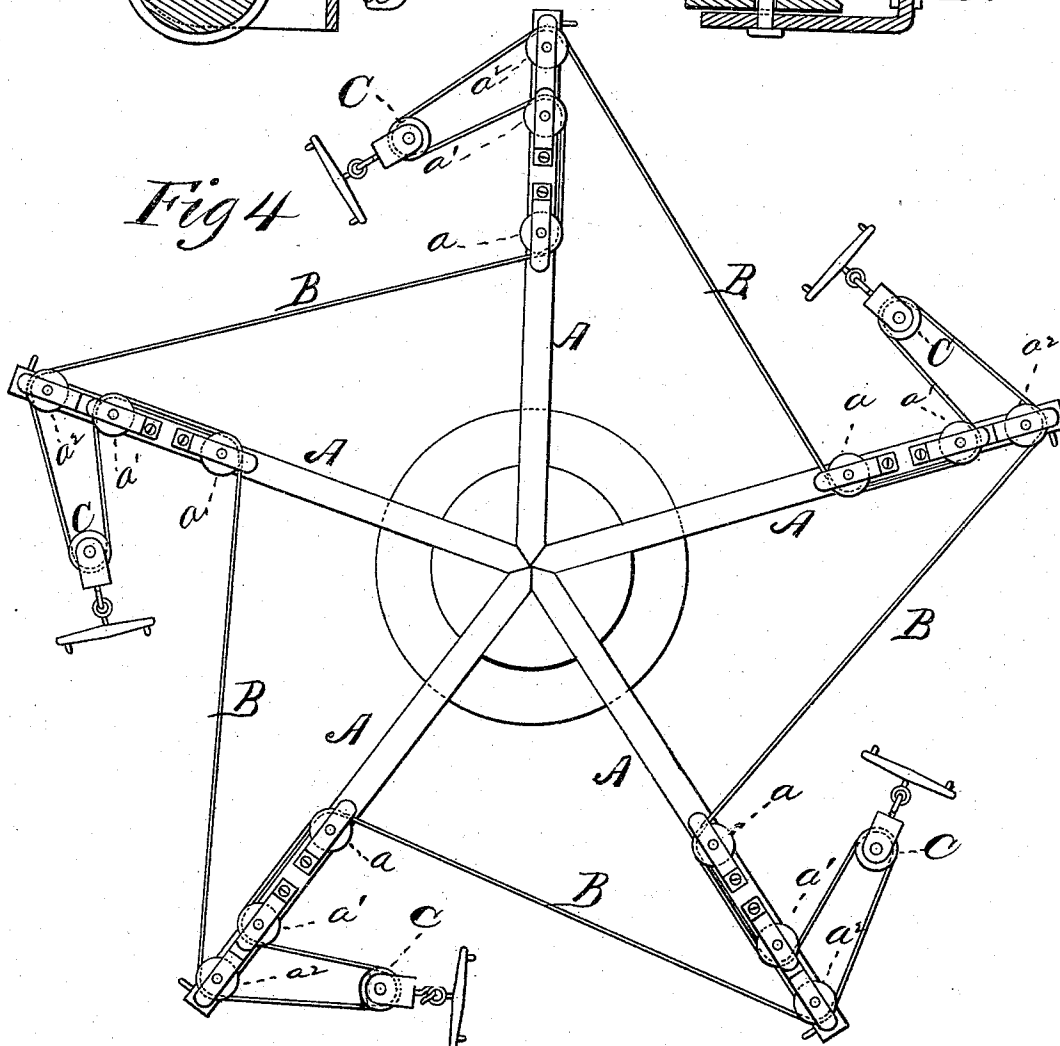
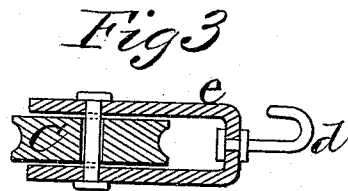
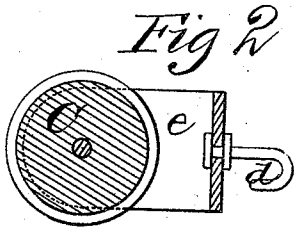
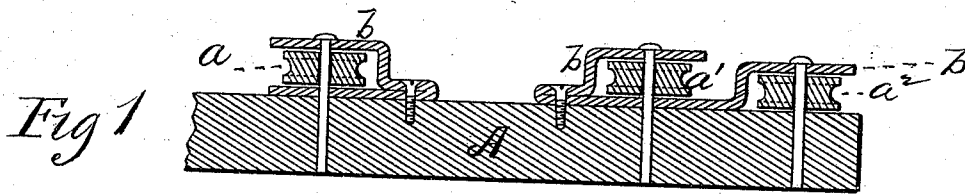


O. WOODWORTH.
HORSE-POWER EQUALIZER.

No. 172,237.

Patented Jan. 11, 1876.



WITNESSES

Villette Anderson.
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UNITED STATES PATENT OFFICE

ORVILLE WOODWORTH, OF ROSEMONT, MINNESOTA.

IMPROVEMENT IN HORSE-POWER EQUALIZERS.

Specification forming part of Letters Patent No. 172,237, dated January 11, 1876; application filed November 27, 1875.

To all whom it may concern:

Be it known that I, ORVILLE WOODWORTH, of Rosemont, in the county of Dakota and State of Minnesota, have invented a new and valuable Improvement in Horse-Power Equalizers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal vertical section of my equalizer, and Figs. 2 and 3 are transverse vertical sectional views thereof. Fig. 4 is a plan view of the same.

This invention has relation to improvements in horse-powers; and it consists in the employment of pulleys arranged on the upper face of each sweep, and in the same horizontal plane, in connection with whiffletree-pulleys, and an endless chain or rope passing around said pulleys, whereby the slack of one horse is taken up by the others, and, at the same time, all friction of the endless chain on the straps in which the pulleys are journaled is prevented, as will be hereinafter more fully explained.

In the annexed drawings, the letter A designates the sweeps of an ordinary horse-power, in connection with which I propose to illustrate my invention. It is well known to those skilled in the art that it requires great care and constant watchfulness on the part of the operator to keep sluggish animals up to the work, so that the more willing and active members of the team shall not be compelled to bear an undue proportion of the labor and strain required to work the power and run the machine.

The object of my invention is to divide the draft equally among the draft-animals, whatever be their relative sluggishness or activity.

Sweeps A, above alluded to, are provided near their outer ends with pulley-wheels a a^1 a^2 , having their bearings in or on the said sweeps, and held against displacement, in the latter case, by means of straps b , in which the journals of the said pulleys have their bearings. Pulleys a^1 a^2 are nearer to each other than the pulley a to pulley a^1 , as shown in Fig.

1. B represents a continuous rope or chain, of suitable flexibility, which makes the complete circuit of sweeps A. This rope, commencing at any given point, will first pass over pulley a , thence extending outward to pulley a^1 , around which it will also pass. It thence extends around a pulley, C, to which the whiffletree-hook d is attached by means of a bail, e , and then, returning, will be passed over pulley a^2 on the end of sweep A. From this point it will be passed around pulley a of the next sweep, over and around pulley a^1 , outward to a second pulley, C, backward over and around pulley a^2 , and so on, until the complete circuit is made, when the two ends of the rope will be rigidly spliced or linked together, thus forming a continuous rope or chain. Hook d is designed to receive a loop, f , on a single or double tree, E; consequently, when two or more draft-animals are used, the rope or chain B, being at no point rigidly secured to the sweeps, any excess of power exerted by one or more of the draft-animals will be transferred, through the medium of pulleys a a^1 a^2 C, to the more sluggish and inactive animals of the team, thus causing the labor and toil of operating the power to be evenly distributed among all the animals of the team, the effect of which is, that with the same motive power the same effects may be produced without entailing upon the more willing animals composing the team any more labor than should be legitimately their share or proportion.

During the operation of the power the endless rope or chain D will be constantly changing in relation to pulleys a , a^1 , a^2 , and C, and consequently it will wear evenly throughout its whole extent, no one portion of the said rope or chain being more worn than the other. The consequence of this is, that the equalizing-rope will be made to last the greatest possible length of time, and that the said rope, when it parts at any point, will be equally worn throughout its whole extent, and not at a single point only, the rest remaining unworn and intact.

I am aware that an endless chain passing around four pulleys arranged above and below each sweep of a horse-power, so that the slack of one horse is taken up by the others,

as shown in Letters Patent granted to L. H. Bratt, dated January 7, 1873, is not new, and I therefore lay no claim to such invention.

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

The combination of the pulleys *a a¹ a²*, arranged on the upper face of each sweep and in the same horizontal plane, pulleys C, and the endless chain or rope B, whereby the slack of one horse is taken up by the others, and, at the same time, all friction of the endless

chain on the straps in which the pulleys are journaled is prevented, substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ORVILLE WOODWORTH.

Witnesses:

C. D. WILLIAMS,

WM. H. VAN KLEECK.