

(No Model.)

2 Sheets—Sheet 1.

P. WIRTH.
HORSE POWER.

No. 467,626.

Patented Jan. 26, 1892.

Fig. 1.

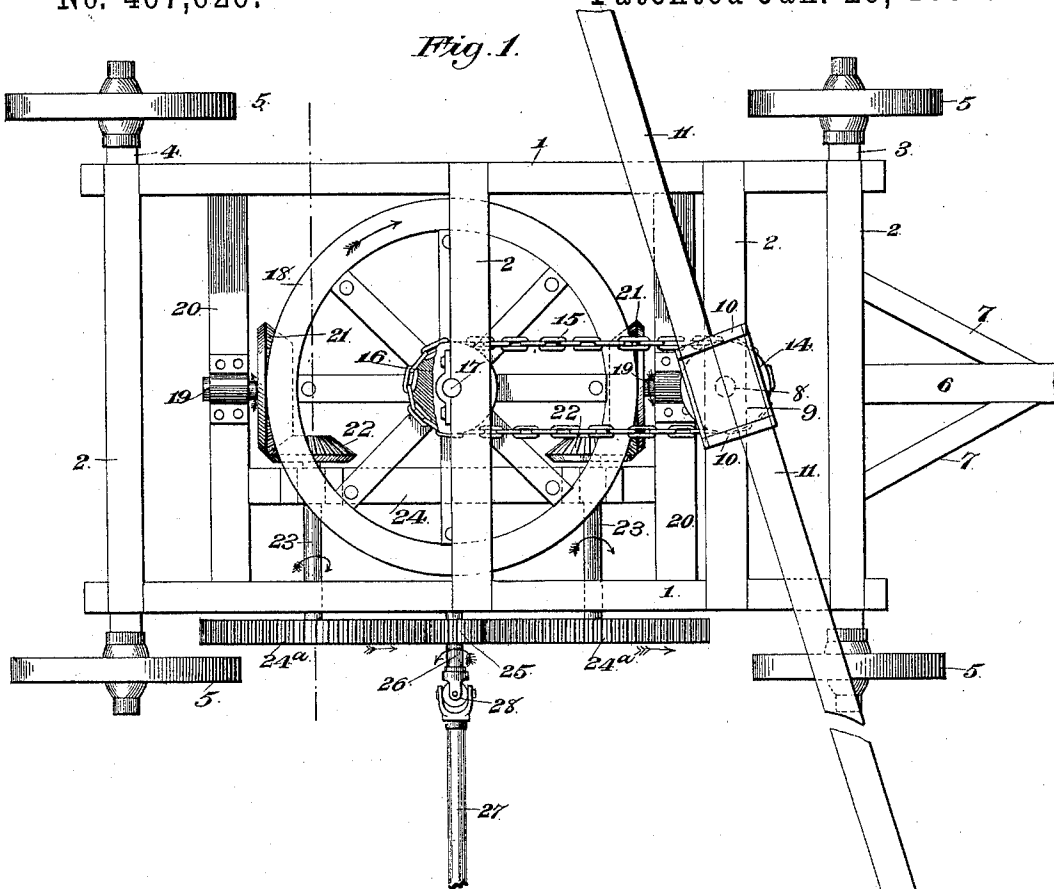
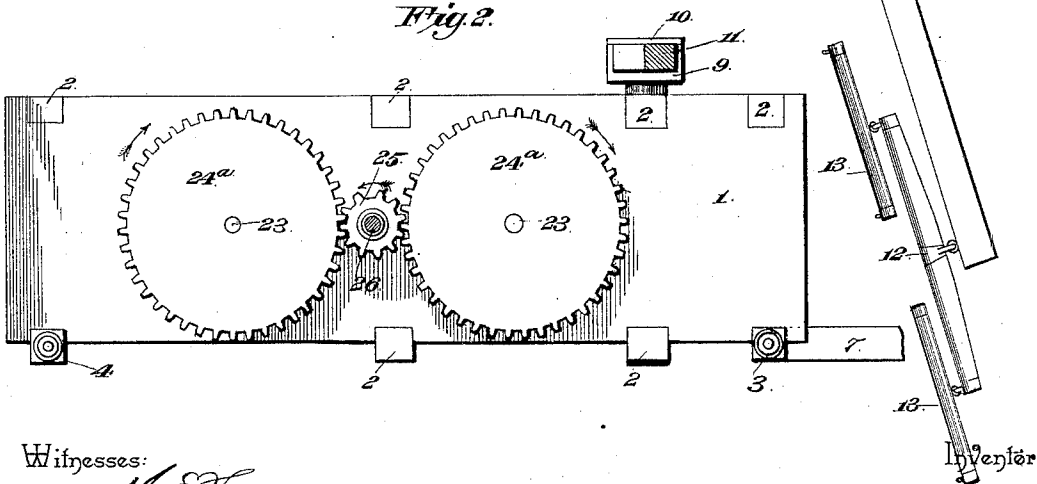


Fig. 2.



Witnesses:

M. Fowler
W. S. Duval

By his Attorneys,

C. A. Snow & Co.

Peter Wirth

Inventor

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Fig. 3.

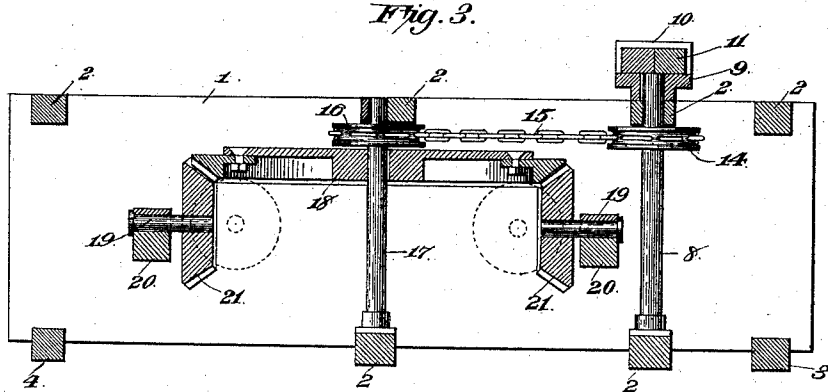
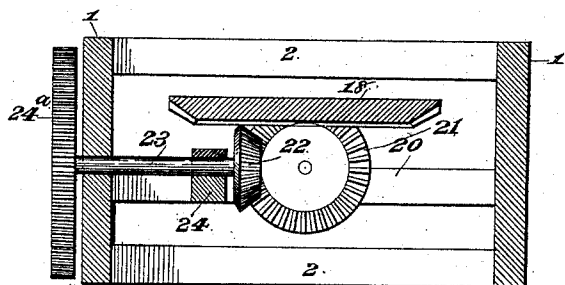


Fig. 4.



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UNITED STATES PATENT OFFICE.

PETER WIRTH, OF MARSHFIELD, WISCONSIN.

HORSE-POWER.

SPECIFICATION forming part of Letters Patent No. 467,626, dated January 26, 1892.

Application filed July 24, 1891.. Serial No. 400,602. (No model.)

To all whom it may concern:

Be it known that I, PETER WIRTH, a citizen of the United States, residing at Marshfield, in the county of Wood and State of Wisconsin, have invented a new and useful Horse-Power, of which the following is a specification.

This invention relates to improvements in horse-powers; and the objects in view are to provide a horse-power that is portable, and therefore especially designed for farm use and adapted to run various farm-machines, that shall be light and of simple construction, capable of being run by inexperienced persons, easily set up, and which will generate a maximum amount of power at a minimum amount of force exerted.

Various other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the claim.

Referring to the drawings, Figure 1 is a plan of a horse-power constructed in accordance with my invention. Fig. 2 is a side elevation of the same, the wheels removed. Fig. 3 is a longitudinal section. Fig. 4 is a transverse section.

Like numerals of reference indicate like parts in all the figures of the drawings.

In constructing the frame-work of my power numerous changes may be made from that hereinafter described; but in the present instance I have shown and illustrated one that is simple and economic and also extremely light and portable.

In the instance referred to 1 designates the opposite side walls of the frame-work; 2, a series of transverse bars connecting the opposite side walls 1 at their upper and lower edges. The frame thus formed is mounted upon front and rear axles 3 and 4, respectively, each of which terminates in suitable bearings for the reception of ground-wheels 5. The front axle is provided with a proper draft-tongue 6, braced by the usual hounds 7, and to said tongue the horses may be attached for drawing the machine from field to field or from one point of use to another. In a pair of the vertically-opposite bars 2, located near the front of the frame-work, there is journaled for rotation a vertical drive-shaft 8, which shaft, above the upper bar, terminates in a head 9,

rectangular in plan and provided at opposite sides with bails 10, which bails receive the butt-ends of a pair of oppositely-disposed removable sweeps 11, which at their outer ends are provided with double and single trees 12 and 13, respectively, whereby the draft-animals are harnessed to their proper positions. Below the upper cross-bar the shaft 8 has mounted thereon a pulley 14, and around the same passes a cable 15, said cable also passing around a pulley 16, which is located upon a main and centrally-located vertical shaft 17, journaled in a convenient pair of vertically-opposite cross-bars 2.

Upon the main shaft 17, immediately below the pulley 16, a large beveled master-gear 18 is mounted, the same being keyed upon and adapted to move with the shaft. Upon stub-shafts 19, extending inwardly from a pair of front and rear cross-bars 20, located at opposite sides of the vertical shaft 17, is mounted a pair of beveled pinions 21, which are diametrically opposite each other, and are engaged and driven in opposite directions by means of the beveled master-gear 18.

Near the inner face of the gears or pinions 21 there is supported a pair of beveled gears or pinions 22, which are mounted upon rotatable transversely-disposed short shafts 23, journaled in one of the side walls and in a short longitudinal bar 24, which connects the two transverse bars 20. The gears or pinions 22 are operated in the same direction through the medium of the gears or pinions 21 and are disposed at a right angle to the same. The outer ends of the shafts 23 occur beyond the wall 1, through which they pass, and are there provided with large gears 24^a, located a short distance apart and engaging and meshing with a small intermediate gear 25, which is mounted upon a transverse shaft 26, journaled in the side wall, and the longitudinal bar 24. The outer end of the shaft 26 is connected to a power-conveying rod or tumble-shaft 27 by an ordinary detachable gimbal-joint 28.

This completes the construction, and the operation may be briefly stated as follows: The machine having been hauled to the point of operation, suitable stakes, chains, or other anchoring devices are employed to lock the machine against displacement. The draft-

animals are then harnessed to the singletrees, of which there are preferably four, and the proper connection made between the shafts 27 and 26. The team is now started and rotates the drive-shaft 8, and the pulley 14 imparting motion from the latter to the pulley 16 and from thence to the main shaft 17 and the master-gear 18. These rotate more rapidly the beveled gears 21 and 22, together with the shafts 23 and 24^a, and the latter rapidly rotate the small gear 25 and the shafts 26 and 27, thus conveying motion to whatever machinery the shaft 27 leads to. By the train of gearing described it will be seen that great power and rapidity of motion is imparted to the shaft 27, and that while the structure is powerful it is yet extremely light for one of its class and may be readily transported from one point of use to another; furthermore, that it requires no skilled mechanic to attend to and operate it or set it up for operation.

Having described my invention, what I claim is—

In a horse-power, the combination, with a suitable frame-work, of a main vertical drive-shaft terminating at its upper end in a head having removable sweeps connected to the

said shaft, a pulley mounted on the shaft, a vertical main shaft, a pulley thereon, a chain cable connecting the two pulleys, a master bevel-gear mounted on the main shaft and adapted to rotate therewith, opposite stub-shafts, beveled pinions mounted on the stub-shafts and engaged and operated by the master-gear, short transverse shafts journaled in the frame-work, beveled pinions mounted upon the inner ends thereof and engaged and operated by the pinions of the stub-shafts, large gears mounted upon the outer ends of the transverse shafts, an intermediate transverse shaft mounted for rotation in the frame-work, and a small gear thereon engaged and driven by the large gears of the transverse shafts, said intermediate shaft being adapted for connection with a tumble-shaft or other power-conveying device, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

PETER WIRTH.

Witnesses:

WILLIAM BARTELS,
HERMAN BARTELS.