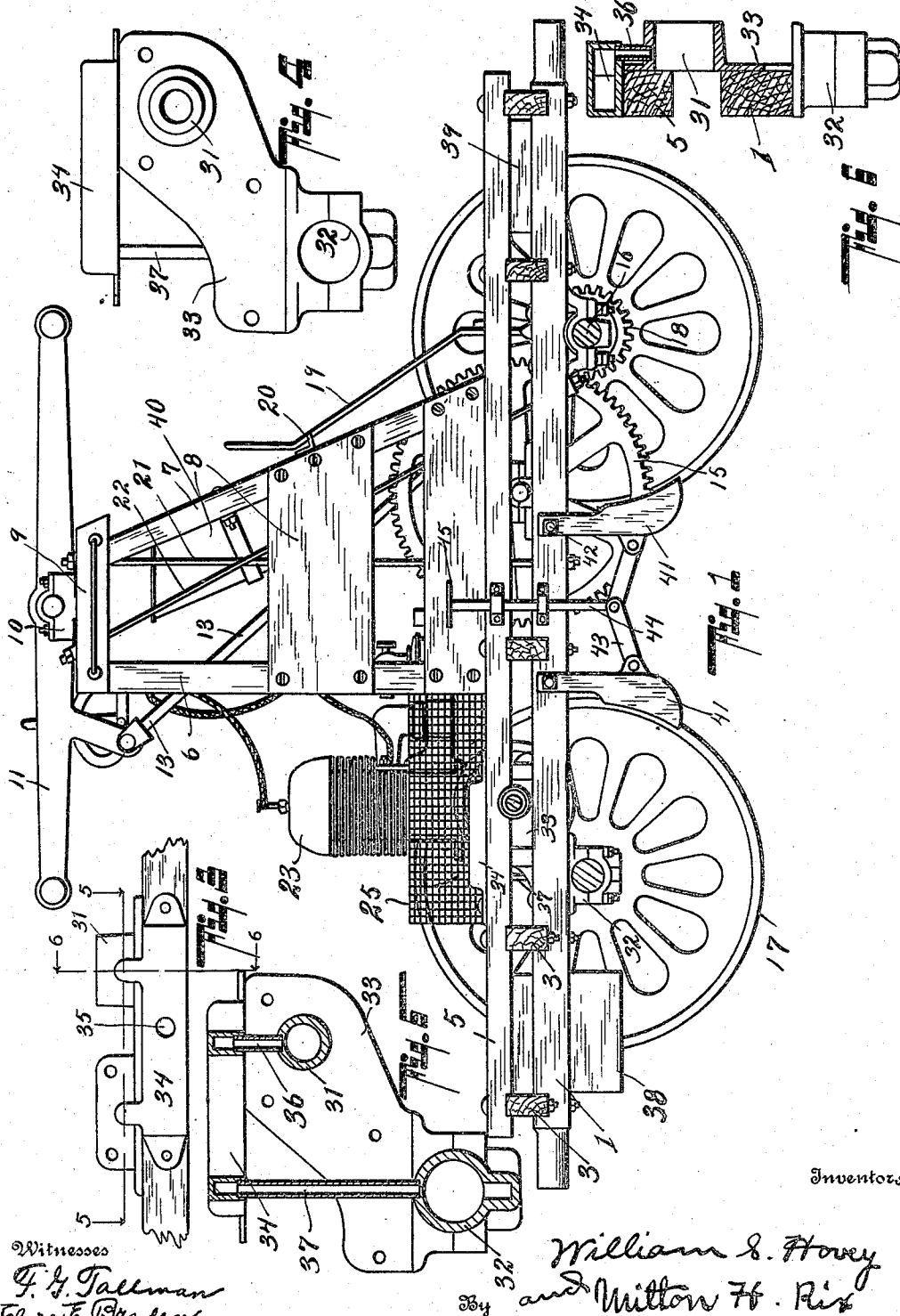


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MOTOR HAND CAR.  
APPLICATION FILED JULY 13, 1909

939,423.

Patented Nov. 9, 1909.

2 SHEETS—SHEET 1.



Inventors

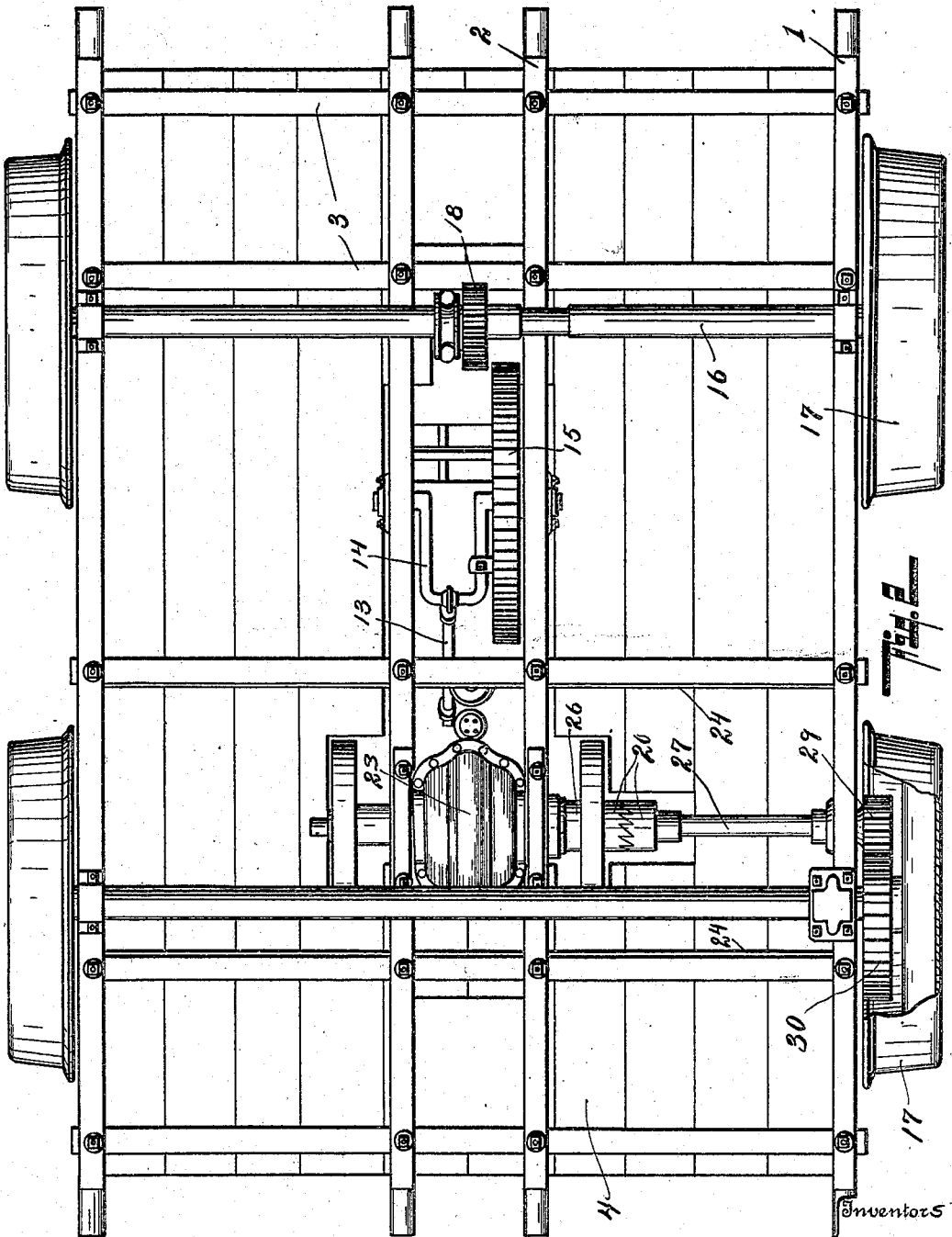
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# UNITED STATES PATENT OFFICE.

WILLIAM S. HOVEY AND MILTON H. RIX, OF THREE RIVERS, MICHIGAN, ASSIGNORS  
TO SHEFFIELD CAR COMPANY, OF THREE RIVERS, MICHIGAN.

## MOTOR HAND-CAR.

939,423.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed July 13, 1909. Serial No. 507,376.

*To all whom it may concern:*

Be it known that we, WILLIAM S. HOVEY and MILTON H. RIX, citizens of the United States, residing at the city of Three Rivers, county of St. Joseph, State of Michigan, have invented certain new and useful Improvements in Motor Hand-Cars, of which the following is a specification.

This invention relates to improvements in motor handcars.

Our invention relates particularly to improvements in motor handcars of the type illustrated in the patent to William S. Hovey, one of the applicants which patent is dated March 2, 1909, No. 914,347 for railway motor cars.

The main objects of this invention are: First, to provide an improved motor handcar which is very simple and compact in structure, also one which is economical to produce. Second, to provide an improved motor handcar which is simple and convenient in its structure. Third, to provide an improved motor handcar which is light in weight, and, at the same time, strong and durable.

Further objects, and objects relating to structural details will definitely appear from the detailed description to follow.

We accomplish the objects of our invention by the devices and means described in the following specification.

The structure described constitutes one effective embodiment of our invention.

Other embodiments would be readily devised by those skilled in the art.

The invention is clearly defined and pointed out in the claims.

A structure constituting an effective and preferred embodiment of the features of our invention is clearly illustrated in the accompanying drawing, forming a part of this specification, in which:

Figure 1 is a side elevation of a structure embodying the details of our invention. Fig. 2 is an inverted plan of the same. Fig. 3 is a detail plan of the lubricating device for the crank shaft and axle. Fig. 4 is a side elevation of the lubricating device and the common supporting bracket for the bearings for the axle and the crank shaft. Fig. 5 is a detailed longitudinal section taken on a line corresponding to line 5—5 of Fig. 3. Fig. 6 is a detailed vertical section taken on a line corresponding to line 6—6 of Fig. 3.

In the drawings, similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, the body of our improved car preferably consists of the longitudinal sills 1 and 2 and the cross sills 3, the sills 2 being the central pair of longitudinal sills. On the cross sills is a platform 4, the platform being provided with side rails 5.

The gallows frame is preferably mounted upon the central pair of longitudinal sills, and consists of uprights 6 and 7, the uprights 6 being substantially vertical while the uprights 7 are preferably arranged in an inwardly inclined position. These uprights are connected by suitable cross pieces 8 and 9.

Mounted on the upper end of the gallows-frame in bearings 10 is a walking beam 11. This walking beam is connected by the connecting rod 13 to the crank 14. On this crank is a gear 15. The axle 16 for one pair of the traction wheels 17 is provided with a gear 18 arranged to mesh with the gear 15, that is, it is adapted to be slipped into and out of mesh therewith, thereby connecting or disconnecting the driving connection for the walking beam to the wheels. The gear 18, shifted by means of the lever 19, which projects up at one end of the gallows frame. A catch 20 being provided for the lever on the gallows frame, the details of the mounting of the lever are not herewith illustrated as they form no part of the present invention. The gallows frame is anchored and braced by rods 21 and 22, respectively. The rods 21 being arranged substantially vertical, and the rods 22 being arranged on an incline to prevent the drawing of the gallows frame over toward the vertical uprights 6.

The engine 23 is arranged through the platform between the central pair of longitudinal sills 2 and a pair of the cross sills, and at the end of the gallows frame having the vertical uprights so that the walking beam 11 projects over the same. The cross sills 3 between which the engine is arranged are preferably provided with reinforcing plates 24. These reinforcing plates are arranged on edge so that they strengthen the cross pieces by which the engine is carried. The engine, being arranged adjacent to the

vertical uprights of the gallows frame, is under the walking beam as stated so that it occupies a space that would not ordinarily be otherwise utilized. The engine is preferably provided with a guard or housing 25, which is secured to the end of the gallows frame, forming in effect an extension thereof.

The engine crank shaft is preferably made up of sections 26 and 27, which are connected by a clutch 20, the clutch being shown in the conventional form of a tooth clutch. The crank shaft is provided with a gear 29 arranged to mesh with the gear 30 on one of the traction wheels thus securing a direct connection for the engine to the traction wheels. The bearings 31 and 32 for the crank shaft and axle respectively, are supported by a common bracket 33 which is bolted to the frame. This bracket holds the parts securely in alinement so that there is no strain upon the crank shaft when in use.

The bearings 31 and 32 are preferably provided with a lubricating device consisting of the reservoir 34 having a supply opening 35, the reservoir being connected by the conduits 36 and 37, to the bearings 31 and 32 respectively.

We preferably arrange between the central pair of sills beyond the engine, a box 38, in which the battery and coil for the engine are located. At the other end of these central sills, is a box 39 which can be used as a tool box for the small tools necessary to use with the car. The fuel reservoir 40 is preferably located within the gallows-frame, see Fig. 1,—in which position it is effectively protected. The brake shoes 41 are pivoted on the outer longitudinal sills as 42, and are connected by the links 43 to the actuating rod 44. This rod is provided with a foot piece 45 at its upper end.

Our improved car is very simple and economical in structure and is one which can be easily operated by an inexperienced workman. The parts are so arranged that they are not likely to be injured in the handling of the car, that is, in the lifting of the same to and from the track.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. In a structure of the class described, the combination with the traction wheels; of car body, comprising longitudinal sills; a platform; a gallows-frame, comprising uprights arranged above the central pair of longitudinal sills, connecting cross pieces for said uprights, the uprights at one end of said gallows-frame being vertical and those at the other end being inclined inwardly; an engine arranged between the said central longitudinal sills and through said platform at the end of said gallows-frame

having the vertical uprights; a walking beam mounted on said gallows-frame with one end projecting over said engine; a guard arranged about said engine and secured to said gallows frame; and driving connections for said walking beam and said engine to said traction wheels.

2. In a structure of the class described, the combination with the traction wheels; of car body, comprising longitudinal sills; a platform; a gallows-frame, comprising uprights arranged above the central pair of longitudinal sills, connecting cross pieces for said uprights, the uprights at one end of said gallows-frame being vertical and those at the other end being inclined inwardly; an engine arranged between the said central longitudinal sills and through said platform at the end of said gallows-frame having the vertical uprights; a walking beam mounted on said gallows-frame with one end projecting over said engine; and driving connections for said walking beam and engine to said traction wheels.

3. In a structure of the class described, the combination with the traction wheels; of car body, comprising longitudinal sills; a platform; a gallows-frame, comprising uprights arranged above the central pair of longitudinal sills, connecting cross pieces for said uprights, the uprights at one end of said gallows-frame being vertical and those at the other end being inclined inwardly; an engine arranged between the said central longitudinal sills and through said platform at the end of said gallows-frame having the vertical uprights; a walking beam; a guard arranged about said engine and secured to said gallows-frame; and driving connections for said walking beam and engine to said traction wheels.

4. In a structure of the class described, the combination with the traction wheels; of car body, comprising longitudinal sills; a platform; a gallows-frame, comprising uprights arranged above the central pair of longitudinal sills, connecting cross pieces for said uprights, the uprights at one end of said gallows-frame being vertical and those at the other end being inclined inwardly; an engine arranged between the said central longitudinal sills and through said platform at one end of said gallows-frame having the vertical uprights; a walking beam; and driving connection for said walking beam and engine to said traction wheels.

5. In a structure of the class described, the combination with the traction wheels; of car body; a gallows-frame; comprising uprights, connecting cross pieces for said uprights, the uprights at one end of said gallows-frame being vertical and those at the other end being inclined inwardly; an engine arranged at the end of said gallows-

frame having the vertical uprights; a walking beam mounted on said gallows frame with one end projecting over said engine; a guard arranged about said engine and secured to said gallows frame; and driving connections for said walking beam and engine to said traction wheels.

6. In a structure of the class described, the combination with the traction wheels; of car body; a gallows-frame, comprising uprights, connecting cross pieces for said uprights, the uprights at one end of said gallows-frame being vertical and those at the other end being inclined inwardly; an engine arranged at the end of said gallows-frame having the vertical uprights; a walking beam mounted on said gallows-frame with one end projecting over said engine; and driving connections for said walking beam and engine to said traction wheels.

7. In a structure of the class described, the combination with the traction wheels; of car body; a gallows-frame, comprising uprights, connecting cross pieces for said uprights, the uprights at one end of said gallows-frame being vertical and those at the other end being inclined inwardly; an engine arranged at the end of said gallows-frame having the vertical uprights; a walking beam; a guard arranged about said engine and secured to said gallows frame; and driving connections for said walking beam and engine to said traction wheels.

8. In a structure of the class described, the combination with the traction wheels; of car body; a gallows-frame, comprising uprights, connecting cross pieces for said uprights, the uprights at one end of said gallows-frame being vertical and those at the other end being inclined inwardly; an engine arranged at the end of said gallows-frame having the vertical uprights; a walking beam; and driving connections for said walking beam and engine to said traction wheels.

9. In a structure of the class described, the combination with the traction wheels; of car body; a gallows-frame; an engine arranged at one end of said gallows-frame and on the outside thereof; a walking beam mounted on said gallows frame, said engine and gallows-frame being arranged so that one end of said walking beam projects over said engine; a guard arranged about said engine and secured to said gallows frame; and driving connections for said walking beam and engine to said traction wheels.

10. In a structure of the class described, the combination with the traction wheels; of car body; a gallows-frame; an engine arranged at one end of said gallows-frame and on the outside thereof; a walking beam

mounted on said gallows frame, said engine and gallows-frame being arranged so that one end of said walking beam projects over said engine; and driving connections for said walking beam an engine to said traction wheels.

11. In a structure of the class described, the combination with a body, comprising longitudinal and cross sills, said longitudinal sills being arranged in pairs; a gallows-frame arranged on the central pair of longitudinal sills; an engine arranged between the longitudinal sills at one end of the said gallows-frame; and boxes arranged between said longitudinal sills at the outer ends thereof.

12. In a structure of the class described, the combination with the car body; traction wheels; a gallows-frame; a walking beam; driving connections therefor to the traction wheels; a gear arranged within and secured to one of said traction wheels; an engine; and a crank shaft for said engine provided with a gear arranged to mesh with said gear on said traction wheels, said crank shaft being made up of sections connected by a clutch.

13. In a structure of the class described, the combination with the car body; traction wheels; a gallows-frame; a walking beam; driving connections therefor to the traction wheels; a gear arranged within and secured to one of said traction wheels; an engine; and a crank shaft for said engine provided with a gear arranged to mesh with said gear on said traction wheels.

14. In a structure of the class described, the combination with the traction wheels; an axle therefor; a bearing for said axle; an engine; a crank shaft therefor; a bearing for said crank shaft; connecting gear for said axle and crank shaft; an oil reservoir; and delivery conduits connecting said oil reservoir to said axle and crank shaft bearings.

15. In a structure of the class described, the combination with the traction wheels; an axle therefor; an engine; a crank shaft therefor; bearings for said axle and crank shaft; a common supporting bracket for said bearings; connecting gear for said axle and crank shaft; an oil reservoir; and delivery conduits connecting said oil reservoir to said axle and crank shaft bearings.

In witness whereof, we have hereunto set our hands and seals in the presence of two witnesses.

WILLIAM S. HOVEY. [L. S.]  
MILTON H. RIX. [L. S.]

Witnesses:

E. J. GODSHALK,  
D. C. MIX.