

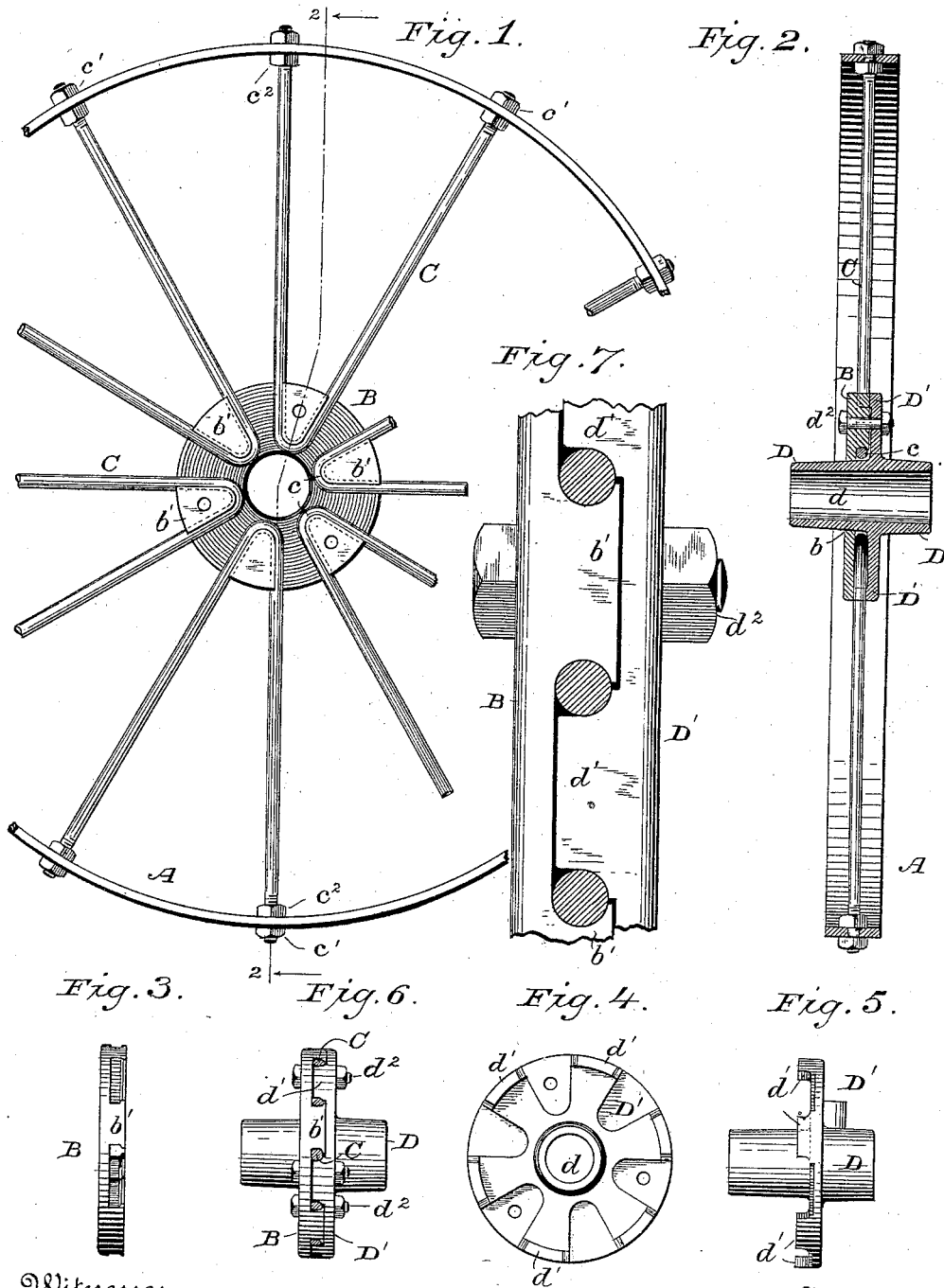
(No Model.)

H. E. PRIDMORE.

WHEEL.

No. 382,899.

Patented May 15, 1888.



Witnesses.

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UNITED STATES PATENT OFFICE.

HENRY E. PRIDMORE, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE McCORMICK HARVESTING MACHINE COMPANY, OF SAME PLACE.

WHEEL.

SPECIFICATION forming part of Letters Patent No. 382,899, dated May 15, 1888.

Application filed September 1, 1887. Serial No. 248,506. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. PRIDMORE, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Wheels, of which the following is a specification.

My invention relates, primarily, to the grain-wheels of harvesters, and will be illustrated and explained in connection with such a wheel, but is, however, capable of general application, and the special wheel described may therefore be considered as the exponent of a more extended type.

Metal wheels have heretofore been constructed with spokes each adjacent two of which were formed of a single rod of metal bent at its center to embrace a lug or round upon the hub or upon a collar slipped over the hub-sleeve and radiating thence to the rim. Such wheels, however, were usually of such nature as to necessarily collapse whenever the hub was removed, or else the spokes were so connected to the collar that they must be entirely disconnected from the rim and drawn endwise through the collar in order to remove them therefrom.

In my present invention I propose to employ spokes of the just-mentioned form; but, instead of attaching them at the bend or apex directly to the hub by slipping them through holes in a collar, I cause them to catch over suitably shaped and grooved lugs upon the face of an independent binding disk or annulus and connect such disk to a flange from the hub, thus practically building up the wheel and giving permanent form to it before the hub is applied, and enabling such hub to be removed without otherwise affecting the general structure of the wheel by disarranging the spokes or affecting their tension, or the disk to be removed without disturbing the spokes, or any double spoke to be separately and readily removed, so that should any injury be received by either the hub, disk, or spokes, or should the hub become so worn as a bearing as to be no longer serviceable, the defective part may be detached and a new one applied without trouble.

In the drawings, Figure 1 is a side elevation

of a wheel constructed according to my invention, the hub being removed to more clearly expose the connection of the spokes to the central annulus or disk. Fig. 2 is a vertical section through said wheel with the hub in position, taken on the correspondingly-numbered line in the preceding figure. Fig. 3 is an edge elevation of the central binding-disk; Fig. 4, an end elevation of the hub, seen from the outer end; and Fig. 5, a side elevation thereof; Fig. 6, a rear elevation of the hub and binding-disk applied to each other and with the spokes broken away at their periphery, and Fig. 7 an enlarged detail view of a portion of said hub and binding-disk applied to each other and with the spokes between them.

A represents a metal wheel-rim, and B an annulus or disk of cast metal provided with central bore, *b*, and having formed upon one face a series of radiating triangular lugs, *b'*, slightly rounded at their inner ends or apexes, and preferably grooved at such apex and along the two flaring sides that extend therefrom to the periphery of the disk. The spokes *C* are composed of metal rods which are bent at their centers *c* to each take over one of the lugs on the disk and fit into the edge grooves thereof, and thence radiate in two arms to the wheel-rim, these arms at their ends being screw-threaded and passing through said rim, outside of which they receive nuts *c'*, whereby they are secured, each bent rod thus forming two spokes and the nuts at the exterior serving to tighten these spokes and strain them against the resistance of the central disk, which in the end binds the whole series of spokes together and in their proper relation to the rim. These nuts also serve as tread strips or projections to enable the wheel to take a firm hold of the ground. Other nuts, *c''*, may be applied to the spokes inside of the rim to serve as jam-nuts, and in case it should be thought advisable to omit the tread-nuts these jam-nuts alone will suffice to hold the spokes when the hub is in position, as will immediately appear, though not when it is removed.

The wheel-hub *D* is formed with a central bearing, *d*, and peripheral flange *D'*, provided with inseting lugs *d'*, which take into the spaces between the lugs on the binding-disk

and sit against the spokes held thereby, but which may be omitted, if desired, leaving the flange a simple collar with flat faces. The periphery of the hub where it passes through the central bore in the binding-disk is preferably slightly tapering that it may wedge into this bore and make a firm fit, allowing, however, its flange to come against the opposing face of the disk, when the two will be secured together by bolts d^2 , passing through said flange and through lugs on the disk, thus completing the wheel. If thereafter, from any cause, it should become necessary to remove the hub, this will easily be done by removing the bolts, when it can be detached from the disk, leaving the spokes, however, still held and strained in their proper position by said disk, and a new hub can then be fitted into position without the attendant trouble of readjusting the spokes. A further advantage of such construction is that it also permits the hub to be made of different metal from the binding-disk—as, for instance, cast-steel.

Another advantage arising from the fact that the lugs on the face of the disk or annulus are open—that is to say, are not guarded by a keeper on the disk or by holes through a lateral flange adjacent to the periphery, as in some prior constructions—is that the disk itself may be removed by slightly loosening some of the spokes without detaching them and a new disk put in its place, or else a broken spoke removed without necessitating its being drawn through before it is entirely detached from the wheel and another spoke quickly and readily put in its place.

While I have described the spokes as passing through the wheel-rim and being strained by nuts applied externally to said rim it is evident that their ends may abut against or sit in sockets on the inner face of said rim, and that the central bore through the disk may be of such size and the tapering hub bear such relation thereto that when the hub is placed in position it will come against the bends or apexes and force or wedge them out against the rim with a force determined by the bolts which clamp the hub and the disk.

I claim—

1. The combination, substantially as hereinbefore set forth, of the metal wheel-rim, the

central binding-disk provided with equidistant open lugs upon its face, the centrally-bent spokes catching over said lugs, and the independent detachable hub.

2. The combination, in a metal wheel, of a metal rim and a central binding-disk provided with lugs upon its face, spokes formed of centrally-bent rods which fit over said lugs at their apexes and extend thence to the rim, an independent hub having a bearing-sleeve passing through the center of the disk, and a flange which comes against the face of said disk and confines the spokes thereon, and bolts passing through said flange and disk.

3. The combination, substantially as hereinbefore set forth, with the metal wheel-rim, the central binding-disk and its flaring lugs, and the centrally-bent spokes, of the tapering hub, its annular flange, and the bolts uniting said flange to the binding-disk.

4. The combination, substantially as hereinbefore set forth, of the wheel-rim, the central binding-disk having radially-flaring lugs, the centrally-bent spokes taking over said lugs and at their ends passing through the rim, the nuts applied to the outer end of said spokes exteriorly to the rim, the hub and its annular flange, and the bolts uniting said flange to the binding-disk.

5. The combination, substantially as hereinbefore set forth, of the wheel-rim, the central binding-disk having radially-flaring lugs, the centrally-bent spokes taking over said lugs and at their ends passing through the rim, the nuts applied to the outer end of said spokes exteriorly to the rim, the jam-nuts applied to said spokes inside of the wheel-rim, the hub and its annular flange, and the bolts uniting said flange to the binding-disk.

6. The combination, substantially as hereinbefore set forth, of the wheel-rim, the central binding-disk having flaring lugs, the centrally-bent spokes taking over said lugs, the hub having an annular flange provided with teeth or projections entering into the spaces between said lugs, and the bolts uniting said flange to the binding-disk.

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Witnesses:

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