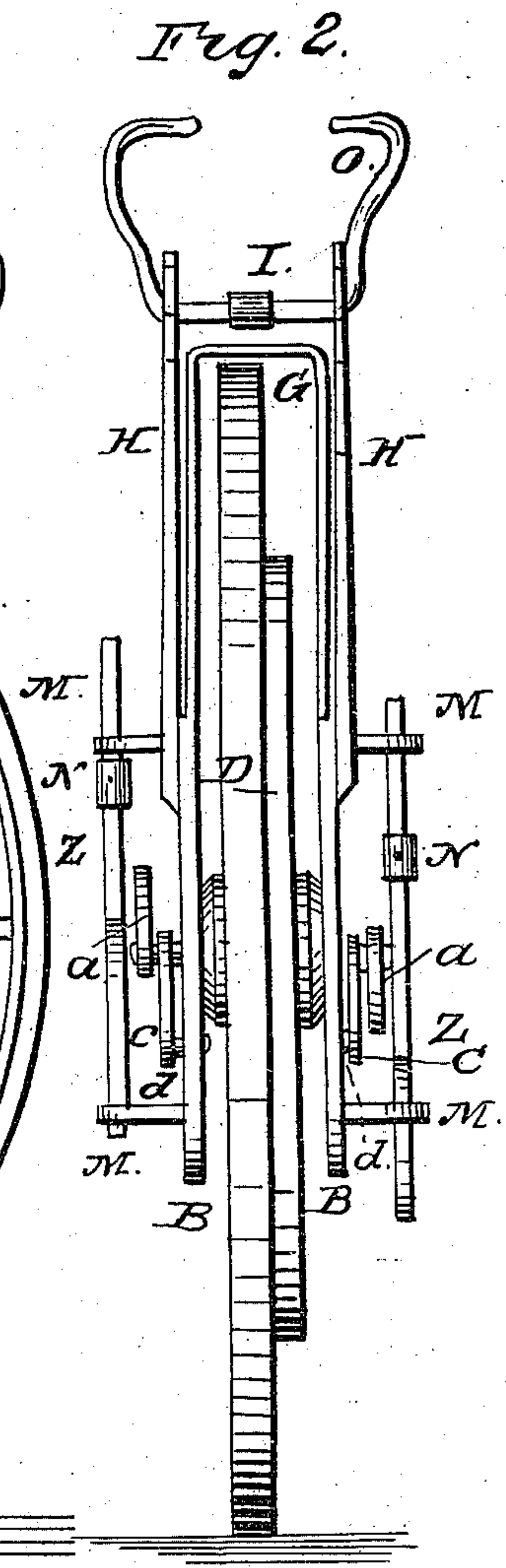
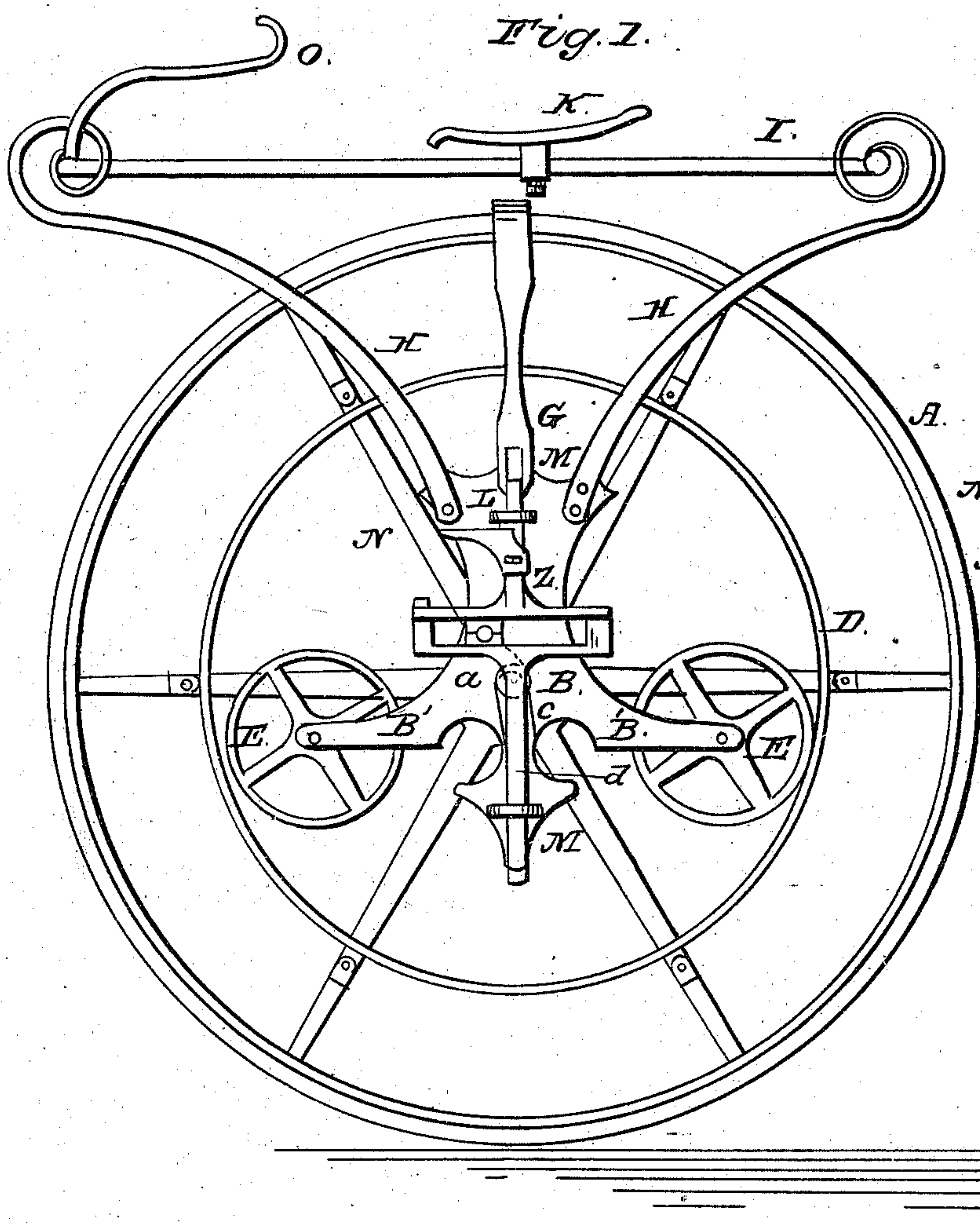


F. MYERS.

Velocipede.

No. 87,355.

Patented March 2, 1869.



Witnesses  
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*Letters Patent No. 87,355, dated March 2, 1869.*

## IMPROVEMENT IN VELOCIPEDES

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, FREDERICK MYERS, of the city of New York, in the county and State of New York, have invented new and useful Improvements in Velocipedes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, wherein—

Figure 1 represents a side elevation of my improved velocipede, and

Figure 2 represents a front elevation of the same.

My invention is designed to provide a velocipede capable of supporting a rider upon one wheel, and being propelled by the power of the rider, applied to the axle of the said wheel by his feet, through the medium of a treadle-mechanism, the rider being supported on a saddle, at or near the top of the wheel, in a manner similar to that of the two-wheel velocipedes now in use. To this end,

My invention consists in the combination, with a wheel similar to a carriage-wheel, of a supporting-frame for the seat and the treadles suspended from the axle of the wheel, but eccentrically thereto, so that the point of suspension of the frame is below the centre of motion of the wheel, whereby it is made more easy for the operator to balance and maintain himself upon the machine.

It also consists in combining, with the said frame and the wheel, a circular balancing-rim adapted to counteract the tendency of the frame and its load to fall beyond a perpendicular line in either direction, in the plane of rotation of the wheel.

It also consists in an arrangement of yoke-mechanism, whereby the power is so applied to the cranks that the treadles move in straight lines, making it less fatiguing to propel the machine than the common arrangement, where the feet are compelled to move around the wrist-pin of a crank.

It also consists in certain details or arrangement, which will be hereafter described.

A represents the wheel, which may be of any preferred construction, having a fixed axle, with a crank, *a*, at each end.

B represents a plate of metal, or other suitable material, suspended from the shaft by a link, *c*, behind the crank.

This plate, together with its counterpart, except the extensions *B'*, similarly arranged on the opposite side, form the base of the supporting-frame for the saddle and treadles.

It is suspended below the centre of motion of the wheel *A*, at the point *d*, by the links *c*, pivoted both at the said point and on the axle.

The said point *d* therefore becomes the axis of motion of the frame, and the motion of the frame on its axis will be eccentric to the wheel *A*.

In consequence of this arrangement, the centre of gravity of the wheel *A* is established at the point *d*, and it is therefore made more easy for the operator, by

skilful balancing, to maintain the machine, with himself upon it, in its upright position, than if the centre of gravity and the centre of motion of the wheel were coincident.

By this arrangement, the balancing of the machine, in the plane of motion of the wheel *A*, may be further facilitated by the employment of the circular balancing-rim *D*, supported upon the spokes of the wheel *A*, at one side of the said spokes, to receive on its inner face the guide-wheels *E*, supported in the projections *B'* of the plate *B*.

As the axis of the rim *D* is coincident with that of the wheel *A*, any tendency of the frame to oscillate on its axis *d*, either toward the front or rear, will cause one of the said wheels to strike the rim, whereby the movement of the frame will be arrested.

If the frame move forward, so as to cause the front wheel *E* to strike the rim *D*, the motion of the machine will be accelerated, and if it move the other way, the motion will be retarded.

The two plates *B* are connected together by a yoke, *G*, doubling over the tops of the wheel.

They are also further connected together by the spring supports, *H*, of the seat, two of which rise on each side of the wheel, branching respectively toward the front and rear, terminating in coils at the tops, and supporting each end of the seat-bar *I*, whereon an adjustable seat, *K*, is supported.

*L* represents yokes arranged to slide vertically in brackets, *M*, projecting from the plates *B*, and supporting the treadles *N*, which are adjustably attached thereto.

The wrist-pins of the cranks are engaged with the slots of the said yokes, in the manner common to such arrangements, and motion is communicated to the said cranks, which are adjusted at right angles to each other on the shaft, and are operated by alternately pressing them downward by the feet, the operator sitting on the seat *K*.

The latter is adjustable on its support in either direction, to permit the rider to adjust himself to the balancing-position.

The front end of the seat-bar is provided with guiding-levers *O*, of ordinary construction, and the operator is enabled to guide the machine by pressure of one foot in one direction, on one side of the machine, and of one hand in an opposite direction, on the guiding-handles on the opposite side.

The frame may be suspended with its axis of motion above that of the wheel *A*, with good results, but I prefer the arrangement above described.

I may, if considered necessary, pivot to the ends of the upper or lower guiding-lugs, through which the axle-operating slide works, a swivel-block or bearing, and through holes in their swivels I may pass steadying-rods that shall have connected to them any well-known spring, so as to keep their lower ends somewhat above the ground.

The top ends of these steadying-rods, on the oppo-



site sides of the wheel, will be connected by a cross-bar within easy reach of the rider, so that in case the wheel is about to upset, the steadying-rods may be thrown down quickly, their lower ends striking the ground each side of the wheel, and steadying it.

These rods may be inclined from the forward toward the back end of the velocipede.

My velocipede may be easily converted into one with two wheels by simply projecting rearwardly from the seat-bar, a curved bar that shall carry, on a pivoted bearing, a second wheel. In this case, the seat will then be placed somewhat back of a vertical line drawn through the main wheel.

With a machine arranged in this way, it will be seen that I may produce a two-wheeled velocipede, in which the power may be applied to reciprocating slides connected with the axle.

I do not wish to confine my invention to the particular construction of parts whereby I am enabled to work the axle through reciprocating slide-bars, as other well-known linked or slotted connections may be used, and the slide-bars operated by the foot may be elevated by springs, or provided with a shoe-like piece for the foot, if desired.

Having thus fully described my invention,

What I claim, and desire to secure by Letters Patent, is—

1. The combination, with one wheel, A, having a double-cranked axle, of a frame supporting a treadle-mechanism, for operating the said axle, a seat and guiding-levers, when the said wheel is independent of any other wheel, as specified.

2. The combination, with the wheel A and cranked axle, of a frame supporting a seat and operating-mechanism, when the centre of motion of the frame is below or eccentric to that of the said wheel, substantially as specified.

3. The combination of the wheel A, cranked axle-frame B, balancing-rim D, and wheels E, substantially as specified.

4. The combination, with the cranked axle, supporting the propelling-wheel, of a reciprocating slide-bar, connected thereto, and operating substantially as specified.

5. The combination, with the plates B, of the spring-seat supports H, seat-bar I, adjustable seat K, and guiding-levers O, substantially as specified.

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