N° 7767 A.D. 1914

(*Under International Convention.*)

Date claimed for Patent under Patents and Designs Act, 1907, being date of first Foreign Application (in France), — *16th Apr., 1913*

Date of Application (in the United Kingdom), 27th Mar., 1914

At the expiration of twelve months from the date of the first Foreign Application, the provision of Section 91 (3) (a) of the Patents and Designs Act, 1907, as to inspection of Specification, became operative

Accepted, 29th June, 1916

COMPLETE SPECIFICATION.

Improvements in or relating to Yokes for Harnessing Animals.

I, ALEXIS GUÉRINEAU, Manufacturer, of 7, 9, 10, rue de la Sardinerie, Cholet, France, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention has for object an improved arrangement of yoke for harnessing beasts of burthen.

A neck yoke for horses has been suggested, having the shape of an ordinary horse collar as now in use and comprising frames with ball and socket joints for connection with a cross bar.

The yoke, according to this invention, particularly useful in the form of a double yoke, is characterised in principle in that it consists of two bows attached to the horns of the beasts and which are connected together by a removable cross-bar to which is secured the traction member, shaft or the like; the said cross-bar engaging with each bow by a male and female assemblage so as to permit of an oscillation of the cross-bar in a horizontal direction around the axes of the said male and female assemblage as well as a certain rotary oscillation in a vertical direction, of each bow around the corresponding assemblage.

A practical method of carrying out the invention is illustrated in the annexed drawing:

Fig. 1 is a diagrammatic elevation of the double yoke arrangement.

Fig. 2 is a corresponding diagrammatic plan.

Fig. 3 is an elevation of half the removable cross-bar and its connection to one of the bows.

Fig. 4 is a corresponding plan.

Fig. 5 shows an elevation of a separate bow with the male portion of the male-female assemblage for the removable yoke.

Fig. 6 is a plan corresponding to Fig. 5.

Fig. 7 is a part elevation of the cross-bar separately with its cotter for retaining the male-member of the male-female assemblage.

[*Price* 6*d*.]

Fig. 8 is a plan showing one of the bows and part of the cross-bar in one of the extreme positions.

Figs. 9 and 10 are sections on the lines A—A and B—B of Fig. 4.

Fig. 11 shows the cross-bar in its extreme inclined position on the outer side of the bow shown.

The complete yoke comprises two separate bows A, each carrying at their upper outwardly curved middle portions, a projecting member *a* for the male-female assemblage with the cross-bar to which is connected in the usual manner, the traction member such as a shaft C.

In the example shown, it is presumed that the male member of the male-female assemblage between the cross-bar B and the bows A, is carried by the bows. The female member can, as will be seen from the drawings, be in the form of a simple cylindrical housing *b* with a diameter corresponding to the stem of the male member *a*. The retention of the member *a* with cross-bar B, in the vertical direction, is ensured by means of a cotter D attached to the end of a small chain *d* secured to the cross-bar, said cotter engaging in the slot a^1 provided in the pin *a*. The cotter may be held in position by a supple pin d^1 of leather or other material.

In the preferred practical form of construction, the male members *a*, instead of being rigidly fast to the bows A, are formed by pins carried by one of the members E of a joint E F, the other member being secured to the bow. The member E is here hemispherical while F is a housing of corresponding shape provided in a plate C made fast to the bow, for example, by countersunk screw-bolts *g*. The member E of the joint E—F rests preferably with its centre on a metallic support, for example, the round head of a screw carried on the bow in order to maintain the part E in contact with the housing F; by reason of this arrangement, when the cross-bar B is in place, the cotter D can enter the slot a^1 without it being necessary to lift the pin *a*. At the top of the housing F is provided a small oblong eye *f*, through which the male member *a* projects. The eye allows a slight displacement of the male member *a* in the transverse direction *x*—*x* (Fig. 6), and a slightly greater displacement in the longitudinal direction *y*—*y* of the bow.

In order to avoid, in these movements, any rough butting of the member *a* in the bottom of the eye *f*, the cross-bar B may be fitted with a metal plate such as H, which covers at its centre the member F of the spherical joint and moves over the similarly spherical surface of this member, while the inner surface of its end portions is suitably extended and rounded so as to abut, by rolling on the plate G, before the pin *a* reaches the end of the eye *f* (Fig. 9).

The plates H may also have recesses *h* in which engage projections g^1 of the plate G.

In the example shown, the plate H is secured by screw-bolts *i* to a cover plate I covering the cross-bar B. It is to be understood that the fastening of the plate H may be effected in other ways.

It is readily seen that the construction described permits first of all a quick fitting and disengagement of the yoke. In fact, the bows A being placed over the animals it is sufficient for assembling the yoke, to slip the cross-bar B over the male members *a* and to fit the cotters D in their slots a^1. It is naturally necessary to take care in placing the cross-bar B in the desired position so that the projections g^1 may engage in the recesses *h*.

The yoke fitted in this manner gives the advantages enumerated. The cross-bar B being capable of pivoting around the axes of the male members *a* permits of an oscillation relative to the heads of the animals in a longitudinal direction, and at the same time a limited displacement for each animal in a vertical direction around the male-female assemblage. Moreover, the fact that the male member *a* forms one of the parts of a joint, the other portion of which is fast with the member which carries the said male member, allows of the transverse and longitudinal oscillations of the said member *a* in the oblong eye *f*.

Fig. 9 shows the cross-bar B in its most inclined position with respect to one of the bows A. The arrangement of the projections g^1 in the recesses *h* which are of limited width, defines, as will be readily seen, the horizontal oscillatory movements of the bar B or the rotation of the bows with respect to the cross-bar.

The diagram, Fig. 2, shows in full lines one of the extreme horizontal positions of oscillation and in dot and dash lines the other extreme position.

The technical advantages of the yoke described gives the following practical results; each of the animals harnessed to such a yoke can move in any manner without affecting the other animal. Each animal therefore assumes the position which suits it best to provide the effort which it is called upon to make.

The oscillations which are possible in the vertical direction allow of harnessing animals of different size without thereby fatiguing them; the new yoke also enables, for tilting for example, the easy displacement of one animal along the ridge while the other animal moves along the bottom of a furrow without thereby causing any torsional strain to the heads of the animals.

Finally the arrangement with two bows and one removable cross-bar permits of fixing the yokes on the animals in the stables, each one separately. The cross-bar can also be instantly removed leaving the bows on the animals while they are resting.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A yoke for harnessing beasts of burthen, adapted to be attached to their horns, comprising two bows connected together by a removable cross-bar, characterised by the fact that the bows A each carry a plate G, the centre of which forms a hollow housing F for a shaft *a* having a hemispherical lower portion, said shaft serving as a pivot for the cross-bar B thereby providing a universal joint between the cross-bar and the two bows which gives the beasts as much freedom as possible.

2. A yoke for harnessing beasts of burthen, as claimed, constructed, combined and arranged substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

Dated this 27th. day of March, 1914.

CHATWIN, HERSCHELL & Co.,
London, W.C.,
Patent Agents for the Applicant.

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GUÉRINEAU'S COMPLETE SPECIFICATION.

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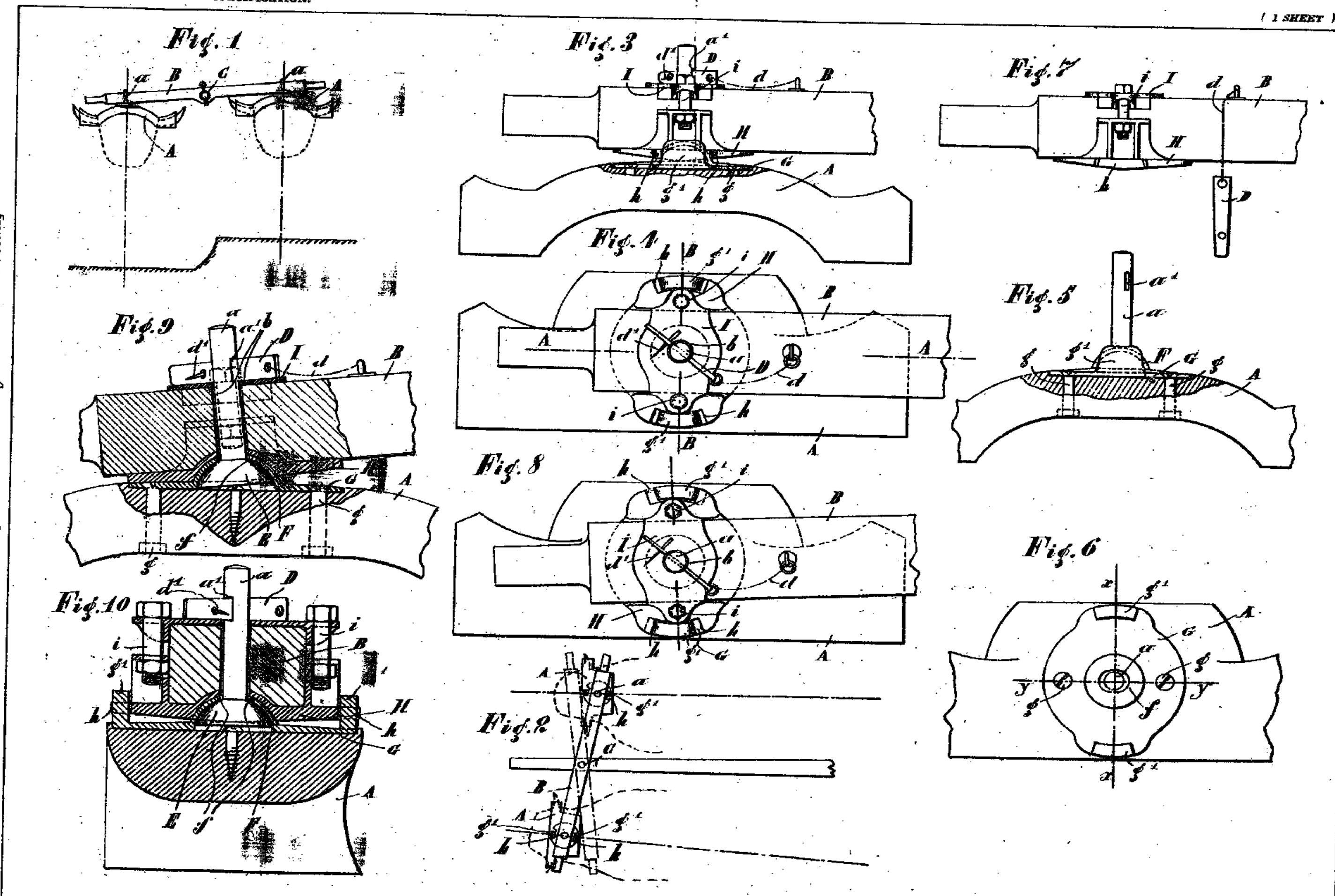
[This Drawing is a reproduction of the Original on a reduced scale]



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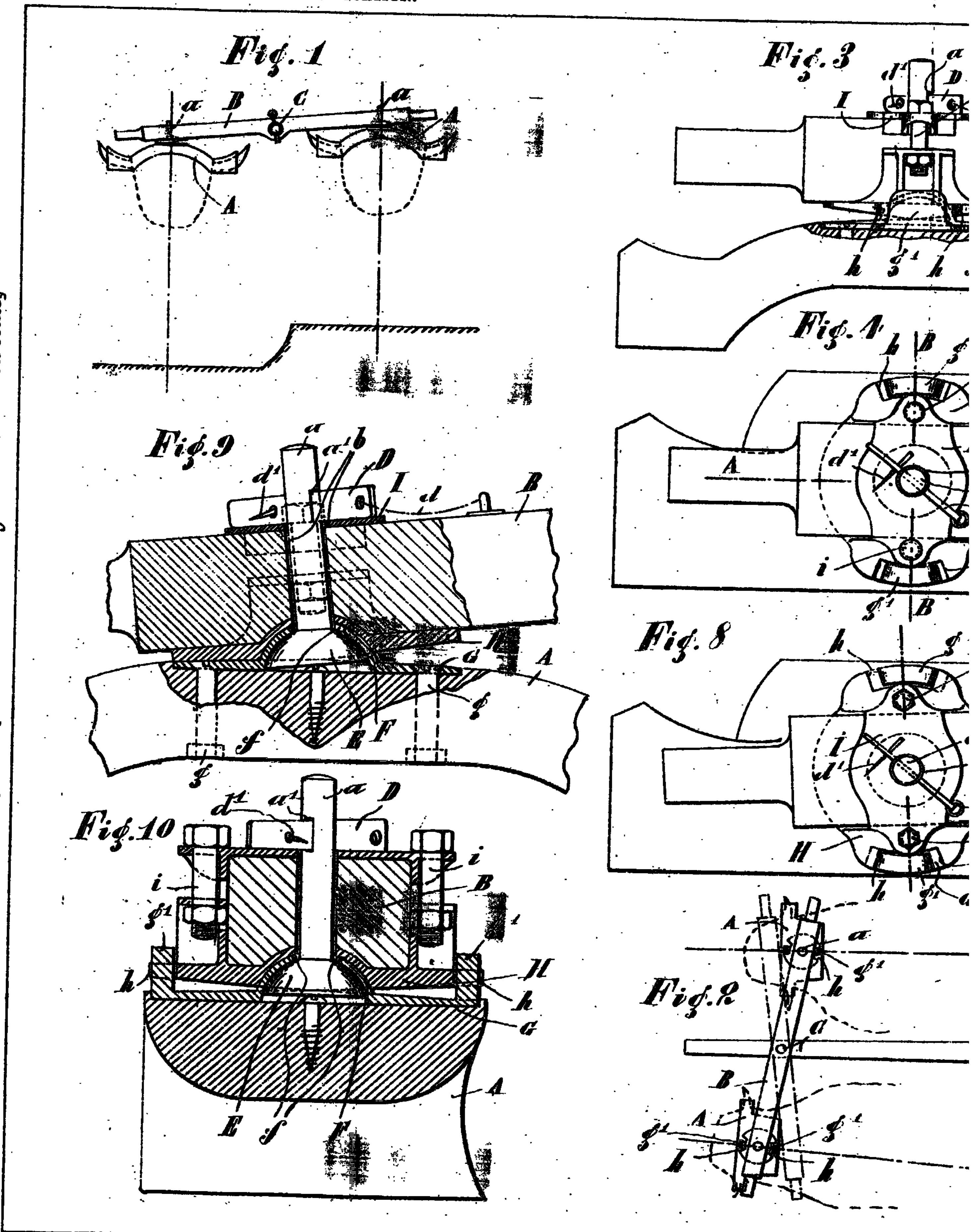

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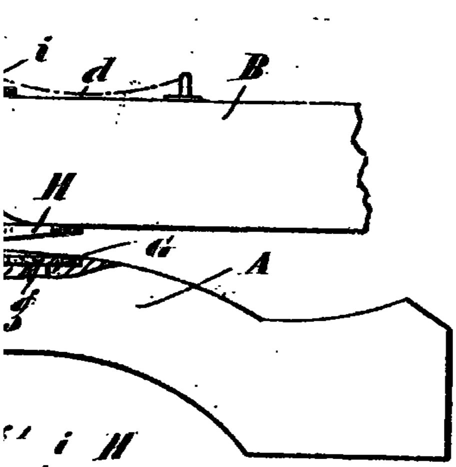

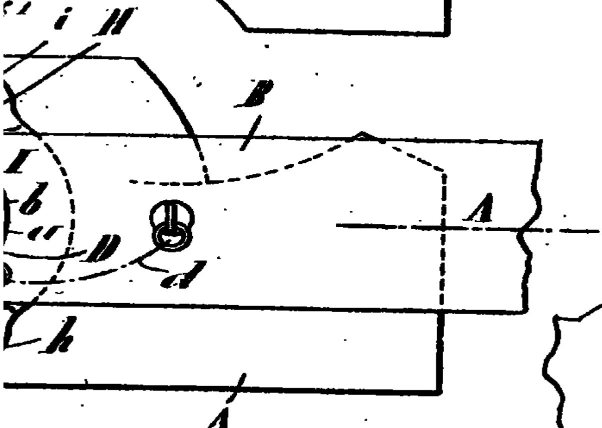

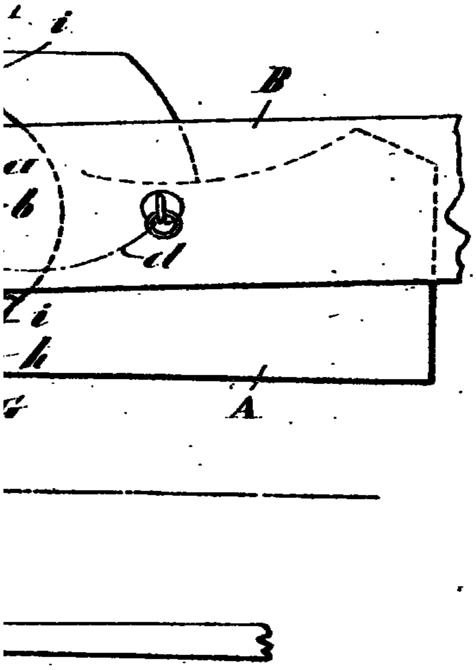

Fig. 7

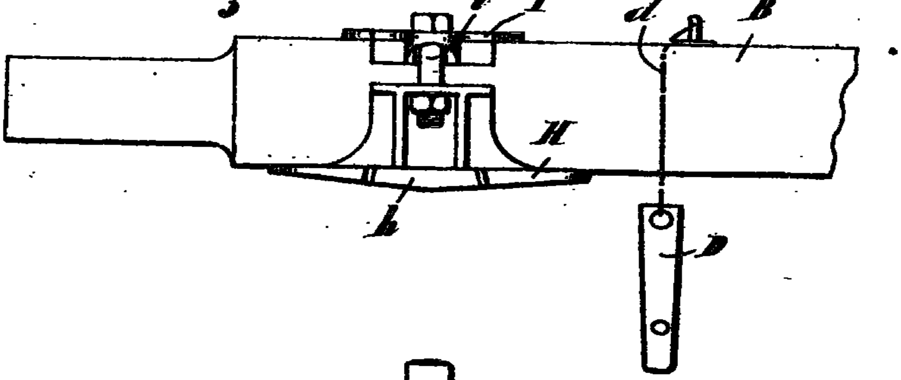

Fig. 5

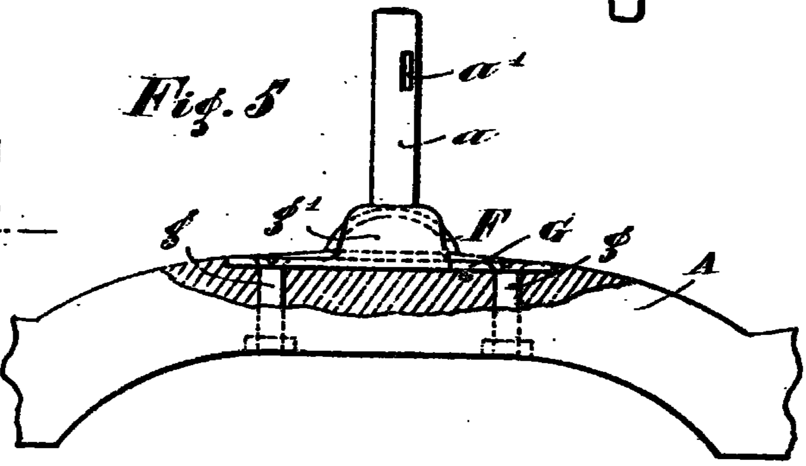

Fig. 6