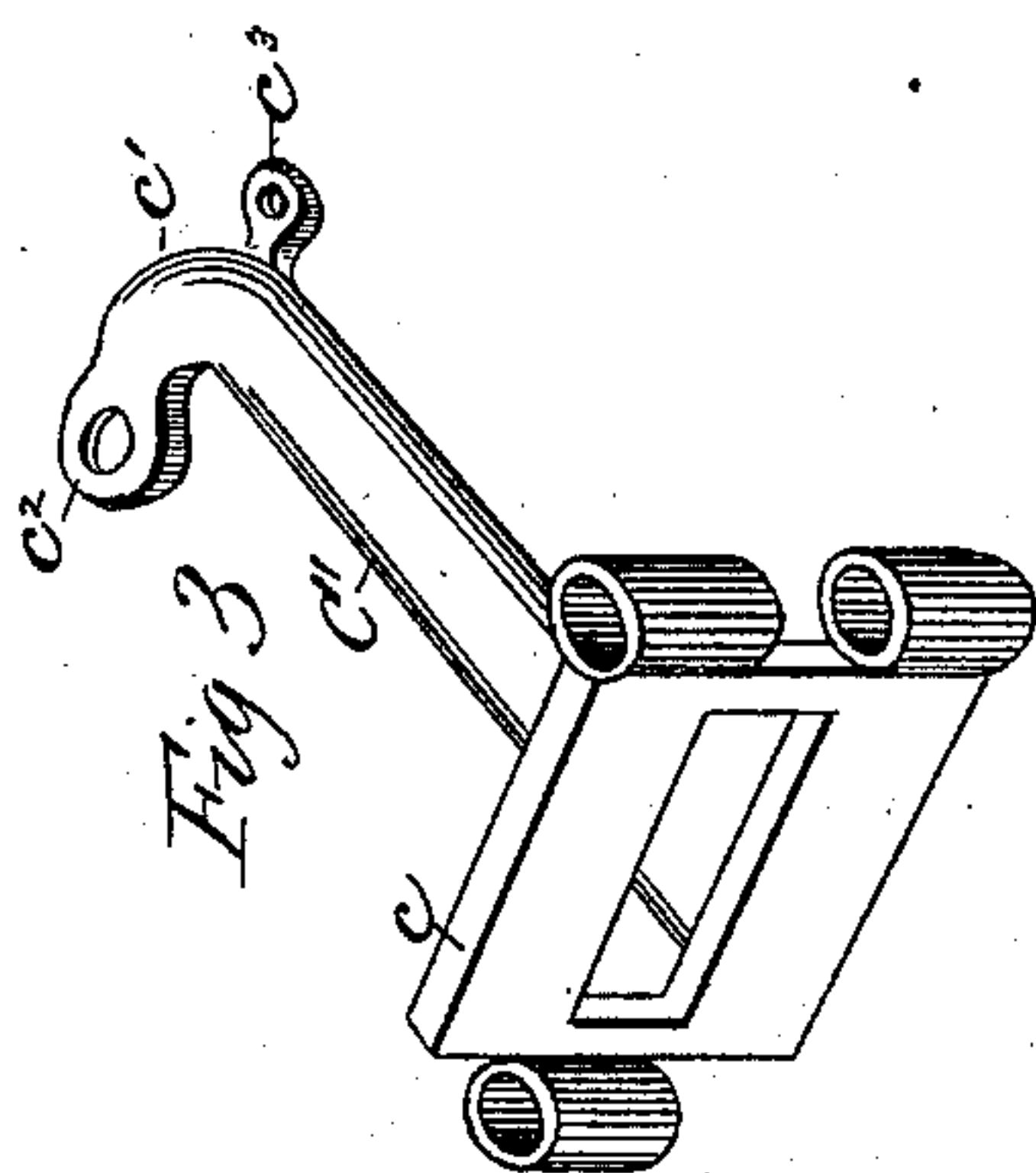
2 Sheets—Sheet 2.

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No. 365,436.

Patented June 28, 1887.



Witnesses.
 J. R. Stuart.
 L. Seward Bacon

Inventor:
James K. Griffin
By *Cummins*
Atty.

UNITED STATES PATENT OFFICE.

JAMES K. GRIFFIN, OF BROOKLYN, NEW YORK.

HORSE-POWER.

SPECIFICATION forming part of Letters Patent No. 365,436, dated June 28, 1887.

Application filed October 8, 1886. Serial No. 215,752. (No model.)

To all whom it may concern:

Be it known that I, JAMES K. GRIFFIN, a citizen of the Dominion of Canada, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Horse-Powers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to horse-powers; and it consists in the construction and arrangement of the parts, which will be more fully hereinafter described, and pointed out in the claims.

One object of my invention is to provide a horse-power mechanism in which the power of the animals attached to a suitable drive-chain will be exerted in a straight line, instead of in a continuous curve, so that while some of said animals are passing around the end curves the greater number of the same will be pulling in a straight line.

A further object of my invention is to so construct the parts of the machine that they may be readily detached and packed in a small space for transportation, and when desired set up again, which is accomplished by the simplicity and lightness of construction of the parts of the device, and the readiness with which they can be manipulated.

A still further object of my invention is to so construct and arrange a series of drive-chains and sprocket-wheels or gearing, with the source of power separated from the transmission of the same, that the mechanism will run easily and lightly, and at the same time give the power-wheel rapid revolution.

I attain these objects by the mechanism illustrated in the accompanying drawings, wherein like letters of reference indicate similar parts in the several views, and in which—

Figure 1 is a plan view of my improved horse-power mechanism. Fig. 2 is a side elevation of the same. Fig. 3 is a detail perspective view of one of the angular draw-arms and the link to which it is attached.

The end of the machine to which the animals are attached consists of the sprocket-wheels A and B, having an endless drive-chain, C, surrounding them and engaging with the

sprockets on their peripheries. These two wheels A and B are keyed upon the ends of the shafts 1 and 2, which are stepped or otherwise secured in a base-rest, D, of any preferred form of construction.

The wheels A and B may be situated at any suitable distance apart. The greater the distance of separation the more advantageous and practicable will be the power given by the animals, as the line of draft will be straight for a long distance. The wheel A is a single sprocket-wheel; but the wheel B is constructed with two series of sprockets cast integral with the periphery thereof, to which two drive-chains may be applied, for purposes which will be more fully hereinafter described.

The drive-chain C is provided at regular intervals with angular draw-arms C', which are securely fastened to one of the links *c* of the chain C in any suitable manner, as illustrated in Fig. 3. The draw-arms C' are formed with an angular projection, *c'*, on the end of which an eye, *c*², is constructed, to which a single or double whiffletree may be attached.

The backs of the arms C', near their outermost ends, are formed with eyes *c*³, cast integral therewith, into which eyes one end of a brace-chain, C², is hooked. The other ends of these brace-chains C² are connected to eyes *c*⁴, formed with the links *c* of the drive-chain C some distance in the rear of the links to which the arms C' are attached. These chains act as draft-equalizers, and thereby distribute the force exerted by the animals over a larger surface. It will be observed that the illustration shows these draw-arms C' so situated that while some of the animals are passing the end curves the greater number are exerting their power on a straight line. This arrangement of the arms will be followed out precisely in the same manner if it is desired to increase their number.

The end of the machine from which power is transmitted has a sprocket-wheel, E, mounted on a vertical shaft, 3, and a drive-pulley, F, mounted on a shaft, 4. The shafts 3 and 4 are secured to a base-rest, G, in a manner similar to the shafts 1 and 2 of the wheels A and B. Mounted on the shaft 3 adjacent to the rest G is a small sprocket-wheel, E', to which power is transmitted by the drive-chain H,

which surrounds the lower series of sprockets on the periphery of the wheel B'. Above the drive-pulley F a small sprocket-wheel, F', is mounted on the shaft 4, which is encircled by the chain I, running over the wheel E. The wheel F' is mounted on a level with the wheel E, as is also the wheel E' with the wheel B.

Power is applied on the two wheels A and B by the operating drive-chain C, and from the lower series of sprockets of the wheel B transmitted through the chain H, encircling the same, to the small sprocket-wheel E'. The wheel E is turned by the wheel E', and the chain I transmits the power of the wheel E to the wheel F', which in turn revolves the drive-pulley F, from which, through the medium of a suitable belt, power may be transmitted to a desired purpose of driving.

The drive-chains used in this device may be of ordinary construction and of a form now in common use and applicable to the purpose. Suitable bridges may be placed over the chain H, so that the animals may readily pass over the same.

This machine is especially applicable for mining regions of high elevation where there is a scarcity of water and steam power attainable for driving crushers, pulverizers, or stamps, the parts of the same being readily transported on the backs of animals.

The drive-pulley F may be placed in any suitable position, and other changes in detail may be made in the construction and arrangement of the parts and substituted for those shown and described without in the least departing from the nature and principle of my invention.

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

1. In a horse-power, the combination of a series of sprocket-wheels arranged in longitudinal alignment, the power-wheels being arranged separate and apart from the transmitting-wheels, suitable drive chains surrounding and connecting said wheels, a pulley in alignment with the transmitting-chain, and means, as described, for applying power to the driving-chain, as herein specified.

2. In a horse-power, the combination of two sprocket-wheels arranged in longitudinal alignment, an endless drive-chain surrounding and connecting said wheels, angular arms extending outwardly from the said chain, and supplementary brace-chains for said arms, substantially as described.

3. In a horse-power, the combination of two sprocket-wheels mounted upon suitable shafts arranged in longitudinal alignment, one of said wheels, B, having a double series of sprockets, an endless drive-chain surrounding and connecting said wheels, angular arms arranged at intervals on said drive-chain, provided with suitable brace-chains, and an endless chain surrounding the lower sprockets on wheel B and extending to and connected with the transmitting power-wheels, substantially as described.

4. In a horse-power, the combination of a series of sprocket-wheels arranged in longitudinal alignment, endless drive-chains surrounding and connecting the same, angular arms attached to one of the drive-chains for applying power, supplementary brace-chains attached to said angular arms, vertical shafts upon which the wheels are mounted, a pulley-wheel, and base-rests in which shafts are secured, substantially as described.

5. In a horse-power, the combination of the sprocket-wheels A and B, an endless drive-chain, C, surrounding and connecting the same, angular arms C', attached to said chain C, the endless chain H, surrounding the wheel E' and the lower sprockets of the wheel B, the sprocket-wheel E', chain I, surrounding the said wheel E and extending to and surrounding the wheel F', mounted above the drive-pulley F, vertical shafts 1, 2, 3, and 4, upon which the said parts are relatively mounted, and the base-rests D and G, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES K. GRIFFIN.

Witnesses:

CHARLES S. HYER,
GEO. S. BROCKY.