(No Model.)

J. H. KANE.

BICYCLE.

No. 446,354. Patented Feb. 10, 1891.

Fig. 1.

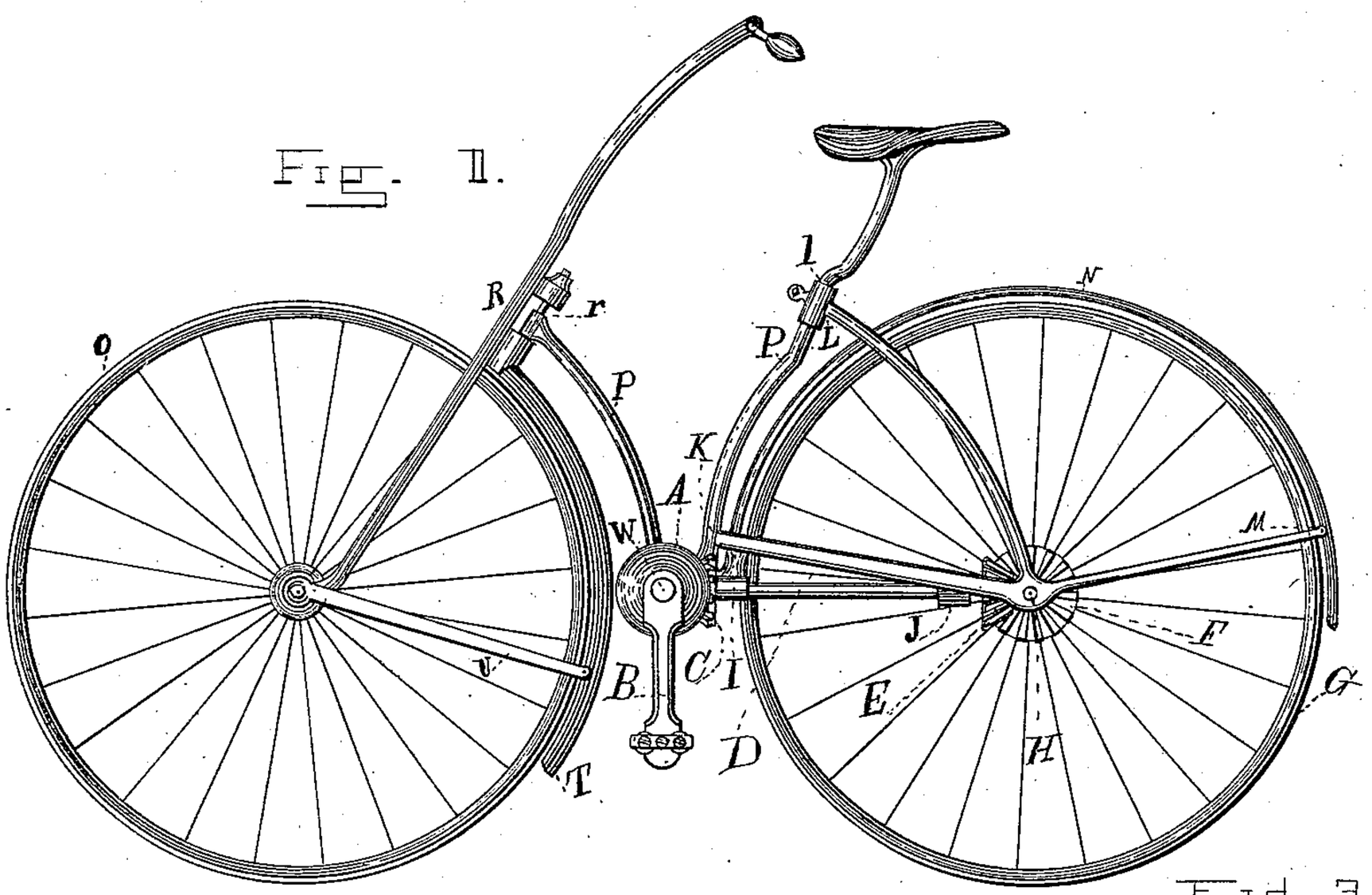

Fig. 3.

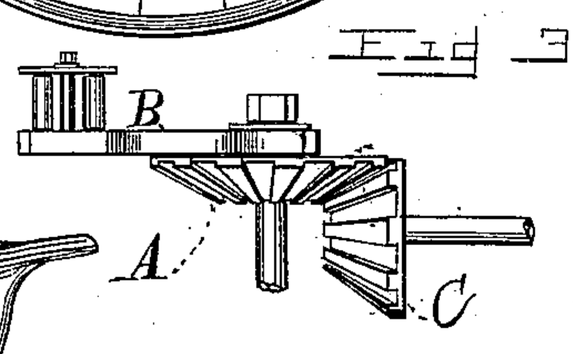

Fig. 2.

Witnesses:
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per

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UNITED STATES PATENT OFFICE.

JOHN HENRY KANE, OF NORTH ADAMS, MASSACHUSETTS.

BICYCLE.

SPECIFICATION forming part of Letters Patent No. 446,354, dated February 10, 1891.

Application filed September 12, 1890. Serial No. 364,715. (No model.)

To all whom it may concern:

Be it known that I, JOHN HENRY KANE, a citizen of the United States, residing at North Adams, in the county of Berkshire and State of Massachusetts, have invented certain new and useful Improvements in Bicycles; 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 an improvement in bicycles; and the object of my improvement is to provide a bicycle constructed and arranged with a view of applying practically a bevel-gear propelling mechanism to same. I attain this object by a certain combination and novel arrangement of parts, fully described in this specification, and particularly pointed out in the claim.

Figure 1 is a side view of my invention. Fig. 2 is a similar view with parts broken away, so as to more fully illustrate my improvement. Fig. 3 is a detail view of the bevel-gearing located at the base of the backbone.

Referring to the drawings, the letter G represents the driving-wheel of my machine mounted upon the axle H, which has bearings in the center of the forks K L M, by means of which said wheel is securely held in its normal position. This wheel is partly surrounded by a mud-guard N, which is secured to the backbone or frame of the machine and rigidly held in position by said forks. The wheel G is provided with a neat and finely-constructed bevel-wheel F, preferably made of the best of steel, which constitutes the hub or a part of said driving-wheel. Said driving-wheel is connected to the steering-wheel O by the forks K L R and the backbone P. Said backbone constitutes a part of the fork K, and is secured to the forks L and R in any suitable way at *l* and *r*. The fork K and the backbone P are preferably cast in the same piece. They may, however, be constructed in separate pieces and connected in any desirable mechanical way. The mud-guard N of the backbone P is provided at the intersection of said mud-guard with said backbone with a journal box or bearing I, through which passes, and in which is located, one end of the horizontal shaft D. The other end of this shaft has bearing J, which is constructed upon the inner side of one of the prongs of the fork K and constitutes a part of same. This (I mean the provision of these bearings and the relative arrangement of same with regard to the horizontal shaft D, working practically and effectually therein) constitutes one of the novel and valuable features of my invention. It is especially valuable because said bearings are strong and hold the shaft D in its true line and keep the same from twisting and getting out of place in the slightest possible manner, either of which would render the machine much less effective in operation.

The horizontal shaft D is made of the best steel and constructed with the small neat bevel-wheels C and E upon each end, which correspond to the bevel-wheel A of the crank B and the bevel-wheel F of the driving-wheel G.

B indicates the propelling-crank of the machine, and has bearings W at the base of the fork of the backbone P. Upon one end of this propelling-crank there is rigidly secured the bevel-wheel A, which is adapted to the bevel-wheel C of the horizontal shaft D.

T designates the mud-guard of the steering-wheel, which prevents mud from being thrown upon the bevel-gearing. This mud-guard is secured by the fork U and the frame or backbone of the machine.

Such being the construction and arrangement of my bicycle, it will be readily observed that the propelling-crank B imparts motion to the horizontal shaft D by means of the bevel-gear A C, which in turn communicates motion to the driving-wheel G through the bevel-gear E F.

As it is apparent that my invention is thoroughly practical and effective, I deem it useless further to enlarge upon its merits.

What I claim is—

In a bicycle, the combination of the mud-guard N, provided with a journal box or bearing I at the intersection of said mud-guard with the backbone P, the backbone P, the fork K, connecting said backbone with the driving-wheel G, the bearings J upon the inner side and near the rear end of the fork K,

the horizontal shaft D, located in said bearings and having the bevel-wheels C and E upon the ends thereof, the propelling-crank B, having the bearings W at the base of the fork of the backbone and provided with the bevel-wheel A, the driving-wheel G, mounted upon the axle H in the center of the forks K L M, and the steering-wheel O, all substantially as described, and for the purpose set forth.

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

JOHN HENRY KANE.

Witnesses:

HARRY E. BLAKE,

ANTHONY AFFHAUSER.