E. HOWLAND.

ARMY TRAILER.

APPLICATION FILED NOV. 18, 1918.

1,327,326.

Patented Jan. 6, 1920.

3 SHEETS—SHEET 1.

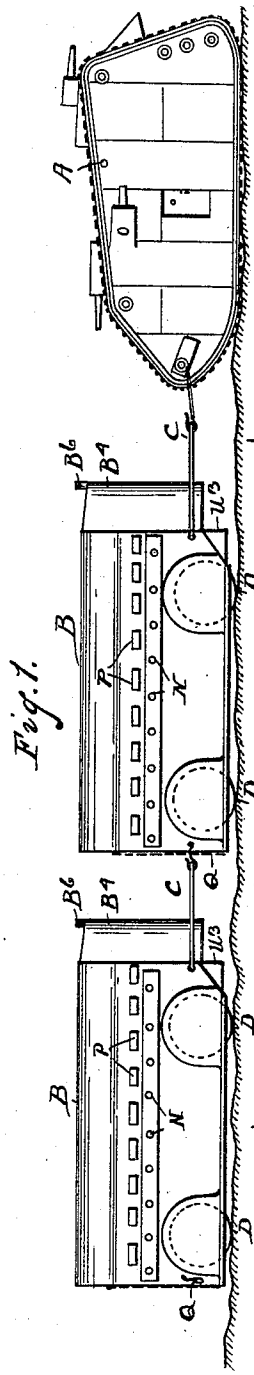


Fig. 1.

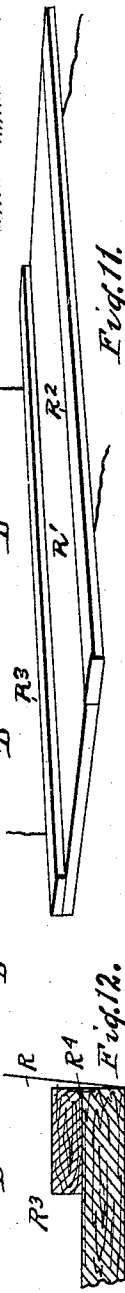


Fig. 11.

Fig. 12.

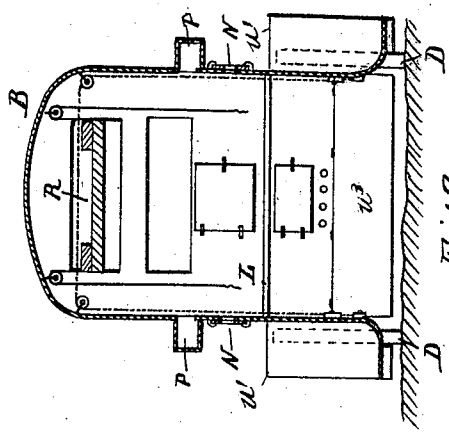


Fig. 3.

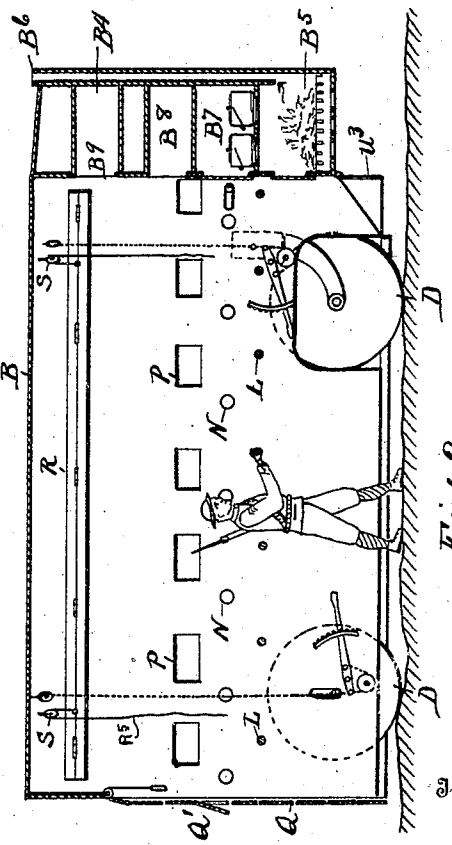


Fig. 2.

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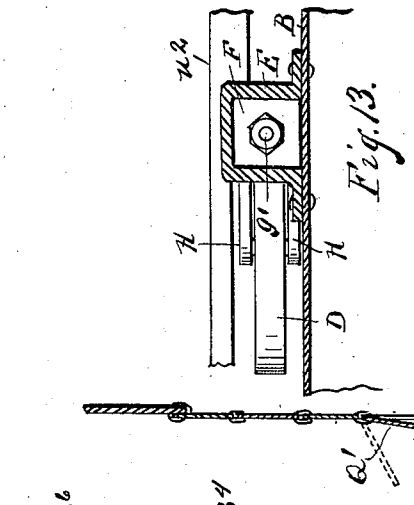


Fig. 3.

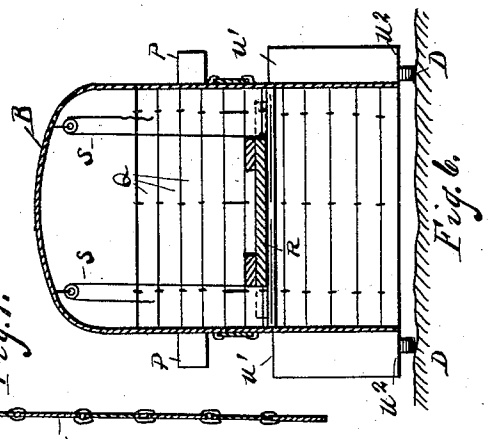


Fig. 6.

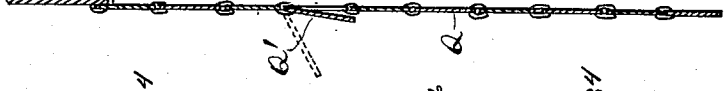


Fig. 7.

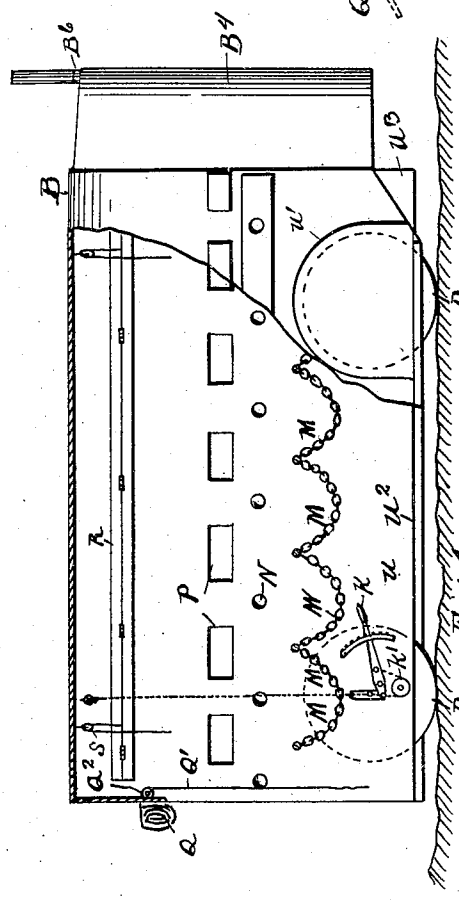


Fig. 4.

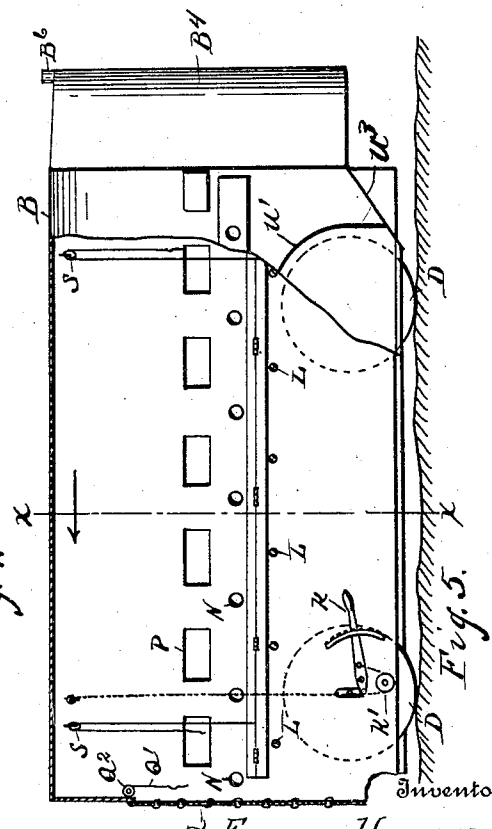


Fig. 5.

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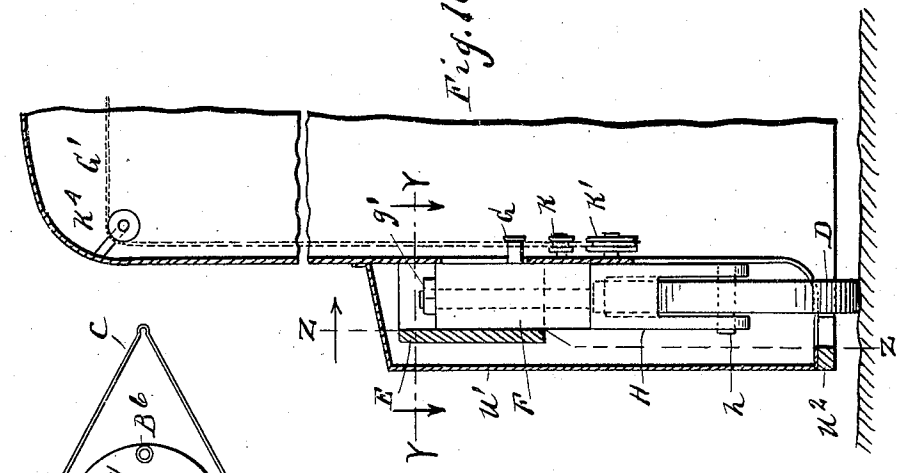
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3 SHEETS—SHEET 3.

Fig. 10.



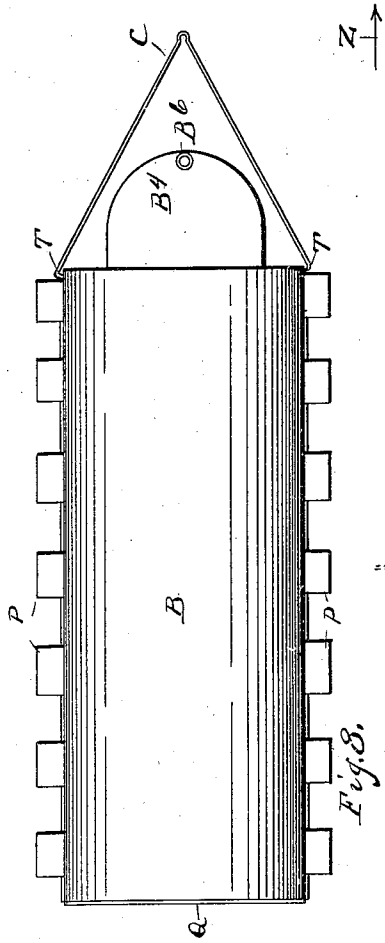


Fig. 8.

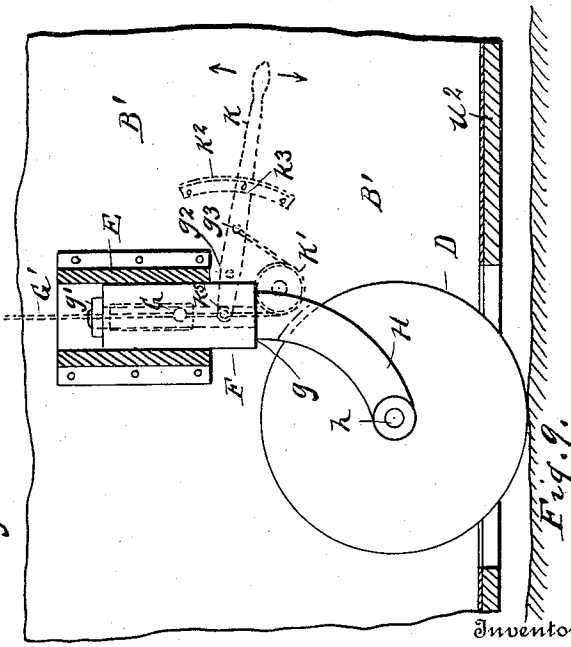


Fig. 9.

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UNITED STATES PATENT OFFICE.

EPHRAIM HOWLAND, OF PONTIAC, MICHIGAN.

ARMY-TRAILER.

1,327,326. Specification of Letters Patent. Patented Jan. 6, 1920.

Application filed November 18, 1918. Serial No. 262,928.

To all whom it may concern:

Be it known that I, EPHRAIM HOWLAND, a citizen of the United States, residing at Pontiac, county of Oakland, State of Michigan, have invented a certain new and useful Improvement in Army-Trailers, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to vehicles for the purpose of conveying and protecting troops, preferably infantry, on the march and field of battle and it consists in the various combinations and devices hereinafter described and claimed.

My invention is designed to provide a trailing vehicle adapted to be drawn by a tank or other tractor and to be used primarily on battle lines during the progress of a battle although it is susceptible and convenient to use during the transportation of troops as well as upon the battle field. For this purpose a train of like vehicles can be drawn by any tractor, as shown in Figure 1, although I am not limited to the number there shown. The vehicles of my design are also capable, to some extent, of independent action and are designed so as to carry a large supply of ammunition and stores and to operate under difficult circumstances as hereinafter described.

In the drawings:

Fig. 1 illustrates two or a number of my devices hauled or propelled by what is commonly termed a tank, although any tractor might be so employed.

Fig. 2 is a vertical longitudinal section of one of my devices or vehicles.

Fig. 3 is a vertical cross section of the same.

Fig. 4 is also a vertical drawing with a side broken away to show the internal construction of one of the vehicles.

Fig. 5 is the same with a modification in position.

Fig. 6 is a vertical cross section on the line X—X of Fig. 5.

Fig. 7 is a view of one of the chains illustrating details of construction.

Fig. 8 is a top view of the vehicle.

Fig. 9 is a detail view partly sectioned of one of the front wheels and supports.

Fig. 10 is a partially sectioned transverse vertical view of Fig. 9.

Fig. 11 is a perspective view of the auxiliary bed or platform employed.

Fig. 12 is a partial cross section of Fig. 11.

Fig. 13 is a cross section through the bearing block of the caster wheel.

Similar letters refer to similar parts.

In the drawings A represents a tractor, B B vehicles of my design to be drawn thereby by the usual swing draw bars C C. Fig. 1 shows the outer appearance of the tanks in elevation. They are each mounted upon wheels D D and they are intended to be made of walls of sheet steel of sufficient thickness to resist the impact and prevent the penetration of small arms ammunition, also shrapnel or shell splinters. Firmly fastened to each side of the walls and at its forward and rear end are ways E E, see Figs. 9 and 13, in which slides a hollow block F. Through the hollow of this block is a pivot G having a shoulder at g and nuts g' to hold the pivot in place. Pivot G is bifurcated at its lower extremity, the forks being curved and designated as H H and provided with a pivot or bearing at h upon which is rotatably mounted a wheel D. In other words, the structure provides a caster support for the wheel D whereby the wheel will follow any direction in which the vehicle is drawn. If the rear wheels, so called, are not desired to have this caster effect, the spindle H may be straight and merely a continuation of the block G and with no ability to allow the wheels to turn on the axis of the block G, or all of the four wheels may be constructed, as shown in Fig. 9, according to the foregoing description. Confining the description to the front or so-called steering wheels I have illustrated in Figs. 9 and 10 the means of raising and lowering the structure upon these wheels by persons inside of the vehicle. At g^2 is a pivot attached rigidly to the wall or the block as the case may be, in which the block G slides. Upon this pivot is mounted a lever K. One end of this lever at K^5 is pivotally attached to the sliding block G and also to a chain G'. This chain passes over a pulley K' fixed to the lower part of the side walls B' of the vehicle B. The chain is continued under the pulley K' and attached at an equal distance point from the central pivot g^2 at g^3. The lever K works in

a quadrant K^2 with means, as chains for instance K^3, not shown in detail, to hold it in any particular position. By working this lever downward the vehicle can be lowered nearer the surface of the road and by raising the lever the vehicle can be lifted and the space increased between its lower edge and the level of the road. Similar construction is shown in Figs. 2, 4 and 5 (but on a small scale) for the rear wheels in which they are not enabled to swivel. The chain G′, as shown in Fig. 10, passes upward toward the top of the vehicle, passes over the pulley K^4, over to the opposite side of the vehicle and over a similar pulley and down to exactly a similar apparatus upon the opposite side, the only difference being in the apparatus they are rights and lefts. By this means the occupants are enabled to keep the vehicle substantially upright on uneven ground, or raise and lower the front end at will as they may desire, or as may be necessary. The wheels of the caster type of course will swivel and follow the direction in which the vehicle is traveling. This is quite necessary in case of a drawn vehicle in order to prevent jamming.

The two side walls of the vehicle are united by cross bars L L, but the vehicle is preferably open at the bottom so that the inmates can walk on the ground or roadway, as shown in Fig. 2. These bars are placed at suitable intervals but preferably close enough together so that they will just about accommodate one man between each pair of bars from the front to rear. According to the gage of the vehicle, however, they may accommodate four or more men walking side by side. If desired the men can pull themselves up and ride on the bars or upon the chains which unite the bars at intervals in the following manner; each bar has hung upon it a system of chains M M M M, each chain long enough so that when the two ends are brought together they will form loops as shown in Fig. 4 marked M M; by unhooking and separating them, they can be used as means for fastening captives if so desired or, by hooking them together, form loops which are useful for a variety of purposes. Hammocks or other devices can be swung in between them, carried by them or mattresses upon them and form sleeping arrangements, or other uses too numerous to mention can be found for them.

In the side walls are placed shuttered openings N N, at the proper height in order to permit the inmates of the vehicle to fire outwardly upon the enemy whenever they desire to do so. Above these openings in the walls are fashioned pockets P P extending outwardly as shown in Fig. 3. These pockets are armored or formed of the same material as the side walls but they afford places for the storage of ammunition or other incidentals which are necessary to be carried. At the rear end of the vehicle is a shuttered arrangement, the shutters themselves being shown in Fig. 7. They consist of a series of linked flat cross bars of metal Q Q and when they are dropped afford a couplete shelter to the persons inside of the vehicle the same as the side walls. This flexible shutter can be rolled up by means of a chain Q′ passing over a pulley Q^2 near the top of the vehicle upon which an ordinary ratchet can be attached so as to hold it in rolled up position. As such means are common, it is unnecessary for me to describe it in detail. Of course, any of these details may be modified to some extent without departing from my invention.

In Figs. 11 and 12 I have shown in separate figures a perspective in cross section a floating table R which is supported from the roof of the vehicle, as illustrated in Figs. 2 and 3, and which may be lowered upon the supports L L, as shown in Fig. 5, where it might be used as a mattress for sleeping purposes or used as a table for dining purposes, or any other suitable use, and when not needed for such use, can be elevated to its position shown in Fig. 4 and thus put out of the way.

This table, as illustrated in Figs. 11 and 12, consists of a substantially center piece R′ to which is hinged side pieces R^2 R^3 so that they may be folded upward and inward as shown at R^3. Either side may be folded up and thus narrow the width of the center piece R′. One or both leaves may be opened out if desired when supported upon the cross bars L L. When folded up, hooks are provided as R^4 to which may be attached chains or cords as R^5 running over pulleys near the roof of the vehicle at S. When elevated the lower end of the pulley may be attached to any convenient support in a manner very familiar to those skilled in the art and which needs no description. This device affords a very convenient mess table and is of sufficient width when opened out and supported by the cross bars L L to afford sleeping bed arrangements for the crew of the vehicle; it being wide enough when opened out to accommodate them crosswise of the vehicle, as shown in Fig. 6. In the front of the vehicle I have shown a semicircular projection B^4. This may be used as a kitchenette as shown in section in Fig. 2. A small firepot B^5 is at the bottom, the products of combustion being carried away by a chimney B^6. Suitable cooking apparatus is provided as at B^7 and above this warming ovens B^8 B^9, the arrangements of which may be varied to suit circumstances or convenience. Upon each side of this kitchenette are provided openings T T for observation or other purposes, both of which are shuttered in the manner in which the

side holes N N are shuttered. It is obvious that the proportions of this vehicle may be varied extensively and also the details of arrangement may be varied to suit circumstances or the wishes of the parties operating it. I have described them in detail as much for the purpose of showing the capacity of the vehicle and its purposes rather than involving any principle except that such device may be useful and form a part in such a vehicle. The object is to provide an armored vehicle capable of being drawn by a so-called tank or tractor, which shall afford the conveniences for a maximum number of soldiers not only in the transportation but in respect to offense or defense upon the battle field. To enable them to live indefinitely therein according to the amount of provisions provided and to become a defensive or offensive unit in warfare.

Each side of the vehicle has its shell extending nearer to the ground or tread of the rear wheels at U and an expansion or widening thereof at U′ also extending nearer to the roadway at U^2. The widening is for the purpose of allowing the front wheels to swivel upon the caster described. At the extreme lower edge I attach beams, preferably of wood, U^2 which in case of very rough ground or in case of the wheels falling into a depression, will ride upon the surface of the ground sled fashion and thus support the vehicle and enable it to pass over the trenches or other very rough surfaces. These are angled upward in front at U^3 for the purpose of overcoming obstacles. I think wood is preferable as its friction upon the earthly surfaces is less than that of metal, especially if such surfaces are wet. I do not wish to confine myself to the material to which these so-called runners U^2 are to be made. With the facility of raising the body, heretofore described, upon the wheels it is obvious that a great amount of adjustment is provided for traversing rough surfaces. I do not provide a floor thus allowing the occupants to walk if they desire or ride at will. In passing over shell holes, etc., they can support themselves by cross bars or chains if it is necessary to do so. It is obvious that machine guns may be employed therein as well as guns of heavy caliber.

The operation of the device may be fully understood from the foregoing description.

What I desire to claim is:

1. A car composed of two side members slidably supported upon traction wheels, means for elevating or lowering it upon said tractor wheels, cross bars intermediate the bottom and roof supporting said sides with respect to each other, pockets in the side walls thereof, perforations in the side walls thereof adjacent to said pockets, a compartment which may be operated as a kitchenette, substantially as and for the purpose described.

2. A car composed of two side members slidably supported upon traction wheels, means for elevating or lowering it upon said tractor wheels, cross bars intermediate the bottom and roof supporting said sides with respect to each other, pockets in the side walls thereof, perforations in the side walls thereof adjacent to said pockets, a platform normally carried from the roof of said car, means for raising and lowering said platform to any desired intermediate position, said platform being composed of three parts, a comparatively wide central part and two comparatively narrow parts, each of said narrow parts being hinged to the central part, substantially as and for the purpose described.

3. A trailer, adapted to be drawn by a tractor; mounted upon adjustable wheels, means for adjusting the height of the trailer from the ground upon said wheels, an open bottom to said trailer, cross bars intermediate the lower and upper edges of the side walls of said trailer, pockets in the side walls of said trailer and openings therein, an adjustable platform normally carried to the roof of said trailer but capable of being lowered to an intermediate position and restored to its normal position, and means for adjusting said platform, substantially as described.

In testimony whereof, I sign this specification.

EPHRAIM HOWLAND.