No. 686,822. Patented Nov. 19, 1901.

J. MACPHAIL.

SHEET METAL WHEEL.

(Application filed Apr. 27, 1901.)

(No Model.)

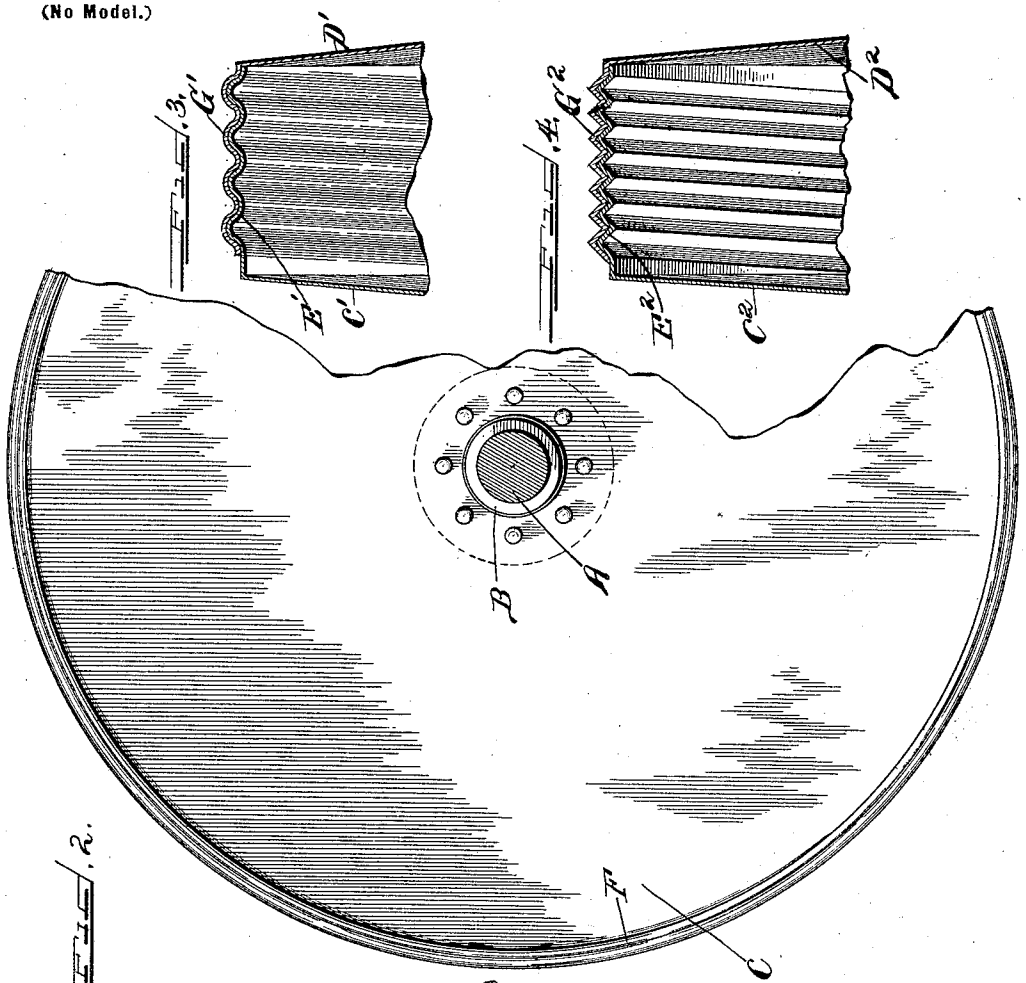


Fig. 3.

Fig. 4.

Fig. 2.

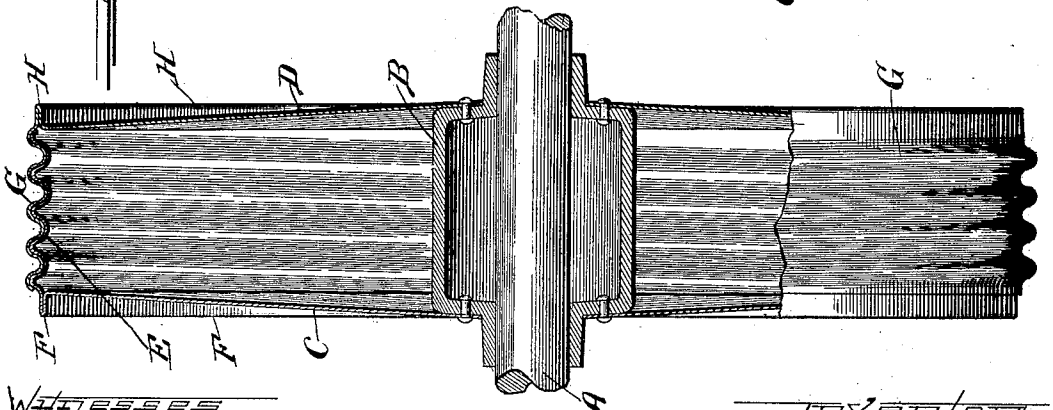


Fig. 1.

Witnesses
J. B. Weir
Ira D. Perry

Inventor
James Macphail
By Brown & Darby
Attys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

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

SHEET-METAL WHEEL.

SPECIFICATION forming part of Letters Patent No. 686,822, dated November 19, 1901.

Application filed April 27, 1901. Serial No. 57,689. (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 Sheet-Metal Wheel, of which the following is a specification.

This invention relates to sheet-metal wheels.

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

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 side elevation thereof, parts broken off. Figs. 3 and 4 are modified forms 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 form the wheel of sheet-metal plates or disks having laterally-extending peripheral flanges which are formed into screw-thread shape, whereby the one may be screwed upon the other, thereby locking said flanges together, said flanges forming the tread portion of the wheel. In this manner an exceedingly light, durable, efficient, and economical wheel is produced.

Referring to the accompanying drawings, reference-sign A designates a shaft or axle, upon which is mounted a hub B, which may be of any suitable construction. Mounted upon the hub B are metallic sheets or disks C D. Each disk at its outer periphery is provided with lateral flanges, which flanges project in opposite directions with respect to each other, and in each of which is formed spiral or screw threads, thereby enabling the one flange to be screwed upon the other, whereby said flanges are locked together and maintained in efficient locking relation to form the tread of the wheel. This interlocking of the flanges by spiral or screw threads may be effected in many different ways. For instance, as shown in Fig. 1, the sheet or plate C is provided with a flange E, which is first bent outwardly and then reversely bent upon itself to form a laterally-extending flange F. Similarly the plate or disk D is provided with a laterally-extending flange G, which is first bent outwardly and then reversely folded back upon itself to form the flange H, portions E and G of said flange extending in opposite directions with respect to each other, and each is formed into or with meshing spiral screw-threads, whereby one of said flanges may be screwed upon the other. The screw-threads or spirals may be of any suitable or convenient transverse sectional shape. For instance, as shown in Figs. 1 and 3, a curved contour of thread is shown, whereas in the form in Fig. 4 the screw-threads or spirals are more V-shaped in cross-section. Instead of first bending the flanges on the disks or plates outwardly and then reversely bending or folding such portions back upon themselves to form the flanges F and H the feature of the flanges F H may be omitted, as shown in Figs. 3 and 4, and the flange E′ of Fig. 3 or E^2 of Fig. 4 may be at once bent inwardly toward the disk or plate D′ D^2, and similarly the flange G′ of Fig. 3 or G^2 of Fig. 4 may be bent at once inwardly toward sheet or disk C′ C^2, the flanges G′ G^2 extending in opposite directions with respect to the flanges E′ E^2, said flanges being formed with intermeshing spirals or screw-threads, as above explained, whereby said flanges may be screwed the one upon the other, as clearly shown, to form the tread of the wheel. In practice and in any case the distance between the outer or peripheral portions of the sheets or disks C D should be less than the distance apart of said disks at their central portions, as clearly shown and indicated in the drawings. In this manner a lateral strain or tension is imposed upon said sheets or disks, which prevents undue vibration thereof and gives strength and rigidity to the tread portions of the wheel.

A wheel constructed in accordance with the

principles above described may be used in any relation and for any purpose for which wheels are adapted, and I do not desire to be limited in respect of the use thereof. I have found, however, that such construction is particularly efficient for traction-wheels for traction-engines, agricultural machines, and the like.

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 plates or disks having laterally-extending flanges, said flanges formed with spirals or screw-threads, whereby the one may be screwed upon the other, as and for the purpose set forth.

2. A wheel composed of sheet-metal plates or disks having lateral oppositely-extending screw-thread flanges, whereby the one may be screwed upon the other to form the tread of the wheel, as and for the purpose set forth.

3. A wheel composed of sheet-metal plates or disks having oppositely-extending screw-threaded peripheral flanges adapted to be screwed the one upon the other to form the tread of the wheel, the distance between said sheets or disks at the peripheries thereof being less than the distance between said sheets or disks at the centers thereof, as and for the purpose set forth.

4. A wheel composed of sheet-metal plates or disks, each plate or disk at the outer periphery thereof being bent outwardly and then folded or bent back upon itself and inwardly or toward each other to form laterally-extending flanges, the inwardly-bent portions being formed into meshing screw-threads whereby the one may be screwed upon the other to form the tread of the wheel, 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.