E. J. & J. W. HOYLE.

Horse-Power.

No. 160,098. Patented Feb. 23, 1875.

Fig. 1.

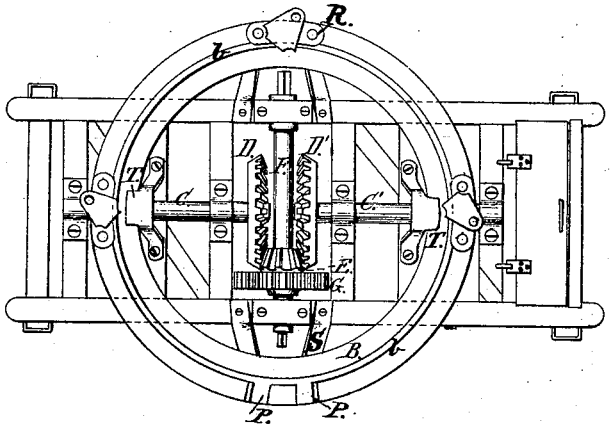
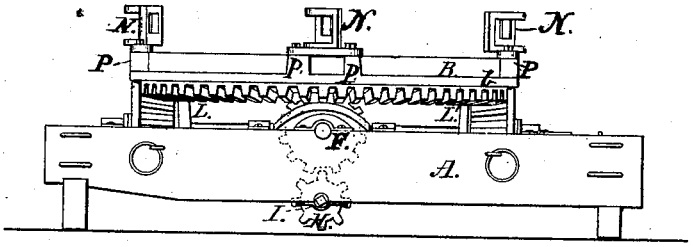



Fig. 2.

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# UNITED STATES PATENT OFFICE.

ELLIS J. HOYLE AND JOHN W. HOYLE, OF MARTIN'S FERRY, OHIO.

## IMPROVEMENT IN HORSE-POWERS.

Specification forming part of Letters Patent No. **160,098**, dated February 23, 1875; application filed September 21, 1874.

*To all whom it may concern:*

Be it known that we, ELLIS J. HOYLE and JOHN WILLITS HOYLE, of Martin's Ferry, in the county of Belmont and State of Ohio, have invented an Improvement in Horse-Powers, of which the following is a specification:

In the accompanying drawings, Figure 1 is a top view of our improved horse-power. Fig. 2 is a side view of the same.

Our invention consists in certain novel combinations, hereafter described.

The frame of our horse-power may be of any suitable construction, as seen at A in the drawings, with the gearing arranged very compactly thereon. Two short shafts, C and C′, are placed thereon, and provided with gear-wheels D and D′, and also with flanged pinion-rollers cast in one piece, as seen at L and L′, Fig. 2. The object of these pinion-rollers is threefold: First, to support, second, to guide, and, third, to gear with, the master-wheel B, which has a horizontal flange or bearing-surface resting on the flanges of the pinion-rollers L L′, and also a vertical flange or shoulder dropping down between the said rollers, and thus serving to guide the master-wheel by means of the rollers without any central shaft. The dogs T and guides S serve also to guard against displacement of the master-wheel by any sudden jar tending to throw it out of position. Two cross-shafts, F and I, are employed. The upper one, F, carries a pinion, E, which gears with the wheels D and D′, and also a gear-wheel, G, engaging with the pinion H upon the cross-shaft I, which is placed below the frame, so the horses may readily pass over the belt or shaft employed for transmitting the power to any desired machine. Our master-wheel B is cast with a high vertical flange, *b*, having strengthening-posts P cast thereon, all in one piece with the master-wheel. These posts give strength (with little excess of metal) for supporting the lever-lugs N, which are fastened to the posts by means of bolts R.

Having described our invention, we claim—

1. The combination of the flanged pinion-rollers L and L′, and dogs T for supporting and holding in place the master-wheel B, substantially as set forth.

2. The combination of the master-wheel B, the flanged pinion-rollers L and L′, shafts C and C′, gear-wheels D and D′, shaft F, pinion E, gear-wheel G, and shaft I, all of these devices being constructed and arranged in relation to each other to operate together substantially in the manner and for the purposes set forth.

3. The master-wheel B, cast with the high vertical flange *b* and strengthening-posts P thereon, in combination with the lever-lugs N fastened to said posts, substantially in the manner and for the purposes specified.

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