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G. H. RABA ET AL
DEVICE FOR PEDALLING BY TWO
PERSONS SPECIALLY ADAPTABLE
TO BICYCLES
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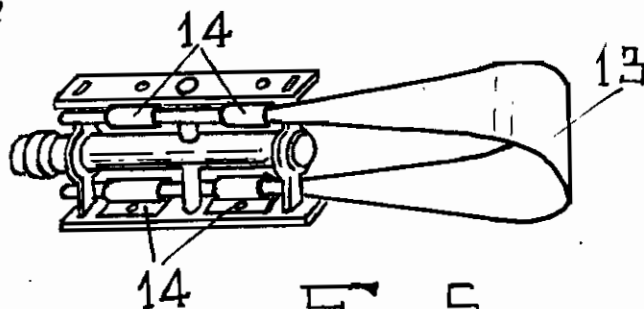
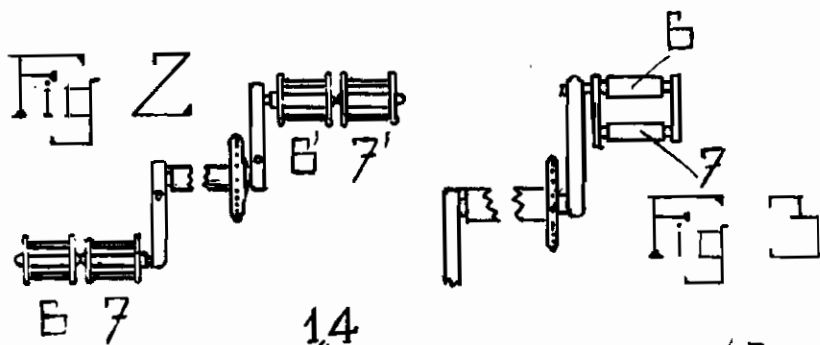
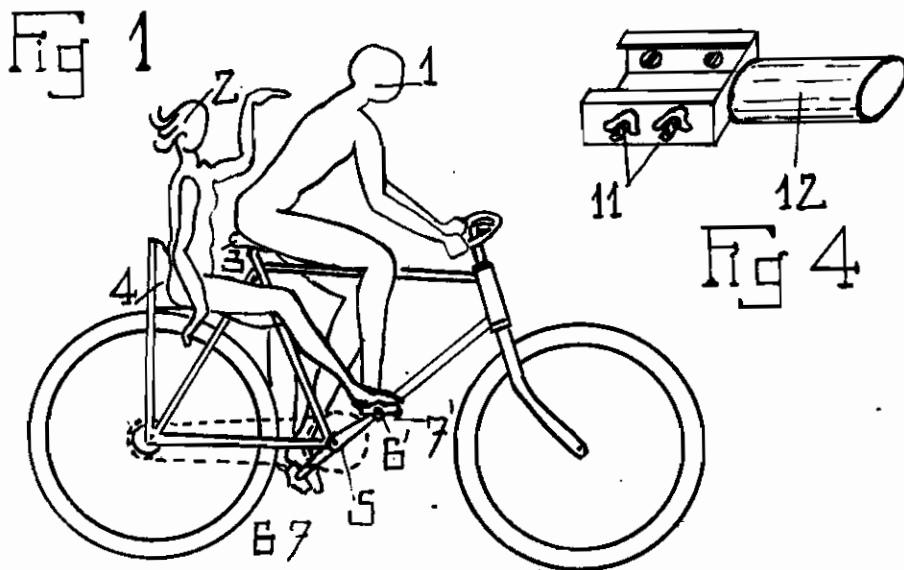


Fig 5
INVENTORS:
GEORGES HENRIQUES RABA
AND ALICE HENRIQUES RABA
BY *Haseltine, Lake & Co.*
ATTORNEYS.

ALIEN PROPERTY CUSTODIAN

DEVICE FOR PEDALLING BY TWO PERSONS SPECIALLY ADAPTABLE TO BICYCLES

Georges Henriques Raba and Alloe Henriques
Raba, Sanary, France; vested in the Alien Prop-
erty Custodian

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The 2 seats bicycle, so called tandem, such as presently embodied, includes two similar seats placed one behind the other. The two cyclists occupy about the same length on the tandem, each of them using his own crankgear.

The result is a large and therefore bulky, heavy and costly machine which can hardly be managed by one person in the absence of the other.

The object of the present invention is to remove such drawbacks by creating a two-seats bicycle no larger than any ordinary bicycle and on which the two cyclists, still seated one behind the other but very close to each other and so to speak fitting into each other (rather like, on a motor-bicycle, the driver and his passenger on the tan-sad) both contribute to the pedalling, generally on the same crankgear, provided for instance and to that object with pedals allowing two feet to rest at the same time, such as further described.

In order to make the invention better understood, we shall now describe, as an instance in no way limitative, a few embodiments of the improvements it conveys.

Fig. I represents the two cyclists 1 and 2 as seated one on an ordinary saddle 3, the other on a seat with its back 4 allowing him to take support with his back, in order to react to the stroke of the pedal, as happens for cyclists using bicycles with horizontal pedalling. Such a seat, fixed where a luggage-carrier should be, can be provided with a strap so as to hold the second cyclist and prevent his sliding forwards.

The two cyclists, the legs of one more wide open and framing the other's legs, work the same crank gears 5 by means of the two elements pedals 6' 6 and 7' 7 of which Fig. II, still given as an instance, shows an embodiment.

These pedals, such as it looks, are simply common double pedals, two pedals successively fitted upon the same axle. The second element in each pedal may, if needed, be removable, unscrewed and folded back under the first in order to lessen the bulk in width of the machine when used by one person.

In another embodiment, both cyclists seated as aforesaid, no longer put their feet one besides the other respectively, but one above the other, with feet superposed on each other. The two elements 6 and 7 of the double pedal as well as 6' and 7' (Fig. III) are for instance assembled by small connecting-rods. The rotation of such connecting-rods around their upper axle is, if needed limited, although allowing of a satisfac-

tory articulation of the ankles, in order to prevent the cyclist seating lower, from having his feet squeezed between the two elements of each pedal during their rotation.

A machine according to the invention may also be obtained by the alteration of any ordinary bicycle of strong build. And, considering the large number of bicycles in use at present, the adaptation of the invention to these will make in itself a far-reaching application.

As regards that simplest of alterations, it is enough to fix a seat where a luggage carrier should be while moving the saddle forwards, if needed, to balance the machine satisfactorily, and to substitute to the pedal other pedals such as have been already described, for instance.

The original pedals may be kept too, and the second element of pedals added, or more simply some kinds of foot-rests, which in a sort of embodiment, would make for instance a prolongation and allow the second cyclist to carry his effort. In order that such an effort may be performed normally, these foot rests should be displaced in relation to the plane of the pedals and show, if needed, a certain bent to account for the angle made by the two cyclists' legs and resulting from their respective position.

Fig. IV shows a device of such kind: 10 is a joint holding the existing pedal from underneath, and fastened to it by bolts 11. This joint is prolonged in order to make the rest foot 12 which the second cyclist will work. The rest foot, padded with rubber so as to prevent any sliding, shows an oval section and the plane of the main axle of the oval makes with the plane of the pedal an angle equivalent to that made by the two cyclists' legs.

A particularly simple embodiment as regards the system of adaptation can be devised as follows:

The pedal used by the second cyclist will consist of a U shaped stirrup 13, Fig. 5, of a length twice that of the pedal itself so as to project outwardly.

It will be fixed astride on the pedal, one of its two branches taking support from over the foreside of the pedal, the other from underneath against the back side of the pedal.

Rings 14 will be strong on each branch and hold it in the right place and will themselves be fixed against the sides of the pedals by means of small bolts.

According to this device, the plane of the stirrup makes with the plane of the pedal an angle

which successfully corresponds to the angle made by the two cyclists, with the crankgear as apex.

In order to compensate the angle made by a wider opening of the back cyclist's legs, the stirrup will be upwardly bent in its projecting part, as on Fig. V.

Finally, in another embodiment of the present invention which would only be advisable when the passenger on the back seat should be smaller and therefore have shorter legs than the driver's, the machine should be provided with two crankgears, both cogged as in a tandem. But the double crankgear, the sole object of which would be to correct the different size of the cyclist without lengthening the machine, should not modify their respective positions in relation to the invention, that is very close to each other. The two axles of the double crankgear should only be distant by the length needed by the cranks not to collide into each other, altogether allowing them to run courses overriding each other partially.

It is obvious that the above described machines can be equipped with all accessories as are usually fitted on bicycles or which may be adapted to them.

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are usually fitted on bicycles or which may be adapted to them.

It should be noticed too that by means of that device, the efficient angle of action of each cyclist is displaced in relation to the other. The wholly dead angle is therefore reduced, allowing of an improved efficiency, particularly noticeable at reduced speed and when ascending hill.

The result is that the device double pedalling, such as above described, as applied to bicycles, can be adapted with profit to all machines actuated by pedals as on the bicycles: pedal boats, bellows actuated by pedals etc. and also to tandems which can therefore be used by 3 or 4 cyclists.

It further allows to create machines of a new kind endowed with the benefits of the invention: less bulk and less cost, or else to modify the existing machines as would require increased power by the adjunction of accessories, a seat and double pedals, altering them according to the invention.

The shapes, sizes and devices of the framework and crankgear can vary, without modifying the general conception of the invention as above described.

ALICE HENRIQUES RABA.
GEORGES HENRIQUES RABA.