

F. H. LATHROP.
 CONCRETE CONVEYING AND MIXING CART.
 APPLICATION FILED DEC. 21, 1908.

939,275.

Patented Nov. 9, 1909.

3 SHEETS—SHEET 1.

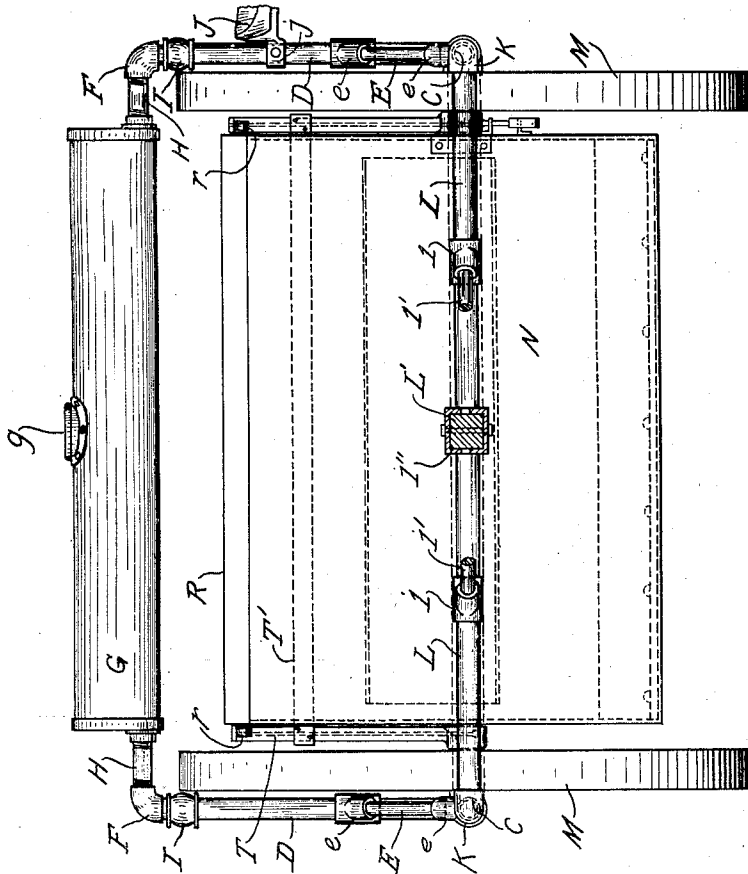


FIG. 2.

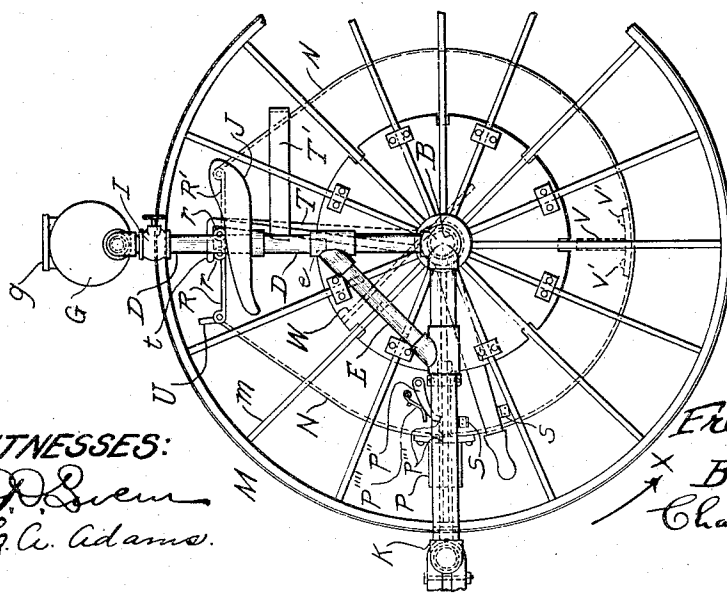


FIG. 1.

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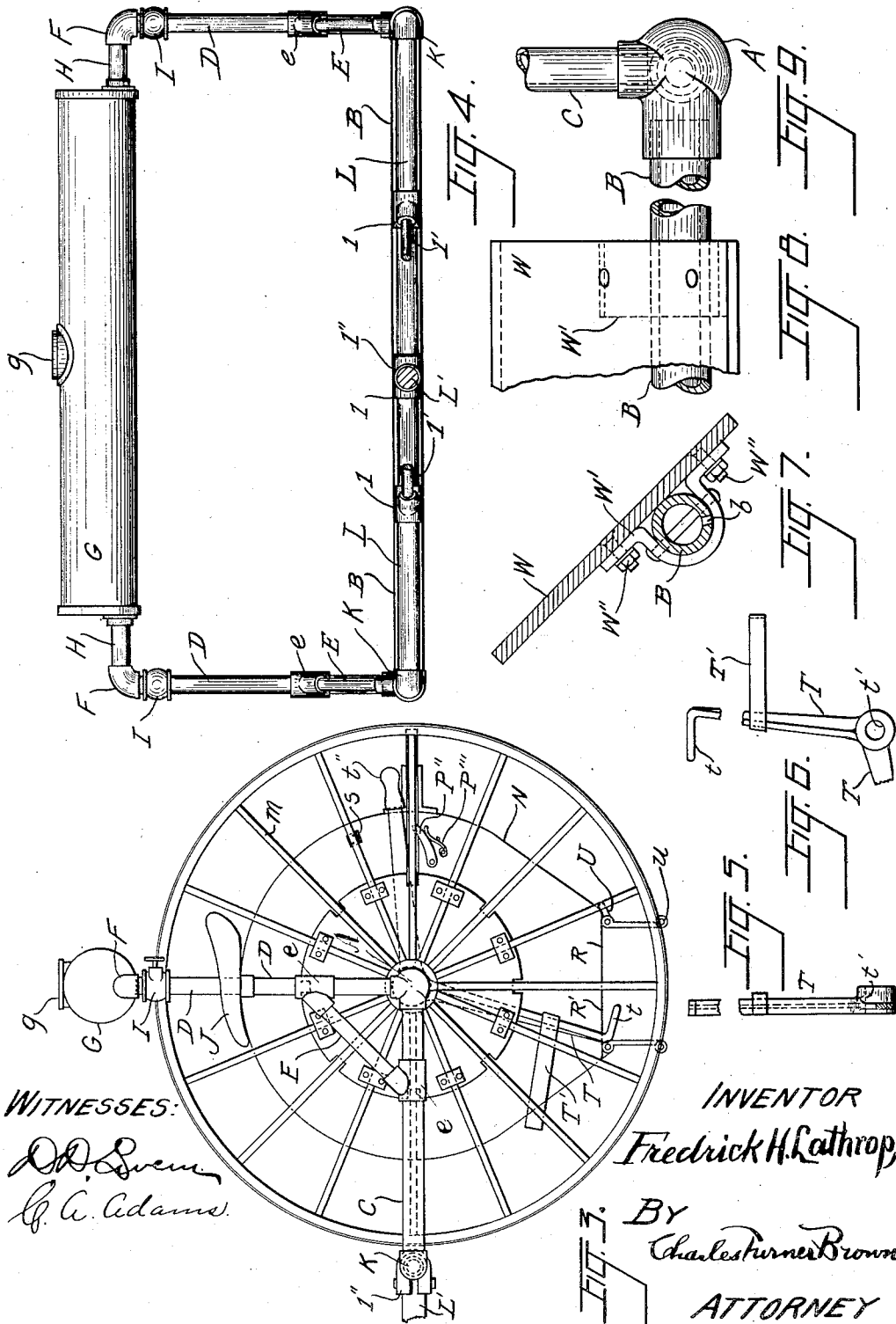
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3 SHEETS—SHEET 2.



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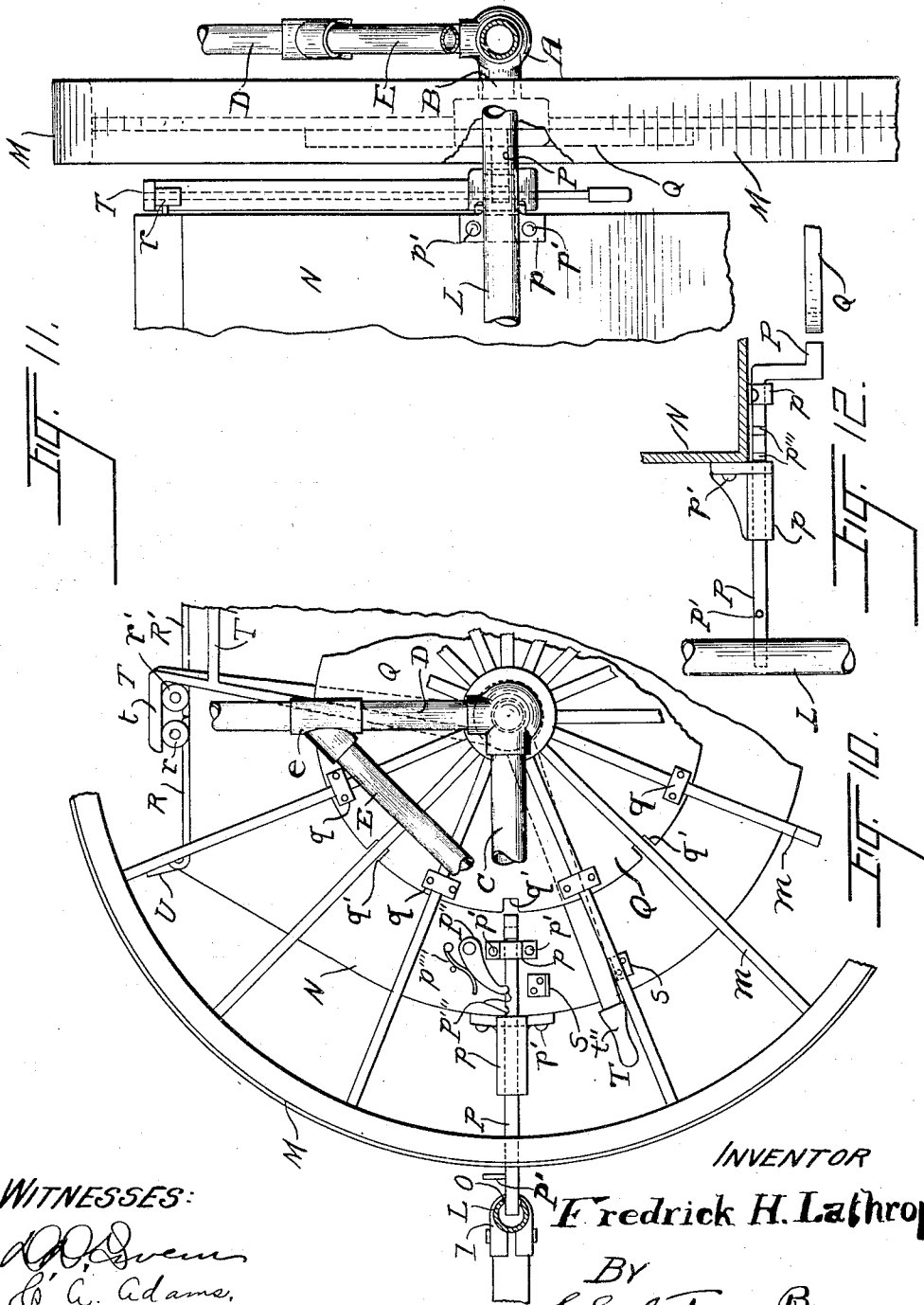
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3 SHEETS—SHEET 3.



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CONCRETE CONVEYING AND MIXING CART.

939,275.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FREDRICK H. LATHROP, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Concrete Conveying and Mixing Carts, of which the following, when taken in connection with the drawings accompanying and forming a part hereof, is a full and complete description, sufficient to enable those skilled in the art to which it pertains to understand, make, and use the same.

This invention relates to devices used in paving cement roads, side walks and cellars.

The object of the invention is to obtain a device by means of which sand, broken stone and cement may be conveyed from the several piles thereof, adjacent to the place where the same are to be used, to such place and there deposited.

A further object of the invention is to obtain a device of the character described which can be easily loaded and quickly unloaded.

A further object of the invention is to obtain a device of the character described which may be operated by the driver or person in charge thereof in a manner to properly mix the several ingredients contained therein in what is termed a dry mix, and also to add water to such mixture and remix the several ingredients, and thereby under the varying conditions which arise in practical work to obtain a mixture properly wetted or moistened.

A further object of the invention is to obtain a device of the character described which will be simple in construction, durable and not liable to get out of order.

In the drawings referred to Figure 1 is a side elevation of a device embodying the invention with the tongue or shaft thereof removed therefrom. Fig. 2 is a front elevation of the device with the tongue and a portion of the driver's seat removed. Fig. 3, is a side elevation of the device with the receptacle thereof in the position the same is placed to discharge its contents therefrom. Fig. 4 is a front elevation of the frame of the device, with a water receptacle mounted thereon. Fig. 5 is a front or end elevation of a lever arranged to latch the cover of the receptacle of the device in a closed position.

Fig. 6 is a side elevation of the latch lever illustrated in Fig. 5. Fig. 7 is a vertical sectional view of the axle and baffle plate contained within the receptacle of the device. Fig. 8 is a front elevation of a portion of the axle and baffle plate contained within the receptacle of the device. Fig. 9 is a view of a side ell and of a section of the pipes attached thereto, arranged to form elements of the frame of the device. Fig. 10 is a side elevation, on an enlarged scale, of a portion of the device embodying the invention, with parts removed to expose movable mechanisms to view. Fig. 11 is a front elevation of a portion of one wheel, a portion of the frame, and a portion of the receptacle of the device, and Fig. 12 is a top plan view of the latch on the receptacle of the device, showing a corner of the receptacle in section and also showing the adjacent parts with which said latch is arranged to alternately engage.

A reference letter applied to designate a given part is used to indicate such part throughout the several figures of the drawings wherever the same may appear.

A, A, are side ells.

B is a horizontal pipe attached to the side ells by screw threads in the ordinary way. Said pipe B extends from the side ell on one side of the frame of the device to the side ell on the other side thereof and is arranged to form the axle of the device. Pipe B is provided with apertures *b, b*.

C, C, are horizontal pipes attached to the side ells A, A, respectively by screw threads.

D, D, are vertical pipes attached at one end thereof respectively to the side ells A, A.

e, e, are couplings on the horizontal pipe C, and the vertical pipe D, respectively.

E, E, are pipes attached by screw threads at their ends to the couplings *e, e*.

F, F, are ells at the top end of pipes D, D, respectively.

G is a water receptacle or tank and H, H, respectively, are nipples connected at their ends to the ells F, F, and to the heads of the tank G.

g is a cover to tank G.

I, I, are valves in pipes D, D.

J is a driver's seat which is attached to pipe D, as by strap *j* (Fig. 2).

K, K, are ells attached, as by screw threads, to the forward ends of the pipes C, C, and L

is a pipe attached, as by screw threads to ells K, K.

7 l, l , are couplings on pipe L and l', l' , are pipes arranged to form braces attached at their ends as by screw threads to the couplings l, l , on pipe L and to the coupling l'' on the tongue L'.

10 The ells A, A, F, F, and K, K, with pipes C, D, and L form the frame of the device and the pipe B which is a part of the frame also forms the axle of the device, such frame being reinforced or strengthened, when desired, by the couplings e, e, l, l , and the brace pipes (or rods) E, E, and l', l' .

15 M, M, are the supporting, carrying and actuating wheels of the device and are provided with a hub which turns freely on the axle B, and with spokes m, m .

20 N is the carrying and mixing receptacle of the device. Receptacle N is loosely mounted on the axle B.

O is a recess or socket in pipe L of the frame of the device.

25 P is a bolt longitudinally movable in bearings p, p . Bearings p, p , are rigidly attached to one end of the receptacle N, as by rivets or bolts p', p' .

P' is the handle by means of which bolt P is moved.

30 P'' is a dog arranged to alternately engage with recesses P''', P''', on bolt P.

P'''' is a spring arranged to yieldingly hold the dog P'' in recess P'''.

35 Q is a plate rigidly secured to spokes m, m , of wheel M as by straps q, q , and q', q' , are recesses in plate Q arranged to form sockets for the bolt P.

40 The receptacle N is locked so as not to rotate when the bolt is in socket O in the frame of the device; and is locked to wheel M to rotate therewith when such bolt P is in any one of the sockets q', q' , on disk Q.

45 The receptacle N is provided with an aperture through which it may be loaded and unloaded and R, R', are doors arranged to form the cover to such apertures. To hold the doors R, R', closed, the ends t, t , of levers T, T, are arranged to engage with abutments r, r' , on such door. Such abutments have rollers thereon shown in the drawings. Lever T is loosely mounted on axle B, such axle passing through the hole t' (Fig. 6).

50 S, S, are stops secured to one end of the receptacle N, arranged to limit the movement of the handle t'' .

55 The lever T which is located at one end of the receptacle N is attached to the like lever T at the other end of the receptacle by the beam or rod T' so that the abutments r, r' , at both ends of the doors R, R', are latched by the said levers T, T, and unlatched when force is applied to the lever at one end of the receptacle.

65 The operation of the device is;—When a

suitable quantity of cement, sand and broken stone has been put into receptacle N and the doors R, R', locked in a closed position, with the bolt P moved to engage with one of the recesses q' on disk Q, as the device is hauled 70 along the ground the receptacle N is rotated simultaneously with the wheels M. By driving the vehicle along the ground at such time, (with valves I, I, closed), the contents of the receptacle become well mixed 75 while in a dry condition. Assuming the tank G to contain the proper quantity of water to wet or moisten the contents of receptacle N, after the desired dry mixture of the contents of such receptacle has been obtained, 80 the valves I, I, are opened and the vehicle is driven a farther distance along the ground and until a wet or moistened mixture is obtained. When a thoroughly mixed and moistened mixture of the contents of the receptacle N is obtained the device is driven to 85 the place where the contents are to be used and the receptacle placed in the position thereof illustrated in Fig. 3 of the drawings. When the receptacle is in this position the contents thereof rest on the doors R, R', and 90 the handle t'' of lever T is in position so that a person standing at the rear of the vehicle may force such handle down thereby turning said levers T, T, and drawing 95 the end t of the levers out of engagement with the abutments r, r' . The contents of the tank will then force the doors open and such contents will fall out of the receptacle to rest on the ground. The vehicle is then 100 driven or drawn forward and the rear door, being prevented by stop U from opening beyond a given distance will scrape over the unloaded contents of the receptacle so that the edge u of such door will tend to level 105 the load.

The board V is attached to the inner side of the wall of the receptacle N by bolts v', v' , and the baffle plate W is secured to the non-rotatable axle B by straps W', and bolts 110 W''. The mixture of the contents of the receptacle is accelerated by such contents being carried up by board V and discharged on the baffle plate W as the vehicle is being driven forward and the receptacle is locked 115 to the wheels M to turn therewith.

The ends of the pipes C, C, which are in the ells A, A, and the ends of pipes E, E, in coupling e , are or may be closed.

120 A sufficient quantity of water is put into tank G to properly moisten or wet the mixture obtained in the receptacle so that a properly moistened mixture is easily obtained.

125 I do not confine myself to the use of pipes or tubes in building the frame of the device, other than pipes D, D, and pipe B with nipples H, H, which are required to convey the water from tank G to the receptacle N while the device is being hauled along the 130

ground and the contents of the receptacle are being thoroughly mixed, as described.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is;—

1. The combination of a frame, a hollow non-rotatable axle secured at its ends to said frame, wheels on the axle, and a receptacle rotatably mounted on the axle, said receptacle provided with an opening and a cover to said opening, means to latch the cover closed, means to latch the receptacle to the frame in a non-rotatable position, and means to latch the receptacle to the wheels to rotate with said wheels.

2. The combination of a frame, a non-rotatable axle attached to the frame, a baffle plate secured to the axle, wheels on the axle, and a receptacle rotatably mounted on the axle, an elevating board secured in place in said receptacle and said receptacle provided with an opening and a cover to said opening, means to latch the cover closed, means to latch the receptacle to the frame in a non-rotatable position, and means to latch the receptacle to the wheels to rotate with said wheels.

3. The combination of a frame, a non-rotatable axle attached to the frame, a baffle plate secured to the axle, wheels on the axle, said frame, axle and wheels being arranged so that when the device is drawn along the ground the wheels support the device and are rotated, and a receptacle rotatably mounted on the axle, an elevating board secured in place in said receptacle, and said receptacle provided with an opening and a cover to said opening, means to latch the cover closed, means to latch the receptacle in a non-rotatable position, and means to latch the receptacle to the wheels to rotate with said wheels.

4. The combination of a frame, a non-rotatable hollow axle attached to the frame, a water receptacle, communicating passage ways from the water receptacle to the hollow axle, valves to said passage ways, wheels on the axle, said frame, axle and wheels arranged so that when the device is drawn along the ground the wheels support the device and are rotated on the axle, a receptacle rotatably mounted on the axle, said axle provided with apertures opening into the receptacle and said receptacle provided with an opening, a cover to said opening, means to latch the cover closed, means to latch the receptacle in a non-rotatable position, and

means to latch the receptacle to the wheels to rotate with said wheels.

5. The combination of a frame provided with a non-rotatable hollow axle, wheels on the axle, the frame and one of the wheels respectively provided with a socket, a water receptacle, communicating passage ways from the water receptacle to the hollow axle, said frame, axle and wheels arranged so that when the device is drawn along the ground the wheels support the device and are rotated, and a receptacle rotatably mounted on the axle, such axle provided with apertures opening into the receptacle and such receptacle provided with an opening and a cover to such opening, projections on the cover, a lever movably mounted on the axle, such lever arranged to engage with the projections to latch the cover closed, and a longitudinally movable bolt attached to the receptacle, arranged to engage in the socket on the frame to latch the receptacle in a non-rotatable position, said bolt arranged to engage in the last named socket to latch the receptacle to the wheels to rotate with such wheels.

6. The combination of a frame provided with a non-rotatable hollow axle, wheels on the axle, the frame and one of the wheels respectively provided with a socket, a baffle plate secured to the axle, a water receptacle, communicating passage ways from the water receptacle to the hollow axle, said frame, axle and wheels arranged so that when the device is drawn along the ground the wheels support the device and are rotated, and a receptacle rotatably mounted on the axle, an elevating board secured in place in such receptacle, such axle provided with apertures opening into the receptacle and such receptacle provided with an opening and a cover to such opening, projections on the cover, a lever movably mounted on the axle, such lever arranged to engage with the projections to latch the cover closed, and a longitudinally movable bolt attached to the receptacle arranged to engage in the socket on the frame to latch the receptacle in a non-rotatable position, said bolt arranged to engage in the last named socket to latch the receptacle to the wheels to rotate with such wheels.

FREDRICK H. LATHROP.

In the presence of—

CHARLES TURNER BROWN,
CORA A. ADAMS.