No. 648,729. Patented May 1, 1900.

J. DONOVAN.

RAILWAY VELOCIPEDE.

(Application filed June 3, 1899.)

(No Model.)

Fig. 1.

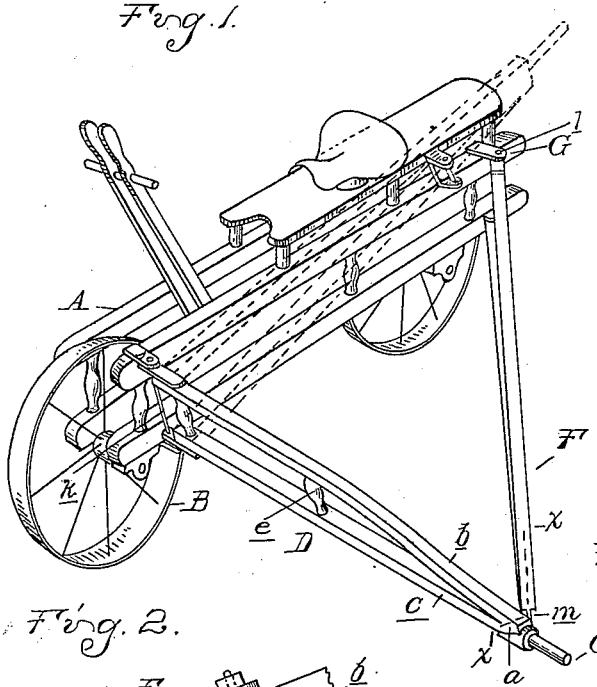


Fig. 4.

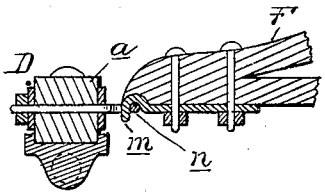


Fig. 3.

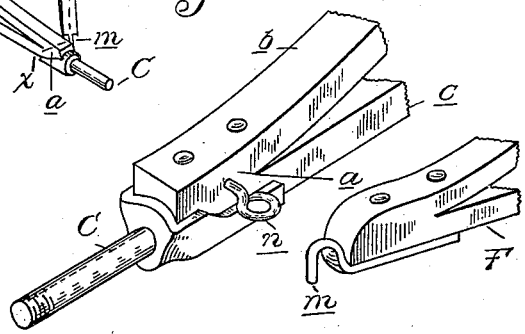
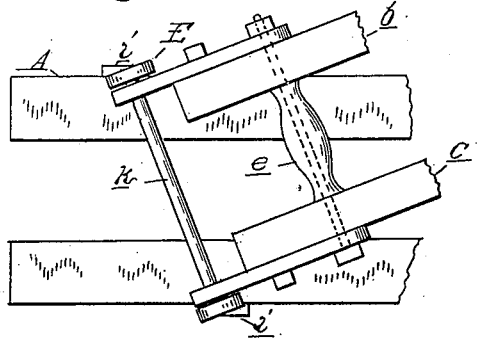


Fig. 2.



Witnesses
H. C. Smith.
W. B. Dougherty

Inventor
James Donovan
By Thos. W. Prague & Sons.
Attys.

UNITED STATES PATENT OFFICE.

JAMES DONOVAN, OF THREE RIVERS, MICHIGAN.

RAILWAY-VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 648,729, dated May 1, 1900.

Application filed June 3, 1899. Serial No. 719,178. (No model.)

To all whom it may concern:

Be it known that I, JAMES DONOVAN, a citizen of the United States, residing at Three Rivers, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Railway-Velocipedes, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention consists in the construction of a railway-velocipede; and it consists in the construction of the frame for supporting the third wheel to the main frame of the car, as is more fully hereinafter described, and specifically pointed out in the claim.

In the drawings, Figure 1 is a perspective view of my improved railway-velocipede, showing in full lines the car-frame and the frame for the third wheel and in dotted lines the position the frame will assume when folded up for transportation. Fig. 2 is an enlarged side elevation of the hinged connection between the axle of the guard-wheel and the main frame. Fig. 3 is an enlarged perspective view showing the construction of the outer end of the guide-wheel axle and the connecting means between the outer end of that axle and the brace. Fig. 4 is a cross-section on line x x in Fig. 1.

In the previous state of the art railway-velocipede hand-cars have been made comprising a main frame A, having the two track-wheels B arranged in line and adapted to run upon one rail of a railway-track. This frame usually carries the drive-gear mechanism, by which the operator may drive one or both of these main-frame wheels for imparting motion to the device. For the sake of more clearly illustrating my invention I have omitted showing the construction of the gearing, which may be of any suitable construction. It has also been customary to provide a third or guide wheel running upon the other rail and secured upon the outer end of an arm of axle, which has been hinged to the forward end of the main frame in various ways. In said devices as heretofore made it has been impossible to drive the velocipede backward upon the track without having it immediately run off the rails. This has been a serious objection, because it frequently happens that the rider is carried a little distance beyond the point he desires to go, and in order to back it he not only has to dismount, but to exercise great care in pulling the velocipede backward to prevent its derailing. In such previous devices it has also been impossible to fold the guide-wheel quickly and conveniently into a space not greater than the main frame.

My invention relates to the construction of the guide-wheel frame in such manner that the device can be driven forward or backward with equal facility, and, second, in so connecting this guide-wheel frame to the main frame that it may be folded compactly in relation to that main frame.

The axle of the guide-wheel has a spindle C, upon which the wheel (not shown) is journaled. This spindle is connected to a trussed arm or axle D. This trussed arm I preferably make by taking a single stick of wood and sawing it longitudinally to near the end, leaving the uncut portion a and separating the two members thus formed, b and c, and holding them apart by the struts e. This, as will be seen, forms a tapering truss in the frame or arm and makes it extremely rigid. At the inner end I provide these members of the truss with suitable hinge connections to the main frame, this hinge being shown at E, Fig. 2, as consisting of an apertured plate upon each truss member extending between the apertured ears i, secured to the upper and lower side bars of the main frame, respectively, and a pivot pin or bolt k, passing through the ears and hinge-plates. The brace F, I form of a tapering truss, preferably, in the same manner as the truss in the guide-wheel axle and make a hinge connection G with each member of this truss and the upper and lower side members of the main frame. The hinge connection I preferably make with a single bolt l, which may be withdrawn in folding up the frame. The outer end of the brace I provide with a hook m, adapted to engage with an eye n in the outer end of the guide-wheel axle.

For the purpose of convenience of folding into compact space I make the hinged connection between the guide-wheel axle and the main frame upon an angle, as shown in Fig. 2, so that when the bolt l is withdrawn the guide-wheel axle may be turned, pivoting

upon the pivot-pin *k*, and the guide-wheel will be moved inward and upward, so as to permit it to stand directly over the frame. The brace F is preferably detached and placed beside the guide-wheel axle or frame, the parts then being in the position shown in dotted lines in Fig. 1. By pivoting the guide-wheel axle upon such an angle to the frame and folding the parts as described it is evident that I obtain a much more compact folding of the parts than would be the case if the axle were turned upon a vertical pivot.

By forming the guide-wheel axle and the members as tapering trusses having a wide bearing upon the main frame I add so to the rigidity of the device that it may be driven backward as well as forward.

While I have shown the guide-wheel axle and the brace formed of a single piece split and separated, it is evident that it may be made of two pieces thus arranged, as well as one, without departing from the spirit of my invention.

While I show and preferably use tapering trusses for the guide-wheel axle and the brace, other-shaped braces may be used and yet come within the broad spirit of my invention.

What I claim as my invention is—

In a railway-velocipede, the combination of the main wheeled frame, the guide-wheel axle hinged to and extending laterally from the frame at its forward end, said axle comprising a journal and a trussed arm, the latter consisting of a lateral truss member *c* connecting the journal to the main frame, a complementary member *b* secured to the member *c* at the junction of the latter with the journal and extending to the main frame, the inner ends of the truss members being separated and struts being interposed between the spaced portions, and a brace F, similar in construction to the trussed arm of the guide-wheel axle, the separated ends of the brace being hinged to the main frame at the rear thereof, and the outer end of said brace being detachably connected to the guide-wheel axle immediately adjacent to the journal.

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

JAMES DONOVAN.

Witnesses:
JAMES WHITTEMORE,
M. B. O'DOGHERTY.