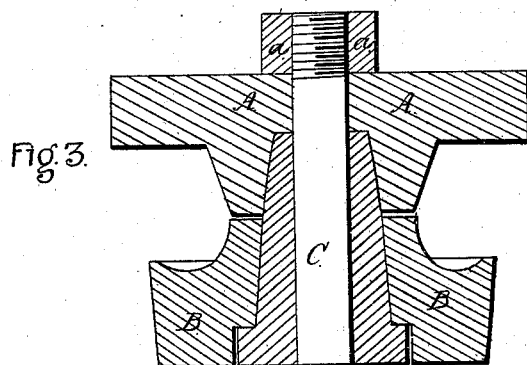
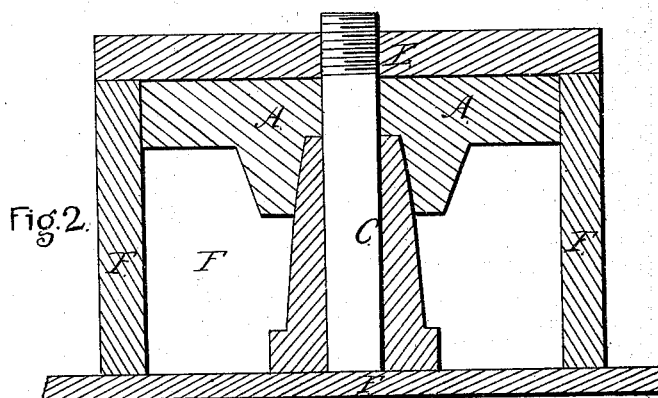
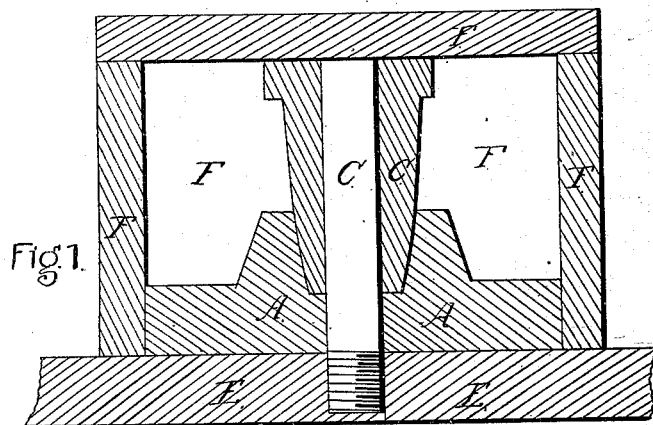


E. P. Russell.

Casting Wheels

Patented Aug. 15, 1865.

N^o 49,439.



Witnesses:

W. Clayton
John A. Cutler

Inventor:

E. P. Russell
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UNITED STATES PATENT OFFICE.

E. P. RUSSELL, OF MANLIUS, NEW YORK.

IMPROVEMENT IN DRIVING-WHEELS OF HARVESTERS.

Specification forming part of Letters Patent No. 49,439, dated August 15, 1865.

To all whom it may concern:

Be it known that I, E. P. RUSSELL, of Manlius, Onondaga county, in the State of New York, have invented certain new and useful Improvements in the Mode of Casting the Driving-Wheels of Harvesters, Horse-Powers, &c.; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference thereon marked.

In the drawings, Figure 1 represents the pattern-face up (with the pins in it) on the mold-board. Fig. 2 represents the pins as they are placed in the flask or mold at the time of casting. That part of the drawing represented as wood is, in practice, of iron or sand. Fig. 3 shows the manner of attaching the friction-rollers to the driving-wheel after it is cast.

The nature of my invention consists in casting the driving-wheels of harvesters, horse-powers, &c., around the pins of their friction-rollers, so as to dispense with the necessity of drilling the pin-holes; also, in casting the pin and its hole in the friction-roller with smooth-chilled surfaces.

In the drawings, A represents the driving-wheel. This wheel is some four feet in diameter. Only a cross-section of it is shown in the drawings.

B is the friction-roller. Each driving-wheel is provided with some twenty of them, working on equidistant pins in the rim of the wheel.

C is the pin upon which the roller B plays. Its head is countersunk in the roller. The other end of the pin passes through wheel A, and is rigidly secured thereto by the nut *a*.

E represents the mold-board; F, the sand and flask.

The friction-pulley B is cast upon a steel pin. When nearly cool the pin is driven out by a blow of a hammer, so as to leave a smooth, hard-chilled hole for the pin C. The pin C is made by placing a wrought-iron pin (having a thread on the upper end) in a metallic mold. The molten iron is then cast around the wrought-pin, thus producing the pin C of about an inch and a quarter in diameter with a hard, smooth chilled surface and a suitable head to fill the countersunk hole of the pulley.

My improved mode of casting the wheel is as follows: I first take a driving-wheel pattern (or a finished driving-wheel) and drill and countersink the necessary number of pin-holes at equal distances apart in it. I then place the pattern upon the mold-board E (see Fig. 1) face upward, and insert the pins C, as shown, in their holes. The mold-board is then filled with sand. I then turn the mold over (see Fig. 2) and withdraw the pattern, leaving the pins in their proper places in the sand and mold. The metal is then run into the mold, thus casting the wheel around all the pins. By this means I am enabled to dispense with the necessity of the labor and expense of laying off and drilling a large number of holes in the cast-iron wheel, and at the same time secure a better and a tighter fit of the pins in their holes. When the wheel is cool it is removed from the mold. A slight blow of a hammer upon the pins will drive them out of their holes. As each pin is removed it is put through a friction-pulley, B, and then replaced in the same hole, and the nut *a* is then put upon it and drawn up closely, so as to hold the pin immovably tight in the wheel. (See Fig. 3.)

By my invention the pulleys, having chilled holes working around chilled pins, wear a much longer time and with less friction (and at less cost) than if the holes were drilled and the pins turned, and the pins are more uniformly equidistant and tighter in the wheel than would be the case if each wheel had to be measured and laid off and each hole drilled.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination of the driving-wheel A, the pin C, and friction-roller B, constructed in the manner and arranged substantially as described.

In testimony that I claim the above I have hereunto set my hand this 3d day of April, 1865.

E. P. RUSSELL.

In presence of—

JOSEPH BAKER,
DAVID P. MURPHY.