ROBERTS & THROP.

Combined Horse Power and Truck.

No. 84,766. Patented Dec. 8, 1868.

Fig. 1

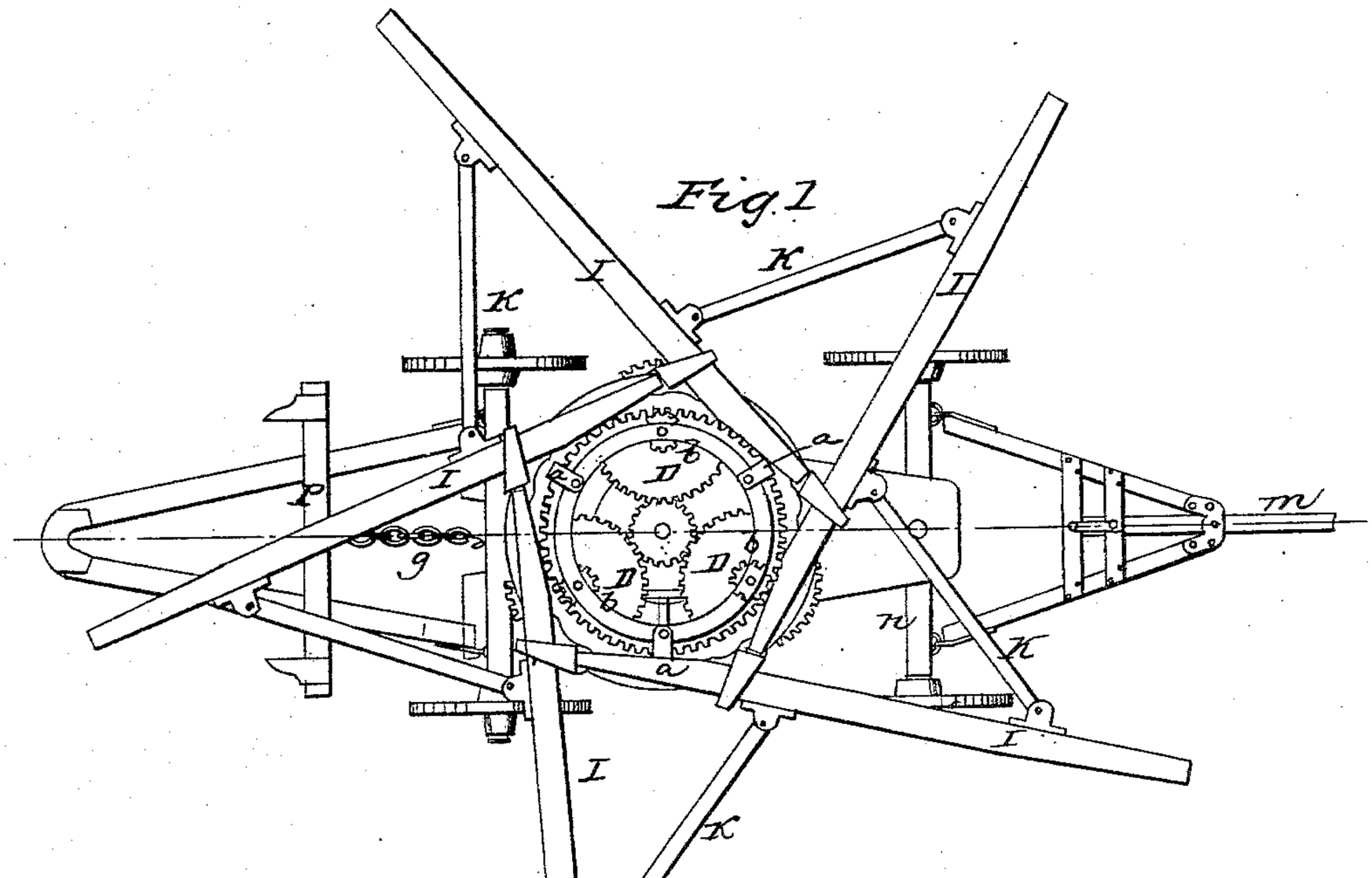


Fig. 2

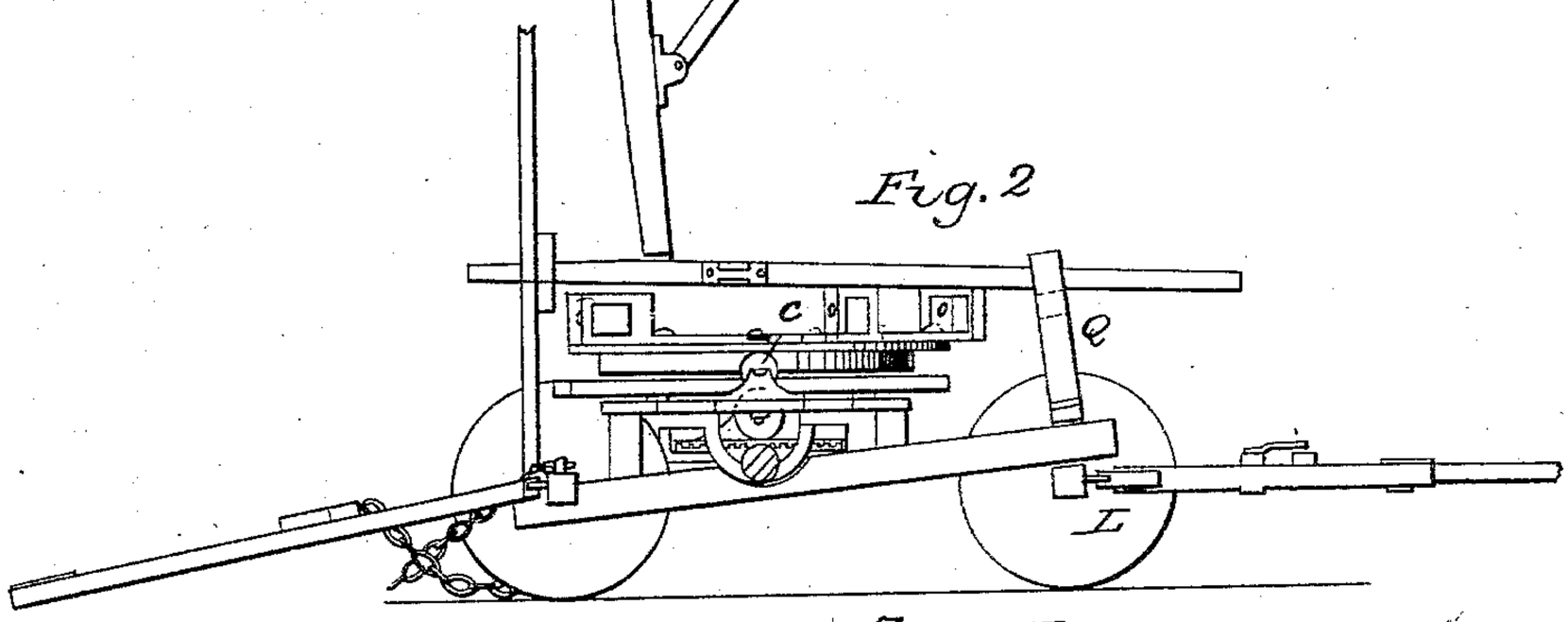
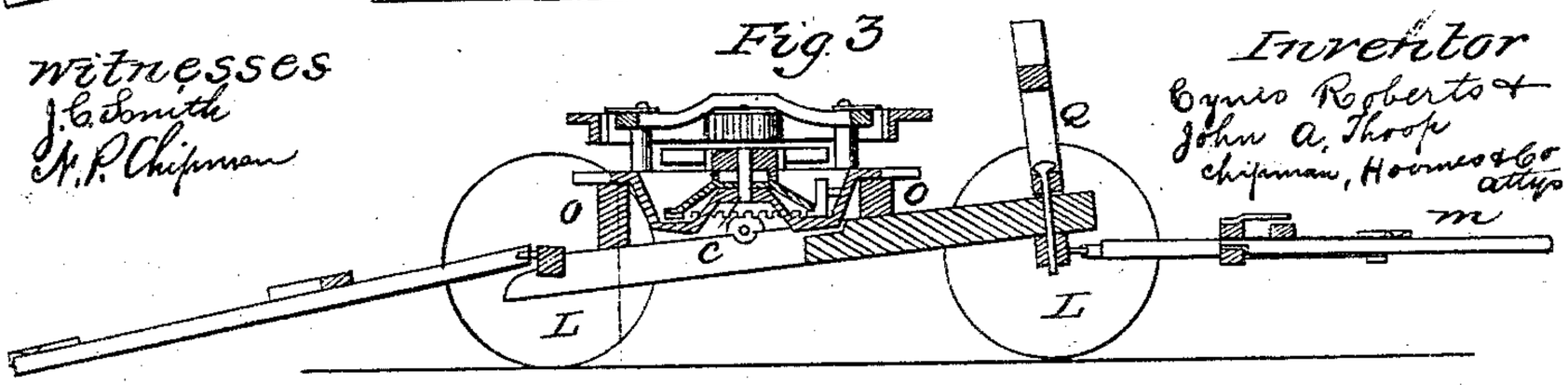


Fig. 3



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UNITED STATES PATENT OFFICE.

CYRUS ROBERTS AND JOHN A. THROP, OF THREE RIVERS, MICHIGAN.

COMBINED HORSE-POWER AND TRUCK.

Specification forming part of Letters Patent No. **84,766**, dated December 8, 1868.

To whom it may concern:

Be it known that we, CYRUS ROBERTS and JOHN A. THROP, of Three Rivers, in the county of St. Joseph and State of Michigan, have invented a new and valuable Improvement in Combined Horse-Powers and Trucks; and we 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 represents a plan view of our device, and Figs. 2 and 3 are sectional views.

Our invention relates to that class of horse-powers adjusted on trucks, and is designed for actual use without severing the connection between the trucks and the power, the object being to construct, for general use, a combined horse-power and truck that shall be more perfect in construction and operation than any similar device heretofore known or used. It also embraces more perfect and effective means of transporting the large number of bars, levers, and other necessary tools and implements connected therewith than has heretofore been devised.

The letter A of the drawings represents a large rag-wheel, having its cogs on the inner margin; and letters B are a series of staples or lever-rests, adjusted thereon, of the form and in the manner shown. The letter C is a disk, placed inside the rag-wheel A, as represented, and is designed mainly as a stay and support for the devices attached thereto, as hereinafter mentioned. The letters *a* are guides, adjusted on the upper side of disk C, and extending part way over the rag-wheel, as shown. The letters D are cogged wheels, geared with the rag-wheel A by means of small pinions *b*, firmly attached, or, what is preferable, cast therewith, on their upper sides respectively. The letter E is a pinion, geared and working with the cogged wheels D, as represented. The lower end of this pinion E is firmly connected with the beveled pinion G, which, in turn, is geared with and actuates the working-shaft H.

Underneath the rag-wheel A we adjust a series of anti-friction rollers, in the form and manner shown at *c*, where one of said rollers and the mode of adjusting the same are represented.

The letters I are a series of levers, adjusted in the manner shown; and the letters K are a series of braces, connected therewith, as represented.

The above constitute the main features of our horse-power. It is mounted and operated on trucks, constructed as follows, namely: The letters L represent the wheels, and letter M the neap. N are the axles, and O the bolsters.

The bottom of the truck is shaped somewhat in the form of the letter **V**, the apex being the point through which the king-bolt passes, connecting it with the front axle-tree, while the base is bolted firmly to the lower side of the rear axle-tree, as shown. To the rear side of the rear axle-tree we attach, with hinges, a **V**-shaped frame, consisting of two bars united at their outer ends, as shown, and we place upon them a cross-bar or bolster of the form represented by the letter P. We also construct a bolster, (marked Q,) and adjust it upon the truck-bottom, above the front axle-tree, by means of the king-bolt of the truck. The arms of this last-named bolster are removable, and we extend a bar across the upper ends of such arms, about two feet (more or less) from their summits, so as to form a frame in the form of a parallelogram, the bolster forming the base, and leaving a frame of three sides above the cross-bar last named, of which said cross-bar forms the base and the extended arms the sides.

To aid in transportation, attach chains, with suitable hooks, to the axles respectively, as shown by the letters *g*.

It will readily be seen that, by means of the braces K, the extra power that may be exerted at the end of any lever is communicated to the lever next in front, upon a desirable angle, and that they constitute not only means for steadying and regulating the movements of the machinery, but also serve to husband and economize the power itself.

The object of the adjustable bolster Q, the chains, the **V**-shaped frame, and its cross-bar

bolster is to aid in the transportation of the levers, braces, and other tools and implements necessarily connected with a horse-power.

When the horse-power is in use the frame is removed from bolster Q and the chains and rear frame are let down; but when ready for removal the frame is adjusted on bolster Q and the rear frame is raised upward at right angles with the body of the truck. Then the levers, braces, and tools are placed with an end on each of the bolsters respectively, the chains are adjusted, and the entire machinery is ready to be moved.

It will be noticed that in the construction of our horse-power we have so arranged the mechanism that the beveled wheel that actuates the working-shaft extends downward below the point usually occupied by the bed-plate of such devices. We are aware that this feature is not new in mechanical movements; but as applied to and combined with a portable horse-power designed for use upon trucks, we believe this feature is new and of great value, inasmuch as it enables the operator to use the power at a point nearer the ground than has heretofore been possible in such devices.

The last-mentioned device also enables the constructor to bring a large wheel (the beveled wheel aforesaid) immediately over the working-shaft, and gear it with said shaft, thereby securing greater leverage and less strain upon that portion of the machinery than is possible by the ordinary mechanism used for such purposes.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The beveled wheel G, extended downward to the point, and in the manner represented, for the purposes specified.

2. A horse-power having cogged wheels A, D, E, and G, staples B, disk C, friction-rollers *c*, and shaft H, in combination with a truck constructed and operating as herein specified, substantially as described.

3. A truck having V-shaped bottom, as described, bolsters O, P, and Q, and rear V-shaped frame, as described, in combination with the horse-power herein described and shown, substantially as specified.

In witness whereof we have hereunto set our hands in the presence of two witnesses.

CYRUS ROBERTS.
JOHN A. THROP.

Witnesses:
LUTHER T. RECK,
STEPHEN MACOMB.