

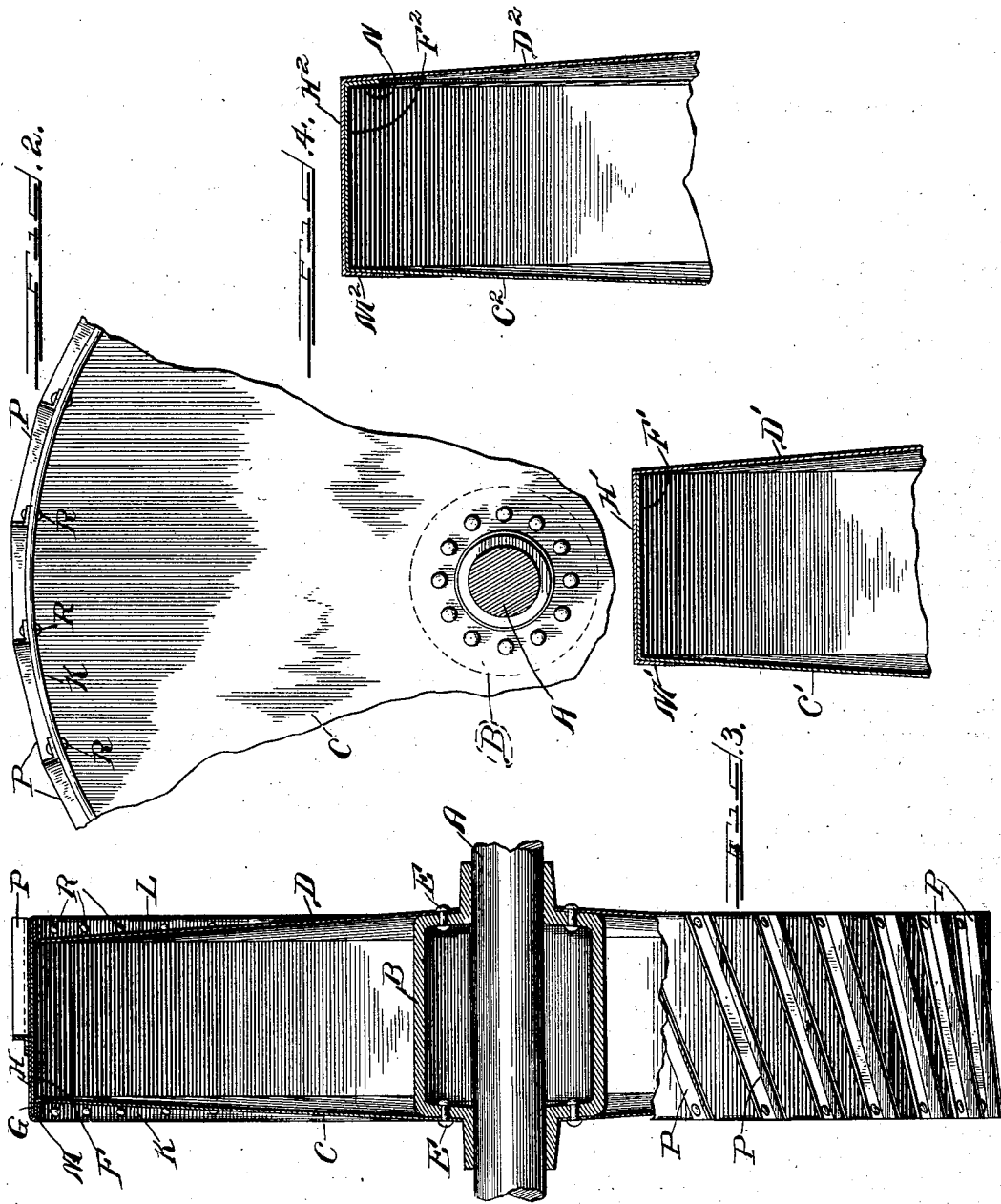
No. 700,215.

Patented May 20, 1902.

J. MACPHAIL.
WHEEL.

(Application filed Apr. 27, 1901.)

(No Model.)



Witnesses
 J. Weir
 J. D. Perry

James Macphail
 By Brown & Darby
 attys.

UNITED STATES PATENT OFFICE.

JAMES MACPHAIL, OF BLUE ISLAND, ILLINOIS, ASSIGNOR TO McCORMICK HARVESTING MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

WHEEL.

SPECIFICATION forming part of Letters Patent No. 700,215, dated May 20, 1902.

Application filed April 27, 1901. Serial No. 57,690. (No model.)

To all whom it may concern:

Be it known that I, JAMES MACPHAIL, a citizen of the United States, residing at Blue Island, in the county of Cook and State of Illinois, have invented a new and useful Construction of Wheels, of which the following is a specification.

This invention relates to the construction of wheels.

The object of the invention is to provide a wheel which is simple in construction, strong, durable, light, and economical.

The invention consists, substantially, in the construction, combination, location, and arrangement, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the appended claims.

Referring to the accompanying drawings and to the various views and reference-signs appearing thereon, Figure 1 is an edge view, partly in transverse section, of a wheel embodying the principles of my invention. Fig. 2 is a broken view, in side elevation, thereof. Figs. 3 and 4 are broken views, in transverse section, showing modified constructions of wheels embraced within the spirit and scope of my invention.

The same part is designated by the same reference-sign wherever it occurs throughout the several views.

In carrying out my invention I provide sheet-metal disks or plates which are mounted upon the hub in place of the usual spokes. At the periphery of each disk or plate I form the same into a flange. The plates or disks are mounted at the respective ends of the hub and with the peripheral flanges thereon presented in opposite directions and arranged to suitably engage each other in various ways, as will be explained more fully hereinafter, thus forming a sheet-metal wheel, the interlocking or engaging oppositely-projecting flanges formed at the peripheries of the sheets or disks forming or constituting the tread of the wheel. By causing the flanges to engage and lock with each other so as to draw the outer edges or portions of the disks or sheets toward each other into closer relation than

the inner or central portions of said disks or sheets I effect a spreading apart of said sheets or disks centrally where said disks or plates are secured to the hub, thus imposing a strain or tension upon the sheets or plates. In this manner I produce an exceedingly strong durable sheet-metal wheel, and which is economical in construction.

Referring to the accompanying drawings, reference-sign A designates a shaft or axle, and B the hub thereon.

C and D designate, respectively, the sheet-metal disks or plates centrally perforated to fit over and to be attached centrally in any suitable manner to the faces or ends of the hub B, as clearly shown in Fig. 1. Any suitable or convenient means of attachment of the plates or disks to the hub may be provided—as, for instance, rivet-bolts E, or otherwise.

Each sheet or disk D is provided with a laterally-extending flange at its outer periphery thereof, and the flanges on said disks or plates are arranged to project in opposite directions with respect to each other and may be applied to each other or attached together in any suitable or convenient manner. I have shown various arrangements and means of attachment of said flanges. For instance, in Fig. 1 the flange F, formed on plate or disk C, is first bent outwardly and laterally with respect to the plane of said sheet or disk, as indicated at G, and is then bent or folded back upon itself in the opposite direction, as clearly shown. The flange H of disk or plate D is first bent laterally and outwardly with respect to the plane of disk D, as indicated at J, and is then doubled or folded back upon itself and to extend in the opposite direction, as clearly shown, thus forming lateral flanges K L. The flanges F H may be applied to each other in any suitable manner and secured or fastened together. In the particular form shown in Figs. 1 and 2 the edge of flange F is arranged to be received within the fold J of flange H, and the extreme edge of flange H is arranged to be folded over the bend or lateral flange G of sheet or plate C and to engage underneath such bend or fold, as indi-

cated at M, Fig. 1, thus efficiently locking said flanges in engaging relation. In assembling the lateral flanges of the disks or plates C D the outer or peripheral portions of said disks or plates are drawn into closer relation with respect to each other or nearer together than the distance between the side faces of the hub B, as clearly shown, thus imposing a lateral strain or tension upon the plates or disks, which aids in strengthening the wheel and preventing lateral vibration of the disks or plates. In the form of construction shown in Fig. 3 the feature of the laterally-extending flanges K L is omitted and the outer edge of sheet or disk C' is merely turned inwardly toward plate or disk D', as indicated at F', and the outer peripheral edge of sheet or plate D' is folded over or laterally, as indicated at H', with the extreme edge thereof M', folded down over the corner or bend in plate or disk C', as clearly shown, the extreme edge of flange F' merely abutting against the surface of plate or disk D'. The construction shown in Fig. 4 is practically the same as that shown in Fig. 3, except that the lateral flange F², formed at the outer or peripheral portion of plate or disk C², terminates in a bend or flange N, over which plate or disk D² extends or against which said plate or disk bears, the flange H² of said plate or disk D² being formed in the same manner as flange H', (shown in Fig. 3,) the extreme edge of such flange M², being folded down over the corner formed in plate or disk C² by the bend of flange F², formed therein.

From the foregoing description it will be seen that the tread portion of the wheel is formed of the lateral flanges, and the locking together of said flanges forms an efficient connection of the same together.

A wheel embodying the principles of construction above set forth is strong and durable, as well as light, and is exceedingly economical in manufacture, and such construction may be embodied in wheels for any desired purpose. I do not desire, therefore, to be limited in respect of the use or purpose to

which the wheels are put; but I have found such construction particularly desirable in the manufacture of traction-wheels for road-engines, agricultural machines, and the like. It may be desirable in order to increase the traction of such wheels to attach to the tread the usual ribs P. These may be of the usual or any well-known construction and may be mounted upon the tread portion of the wheel in any suitable or convenient manner—as, for instance, by rivet-bolts R, or otherwise.

Having now set forth the object and nature of my invention and a construction embodying the principles thereof, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent, is—

1. A wheel composed of sheet-metal disks or plates, each of said plates or disks being bent outwardly or away from each other at the outer peripheries thereof, said outwardly-bent portions being bent or doubled back upon themselves to project in opposite directions, thereby forming laterally-extending flanges, the reversely-bent or doubled-back portions of one of said disks or plates having its edge turned over upon and under the laterally-extending flange of the other of said plates or disks, as and for the purpose set forth.

2. A wheel composed of sheet-metal disks or plates, each of said plates or disks being bent outwardly or away from each other at the outer peripheries thereof, said outwardly-bent portions being bent or doubled back upon themselves to project in opposite directions, thereby forming laterally-extending flanges, one of said flanges to constitute the tread portion of the wheel, said flanges being arranged to engage and lock with each other, as and for the purpose set forth.

In witness whereof I have hereunto set my hand, this 24th day of April, 1901, in the presence of the subscribing witnesses.

JAMES MACPHAIL.

Witnesses:

E. C. SEMPLE,
S. E. DARBY.