H. LOTTE.

WHEEL WITH MULTIPLE AND BALANCED RIMS.

APPLICATION FILED MAR. 11, 1911.

1,076,591.

Patented Oct. 21, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

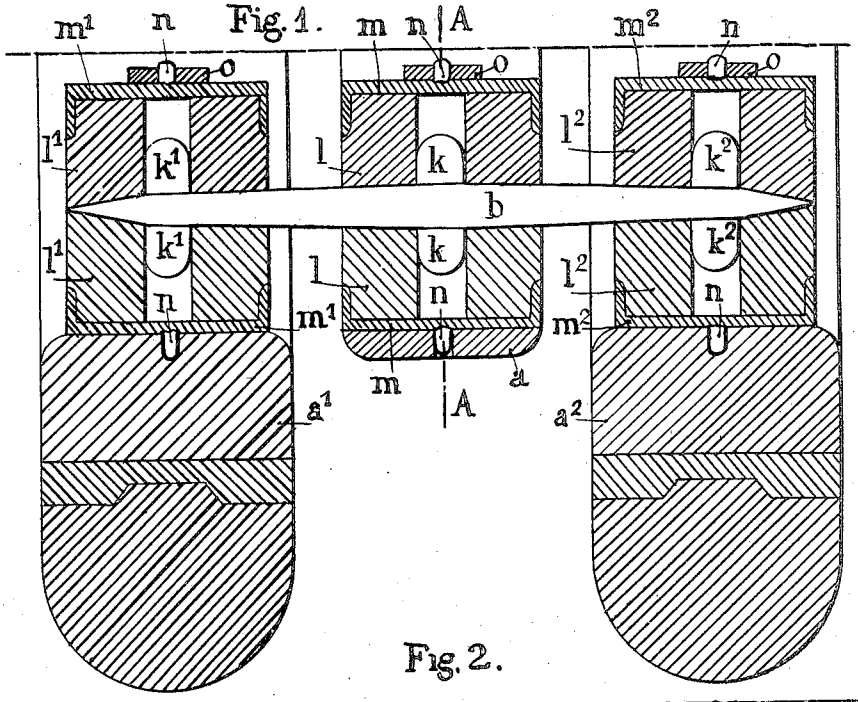


Fig. 2.

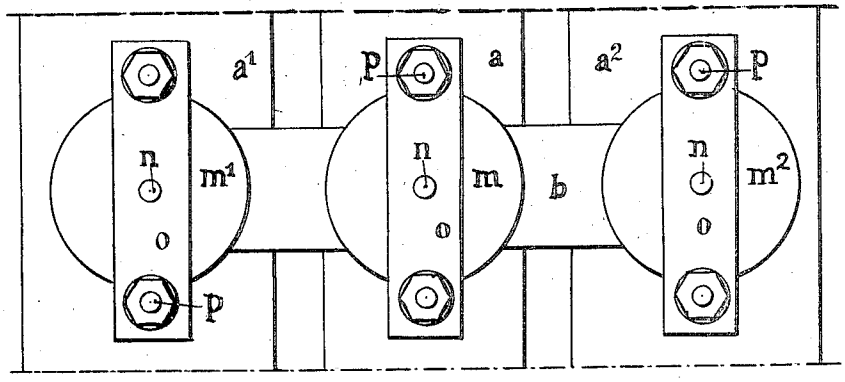
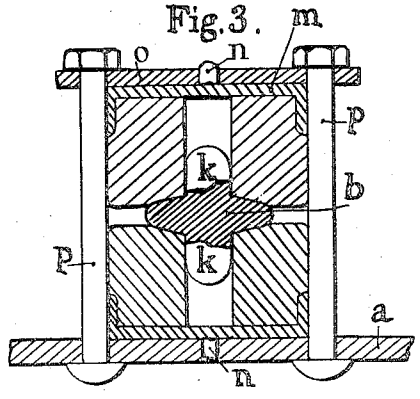


Fig. 3.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 4.

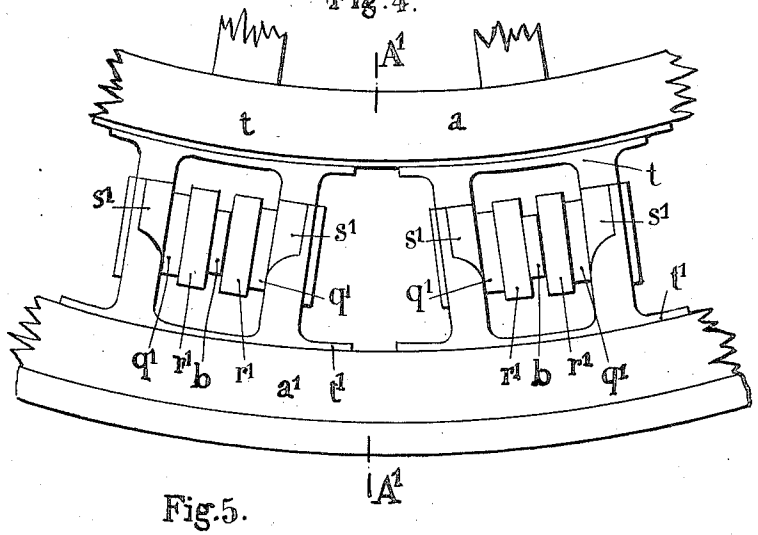


Fig. 5.

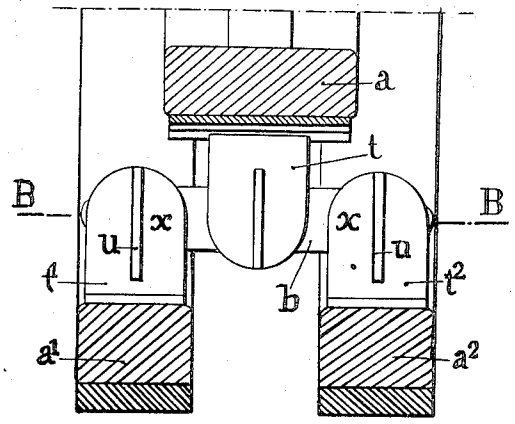


Fig. 8.

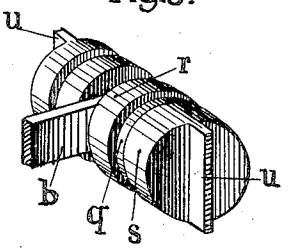


Fig. 6.

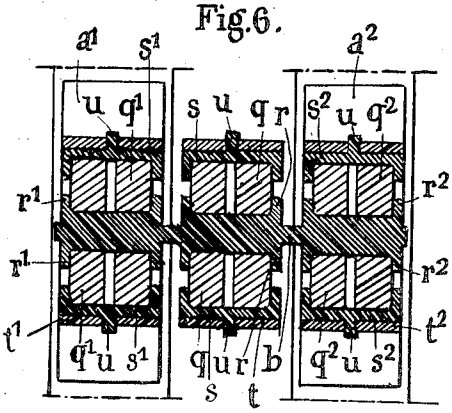
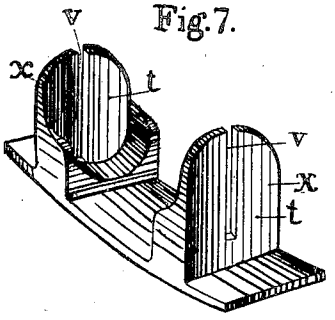


Fig. 7.



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WHEEL WITH MULTIPLE AND BALANCED RIMS.

1,076,591. Specification of Letters Patent. Patented Oct. 21, 1913.

Application filed March 11, 1911. Serial No. 613,721.

To all whom it may concern:

Be it known that I, HENRY LOTTE, of 4 Rue Pascal Bourcy, St. Jean d'Angély, Charente-Inférieure, Republic of France, controller of direct taxes, have invented a Wheel with Multiple and Balanced Rims, of which the following is a full, clear, and exact description.

The invention relates to improvements in the wheel with multiple and balanced rims making the subject-matter of the United States patent application filed on the 19th December 1907.

This wheel comprises a main rim and auxiliary rims connected to the preceding one by beams arranged so that the auxiliary rims may be capable of being displaced vertically and horizontally relatively to the main rim.

This invention has for its object to efficiently connect the beams to the rims, so as to obtain a strong structure and a great resiliency in the operation.

Moreover, the invention comprises various combinations of parts which will be hereinafter described and claimed.

In the accompanying drawings, given by way of example, Figure 1 is a vertical section passing through the longitudinal axis of a beam; Fig. 2 is a corresponding plan view; Fig. 3 is a section made on line A—A of Fig. 1; Fig. 4 is an elevation of a portion of the new wheel; Fig. 5 is a section made on line A^1—A^1 of Fig. 4; Fig. 6 is a section made on line B—B of Fig. 5; Figs. 7 and 8 are two perspective views showing separately a bearing and the parts it receives.

As illustrated in the drawings, the beams b which connect the main rim a to the auxiliary rims a^1, a^2 carry studs k, k^1, k^2 respectively inserted in the inner recesses of rubber rings l, l^1, l^2. These rings are fitted in cups m, m^1, m^2 secured on their respective rims by means of small bars o and of bolts p. Said cups are provided with retaining claws n some of which fit in the small bars o and the others in the rims a, a^1, a^2. By reason of this arrangement, the auxiliary rims can be displaced in any direction relatively to the main rim; the rubber rings are elastically distorted under the pressures which are produced and afterward resume their shape. In these conditions, no sliding of parts relatively to one another is produced when an auxiliary rim is displaced relatively to the main rim, the elastic rings of the various beams of the wheel, according to their position on this wheel, yield some in the vertical direction, the others in the horizontal direction, and add their actions for elastically restraining the relative displacements of the rims relatively to one another. The bolts p being placed in the same planes as the studs k, k^1, k^2, the strains due to the driving along and to the braking action are supported by the wheel without inconvenience. In the new arrangement, the mounting and dismounting of the wheel is very easily and readily effected. The inner recesses of the rubber rings into which are fitted the studs are completely closed and the dust cannot enter therein.

In the modification illustrated in Figs. 4 to 8, special devices are interposed at intervals on the periphery of the wheel, between the auxiliary rims a^1 and a^2 and the main rim a. These devices are constituted by beams b, Figs. 5 and 6, on which are secured cups r, r^1, r^2; in these cups are fitted rubber rings g, g^1, g^2 inserted on the other hand in cups s, s^1, s^2. The latter are mounted in bearings t, t^1, t^2 secured on the main rim and on the auxiliary rims. Each connection device connecting the auxiliary rims to the main rim thus comprises three bearings: a bearing t secured on the rim a and bearings t^1, t^2 secured on the rims a^1 a^2 (Fig. 4). According to the foregoing, each rubber ring is clamped between two cups placed opposite each other and it permits of a slight displacement of these two cups relatively to each other in every direction. It results therefrom that the beams can play between the auxiliary rims and the main rim in a manner similar to what has been indicated above and that the auxiliary rims can take relatively to the main rim the displacements necessary to the proper working. This arrangement has the advantage of great solidity, as there is no risk for the rubber rings being injured by use.

In order to facilitate the putting into position of the parts and the mounting of the wheel, the cups s, s^1, s^2 carried by the bearings are secured in a removable manner on these bearings. To that effect, these cups are provided with ribs u which can be introduced into corresponding slots v made in the bearings. For introducing in these bearings the cups and rubber blocks to be received therein, the members are placed in the position they must occupy relatively to

one another, as illustrated in Fig. 5. Then the extreme cups are clamped by means of a vise or similar tool bearing on the ribs u and the whole of the members is introduced in the bearing, by sliding the ribs u into the slots or openings v. As the ribs u make a projection relatively to the side plates x of the bearings, the preceding operation can be effected while the members are held in the clamping tool. It will be noted that in this arrangement the cups are arranged at right angles to the rims, and the beams are arranged in the same way; this arrangement facilitates the construction and renders it stronger.

Claims:

1. In a wheel, a main rim, auxiliary rims moving laterally relatively to the main rim, beams connecting the auxiliary rims to the main rim, rubber rings interposed between the rims and the beams, and cups receiving these rubber rings.

2. In a wheel, a main rim, auxiliary rims moving laterally relatively to the main rims beams at right angles to the planes of the rims and connecting the auxiliary rims to the main rims, rubber rings interposed between the rims and the beams, and cups fixed to the rims and receiving the said rubber rings.

3. In a wheel a main rim, auxiliary rims moving laterally relatively to the main rim, beams connecting the auxiliary rims to the main rim, rubber rings interposed between the rims and the beams, and cups receiving these rubber rings, the beams and cups being placed at right angles to the rims.

4. In a wheel, a main rim, auxiliary rims moving laterally relatively to the main rim, beams connecting the auxiliary rims to the main rim, cups r r^1 r^2 integral with the beams, cups s s^1 s^2 connected to the rims, and rubber rings fitted in these cups r r^1 r^2 and s s^1 s^2.

5. In a wheel, a main rim, auxiliary rims, beams connecting the auxiliary rims to the main rim, bearings t t^1 t^2 secured on the rims, cups r r^1 r^2 integral with said beams, cups s s^1 s^2 removably mounted on the bearings t t^1 t^2, and rubber rings fitted in the cups r r^1 r^2 and s s^1 s^2.

6. In a wheel, a main rim, auxiliary rims, beams connecting the auxiliary rims to the main rim, bearings t t^1 t^2 secured on the rims, slots in the cheeks of said bearings, cups r r^1 r^2 integral with said beams, and cups s s^1 s^2 provided with ribs to be introduced in the slots of the bearings.

The foregoing specification of my "wheel with multiple and balanced rims" signed by me this twenty-fifth day of February, 1911.

HENRY LOTTE.

Witnesses:
LEON LEJEIL,
EDMOND CONTRE.