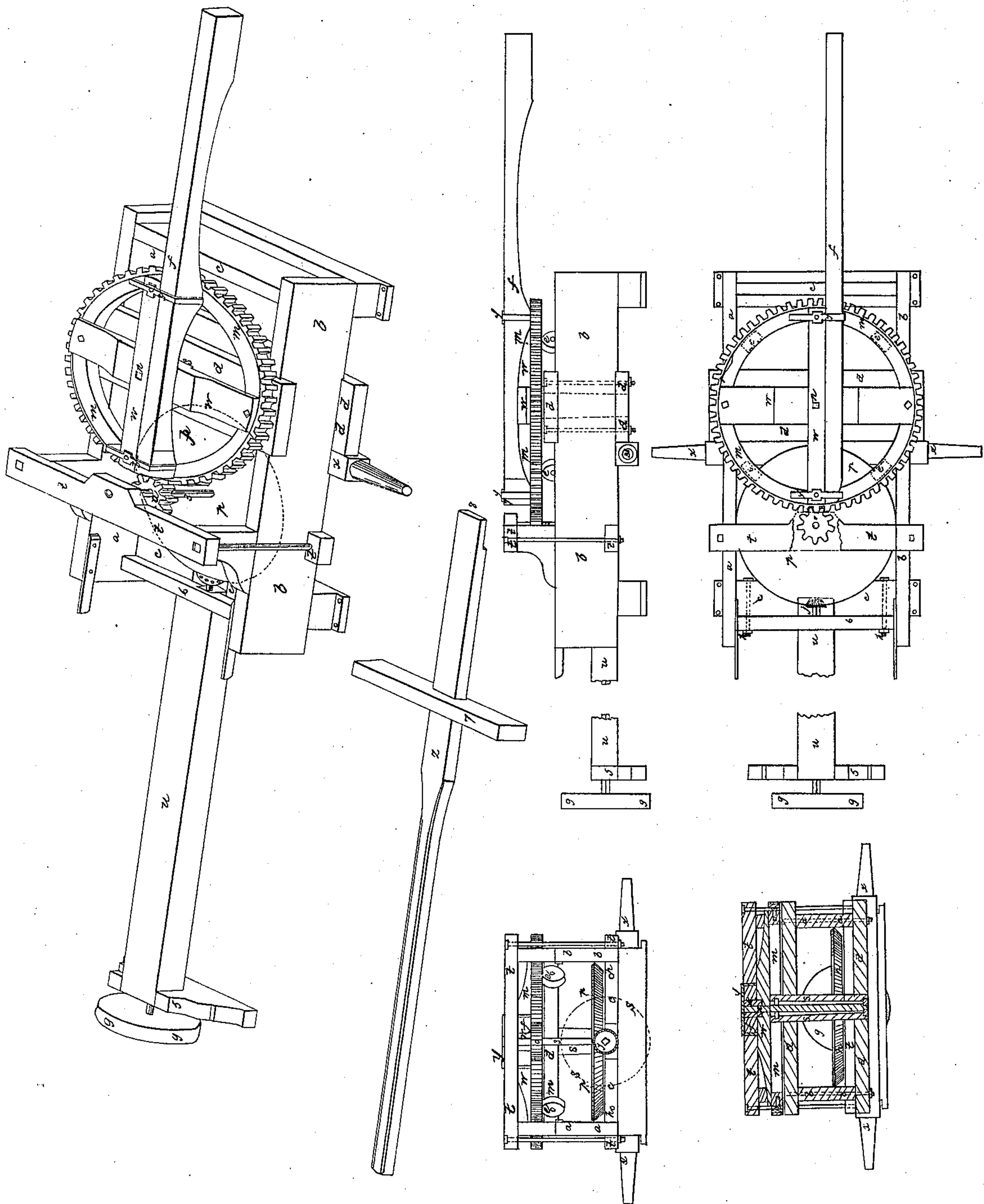


*H. Smith,
Horse Power.*

N^o 418.

Patented Oct. 6, 1837.



UNITED STATES PATENT OFFICE.

HENRY SMITH, OF BETHEL, OHIO.

HORSE-POWER FOR COMMUNICATING MOTION TO MACHINERY.

Specification of Letters Patent No. 418, dated October 6, 1837.

To all whom it may concern:

Be it known that I, HENRY SMITH, of Bethel township, in county of Miami and State of Ohio, have invented a new and useful machine, called "A Movable Horse-Power," for the purpose of propelling threshing machines and applicable to all purposes for which horse-power is generally used; and I do hereby declare that the following is a full and exact description.

The nature of my invention consists in so constructing the frame that it will not be liable to spring or twist in moving or by being exposed to the weather. In hanging the master wheel which is a spur wheel on a spindle in an upright standard which contains both boxes for the spindle, and supporting the wheel by four or more rollers, in putting on the levers to draw by so as to throw the bearing upon the rim of the wheel and yet be easily removed and replaced, and in so constructing a trunk containing a long horizontal shaft, over which the horses walk, that it can be taken off when the machine is to be moved, and a tongue made to fit in its place.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

I construct the frame of my horse power principally of oak or other hard wood plank about three inches in thickness. Two pieces of plank about seven feet long and fourteen inches wide marked (*a a*), (*b b*), in the drawing are placed upon their edges three feet one inch apart in the clear parallel and opposite to each other, these are connected by two pieces one at each end called the head and the foot rail, the former (*c*) is three inches by eight, framed into the side pieces at one end called the head of the frame lying horizontally, the lower side being level with the bottom of the frame. The latter (*e*) three inches by 12 in size mortised into the side pieces at the other end of the frame perpendicularly, the top edge being level with the top of the side pieces. Two cross pieces (*d, d*), called clamps are placed across the frame at a proper distance from the head according to the size of the wheels, one at the top the other at the bottom and notched a little into the frame these are confined by one or more long screw bolts at each end, a mortise is cut through the middle of each clamp about six inches square in the upper and five in the lower one, into

which is fastened a hollow upright standard *s*, with a metal box in each end of a suitable size. The lower end of the standard extends to the bottom of the lower clamp, the upper end must extend above the upper one a distance equal to the thickness of the master wheel which is a spur wheel not less than four feet in diameter marked *m, m*, of cast iron with a flange at the top about three inches wide extending inwardly to keep the wheel from springing and to furnish room for screw bolts. This wheel is furnished with wooden arms and runs horizontally having a common center with the upright standard upon which it hangs. The arms (*w, w*), cross each other at right angles to the ends being fastened to the rim or rather to the flange of the wheel, with screw bolts one arm is three inches by eight lying horizontally the other about four inches by six and standing on the edge and framed so that their lower surfaces will be on a level. At the crossing of the arms is a two inch mortise into which a spindle is driven which has journals fitting the boxes in the standard. At each end of the larger or upright arm is stirrup *y y*, with a hole through the horizontal part to admit the bolt which fastens the arm to the wheel and projecting each way sufficiently for the levers to draw by marked *f* to slide in between the arm and the stirrup. The bearing on the upper journal ought to be a little above the center of the cogs. Under the rim of the wheel at equal distance are four or more rollers of cast iron marked *e, e*, about five inches in diameter hung in blocks which are fastened to the side pieces of the frame with screw bolts so as to slide up and down to regulate them to the position of the wheel, having their axles perpendicular to the spindle.

The next is a bevel wheel called the counter wheel three feet in diameter marked *p, p*, of cast iron with a rim two and $\frac{1}{4}$ inches and cogs of one and $\frac{3}{8}$ inch pitch, running horizontally on an iron shaft with the cogs downward just clearing the top of the head rail, the outer edge of the wheel coming just even with that of the rail. Near the upper end of the counter wheel shaft marked *3* is a pinion *o* about $8\frac{1}{2}$ inches diameter the cogs fitting those of the master wheel. The boxes for the counter wheel shaft are confined in two corresponding cross pieces, one with short posts *t, t*, framed

into the side pieces the other notched into the side pieces below so as to admit of keeping the work in gear, the cross pieces are fastened together by a long screw bolt at 5 each end.

A trunk about seven and a half feet long is attached to the head rail of the machine in which is hung an iron horizontal shaft, in metal boxes leaving room outside the 10 journals for a pinion marked (*f*) on one end and a band wheel *g*, *g* on the other. The pinion for the counter wheel is about $4\frac{1}{2}$ inches in diameter, the band wheel is from 10 to 30, according to the motion re- 15 quired, the trunk marked *u* is constructed of thick plank about 5 inches wide placed far enough apart for the shaft to run between them and framed into the two pieces marked (5) (6) which contain the boxes for 20 the shaft and covered with plank of suitable thickness.

A notch is cut in the head rail large enough for the pinion of the long shaft to run clear, the trunk is applied to the rail 25 so that the end piece will come parallel and in contact with the head rail, the pinion entering the notch, and coming in gear with

the counter wheel, the trunk is fastened in its place by two screw bolts *h*, *h*, passing through both rails. Two small strips are 30 fastened to the side pieces over the counter wheel for the purpose of supporting a thresher while moving. A piece marked 7 is made similar to the rail on the pinion 35 end of the trunk, into which a tongue is framed so that the trunk can be taken off and the tongue put in its place and fastened by the same screws.

What I claim as my invention and desire to secure by Letters Patent is— 40

1. The method of hanging the master wheel on a spindle which runs in a stand- 45 ard and the rim of the wheel supported by rollers beneath.

2. The method of constructing and fas- 45 tening the arms of the master wheel by stirrups which support the levers to draw by and the method of constructing the movable trunk.

HENRY SMITH.

Witnesses:

EDWARD L. CRANE,
DAVID H. WITTMER.