Aug. 9, 1932. F. G. KOEHLER 1,870,633

TRUCK

Filed May 3, 1930 2 Sheets-Sheet 1

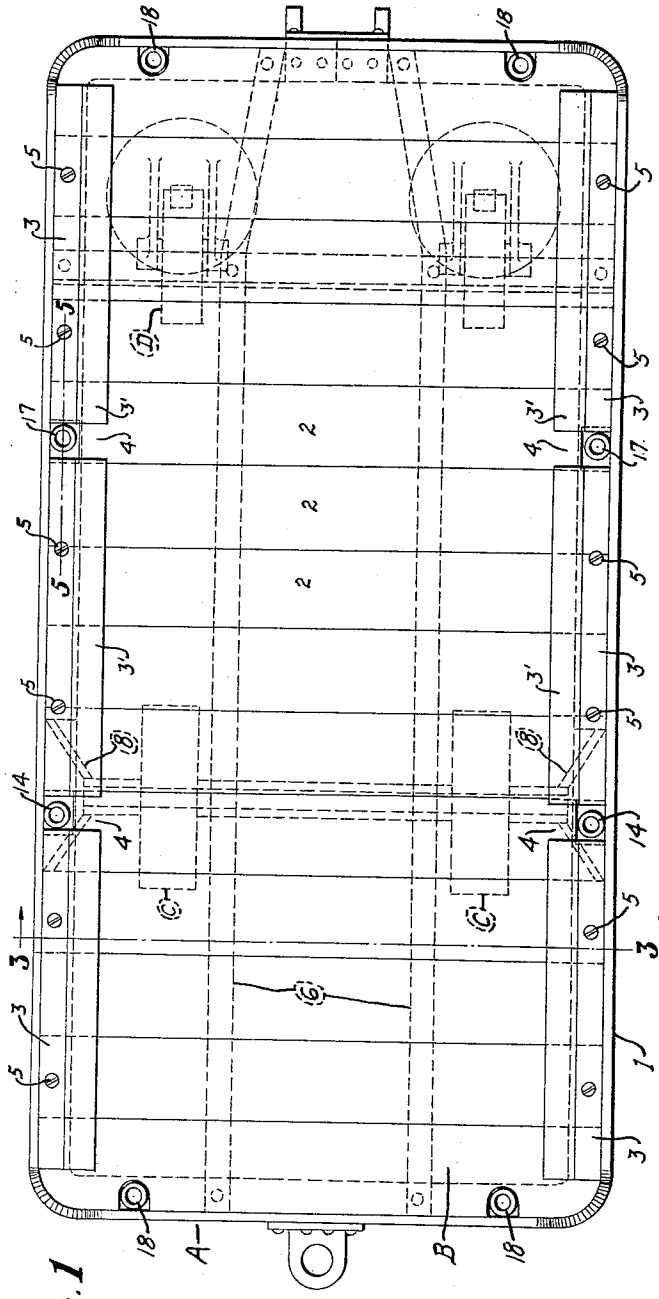


Fig. 1

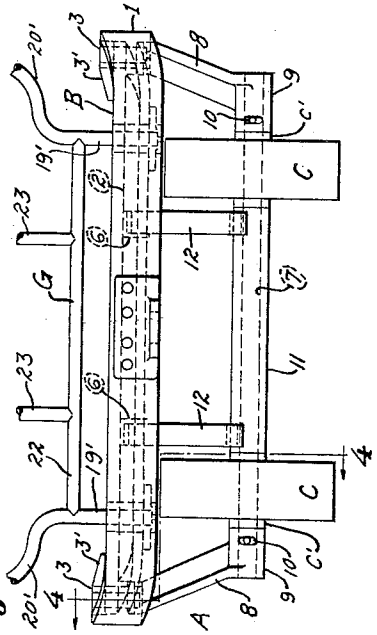


Fig. 2

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Filed May 3, 1930 2 Sheets-Sheet 2

FIG. 3

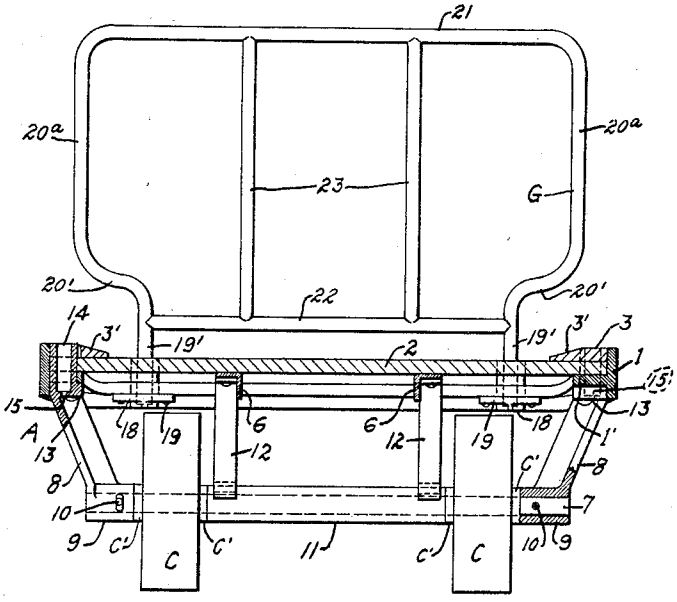


FIG. 4

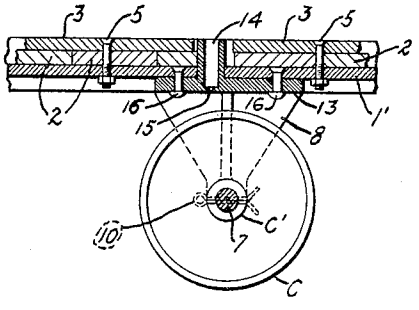
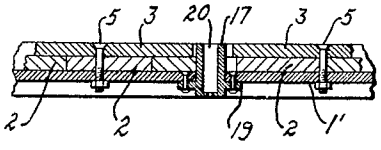


FIG. 5



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UNITED STATES PATENT OFFICE

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TRUCK

Application filed May 3, 1930. Serial No. 449,398.

This invention relates generally to trucks, and more specifically to trucks of the type employed in railroad stations, factories, warehouses, and a great variety of other places, for transporting articles from place to place, an important object of the invention being to so construct a truck of the type described that the deck frame thereof is flush with the top surface of the deck of the truck at the ends thereof.

Prior to this invention it has been the practice to provide trucks of the type to which my improved truck belongs with strips which rested upon the top surfaces of the decks of the trucks at the opposite sides of the decks of said trucks. These strips were usually provided with inclined upper faces and were intended to provide means whereby articles stacked on the trucks would be tipped upwardly at their outer ends. The outer portions of the articles on the trucks rested upon the strips referred to, and because of the tipped up position of said articles they were less likely to fall from the truck when the same was in motion.

Prior to this invention the strips referred to, in addition to extending upwardly from the top surfaces of the decks of the trucks, were located entirely above the deck frames of said trucks, and therefore said deck frames did not serve to protect said strips from blows which would tend to injure or displace them from the trucks. In other words, these strips were held in place only by the fastening devices which secured them to the decks of the trucks, and as a result of this situation said strips were frequently injured or displaced when subjected to blows, as, for instance, when the trucks were being loaded.

Recognizing the disadvantages encountered in the use of trucks constructed as heretofore, I have devised the truck construction disclosed herein, which, briefly stated, includes a deck frame which extends above the top surface of the deck of the truck at the sides thereof for the purpose of affording protection to the strips at the sides of said deck. At the ends of the deck of my improved truck, however, where no strips are present, the deck frame does not extend above the top surface of said deck, but said deck frame is depressed at these points so that the upper edge thereof is flush with the top surface of the deck. The deck frames of my improved trucks are depressed at the ends of the truck as described so as to eliminate an upstanding flange at said ends of the trucks which would prevent workmen from removing articles from the trucks by sliding said articles over the edge of a truck at an end thereof, for it is obvious that if an article being removed from a truck were enclosed in a box or wood crate, as is usually the case, the edge of the upstanding flange portion of the deck frame would bite into the wood of the box or crate and make it necessary that same be lifted bodily from the truck. By depressing the deck frame of my improved truck at the ends of the truck, it is plain that a heavy article may be slid from the deck of my improved truck at the ends thereof without hindrance from the deck frame at said ends of the truck.

Another object of the invention is to provide a truck with a gate, which is so constructed and is capable of being so associated with the truck that said gate will extend to the opposite corners of the truck at an end thereof, even though the pockets by which said gate is supported are located inwardly of said corners.

In the operation of trucks of the type referred to above, the motive power for imparting motion to the trucks usually is supplied by a power driven tractor to which one or more of the trucks are attached, or by a suitable motor mounted directly on a truck, and as a result of this condition the trucks are usually caused to travel very rapidly, said

trucks frequently moving at a rate of speed as high as eight miles per hour.

The trucks are usually provided with gates at the opposite ends thereof which are intended to prevent the boxes or other articles stacked on the trucks from falling from the trucks when they are in motion. The gates referred to are ordinarily supported in pockets carried by the frames of the trucks, and due to the tendency for articles to be cast from the ends of the trucks at the corners thereof as said trucks are in rapid motion, and particularly when said trucks are making turns at relatively high speed, it has been found to be quite desirable to have the gates extend entirely across the ends of the trucks to the opposite corners thereof. Due to the construction of the gates formerly employed, the use of gates which extended entirely across the ends of the trucks necessitated the provision of pockets at the corners of the truck frames, but because of the depressed ends of the deck frame of my improved truck, the location of the pockets at the corners of the truck is not feasible.

In view of the foregoing, I have devised the truck gate disclosed in the present application, which, briefly stated, is so constructed that said gate may extend entirely across an end of a truck from one to the opposite corner thereof, even though said gate is supported in pockets which are spaced inwardly from the opposite corners of the truck at the end thereof at which the gate is positioned.

Another important feature of the invention resides in the novel construction and arrangement of the stake pockets of my improved truck.

With the foregoing and other objects in view, the invention comprises the novel construction, combination and arrangement of parts hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown the preferred embodiment of the invention. However, it is to be understood that the invention comprehends changes, variations and modifications which come within the scope of the claims hereunto appended.

Fig. 1 is a plan view of a truck constructed in accordance with the present invention.

Fig. 2 is an end elevation of my improved truck.

Fig. 3 is a section taken on line 3—3 of Fig. 1.

Fig. 4 is a section on line 4—4 of Fig. 2.

Fig. 5 is a section on line 5—5 of Fig. 1.

In the drawings, A designates the improved truck generally, said truck comprising a bed or deck portion B, ground wheels C which are capable of rotary movement only with respect to the truck, and ground wheels D which, in addition to being mounted for rotary movement, are arranged to swing about vertical axes so as to permit the direction of travel of the truck to be controlled.

The bed or deck portion B of the truck comprises a substantially rectangular, and preferably endless, deck frame 1 which in cross-section is preferably the approximate shape of a T-beam with one leg 1′ thereof arranged horizontally, as shown clearly at the right-hand side of Fig. 3. The horizontally arranged leg 1′ of the deck frame 1 extends inwardly from the vertical leg of the deck frame 1, and said horizontal leg 1′ extends entirely around said frame, as shown by dotted lines in Fig. 1. The horizontal leg 1′ of the deck frame serves as the support for the boards or other elements 2 which provide the deck of the truck, the opposite end portions of said elements resting upon the portions of said horizontal leg at the opposite sides of the deck frame.

Arranged longitudinally of the truck A at each of the opposite sides thereof is a plurality of strips 3, the strips on each side of the truck being spaced from each other as indicated at the points designated by the reference character 4 for a purpose to be hereinafter set forth. Formed through each of the strips 3 is a plurality of apertures through which bolts 5 are passed, said bolts, which are provided with countersunk head portions, being passed also through apertures formed through certain of the elements 2 and in the horizontal leg 1′ of the deck frame 1, and being provided with nuts which are screwed on the lower screw-threaded portions of said bolts. It is plain that those deck elements 2 through which bolts 5 pass will be very securely held in place with respect to the deck frame, but it will be noted that some of said elements do not have bolts passed therethrough. However, the opposite end portions of the last mentioned deck elements are confined between the horizontal leg 1′ of the deck frame and the associated strips 3, and therefore said deck elements are very securely maintained in their proper positions in the deck structure. The strips 3, as shown in Fig. 3, are each provided with a downwardly inclined top face 3′ so as to avoid abrupt shoulders at the inner edges of said strips which may interfere with free handling of articles on the truck.

By referring to Fig. 3 of the drawings it will be noted that the deck frame 1 extends above the top surface of the deck of the truck a sufficient distance to bring the top edge of the deck frame at the sides of the truck approximately flush with the top surfaces of the strips 3. In view of this arrangement it is obvious that the strips 3 are protected by the upwardly extended portions of the deck frame and hence will not receive blows which might otherwise be imparted to the outer edges of the strips, which blows would tend to injure or displace the strips 3. At the opposite ends of the truck A the deck frame is

depressed, as shown clearly in Fig. 2 and by shade lines in Fig. 1, so that the portions of the deck frame at these points are in a lower vertical plane than said deck frame at the sides of the truck. The extent of the depression of the deck frame 1 at the opposite ends of the truck is such as to bring the top edge of said deck frame flush with the top surface of the deck at these points, hence the deck frame at the opposite ends of the truck will not produce an impediment to the free sliding of articles from the truck at the ends thereof.

Extended longitudinally of the truck is a pair of supporting elements 6 which are preferably of angle formation in cross-section. The elements 6 are supported at their opposite ends upon the portions of the horizontal leg 1′ of the deck frame at the opposite ends of the truck, and as the top faces of the elements 6 are in the same horizontal plane as the top face of the portions of the horizontal leg 1′ at the sides of the truck, said elements will aid the said horizontal legs in supporting the deck elements 2.

The ground wheels C are mounted for rotary movement on a stationary shaft 7 (Fig. 3), which shaft is supported by brackets 8 extended downwardly from the deck frame 1. The brackets 8 are each provided with a sleeve portion 9 in which an end portion of the shaft 7 is located, and said shaft at each end thereof is provided with an aperture formed therethrough which registers with alined apertures formed through the wall portion of the sleeve portion of the adjacent bracket 8. Extended through the alined apertures formed through the shaft and sleeve portions of the brackets at each end of the shaft 7 is a cotter pin 10, said cotter pins being intended to prevent relative movement of the sleeve portions with respect to the shaft whereby the tendency for the brackets to apply friction to the hub portions of the wheels C when an unusually heavy load is placed on the truck is eliminated.

The ground wheels C are provided with hub portions C′, and 11 designates an elongated tube which surrounds the shaft 7 and is interposed between the hub portions of the ground wheels C, as shown in Fig. 3. The hub portions of the ground wheels C at the outer faces of said wheels contact with the sleeve portions of the brackets 8, and the hub portions of the wheels C at the inner faces of said wheels contact with the opposite end faces of the tube 11, and it is plain, therefore, that said wheels are prevented from moving longitudinally of the shaft 7. 12 designates supporting members which are secured to the longitudinally extended elements 6 and extend downwardly therefrom to contact with the elongated tube. These members serve to provide additional support for the deck of the truck.

The brackets 8 at the upper ends thereof are each provided with a horizontal web portion 13 which contacts with the lower face of the horizontal leg 1′ of the deck frame 1. Formed integral with this horizontal web portion 13 of each bracket and extended upwardly therefrom is a hollow tubular portion providing a stake pocket 14, said stake pocket being closed at its lower end by a wall through which an aperture 15 is formed to permit dirt or other accumulation to pass from said pocket. The horizontal leg 1′ of the deck frame is provided with an aperture through which the hollow tubular portion in which the stake pocket 14 is formed passes, said aperture being approximately the same diameter as said hollow tubular portion. In assembling a truck the hollow tubular portions are forced or pressed through the apertures in the horizontal leg 1′ of the deck frame with the aid of a suitable pressure apparatus, such as a hydraulic press, for instance, and the frictional grip between the walls of the apertures and the outer faces of the hollow tubular portions will aid in maintaining the brackets 8 in place with respect to the deck frame. To be doubly sure of the rigidity of the brackets 8, I pass rivets 16 through apertures in the web portions 13 of the brackets and in the horizontal legs 1′ of the deck frame, said rivets having countersunk head portions at their upper ends so that same will not necessitate gouging out of the deck elements 2, as would be the case if said rivets had head portions which extended above the top face of the horizontal leg 1′.

In addition to the stake pockets 14 associated with the brackets 8, my improved truck includes a stake pocket 17 at each side of the truck and a pair of spaced apart stake pockets 18 at each end of the truck. Each of the stake pockets designated by the reference characters 17 and 18 includes a base portion 19, the top face of which is arranged in contact with the lower face of the horizontal leg 1′ of the deck frame, and a hollow tubular portion 20 formed integral with said base portion and extended upwardly therefrom. Just as in the case of the hollow tubular portions in which the stake pockets 14 are formed, the hollow tubular portions 20 are forced through apertures formed through the horizontal leg 1′ of the deck frame which are of approximately the same diameter as said hollow tubular portions, hence the frictional grip between the walls of said apertures and the outer faces of said hollow tubular portions will be sufficient to maintain the entire pocket providing element in its proper position with respect to the deck frame. However, as an additional precaution, I employ rivets which are extended through apertures formed in the base portions 19 and in the horizontal leg 1′ of the deck frame, whereby the stake pocket providing ele-

ments are made doubly secure. The associated stake pockets 18 at the opposite ends of the truck and the associated stake pockets 14 and 17 at each side of the truck are spaced apart the same distance, whereby the same gate may be used at either end or either side of the truck. As shown clearly in Fig. 1, the stake pockets 14 and 17 at the sides of the truck are located in the spaces 4 between the adjacent strips.

G designates my improved truck gate, which includes a pair of leg portions 19′ which are spaced apart from each other a distance equal to the distance between a pair of associated pockets. The gate G is formed preferably of metallic rod or bar material, or tubing, and immediately above the legs 19′ the side members 20ª of the gate extend outwardly and upwardly, as shown clearly in Fig. 3. At the top of the gate G a member 21 joins the opposite side members 20ª. 22 designates a bracing member, which extends from the leg 19′ at one side of the gate to the leg 19′ at the opposite side of said gate, and 23 designates a pair of upright members which extend from the top member 21 to the member 22. It will be noted by referring to Fig. 3 of the drawings that the wide portion of the gate G above the member 22 is approximately as wide as the truck deck, hence, except for the relatively slight space below the angular portions 20′ of the side members 20ª, the gate G will extend entirely across the end of the truck.

In the use of my improved gates, the leg portions 19′ of a gate are introduced into a pair of associated pockets, and when one of said gates is used at an end of a truck the wide upper portion of the gate will prevent boxes, or other articles, from falling from the truck by swinging around an end of the gate, as was frequently done heretofore when a gate narrower than the truck deck was used and the truck was turned at a high rate of speed. Also, the narrow lower portion of the gate permits of the use of pockets which are located inwardly from the corners of the truck, which is the preferred arrangement.

By providing my improved truck with a plurality of the strips 3 instead of a single strip extended from end to end of the truck at each side thereof as heretofore, I am enabled to employ shorter sections, and consequently less expensive lumber for this purpose. Also, my improved truck is so constructed and arranged that all of the strips 3 and all of the deck elements 2, excepting the elements 2 at the opposite ends of the truck, are interchangeable, hence much time and expense are saved in assembling the truck. With respect to the deck elements 2 at the opposite ends of the truck, these elements are interchangeable one for the other. Also, by employing the short strips 3 a broken deck element 2 may be replaced by removing a pair of the short strips at the opposite sides of the truck, instead of removing the strips throughout the length of the truck as heretofore.

I claim:

1. A truck comprising a deck, a metallic deck frame surrounding said deck at the marginal edge thereof, said deck frame comprising a structure including a horizontally extended leg, a shaft, brackets for supporting said shaft, and stake pockets on said brackets, said stake pockets being extended through apertures in said horizontal leg of said deck frame of such dimensions with respect to the dimensions of said stake pockets to be frictionally gripped by the walls of said apertures, whereby said stake pockets and the brackets with which same are associated are fixed to said deck frame.

2. A truck comprising a deck, a deck frame surrounding said deck at the marginal edge thereof, said deck frame comprising a structure including a horizontally extended leg, a shaft, brackets for supporting said shaft, stake pockets on said brackets, said stake pockets being extended through apertures in said horizontal leg of said deck frame of such dimensions with respect to the dimensions of said stake pockets as to cause said stake pockets to be frictionally gripped by the walls of said apertures whereby said stake pockets and the brackets with which same are associated are fixed to said deck frame, and fastening devices providing additional means for attaching said brackets to said deck frame.

3. A truck comprising a deck, a deck frame surrounding said deck at the marginal edge thereof, said deck frame comprising a structure including a horizontally extended leg, and stake pockets supported by said deck frame, said stake pockets comprising each a base portion and a recessed portion extended upwardly from said base portion, said base portion being arranged in contact with the lower face of said horizontal leg of said deck frame and said recessed portion being extended through an aperture in said horizontal leg of such dimensions with respect to the dimensions of said recessed portion as to cause said recessed portion to be frictionally gripped by the wall of said aperture, whereby said stake pocket is fixed to said deck frame.

4. A truck comprising a deck, a deck frame surrounding said deck at the marginal edge thereof, said deck frame comprising a structure including a horizontally extended leg, stake pockets supported by said deck frame, said stake pockets comprising each a base portion and a recessed portion extended upwardly from said base portion, said base portion being arranged in contact with the lower face of said horizontal leg of said deck frame

and said recessed portion being extended through an aperture in said horizontal leg of such dimensions with respect to the dimensions of said recessed portion as to cause said recessed portion to be frictionally gripped by the wall of said aperture, whereby said stake pocket is fixed to said deck frame, and fastening means providing additional means for securing said pockets to said deck frame.

In testimony that I claim the foregoing I hereunto affix my signature.

FRANK G. KOEHLER.