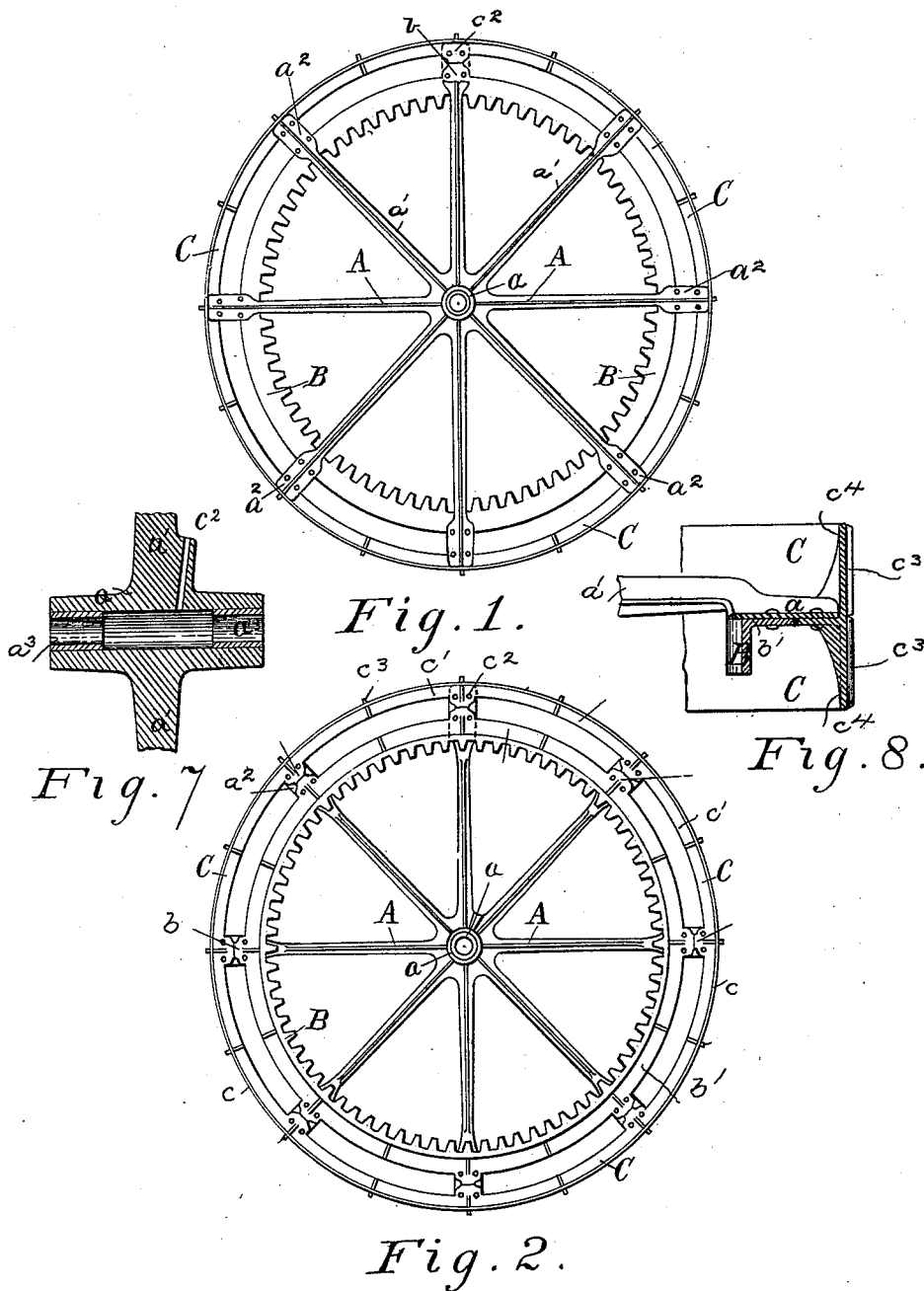


S. D. LOCKE.  
HARVESTER WHEEL.

No. 420,947.

Patented Feb. 11, 1890.



WITNESSES=

*W. Longrove.*  
*N. W. Locke.*

INVENTOR=

*Sylvanus D. Locke.*

S. D. LOCKE.  
HARVESTER WHEEL.

No. 420,947.

Patented Feb. 11, 1890.

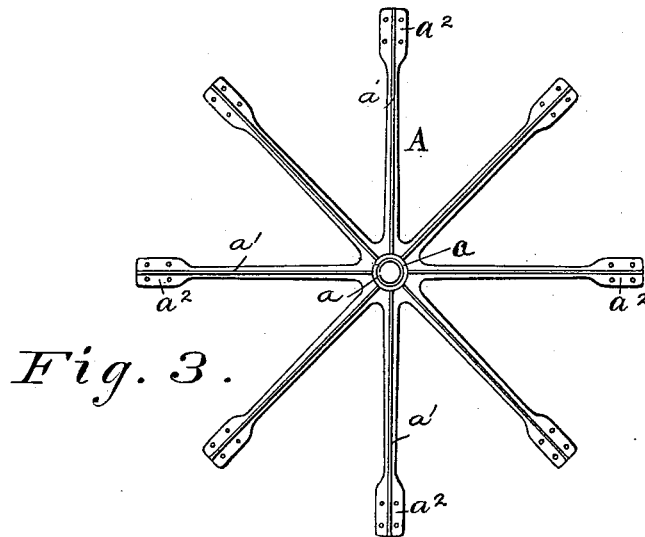


Fig. 3.

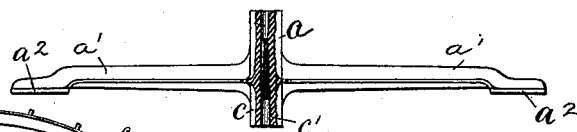


Fig. 4.

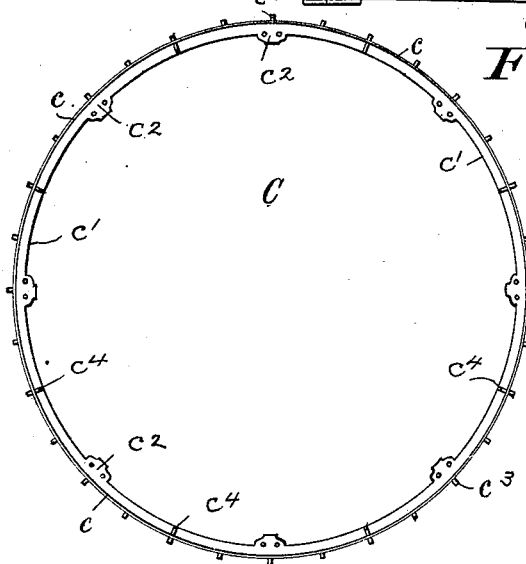


Fig. 5

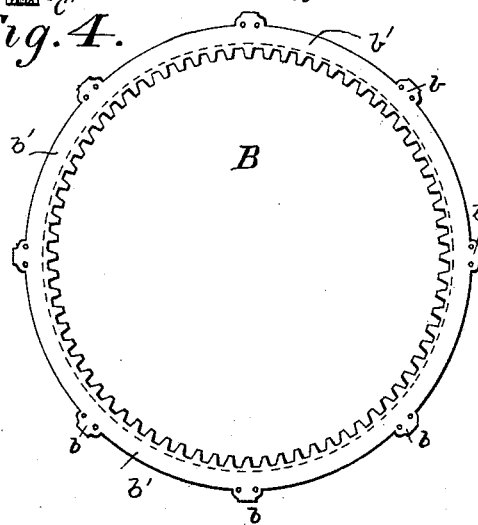


Fig. 6.

WITNESSES=

*W. Lovegrove*  
*N. W. Locke*

INVENTOR=

*Sylvanus D. Locke*

# UNITED STATES PATENT OFFICE.

SYLVANUS D. LOCKE, OF HOOSICK FALLS, NEW YORK.

## HARVESTER-WHEEL.

**SPECIFICATION** forming part of Letters Patent No. 420,947, dated February 11, 1890.

Application filed March 17, 1886. Serial No. 195,575. (No Model.)

*To all whom it may concern:*

Be it known that I, SYLVANUS D. LOCKE, of Hoosick Falls, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Harvester-Wheels, of which the following is a specification.

The drive-wheel of the modern harvester is a class by itself. It has a gear or gear-rim for driving the harvester. It must be about three feet in diameter and have a "tread" eight to ten inches wide—that is, the width of the rim must be eight to ten inches. At the same time this wheel must be strong, and ought to be light. If cast of common gray iron, it will be heavy if it have the necessary strength. For this reason, to secure both lightness and strength, manufacturers have resorted to a combination of material and have used what may be called "built-up" wheels, or wheels composed, for instance, of cast-iron or malleable-iron hubs, wrought-iron or steel spokes, cast-iron gears, and steel rims. Wheels of this character are quite costly and require much labor in their construction. Were these wheels constructed of cast malleable iron, they would be both strong and light; but it has heretofore been found impossible to cast them of malleable iron, when they may be of gray iron, with uniform certainty. The shrinkage of malleable iron is so great that they invariably crack or break in cooling, and so are spoiled.

My invention relates to that class of harvester-wheels called "cast wheels;" and the object of my improvements is, first, to reduce the weight of the cast wheel to that of the built-up steel wheel and still maintain its strength, and, second, to provide a simple and cheap way of making it of malleable cast-iron.

That others skilled in the art may make and use my invention, I will proceed to describe its construction and operation, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view, in elevation, of my wheel. Fig. 2 is also a view in elevation, but of the opposite side of the wheel. Fig. 3 is a detail view, in elevation, of the hub and spoke section of the wheel. Fig. 4 is a cross-

section of the hub and spoke section of the wheel longitudinally through its hub. Fig. 5 is a detail view, in elevation, of the rim-section of the wheel. Fig. 6 is a detail view, in elevation, of the gear-section of the wheel. Fig. 7 is a central longitudinal section of the hub and spoke section of the wheel enlarged; and Fig. 8 is a cross-section through the gear and rim section of the wheel, explaining the manner of uniting the different sections.

In constructing my improved wheel, and for the above explained purpose of enabling it to be made of cast malleable iron, of "mitis," or of cast-steel, with but little labor in the construction, I form it in three pieces or sections, dividing it along lines that enable it to be cast without cracking or breaking from shrinkage. The first section A includes integrally the hub  $a$  and the spokes  $a'$ , which may be ribbed longitudinally, as shown, and are splayed or flattened at their outer ends  $a^2$  in the plane of the wheel, and perforated for the reception of rivets or bolts, whereby the other sections are to be united to the said spoke-section, as presently explained. Preferably the hub is bored out to receive at each end a sleeve or bushing  $a^3$  to lessen the friction of the wheel on its axle. These bushings should be of brass turned and bored to fit and be driven into the hub, leaving between them a central chamber for holding oil. This, however, is not a feature of my invention. The second wheel-section B includes the gear alone, herein shown as annular, and this at intervals around its periphery, corresponding to the number of spokes, has ears  $b$ , outsetting radially from its flanged back  $b'$  and drilled or perforated to correspond with certain of the bores through the outer flattened ends of the spokes. The third section C comprises the rim  $c$  of the wheel, formed with a central internal web or flange  $c'$  and ears  $c^2$ , inseting from said web to meet and preferably abutting against the ears from the gear-section. It also may have external traction-ribs  $c^3$  and under stiffening-ribs  $c^4$ , as shown, but should include practically nothing beyond these, it being intended to confine this section essentially to the rim as an integer. The sections, being thus constructed, will be assembled by placing the rim-section upon the spokes, with its

ears matching the flattened ends of the latter, and riveting or bolting said ears thereto, then fitting the gear-section into place inside of the rim, against the ears of which its own  
5 will abut if nice workmanship is exacted or great strength required, and riveting or bolting it in like manner to the spokes, when the wheel will be complete.

I claim—

10 1. The combination, substantially as here-  
inbefore set forth, in a drive-wheel for har-  
vesters, of the spoke-section A, cast in one  
integral piece comprising the hub  $a$ , spokes  
 $a'$ , and their flattened extremities  $a^2$ , the gear-  
15 section B, having flanged back and radiating  
projecting ears  $b$ , corresponding to the num-  
ber of spokes, and the rim-section C, having  
central internal flange  $c'$ , and inseting ears  
 $c^2$ , corresponding to the ears from the gear-

section, said gear and rim section being riv- 20  
eted or bolted to the flattened extensions of  
the spokes by means of such ears.

2. The combination, substantially as here-  
inbefore set forth, of the spoke-section com-  
prising the hub and spokes with their flat- 25  
tened extremities, all cast integrally, the  
gear-section provided with outseting ears  
corresponding with the inner part of said  
flattened extremities, and also cast in one  
piece, and the rim-section likewise cast in one 30  
piece, having inseting ears which meet and  
abut against the ears in the gear-section, all  
three sections being riveted or bolted to-  
gether, as described.

SYLVANUS D. LOCKE.

Witnesses:

H. S. BARKER,

L. S. BRITTON.