

(No Model.)

4 Sheets—Sheet 1.

H. GENTZEN.  
SOLDIER'S CART.

No. 417,017.

Patented Dec. 10, 1889.

Fig. 1.

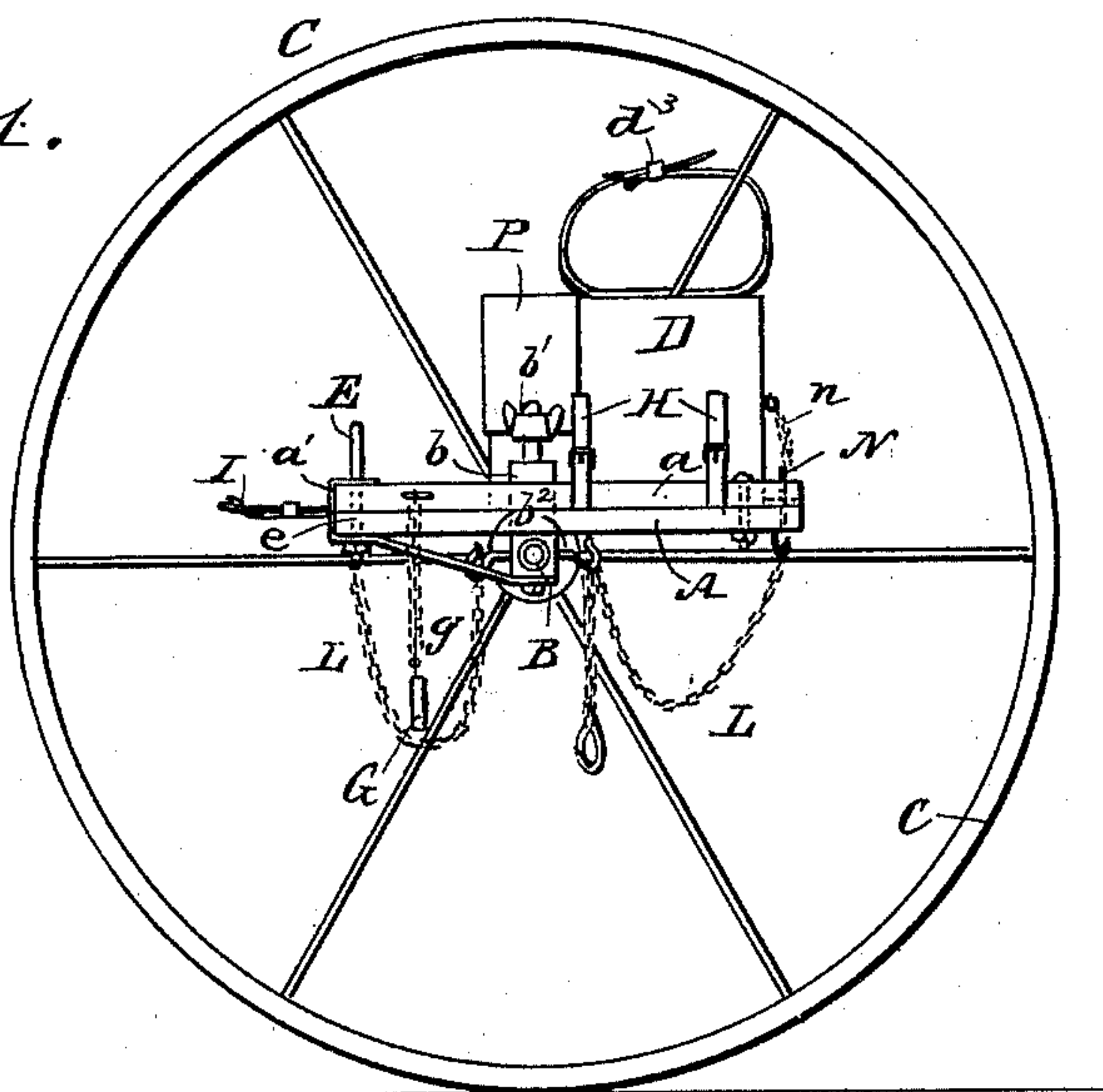


Fig. 2.

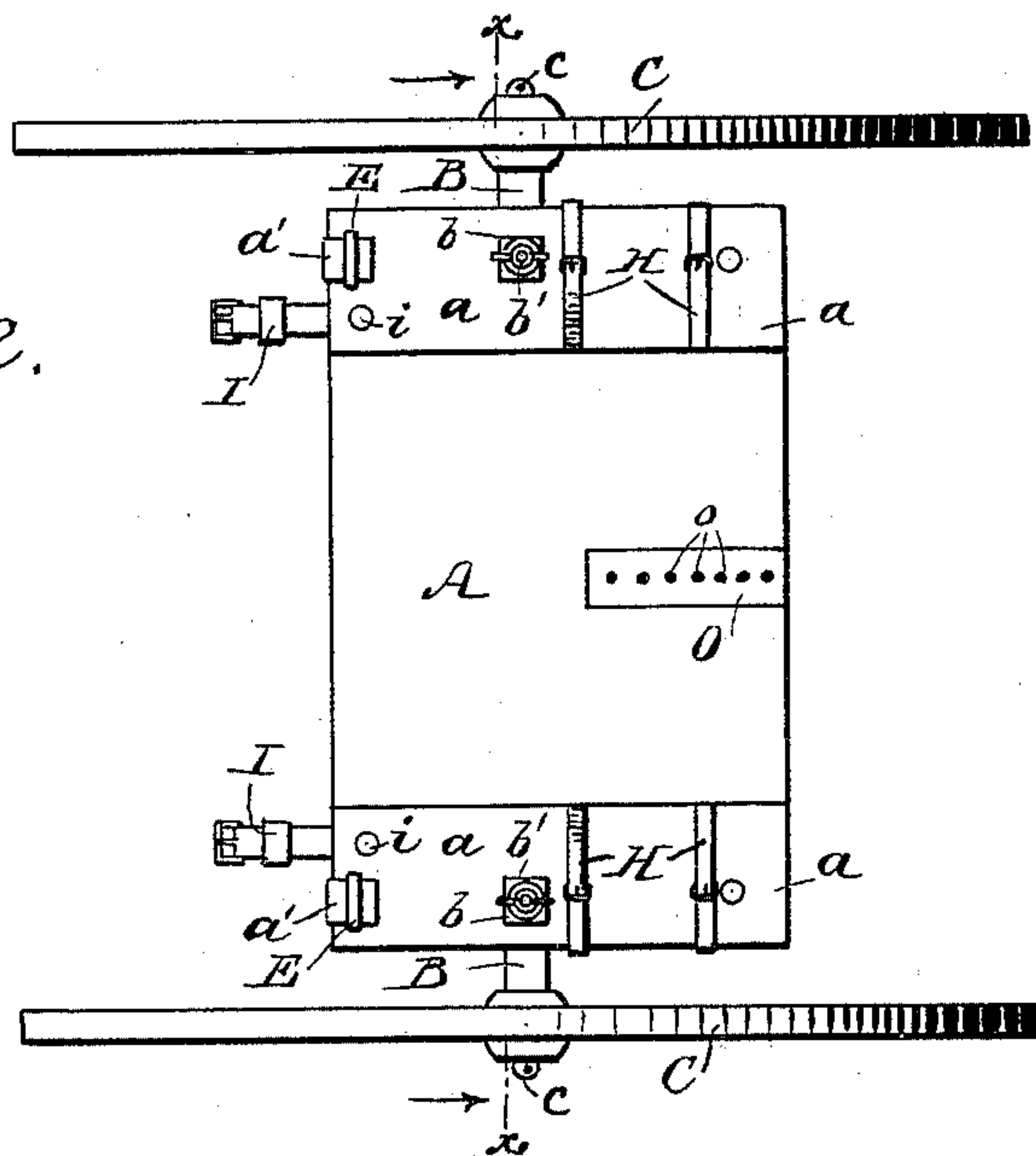
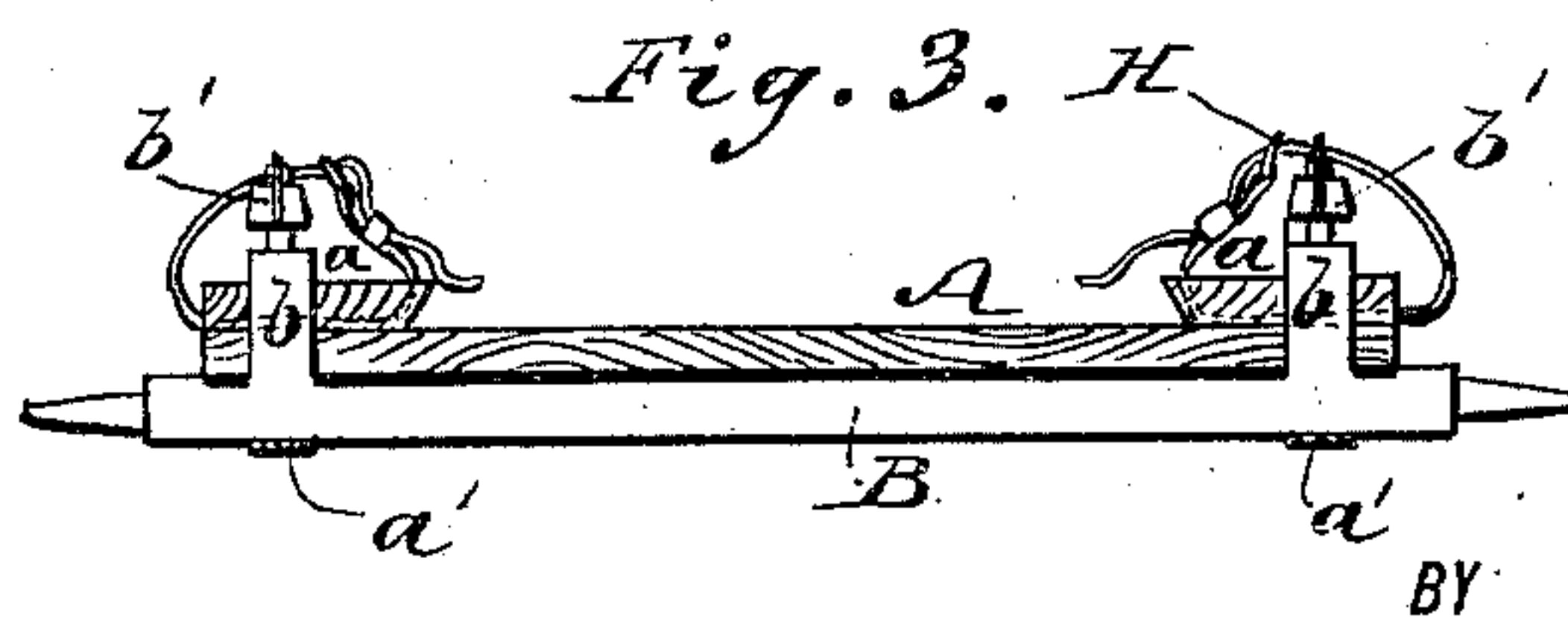


Fig. 3.



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ATTORNEYS.



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Fig. 7.

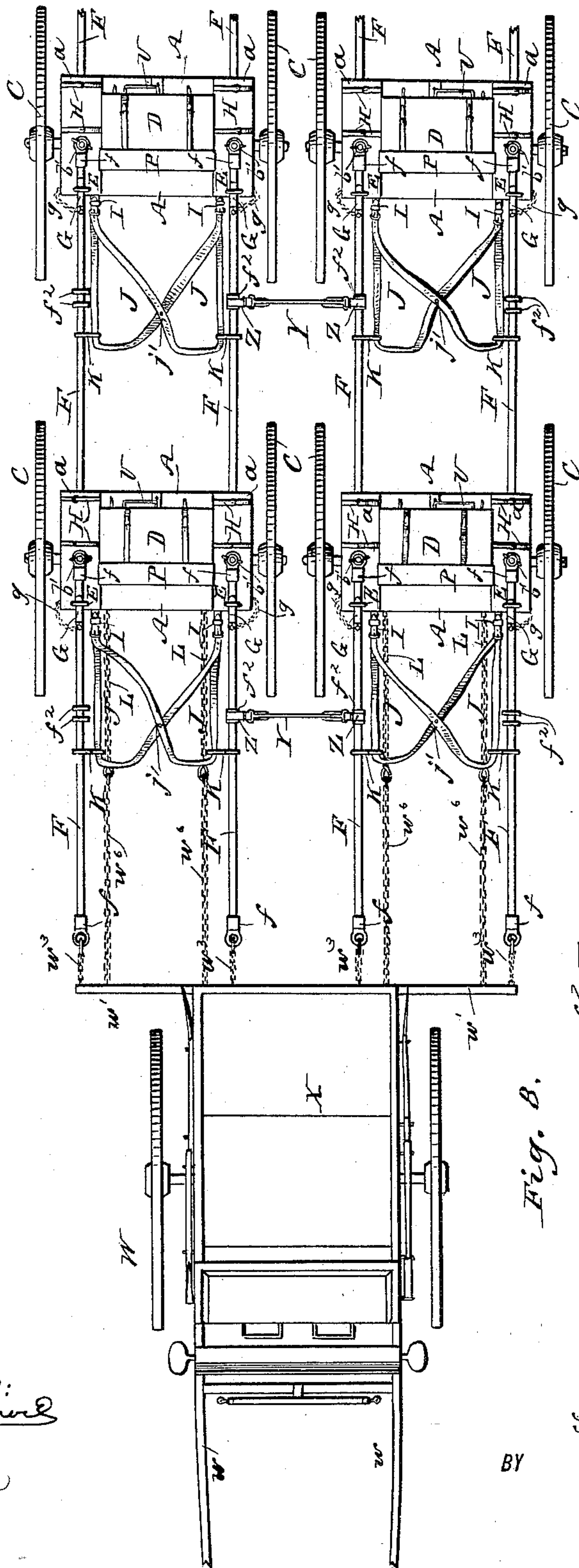
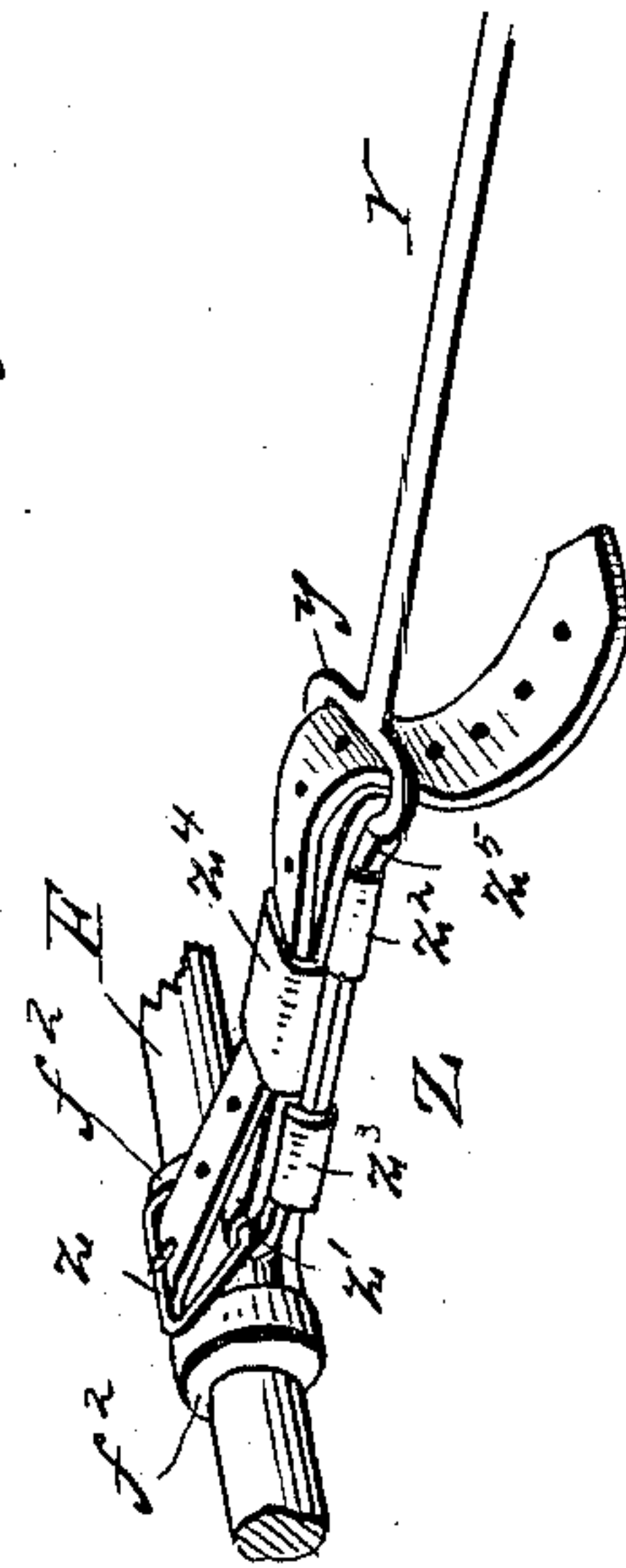


Fig. 9.



Fig. 8.



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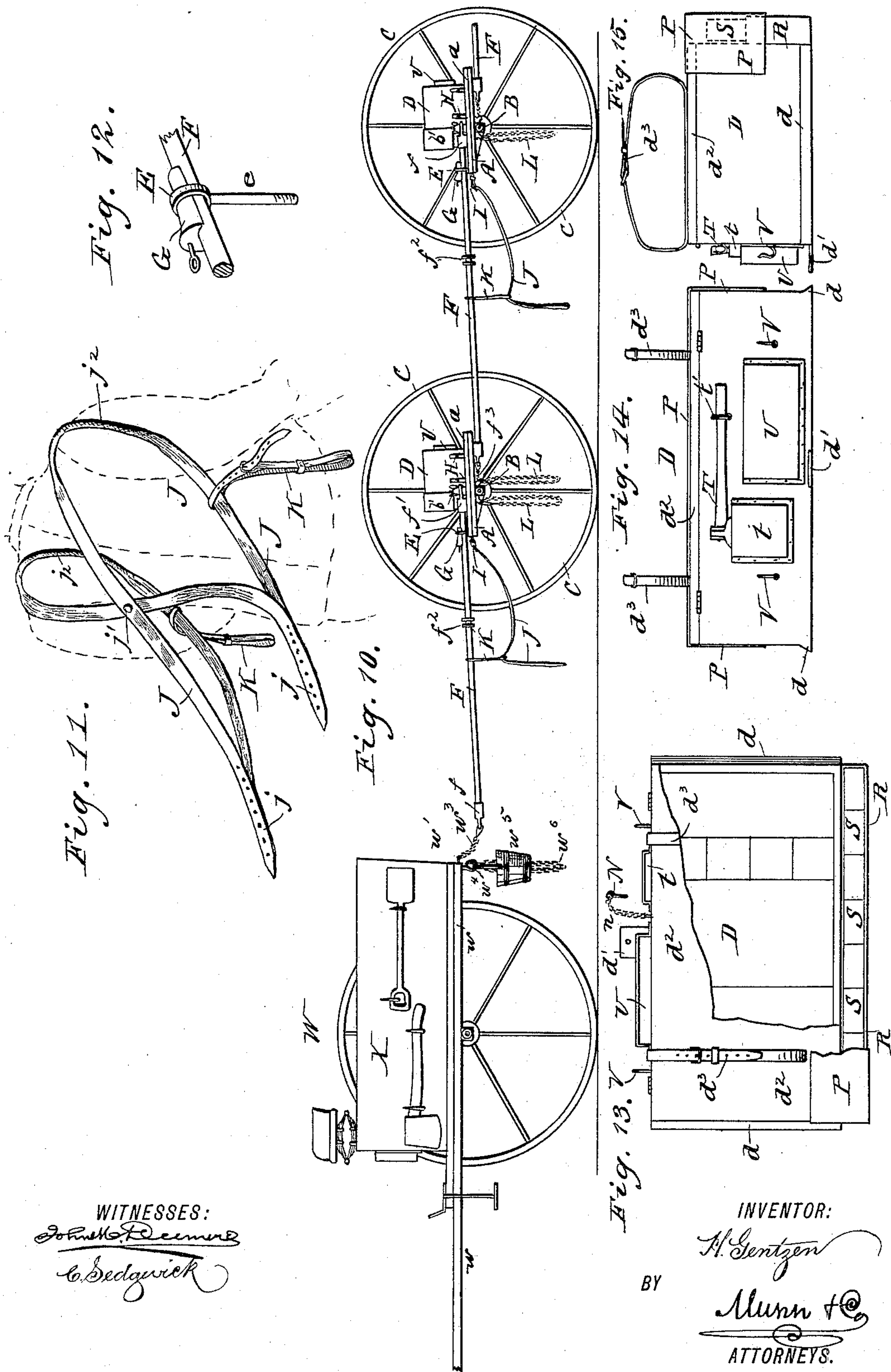
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# UNITED STATES PATENT OFFICE.

HERMAN GENTZEN, OF FORT RINGGOLD, TEXAS.

## SOLDIER'S CART.

SPECIFICATION forming part of Letters Patent No. 417,017, dated December 10, 1889.

Application filed July 17, 1889. Serial No. 317,790. (No model.)

*To all whom it may concern:*

Be it known that I, HERMAN GENTZEN, of Fort Ringgold, in the county of Starr and State of Texas, have invented a new and Improved Soldier's Cart, of which the following is a full, clear, and exact description.

My invention relates to carts designed more especially for soldiers' use, and has for its object to provide inexpensive, light, strong, and conveniently-arranged carts adapted for carrying the rations, baggage, and accouterments of one man, and adapted also when coupled together for the safe carriage of disabled men from the field by the least possible number of attendants, and adapted also to be coupled together in pairs side by side, and to be coupled in front of each other and also to a mule-cart to allow one animal to draw the baggage of from six to ten or more men, and to carry from the field two, four, or six men at a time, the carts being thus as well adapted for hospital service as they are for relieving or lessening the fatigues of the march.

This invention will first be described, and then will be particularly pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of one of my improved soldiers' carts with one wheel and the shafts removed. Fig. 2 is a plan view of the cart with the ration-box and shafts removed. Fig. 3 is a transverse vertical section of the cart-body, taken on the line *x x* in Fig. 2. Fig. 4 is a bottom plan view of two of the carts as arranged for carrying a wounded soldier, the shafts of one of the carts being broken away. Fig. 5 is a detail view of part of the body or frame of a mule-cart to which a number of the soldiers' carts will be connected. Fig. 6 is a perspective view of one of the two tent-poles which preferably form the shafts of the soldier's cart. Fig. 7 is a plan view showing how carts for a squad of soldiers are coupled to each other and to the mule-cart. Fig. 8 is a perspective view showing the connection of the cart-coupling or stay-bar with the adjacent shaft of a cart. Fig. 9 is a perspective

view of one of the cart-wheel retaining-nuts. Fig. 10 is a side view of the coupled soldiers' and mule carts represented in Fig. 7. Fig. 11 is a perspective view of the draft-straps by which a soldier pulls his cart, and shows the soldier's body in dotted lines. Fig. 12 is an enlarged perspective view of the cart-shaft supporting-eye and key and part of the shaft held thereby. Fig. 13 is a plan view of the ration-box with its covers partly broken away. Fig. 14 is a front view of the ration-box, and Fig. 15 is an end view of the box.

The body or platform A of the soldier's cart consists, preferably, of a thin hard-wood board about three feet long and two feet wide and fastened to the axle B by bolts or otherwise. The axle is provided with end arms, on which the two wheels C C of the cart are placed and held by retaining-nuts *c*, (one of which is shown in Fig. 9 of the drawings,) said nuts being made with an end projection having a slot or hole *c'*, into which a bar or rod may be passed to tighten or loosen them more conveniently.

The cart-axle B is provided with two upwardly-projecting parts or studs *b b*, which pass through the body A and cleats *a a* thereon, and at their reduced threaded upper ends receive thumb-nuts *b'*, by which the cart-shafts are held to the body and axle, as hereinafter more fully explained. The cleats *a a*, which extend from front to rear of the body A, are beveled or cut under at their inner edges to overlap beveled cleats *d d*, which project from opposite ends of the bottom of the ration-box D, which will be hereinafter described.

The cart-body A is stayed to the axle B at each end by a metal strap *a'*, which is screwed or bolted to the under side of the axle and extends forward to the front of the body and thence upward and rearward to lap onto the top of the body. These straps or braces are each fastened to the cart-body by a bolt *e*, which passes also through the fixed cleat *a*, and has a head formed as an eye or ring E, through which will be passed one of the shafts F of the cart. The shafts are preferably two metal tubes, each having a nut or head *f* at each end provided with a perforated lug *f'*, and which I use as poles in constructing a



tent, for which Letters Patent No. 394,262 were granted to me December 11, 1888. In applying these tent-poles to use as shafts for the cart one end of each pole is slipped through the ring E, which is large enough to allow the end nut  $f$  of the pole to pass through it, and the perforated lug  $f'$  of the nut is then slipped onto the reduced threaded end of the axle-stud  $b$ , and the nut  $b'$  is then applied to the stud above the pole or shaft, whereupon a key G, which is held conveniently at hand by a chain  $g$ , held to the cart-body, is slipped into the ring E over the body of the shaft to keep it from shaking, and as will be understood from Figs. 7 and 12 of the drawings. The shafts of each cart are each provided with a couple of rings  $f^2$ , to facilitate coupling of two carts side by side by a stay-bar, as hereinafter explained. Two pairs of straps H H, held in grooves in the under side and inner edge of the body-cleats  $a$ , provide for strapping to the cart-body the remainder of the poles and braces of the soldier's tent. A pair of straps I I, held to the front of the cart-body and between it and its cleats by bolts  $i$ , are provided with buckles for attachment of the draft-straps J J, by which the soldier pulls his cart and the accouterments thereon. The pull-straps J J (most clearly shown in Fig. 11 of the drawings) consist of a pair of straps, two ends of which are crossed before the four ends are secured together in pairs at  $j$ , where they have series of holes to receive the tongues of the buckles of the cart-straps I I. Where the two straps are crossed they will be secured together by a button  $j'$ , which comes over the soldier's back between his shoulders, and the parts  $j^2$  of the straps which come over the shoulders and under the arms of the soldier are preferably bent into a round tube, which is stuffed with any suitable filling and does not chafe the soldier while he is pulling the cart. The dotted lines in Fig. 11 of the drawings, and indicating the soldier's body, illustrate how the straps are adjusted so as to cross his back and pass around under his arms and leave his chest free, and also leave his arms and hands entirely free for handling his gun to protect himself while on the march. The soldier may very quickly slip the straps from his shoulders, and to prevent the straps from falling onto the ground when not in use to pull the cart I have provided for each strap J a tie-strap K, which is engaged with the adjacent cart-shaft F and holds it up clear of the dust, mud, or dirt of the road. (See Figs. 7 and 10 of the drawings.)

To the axle B of the cart are fixed two pairs of hooks  $b^2$ , each pair being fastened one at the front and the other at the rear of the axle near each end of it. To each of these hooks is connected a chain L, thus allowing the axles of two carts to be connected by coupling the two chains L L at each side together by means of a snap-hook  $l$ , carried by one of the chains. This allows the canvas

bottom M of the tent, before mentioned, to be hung by cords  $m$  between the shafts and opposite pairs of connected chains L L, as shown in the inverted plan view, Fig. 4 of the drawings, to allow a wounded or disabled soldier to be drawn off the field or to be helped on the march, the canvas forming a comparatively-comfortable cot-bed for him, and he may be quickly and safely moved or carried on the two carts by one man pulling the forward cart. It will be understood that the forward ends or nuts  $f'$  of the shafts F of the rear cart are coupled to short chains  $f^3$ , which are connected or hung from hooks  $b^3$ , fixed in the axle B of the front cart; hence the strain of pulling the rear of the two carts comes on the axle of the front cart, and the chains L, whether the canvas bottom M is stretched between them or not, form draft-connections which relieve the axles of the carts of considerable strain.

When the chains L are not used for coupling the carts or to stay the cot-canvas, the chains connected to the hooks  $b^2$  at one side of the cart will be hung onto the hooks at its other side, as shown in Fig. 4, or both of the front chains L may be hung onto a hook fastened at the front center of the cart-body, and both the rear chains may be hung onto a hook secured at the rear center of the cart-body, the latter disposal of the chains being shown in Fig. 1 of the drawings. When two carts are used for carrying a disabled soldier on the canvas cot, the two ration-boxes D of the carts will be moved apart as far as possible on the cart-bodies A to give ample room on them for the head and feet of the soldier or for his clothing-bag or other articles for his comfort, and the baggage and accouterments of the wounded man will be carried on one of the carts, while the goods of the other soldier pulling him will be packed on the other cart, both men thus having their rations and all necessities with them. The cot-canvas M may be tied directly to the straps of the rear cart, if preferred, and in this case the chains L will assist the shafts to carry the cot-canvas and its occupant.

Before describing the manner of coupling a number of the carts to each other and to the mule-cart I will explain the construction of the ration-box D, with more special reference to Figs. 1, 2, 13, 14, and 15 of the drawings, as follows:

The ration-box, besides its end flanges  $d$ , which fit between the body-cleats  $a$ , is provided with a rear projecting lip or plate  $d'$ , having a hole through which a pin N, held by a chain  $n$  to the box, may be passed into any one of a series of holes  $o$  made in a metal plate O, fixed to the cart-body A, to hold the box at any required position on the body to nicely balance the load on the cart-axle. The holes  $o$  preferably extend through the cart-body. The body is made with a hinged lid  $d^2$ , to which are fixed a couple of straps  $d^3$ , for binding the soldier's baggage on top of



the box. The lid-hinges are at the back of the box, and to the free edge or front of the lid is fixed a rubber cloth or other suitable apron P, which projects rearward and downward sufficiently to cover the top of a galvanized-iron box or compartment R, which is fixed to the front of the ration-box, and will carry a full complement of cartridges in regulation-packages S, placed in the box R. By raising the apron P, fixed to the lid of the ration-box, the cartridge-packages S are uncovered and may be easily removed as required, and the apron P falling back fully protects the cartridges from the weather. The inside of the box D is subdivided into a series of compartments, preferably seven, for holding bread, water, meat, beans, rice, &c., in quantity sufficient for about ten days' rations and three days' water for one man. At the back of the ration-box is provided a pocket *t*, receiving the head of a hatchet T, the handle of which has support in a hook *t'* on the box, and also a pocket U, for carrying bandages for wounds and oil for lubricating the cart-axles, and a small rod for adjusting the axle-nuts. Hooks VV are also provided on which to hang a soldier's haversack and canteen.

The mule-cart W (shown in Figs. 7 and 10 of the drawings) is or may be of any approved design as regards its body, axle, and wheels, allowing it to carry in its body X, rations and water for an officer and driver who ride on the cart and ten days' forage and three days' water for the mule drawing the cart, a suitable mess-chest, and one camp-table and two camp-chairs for the officer. To the back ends of the cart-shafts *w w* is connected by mortise-and-tenon joints a cross-bar *w'*, which preferably projects from each side of the body at its rear end. The joints of the cross-bar and shafts are re-enforced by T-shaped metal plates *w<sup>2</sup>*, bolted to the upper and lower faces of the shafts and cross-bar, as shown in Fig. 5 of the drawings. To this cross-bar *w'* are attached four short chains *w<sup>3</sup>*, each provided at its free end with a snap-hook device adapted to engage the eye or opening of the front nut *f'* of one of the soldier's cart-shafts and four chains *w<sup>6</sup>* for engaging the four front chains L of the two front soldiers' carts. (See Fig. 7 of the drawings.)

The mule-cart has a comfortable spring-seat and a foot-board, and at opposite sides of its body is provided with hooks to receive axes, shovels, or other tools useful in camp or on the field. The cross-bar *w'* is also provided with hooks *w<sup>4</sup>*, on which water-pails or buckets *w<sup>5</sup>* may be hung.

In coupling the soldiers' carts A to the mule-cart, to have one mule draw four, six, eight, ten, or more of the soldiers' carts, two of the carts A will be connected by their shafts F with the chains *w<sup>3</sup>* on the mule-cart cross-bar *w'* and by their front chains L with the chains *w<sup>6</sup>* on the mule-cart, and the rear carts will be coupled behind each other in pairs side by side, the shafts of the rear carts being con-

nected to the axle of the cart in front of it by the chains *f<sup>3</sup>*. Each pair of carts are also connected by a laterally-ranging stay bar or link Y and two straps Z, which hold the two carts at a given distance apart on the road and prevent collision of one cart with another. This coupling Y Z Z is shown applied to use in Fig. 7, and its construction is best illustrated in Fig. 8 of the drawings, the latter figure showing one end of the bar Y and its strap-connection Z with the cart-shaft F. It will be noticed that the bar Y is provided at each end with a loop *y*, which the strap Z engages. This strap is made mainly of one piece of leather doubled onto itself at one end to form a bight *z'*, into which the strap-buckle *z* is caught or held, and in or to this doubled end of the strap are sewed or fastened three loops *z<sup>2</sup> z<sup>3</sup> z<sup>4</sup>*. The strap is next passed through the eye *y* of the metal bar or link Y, and is then passed through the loop *z<sup>2</sup>* and is drawn around tightly, thereby forming a loop or bight *z<sup>5</sup>*, which holds the link-eye securely. The strap end is then passed along and through the next loop *z<sup>3</sup>*, and thence it is passed around the cart-shaft F, between its fixed rings or collars *f<sup>2</sup> f<sup>2</sup>*, and then the strap is passed through and caught in the buckle *z*, and thence it is run through the third loop *z<sup>4</sup>*, and thence through the link-bar eye *y*. When the carts are thus coupled in pairs, each pair of carts will be held apart and one cannot much outrun the other; hence any required number of pairs of carts may be coupled together and to the mule-cart, and may be drawn easily and safely by one animal, however rough the road may be.

It is manifest that with little training soldiers may be drilled to set up their carts and couple them easily and quickly by commands of the sergeant or other officer of each squad of men, and that in transferring troops and army-stores time will be economized and good condition of the men will be maintained, thus promoting their full efficiency in service, as there will be no stoppages on account of bad spots or ruts in the roads or in fording rivers, as the carts in those places should be uncoupled and pulled by the men, and by carrying three days' water any desert can be crossed and camps can be made anywhere. The carts, whether pulled directly by the men or by or from the mule-cart, are specially adapted for hospital service in conveying the wounded from the field, while leaving the maximum number of men to face the enemy.

While there are a number of novel features in the construction of each cart, I consider that the means I employ for coupling the carts together and to the mule-cart are legitimate parts of my invention, assuring the greatest utility of the entire system of army or soldiers' carts herein described.

When each soldier's baggage is strapped onto the ration-box D, with his overcoat on top, the canvas M, which forms the bed-bottom of his tent, will be laid over all as a pro-



tection from the weather, and a rifle-boot passed through the straps  $d^3$  may then be slung onto the top of the load to carry the man's rifle when it is not necessary for him to handle it for protection. Although I prefer to use the tent-poles F for shafts to the carts, and specially claim them for this service, any other suitable shafts may be fixed to the body of the cart. Should it be necessary, the carts may be quickly knocked to pieces by the hatchets which they carry, to prevent their capture in serviceable condition by the enemy.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A soldier's cart made with a body and an axle held thereto and provided with studs  $b$ , having nuts  $b'$  and adapted to secure the inner end of a shaft or pole, substantially as herein set forth.

2. A soldier's cart made with a body, an axle thereon provided with studs  $b$ , having nuts  $b'$  and adapted to secure the inner end of a shaft or pole, and a ring or loop held to the body and receiving the shaft held by the axle-stud and nut, substantially as herein set forth.

3. A soldier's cart made with a body, an axle thereon provided with studs  $b$ , having nuts  $b'$ , a brace  $a'$ , held to the axle and bent around the edge of the body, and a bolt  $e$ , passed through the brace and body and having a ring or loop-head E, substantially as herein set forth.

4. A soldier's cart provided with a body, having studs  $b$  fitted with nuts  $b'$ , combined with detachable shafts provided at one end with a nut or head  $f$ , having a perforated lug  $f'$  adapted to the studs  $b$ , and nuts  $b'$ , substantially as herein set forth.

5. A soldier's cart provided with a body, having studs  $b$  fitted with nuts  $b'$ , and also having guide rings or loops E, combined with shafts F, having heads  $f f'$  adapted to the studs and nuts, and keys G, fitted to the rings and shafts, substantially as herein set forth.

6. A soldier's cart made with a body hav-

ing top cleats, a ration-box fitted loosely on the body between the cleats and provided with a perforated lug, and a pin or key adapted to holes in the lug and cart-body, substantially as herein set forth.

7. A soldier's cart provided with chains or flexible cot-supports adapted to be stretched between two carts along the shafts of the rear cart, substantially as herein set forth.

8. A soldier's cart provided with chains L, having snap-hooks 11, allowing coupling of four chains of two carts to sustain a cot-canvas between the carts, substantially as herein set forth.

9. A soldier's cart provided with hooks  $b^2$  on its axle, and shafts F F', and hooks  $b^3$ , and chains  $f^3$ , connecting the shafts to the hooks  $b^3$ , combined with chains L, held to the hooks  $b^2$  and coupled between the shafts of the rear cart, which are connected to the chains  $f^3$  of the front cart, and a canvas M, hung between the shafts of the rear cart, substantially as herein set forth.

10. Soldiers' carts placed in pairs side by side and provided with a stay between each pair of carts for holding them in proper positions laterally while on the road, substantially as herein set forth.

11. The combination, with two soldiers' carts provided with shafts having collars or straps  $f^2$ , of a stay-bar and straps connecting the carts at said collars, substantially as herein set forth.

12. In soldiers' carts, the coupling connecting two carts side by side and consisting of a bar or rod Y, having a loop  $y$  at each end, and straps Z, provided with a buckle  $z$ , bights  $z' z^5$ , and loops  $z^2 z^3 z^4$ , substantially as described, for the purposes set forth.

13. In soldiers' carts, the combination, with one or more pairs of carts, of a mule-cart having a rear cross-bar  $w$  and chains  $w^3 w^6$ , to which the soldiers' carts are coupled, substantially as herein set forth.

HERMAN GENTZEN.

Witnesses:

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GEO. M. CHASE.