No. 635,525. Patented Oct. 24, 1899.

G. W. WERNER.

SPEED WAGON.

(Application filed July 27, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

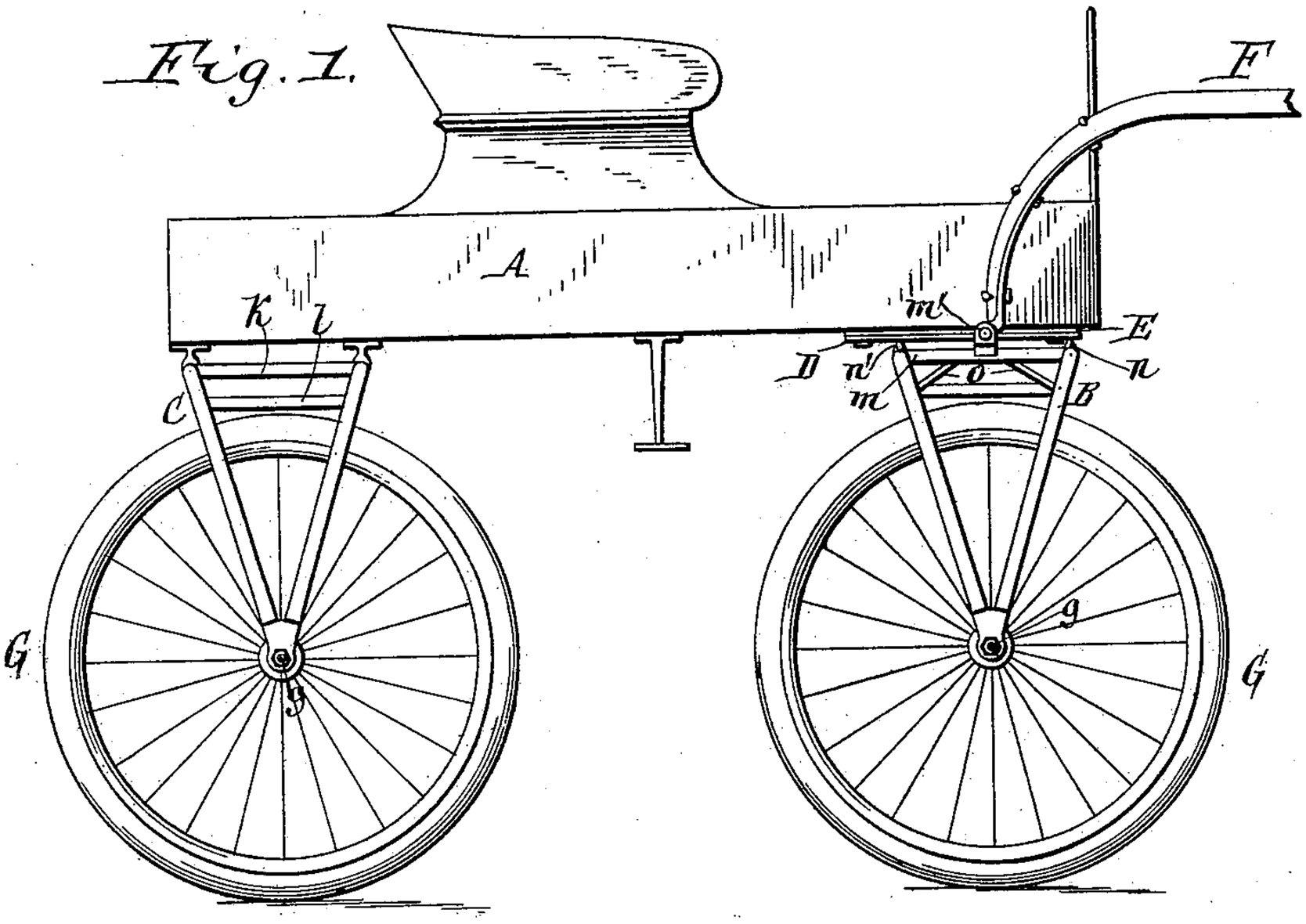
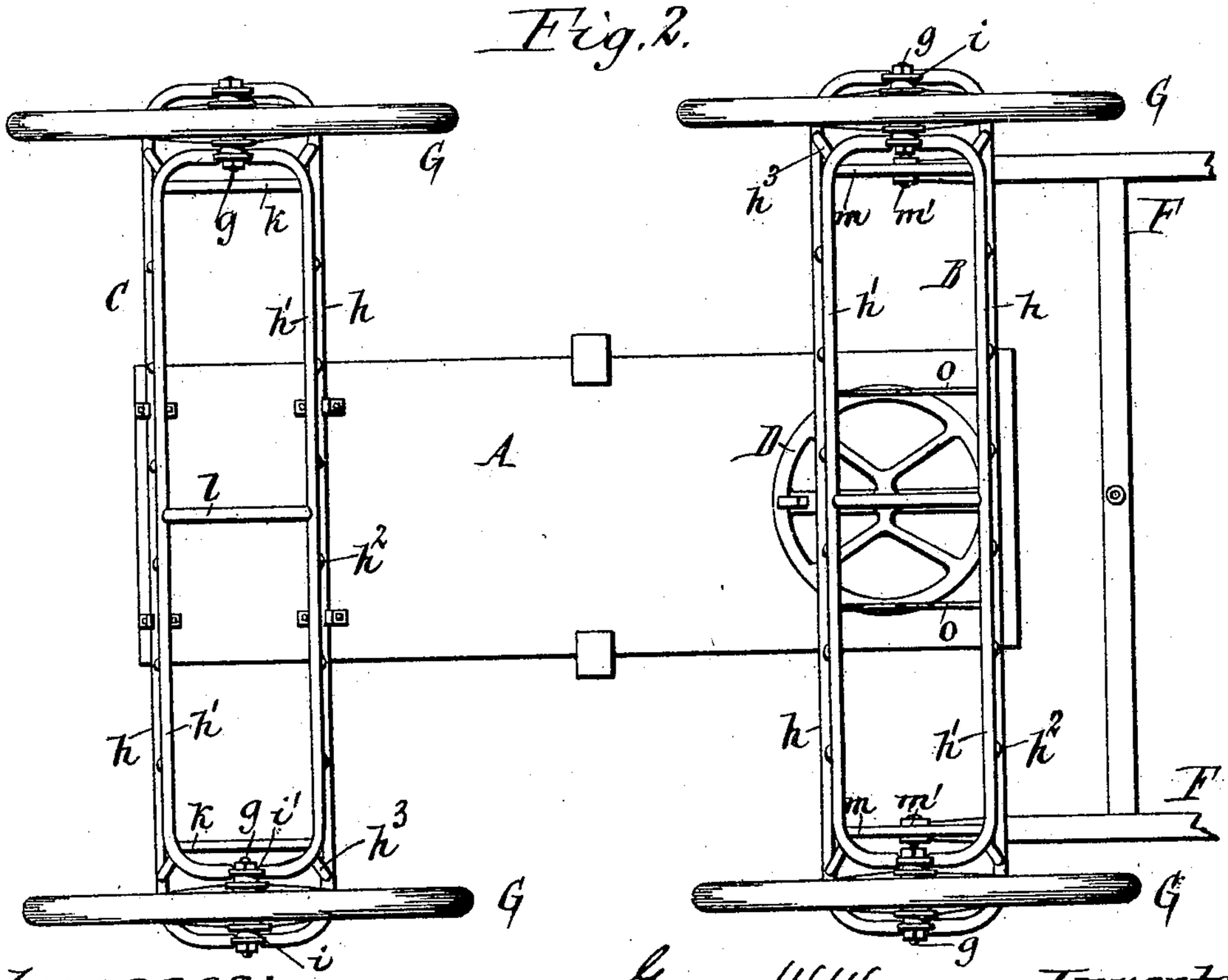


Fig. 2.



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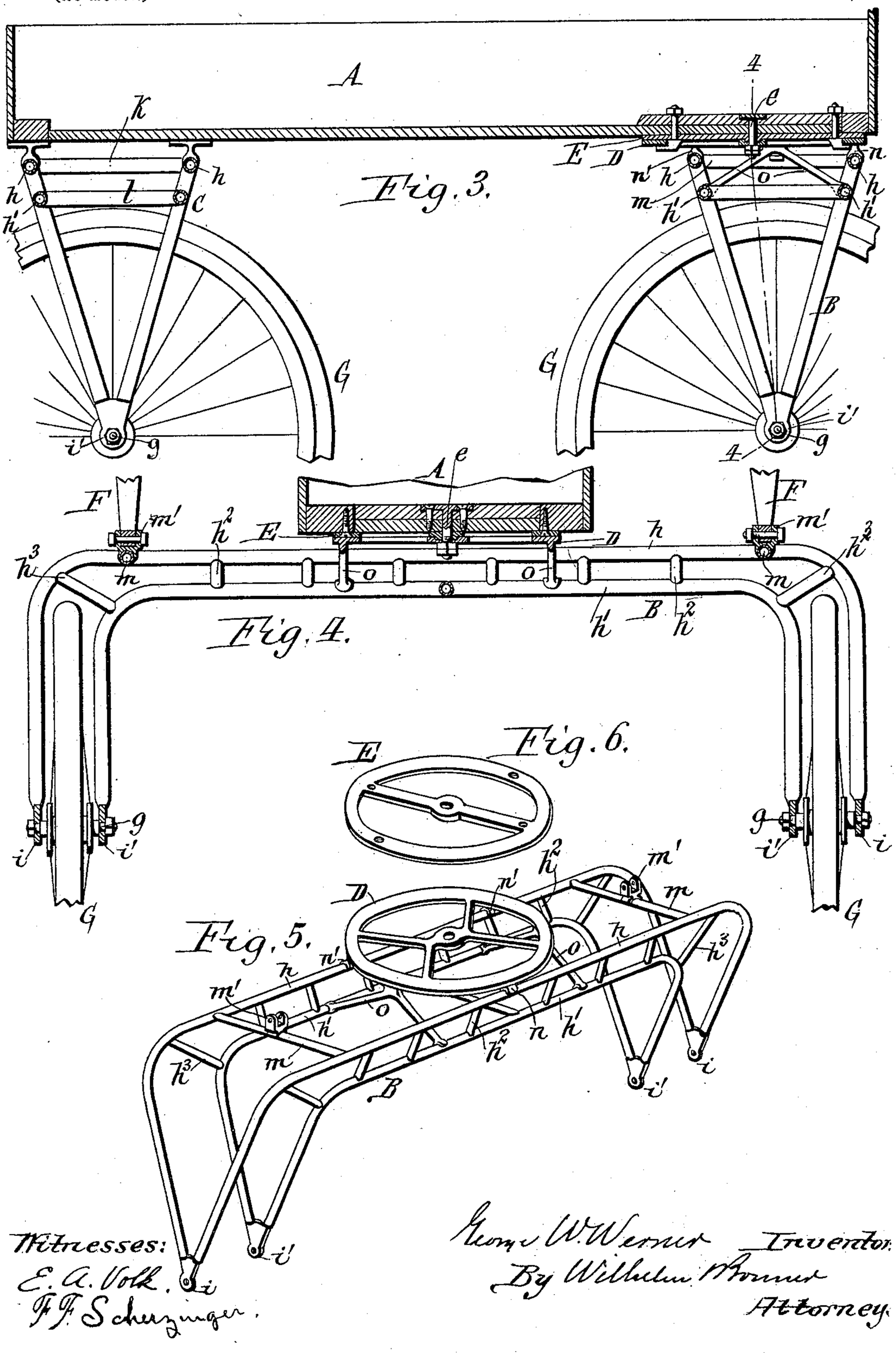

UNITED STATES PATENT OFFICE.

GEORGE W. WERNER, OF BUFFALO, NEW YORK.

SPEED-WAGON.

SPECIFICATION forming part of Letters Patent No. 635,525, dated October 24, 1899.

Application filed July 27, 1899. Serial No. 725,295. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. WERNER, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Speed-Wagons, of which the following is a specification.

My invention relates to a speed-wagon in which each axle is composed of several transverse members, which are connected by intermediate bars or pieces.

The object of my invention is to produce an axle which is light, strong, and rigid, which supports the wheel-spindles rigidly at each end, which is easily connected with the body of the vehicle, and which is sightly in appearance.

In the accompanying drawings, consisting of two sheets, Figure 1 is a side elevation of a speed-wagon provided with my improvements. Fig. 2 is a bottom plan view of the same. Fig. 3 is a central longitudinal section of the same. Fig. 4 is a transverse section of the front axle in line 4 4, Fig. 3. Fig. 5 is a perspective view of the front axle and the lower part of the fifth-wheel secured thereto. Fig. 6 is a detached perspective view of the upper part of the fifth-wheel.

Like letters of reference refer to like parts in the several figures.

A represents the body of the wagon; B, the front axle; C, the rear axle; D, the lower part of the fifth-wheel; E, the upper part of the fifth-wheel; *e*, the king-bolt; F, the thills; *g*, the wheel-spindles, and G the wheels.

Each axle is composed of two transverse skeleton frames, which are arranged one below the other. Each frame has downwardly-turned end portions, those of the upper frame being arranged on the outer side of the wheel and those of the lower frame on the inner side of the wheel. The upper frame consists of two members *h* and the lower frame of two members *h'*. The two members of each frame have their main portions arranged transversely and horizontally, one forward of the vertical center line of the wheel and the other in rear thereof. The end portions of each frame converge downwardly and are united at their lower ends to an ear which receives the adjacent end of the wheel-spindle. The end portions of the upper and outer frame are united to an ear *i*, and those of the lower or inner frame to an ear *i'*. The spindle *g* is secured to these ears, and the wheel, mounted on the spindle, stands between the downwardly-turned outer and inner frame members. The downwardly-turned portions of the inner frame are preferably arranged, as shown, at the same angle or inclination as those of the outer frame, so that viewed from the side, as shown in Fig. 3, the inclined portions of the two frames stand in line and the two horizontal portions of the lower frame stand correspondingly nearer together than those of the upper frame. The two front members *h h'* of the upper and lower frame and the two rear members of these frames are united by connecting-pieces h^2, which extend downward from the horizontal portion of each upper member *h* to that of each lower member *h'*, and by inwardly-inclined connecting-pieces h^3, which connect the outer curved or elbow portions of the frame members.

The upper members *h* of the rear axle are connected by longitudinal braces *k*, arranged, preferably, as shown, near the ends of the horizontal portions of the upper members. The lower members *h'* of each axle are similarly connected by longitudinal braces *l*, arranged, preferably, at the middle of the axle.

The two upper members of the front axle are connected near the ends of their horizontal portions by longitudinal braces *m*, which carry the clips *m'* to which the thills are coupled.

The members of each axle and their connecting pieces or braces are preferably constructed of steel tubing and secured together by brazing.

The lower part D of the fifth-wheel is arranged over the horizontal portions of the upper members *h* of the front axle and is secured to the upper front member of the front axle by a central foot *n* and to the upper rear member by feet *n'*. This part of the fifth-wheel is connected to the lower members *h'* of the front axle by two downwardly and longitudinally diverging braces O, each secured at its upper end to one side of the fifth-wheel and extending with one branch downwardly and forwardly and with the other branch downwardly and rearwardly to the lower members of the

axle. These braces are rigidly secured to the parts, preferably by brazing. The fifth-wheel and its braces form a very strong and rigid central connection between the four transverse members of the front axle.

Each axle is composed of an upper and outer frame and a lower and inner frame, and each frame contains two main members which converge to and unite at the ear to which the respective end of the wheel-spindle is secured. The spindle is in this manner supported at each end by two axle members, which stand one behind the other and brace each other fore and aft and effectually resist strains which tend to deflect the spindle forwardly or backwardly. The two ends of the spindle are thus supported alike and with equal security and rigidity, whereby the spindles and wheels are securely supported in their proper position under the severe strains to which they are subjected in rounding turns on a race-track or speedway. The members of each axle are securely connected and braced in every direction, and can be made comparatively light without sacrificing strength and rigidity. The load is divided between the ends of each spindle, which also tends to prevent undue vibrations of the spindles and assists in securing an even running of the vehicle.

The body of the vehicle is secured at its front to the upper part of the fifth-wheel and at its rear to the upper members of the rear axle.

I claim as my invention—

1. A compound vehicle-axle having two outer members arranged one behind the other, having their end portions extending downwardly and connected at their lower ends, to support the outer ends of the wheel-spindles, two inner members also arranged one behind the other and having their end portions extending downwardly and connected at their lower ends to carry the inner ends of the wheel-spindles, and wheel-spindles supported at their outer ends by the two outer members and at their inner ends by the two inner members, substantially as set forth.

2. A compound vehicle-axle composed of two upper and outer members arranged one behind the other and having their end portions downwardly converging and connected at their lower ends, two lower and inner members also arranged one behind the other and having their end portions downwardly converging and connected at their lower ends, connections extending from one upper member to the other and from one upper member to the adjacent lower member, and spindles supported at their outer ends by the two upper and outer members and at their inner ends by the two lower and inner members, substantially as set forth.

3. The combination with a compound front axle composed of two upper and outer members arranged one behind the other and two lower and inner members also arranged one behind the other, of a fifth-wheel having its lower part arranged over said upper members and secured thereto and provided with side braces which extend from the fifth-wheel downwardly to said lower members, substantially as set forth.

Witness my hand this 26th day of July, 1899.

GEORGE W. WERNER.

Witnesses:
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