(No Model.)

R. C. FAY.

VEHICLE WHEEL.

No. 492,578. Patented Feb. 28, 1893.

Fig. 1

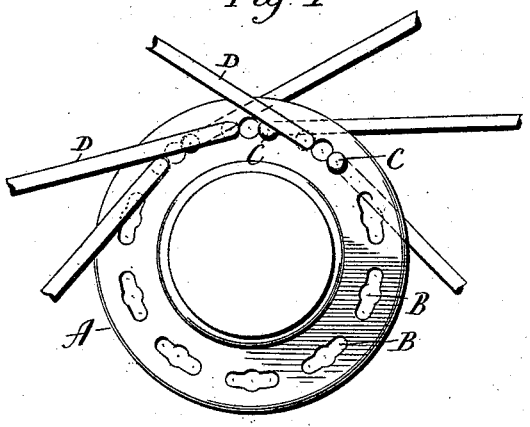


Fig. 2.

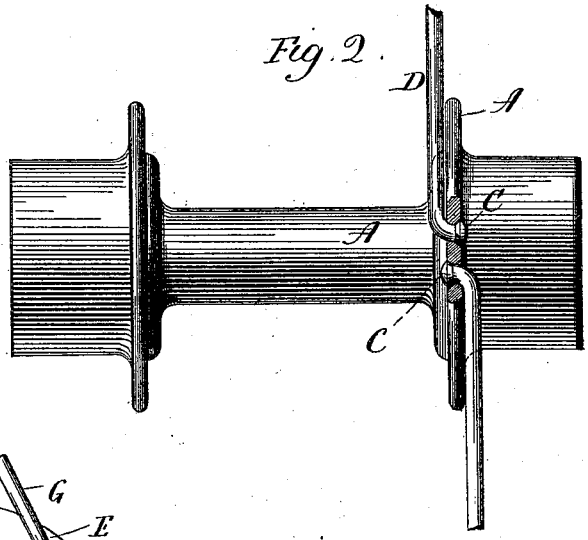


Fig. 3

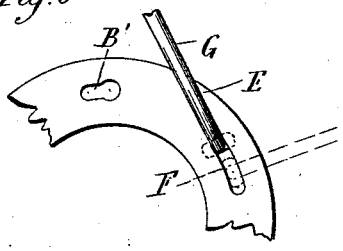
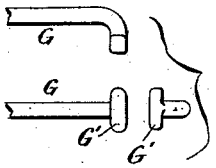


Fig. 4



Witnesses
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UNITED STATES PATENT OFFICE.

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VEHICLE-WHEEL.

SPECIFICATION forming part of Letters Patent No. 492,578, dated February 28, 1893.

Application filed November 21, 1892. Serial No. 452,689. (No model.)

To all whom it may concern:

Be it known that I, RIMMON C. FAY, of Ilion, in the county of Herkimer and State of New York, have invented a new Improvement in Vehicle-Wheels; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in end elevation of a wheel-hub constructed in accordance with my invention, and showing in its exposed hub flange six spokes arranged in pairs in three slots. Fig. 2, a view of the hub in side elevation, showing only two spokes, and having a portion of its flange broken away to better represent their position in one of its slots. Fig. 3, a detached broken enlarged view showing a different form which a slot and spoke-end made in accordance with my invention, may assume. Fig. 4, a view comprising front, edge, and end elevations of the modified form of spoke end shown in the preceding figure.

My invention relates to an improvement in that class of vehicle-wheels constructed on the suspension principle, which have independently attached, tangentially arranged spokes, the outer ends whereof are connected to the wheel-rim, by means of threaded nipples, and their inner ends bent and headed, and attached to the wheel-hub, which is thereto constructed with a slotted flange, the object of the present invention being to improve wheels of the construction described, by a different formation and arrangement of the slots in the hub-flange, whereby the wheels are made stronger and simpler, and better able to resist the various strains and concussions to which they are subjected in use.

With these ends in view, my invention consists in a vehicle-wheel of the suspension type, having spokes, the inner ends of which are bent and headed, and a flanged wheel-hub having a circular series of slots to receive the said ends of the spokes which are thus detachably connected with the hub the said slots being arranged lengthwise with respect to the edges of the hub-flanges, and endwise with respect to each other.

My invention further consists in certain details of construction and combinations of parts as will be hereinafter described and pointed out in the claims.

In carrying out my invention, the hub flanges A A, of the hub A′, are provided with a circular series of slots B, the hub and flanges being otherwise of any approved construction the said slots being arranged lengthwise with respect to the edges of the hub-flanges, and endwise with respect to each other. As shown in Fig. 2 of the drawings, the slots are double-ended, and centrally enlarged, whereby each slot is adapted to receive the bent and headed ends C, of two of the spokes D, the outer ends of which are attached in any suitable manner, and preferably by threaded nipples, to the wheel-rim, which is not shown. It is not essential, however, that the slots for the reception of the headed ends of the spokes be double-ended, one form of a single-ended slot being shown by Fig. 3 of the drawings, in which it is lettered B′. Preferably, however, the slots are made double-ended, or adapted to receive the ends of the two spokes, as that reduces the number of slots required, by half, and weakens the hub-flanges much less than to provide them with a slot for each spoke.

It will be observed by reference to Fig. 1 of the drawings that the pull of the spokes is nearly in line with the length of the slots, while Fig. 2 of the drawings shows how the respective spokes of each pair of spokes are inserted into the slot receiving them from opposite faces of the hub-flange. The broken hub-flange E, shown by Fig. 3 of the drawings, and containing the modified slot B′ before mentioned, also contains another form of modified slot, which is designated by F. This slot is arranged lengthwise with the edge of the flange, but of uniform width throughout its main-portion. With this slot I should employ a spoke having its inner end provided with an oblong head, constructed to pass through the slot when the spoke is presented radially to the hub-flange, but locking into the slot when the spoke is then moved into a tangential position with reference thereto. Such a spoke G, is shown by Fig. 4 of the drawings, its inner end being constructed with an oblong head G′, standing at a right angle to it,

and projecting equally beyond its opposite faces. This head is narrower than the width of the slot, so that it will pass through the same when it is aligned therewith, but not otherwise, whereby the spoke is firmly locked into the slot by turning it so as to carry the head out of line with the length of the slot, as clearly shown by Fig. 3 of the drawings. Obviously, the spoke-ends may assume different forms in their adaptation to be engaged with slots arranged in accordance with my invention, and I do not limit myself to the particular form of spoke-ends shown.

By arranging the slots lengthwise with respect to the edges of the hub-flanges, and end to end with respect to each other, the pull of the spokes is nearly in line with their length, whereby the strain on the flanges becomes less than when slots arranged radially or endwise with respect to the edges of the hub-flanges, and lengthwise or side by side with respect to each other are employed, for in that case the line of strain is often nearly at a right angle with the length of the slots, and apt to result in breakage of the flange. Furthermore, when the pull of the spokes is in line with the length of the slots, the spoke-ends have to move farther in being disengaged from the slots than do spoke-ends inserted into radial slots, whereby, under my invention, the spoke-ends are less liable to be jumped out, or disengaged from the slots under the severe strains and concussions to which cycle-wheels are exposed.

I am aware, as appears herein, that a vehicle-wheel having a flanged hub constructed with radially arranged slots, is old, and I do not, therefore, claim a slotted wheel-hub broadly, but only a construction in which the slots are arranged lengthwise with respect to the edges of the hub-flanges, and endwise with respect to each other.

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

1. A vehicle-wheel of the suspension type, having spokes, the inner ends whereof are bent and headed, and a flanged wheel-hub, the flanges whereof are each constructed with a circular series of slots arranged lengthwise with respect to their edges, and endwise with respect to each other, and adapted to receive the headed ends of the spokes which are thus detachably connected with the hub, substantially as set forth.

2. A vehicle-wheel of the suspension type, having spokes, the inner ends whereof are bent and headed, and a flanged wheel-hub, the flanges whereof are each constructed with a circular series of double-ended centrally enlarged slots arranged lengthwise with respect to their edges, and endwise with respect to each other, to receive the said ends of the spokes which are thus detachably connected with the hub, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

RIMMON C. FAY.

Witnesses:
GEO. E. HUMPHREYS,
F. ARMSTRONG.