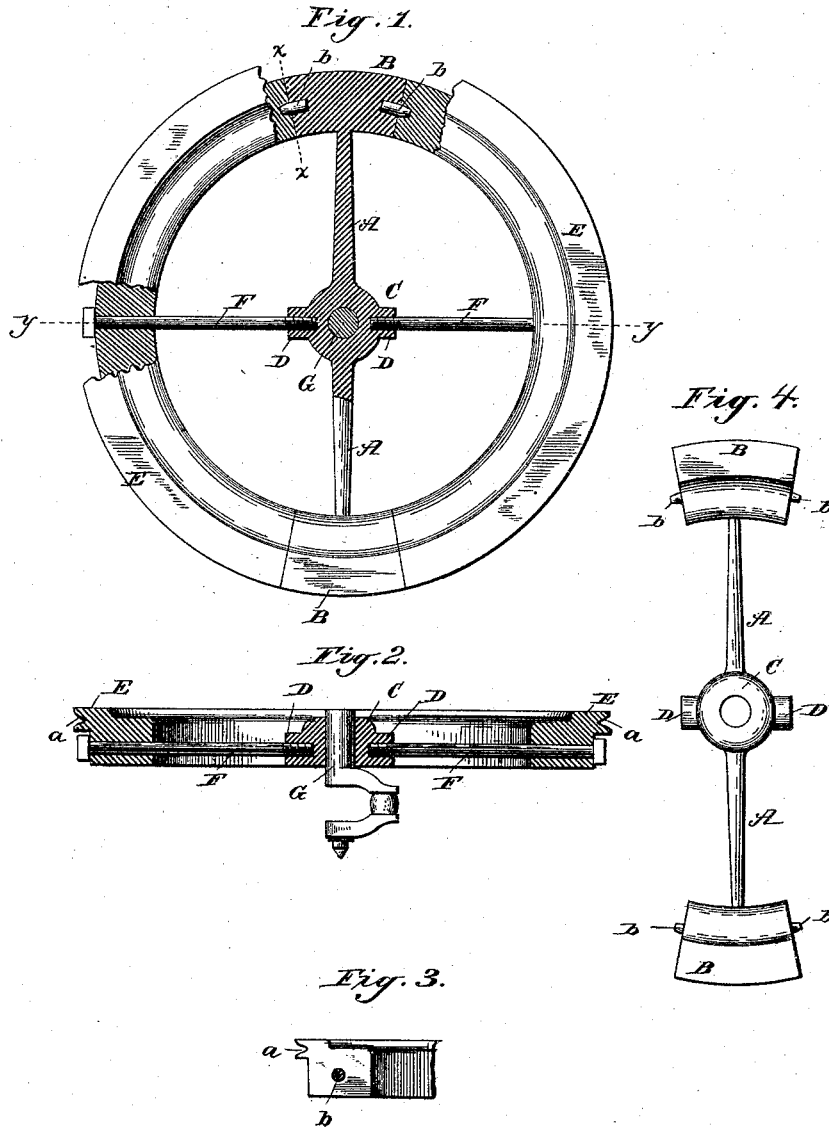


(No Model.)

J. S. CAMPBELL.
DRIVING WHEEL FOR DENTAL ENGINES.

No. 445,879.

Patented Feb. 3, 1891.



Witnesses

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UNITED STATES PATENT OFFICE.

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DRIVING-WHEEL FOR DENTAL ENGINES.

SPECIFICATION forming part of Letters Patent No. 445,879, dated February 3, 1891.

Application filed June 13, 1890. Serial No. 355,315. (No model.)

To all whom it may concern:

Be it known that I, JOHN SMALLEY CAMPBELL, a citizen of the United States, residing at London, England, have invented certain new and useful Improvements in Driving-Wheels for Dental Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain improvements in driving-wheels for dental engines, and particularly to that class of engines described and shown in another application, Serial No. 332,174, filed by me in the United States Patent Office December 2, 1889, wherein the engine is designed to be folded and packed in a suitable case for the convenience of transportation.

The object of my present invention is to so construct the driving-wheel that it may be packed within a much smaller compass than can be done with wheels as at present made.

My invention further consists in the several details of construction hereinafter described, whereby the desired results may be obtained.

In order that those skilled in the art to which my invention appertains may know how to make and use my improved wheel, I will describe the construction and arrangement of the several parts, referring by letters to the accompanying drawings, in which—

Figure 1 is a plan view, partly in section, of a wheel embodying my invention. Fig. 2 is a cross-section taken at the line *yy* of Fig. 1, with the screw-threaded spokes shown in plan. Fig. 3 is a cross-section of the rim of the wheel, taken at the line *xx* of Fig. 1; and Fig. 4 is a plan view of a part of the wheel, consisting of the hub and two spokes with **T** ends, all made in one piece.

Similar letters indicate like parts in the several figures.

A A represent two radial arms or spokes having **T** ends **B**, and **C** is the hub of the wheel, formed with spoke-sockets **D D**, all cast or otherwise formed in one piece, as clearly shown at Fig. 4. The **T** ends **B** are designed to form segments of the rim of the wheel when the several parts are assembled, and the

curves thereof are struck from the center of the hub **C**.

E E are two segmental rim-pieces designed to abut against and to connect with the **T** ends **B** to form a continuous rim. These rim-pieces **E** and **T** ends **B** are constructed in cross-section, as shown at Figs. 2 and 3, to provide a belt-groove *a* and to give proper weight and at the same time provide sufficient stock or metal to receive the removable spokes **F F**, which are fashioned like a bolt, the outer end being formed with a suitable head and the inner end threaded to screw into the sockets **D D**, formed on the hub **C**. The heads of the spokes **F**, as will be seen, bear against the "tread" and are concealed behind the flange of the rim; but, if thought desirable, a seat or countersink may be provided for the head of the spoke, in which case an ordinary pipe-wrench should be used in securing the said spokes in position. The concealment of the heads of the spokes will enable the wheel to be trued in a lathe, if necessary.

The wheel, as shown and described, consists of five members—namely, the hub **C**, spokes **A**, and **T** ends **B**, constituting one piece, the segmental rim-pieces **E E**, and the headed and screw-threaded spokes **F F**.

A suitable crank-shaft **G** is secured in any preferred manner within the hub **C** of the wheel.

Dowels *b* are employed at the line of juncture between the **T**-heads of the spokes **A** and the segmental rim-pieces **E E**, and they may be secured in place either within the **T**-heads or the ends of the rim-pieces, though I prefer the former.

It will, of course, be understood that the exposed ends of the dowels must of necessity be tapered on a line coincident with the arc of the wheel in order that they may enter the sockets prepared for them. Their purpose is simply to hold the **T**-heads and rim-pieces in proper relation with each other, as the screw-spokes **F** constitute the main binding power.

To dismember a wheel such as I have shown and described, the screw-spokes **F** are unscrewed from the sockets in the hub of the wheel and the segmental rim-pieces **E E** are then drawn off the dowels *b*, and the wheel is

then in its "break-down" condition, and all the five members of the wheel may then be packed within a space the largest dimension of which is equal to the "cord" of the rim, and the height of the rim, as will be seen, is less than the radius of the wheel by a distance equal to the length of one of the T-heads B.

In lieu of a single dowel *b* being employed at the juncture between the T ends B and rim-pieces E, two or more dowels may be employed, if thought desirable.

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

1. A main driving-wheel composed of two main rim-segments E E, an intermediate piece composed of a hub C, spokes, A with T ends B, and the locking and strengthening spokes F F, substantially as hereinbefore set forth.

2. A driving-wheel having its rim divided into the large or main segments E E and the two smaller segments B B, the latter formed integral with a central hub C and spokes A, the hub C and segments E E adapted to receive and to be connected together by locking-spokes F F, substantially as described.

3. A driving-wheel composed of segmental rim-pieces E E, the hub C, spokes A, and T ends B, all united together by locking-spokes F and dowels *b*, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN SMALLEY CAMPBELL.

Witnesses:

E. EVERETT ELLIS,
W. CURTIS LAMMOND.