

Keen & Briggs,

Horse Power.

N^o 33,252.

Fig. 1 Patented Sept. 10, 1861.

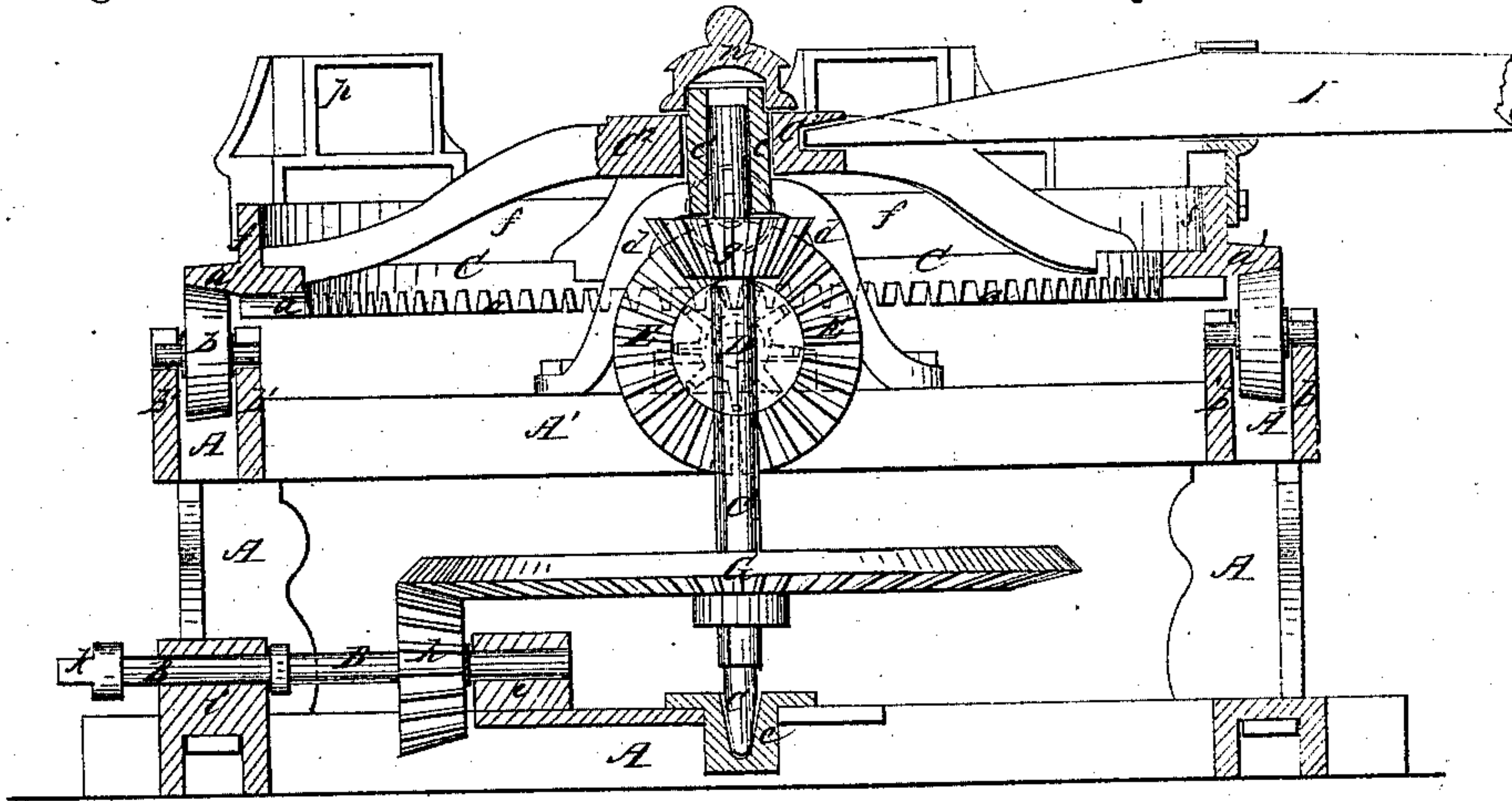
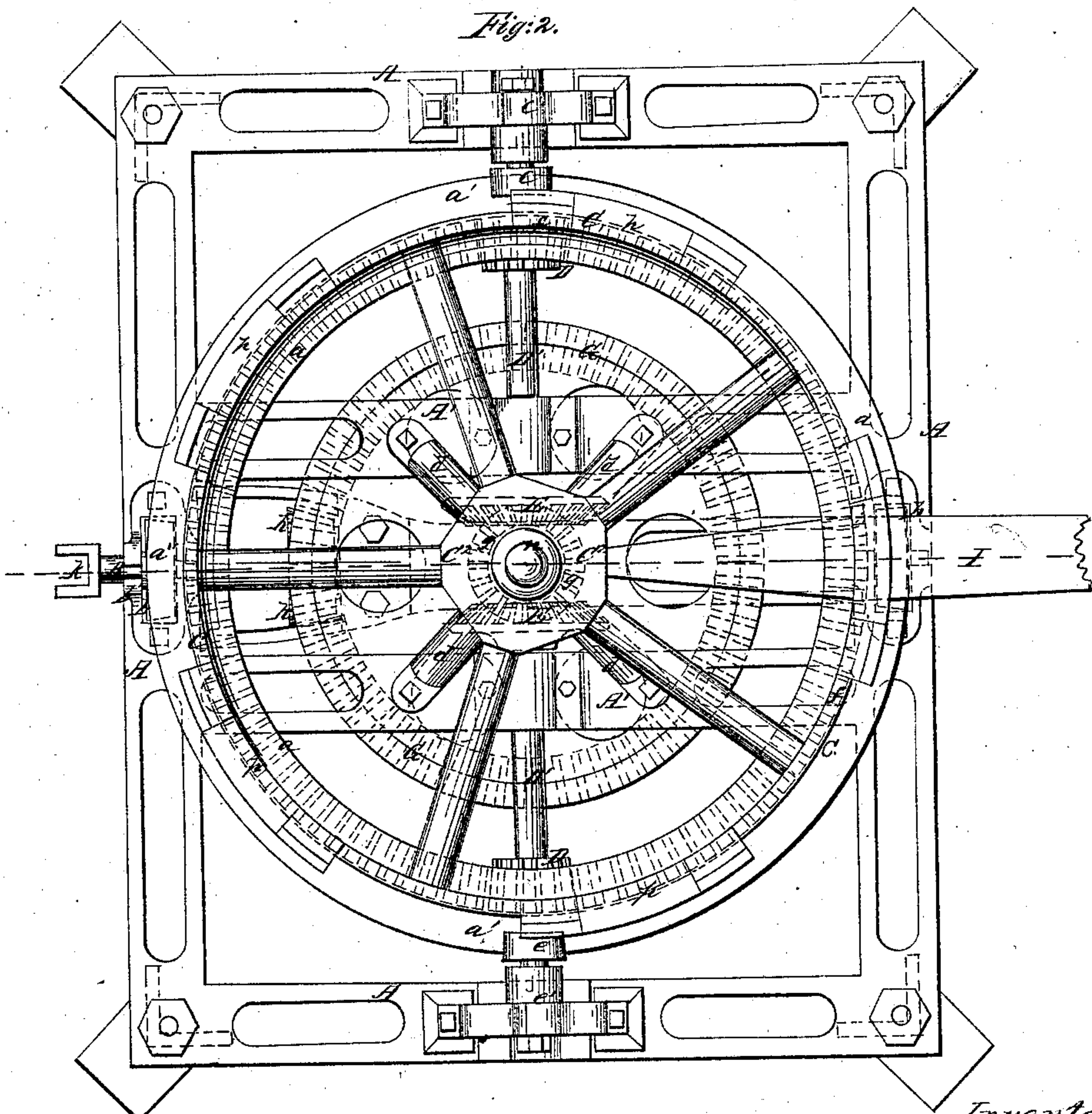


Fig. 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

E. J. KEEP AND W. H. BRIGGS, OF STOCKTON, CALIFORNIA.

IMPROVEMENT IN HORSE-POWER MACHINES.

Specification forming part of Letters Patent No. 33,252, dated September 10, 1861.

To all whom it may concern:

Be it known that we, E. J. KEEP and W. H. BRIGGS, both of Stockton, in the county of San Joaquin and State of California, have invented a new and Improved Horse-Power Machine; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a transverse section through the improved machine in the vertical plane indicated by red line *xx* in Fig. 2. Fig. 2 is a plan view of the complete machine.

Similar letters of reference indicate corresponding parts in both figures.

This invention is an improvement in machines for making the labor of horses available in operating thrashing and other machines where great swiftness of motion is desired.

To enable those skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

A represents a rectangular frame, which is securely braced and made very strong and substantial and of a suitable size to contain and support the gearing which is employed to give motion to the main driving shaft or spindle B, from which motion is transmitted directly to the machine to be put in operation.

C is a large wheel, which has bevel spur-teeth *a* around its bottom edge and a double beveled flange *a'* projecting out from the teeth, which rests on the two beveled friction-wheels *b b*, having their bearings in blocks *b' b'* on each side of the frame A and directly opposite each other.

C' is the vertical axis or central shaft of wheel C, which is stepped in a block *c*, and has its upper bearings in a stationary collar *c'*, around which the wheel C revolves. The collar *c'* is supported in its position on arms *d d d d*, which are bolted to the transverse bars A' A' of frame A. The wheel C turns on the friction-rollers *b b* and is held down by the two friction-rollers *e e*, which roll on top of the annular flange *a'*. These two rollers *e e* have their bearings in brackets *e' e'*. The large horizontal bevel-wheel C is thus supported at its circumference on friction-rollers which support the wheel on the frame

A and also keep it down in a horizontal position.

Arranged at equal distances apart around the circumference of wheel C and secured to flange *f* are eyes *p p p p*, through which the levers I are passed, to which the horses are hitched. The ends of levers I fit into sockets in the hub C² of wheel C, as shown in Fig. 1 of the drawings.

D D are two beveled pinion spur-wheels, which are keyed to the horizontal shafts D' D', which have their end bearings respectively in the outer and inner bars of frame A. The axes of these shafts are in the same horizontal line, and their axes are at right angles to the axes of the friction-wheels *b b*. The teeth of spur-wheels D D engage with the teeth *a* on wheel C, and the shafts D' D' are rotated rapidly in opposite directions when the wheel C is revolved. On the inner end of shaft D' D' is keyed a large bevel spur-wheel E, and both of these wheels E E engage with bevel-pinion *g* and give a rapid rotary motion to the vertical shaft C', to which this wheel *g* is keyed. This vertical shaft C' has a large horizontal bevel spur-wheel G keyed to it below the wheels E E. The teeth of this wheel G engage with the teeth of a bevel pinion spur-wheel *h* on the horizontal driving-shaft B, which shaft has its bearings in blocks *i i'* on the base part of frame A. On the outer end of shaft B is fixed a coupling-box *k*, to which a shaft may be readily connected for communicating motion to a thrashing or other machine to be operated by the horse-power. The space between the two bearing-blocks *i i'* of shaft B will allow the pinion-wheel to be moved some distance toward the block *i*, so that a much larger wheel may be substituted for the wheel G, and this wheel G may be moved upward some distance for substituting a larger pinion for the one lettered *h*.

Over the upper end of hub C² and collar *c'* fits a cap *n*, which is removed for lubricating inside and outside of the collar and which prevents dust, &c., from getting into the journals.

To put this machine in operation, horses are hitched to the extreme outer ends of levers I and driven around in a circular path. This turns wheel C, which gives motion to the pinions D D, their shafts D' D', and the

bevel-wheels E, which are keyed to the inner ends of shafts D' D'. These bevel-wheels E transmit a rapid rotary motion to the vertical central shaft C' through wheel g, and shaft C' turns the large horizontal bevel-wheel G, which engages with and gives a very rapid motion to the shaft B through the pinion h. If it should be found desirable to obtain more power, the large wheel G can be moved up and a large bevel-wheel used instead of the wheel h, or, if greater speed is required, the wheel h can be moved out toward the block i' and a larger wheel used instead of the wheel G.

The stationary collar c' serves as an upper bearing for the shaft C and keeps this shaft in a steady position, and it also serves as an axis around which the wheel C turns.

It will be observed that the wheel C has a very peculiar construction. It is composed of a toothed ring a, beyond which projects a double beveled flange a' and a vertical flange f, while connected with these flanges and rising inwardly are a series of radial arms which unite centrally in a hub C², all the above-

named parts being intended to be cast in one piece of metal. This peculiar construction gives great strength to the master-wheel, while it is also light in respect to weight. The flange a' serves to receive two sets of friction-wheels b e, and the flange f serves as a support for the lever-sockets p.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the stationary hollow axis and journal c' with the master-wheel C, hub C², and shaft C', as herein shown and described.

2. The construction of the open-toothed wheel C with a circular toothed ring a, double beveled flange a', vertical flange f, and radial-armed hub C², all as herein shown and described.

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Witnesses:

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