S. S. Allen,

Horse Power,

No. 1,466, Patented Jan. 10, 1840.

Fig: 1

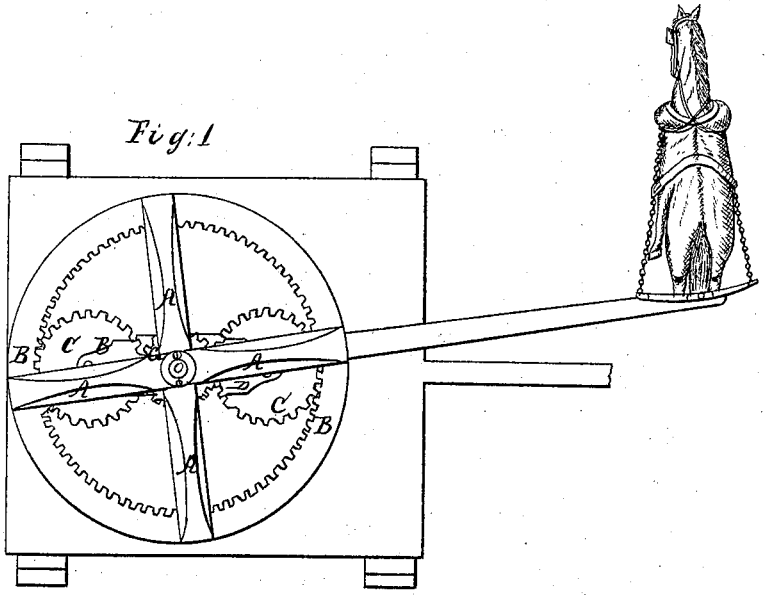


Fig: 3.

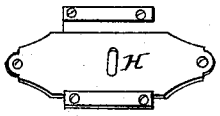
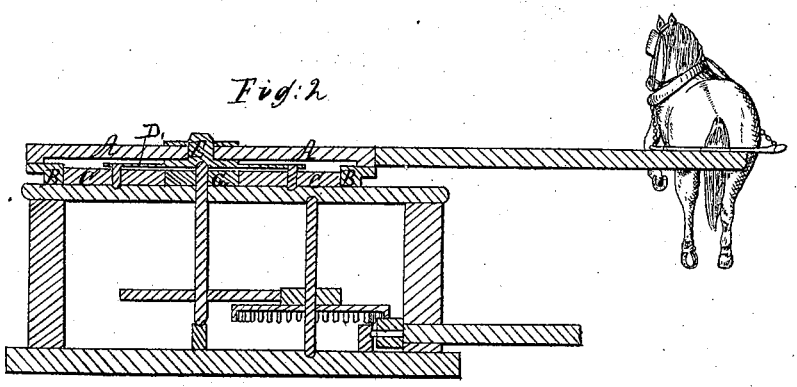


Fig: 2.



UNITED STATES PATENT OFFICE.

SAMUEL S. ALLEN, OF MIAMISBURG, OHIO.

MANNER OF CONSTRUCTING HORSE-POWERS FOR DRIVING MACHINERY.

Specification of Letters Patent No. 1,466, dated January 10, 1840.

To all whom it may concern:

Be it known that I, SAMUEL S. ALLEN, of Miamisburg, in the county of Montgomery and State of Ohio, have made certain Improvements in the Manner of Constructing Horse-Powers for Propelling Machinery; and I do hereby declare that the following is a full and exact description thereof.

Figure 1 in the accompanying drawing represents a plan or top view of my horse power, and Fig. 2 a vertical section thereof through the main axis or shaft, showing the arrangement of the gearing which I usually employ for giving motion to the line or horizontal shaft by which the power is to be conveyed to other machinery. Fig. 3 is a view of the under side of the cap within which the upper gudgeon of the main shaft works.

In each of these figures, like parts are designated by the same letters of reference.

A, A, are cross timbers, or bars, which are attached firmly to the wheel B, B, the teeth of which are on the interior of its rim, and gear into the two pinions C, C, which revolve on stationary centers, and do not travel around the main axis, like those known under the name of sun and planet wheels.

D, D, is the outline of the cap which receives the upper gudgeon of the main shaft, and sustains the center pins, *a*, *a*, upon which the pinions C, C, revolve; this cap is shown in outline only, in this figure, for the purpose of more clearly exhibiting the parts which it immediately covers. From the center of this cap rises a stationary gudgeon E, Fig. 2, which is firmly affixed to it, and constitutes the axis upon which the wheel B, B, revolves, F, being the lever, or sweep, to which the horse is to be attached.

G, is a pinion on the main shaft, into which the pinions C, C, gear, and thus communicate motion to said shaft. It is a point of primary importance that there should be a perfectly equal bearing of the teeth, or leaves, of the two pinions C, C, against those of the pinion G, an object which cannot be attained by mere truth of workmanship, but which I effect in the following manner. In Fig. 3, which represents the under side of the cap D, D, H, is the box, or bearing, of the upper gudgeon of the main shaft, and this is so formed as to allow to said gudgeon the necessary extent of lateral play, transversely to the pinions C, C, to prevent its bearing against the box in that direction, and, consequently, to insure the equal bearing of the teeth, or leaves, of the pinions, at all times.

In the arrangement of the gearing for driving the line shaft I, as shown in Fig. 2, there is not anything peculiar, nor do I intend to confine myself thereto, as the wheels and pinions may be varied in size and number in ways well known to every competent machinist. The wheel B, B, may be thirty inches in diameter, the pinion G, eight inches, C, C, filling the intermediate space.

I claim—

The manner of causing the teeth, or leaves, of the pinions to have, at all times, an equal bearing, by allowing play, in one direction, to the upper gudgeon of the main shaft, within its box, or bearing, in the cap D, D, in the manner described.

SAMUEL S. ALLEN.

Witnesses:

THOS. P. JONES,

GEORGE WEST.