June 4, 1946. W. A. SPEAR 2,401,387

CARRIAGE

Filed Jan. 8, 1943 2 Sheets-Sheet 1

Fig. 1

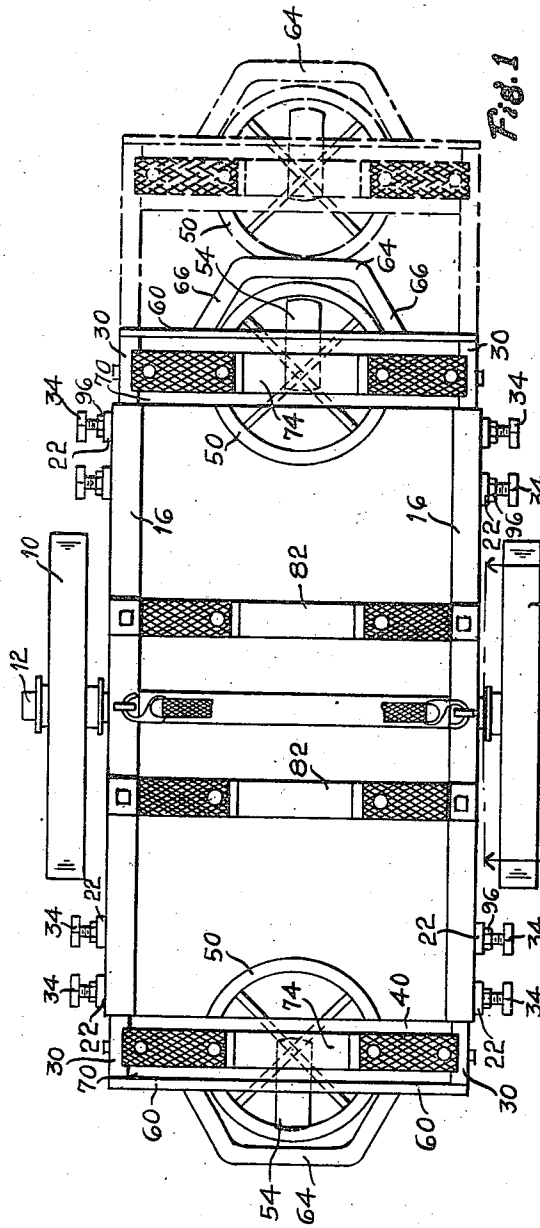
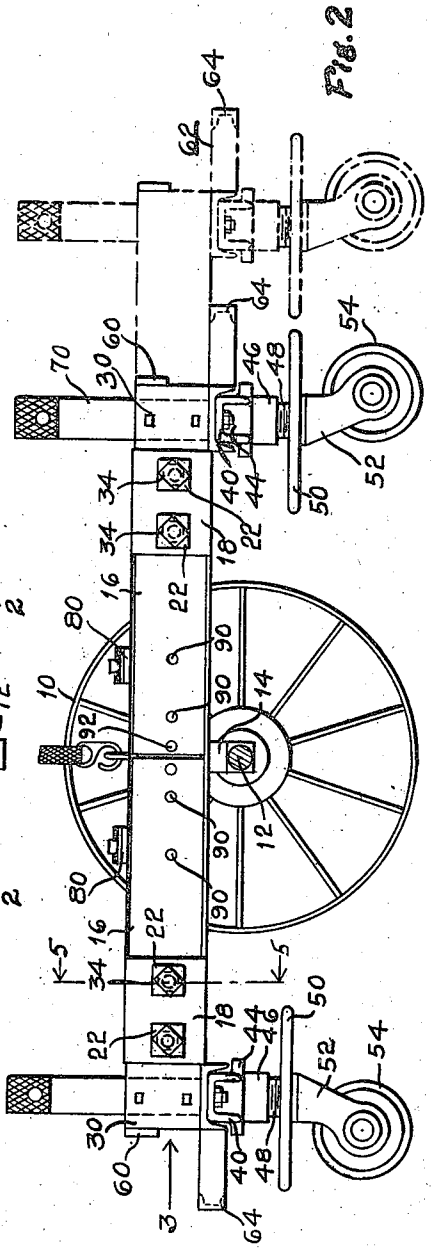


Fig. 2



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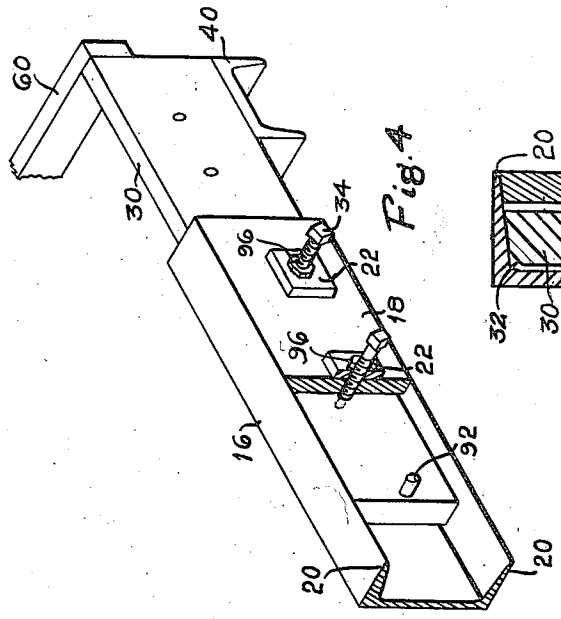


Fig. 4

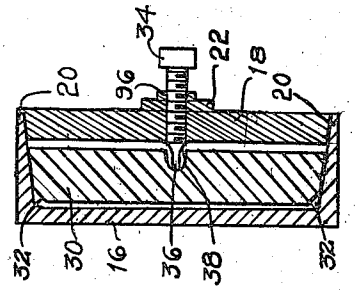


Fig. 5

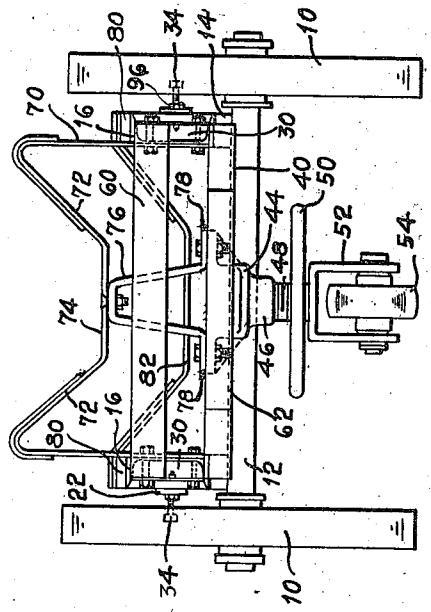


Fig. 3

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2,401,387

UNITED STATES PATENT OFFICE

2,401,387

CARRIAGE

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Application January 8, 1943, Serial No. 471,785

5 Claims. (Cl. 280—35)

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This invention relates to a torpedo carriage and more particularly to a torpedo carriage of the universal type.

In the past, it has been common practice to transport torpedoes prior to use on carriages. The carriages, so to speak, have been made to order for the particular torpedo. Various torpedoes vary in length. This has necessitated the manufacture of several types of carriages, some for the long torpedoes and others for the shorter torpedoes.

An object of this invention is to provide a torpedo carriage that is adjustable, easily adjusted, dependable, sturdy and adapted for use with various sizes and dimensions of torpedoes.

Another object of this invention is to provide a torpedo carriage that includes a support for the end of the carriage, which support functions as a guard and as a bumper for the carriage when in use and as a base for the carriage when it is set on end.

Another object of this invention is to provide an adjustable chassis for the torpedo carriage wherein the adjustment is made near the end of the frame, so as to prevent extensive weakening of the frame.

Other objects and advantages reside in the construction of parts, the combination thereof and the mode of operation, as will become more apparent from the following description.

Referring to the drawings,

Figure 1 is a top plan view of the torpedo carriage.

Figure 2 is a side elevational view of the body with one wheel removed by taking a cross sectional view substantially on the line 2—2 of Figure 1.

Figure 3 is an end view looking in the direction of the arrow 3 of Figure 2.

Figure 4 is a fragmentary perspective view to show details of the adjustable portion of the chassis.

Figure 5 is a fragmentary cross sectional view of one of the side frame members taken substantially on the line 5—5 of Figure 2.

In the drawings, the reference character 10 indicates a pair of main supporting wheels for the carriage, which wheels are journalled upon an axle 12 welded to blocks 14 which, in turn, are welded to the under side of longitudinal channel-shaped frame members 16. These frame members 16 are mounted with the web on the inside and the flanges directed outwardly. The flanges are substantially horizontally disposed when the carriage rests on a horizontal support.

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Heavy plate-like members 18 are welded to the ends of the channels between the flanges of the frame members 16, there being one plate-like member for each end of each frame member. These plate-like members are welded near the outer margins of the flanges 20 of the channel-shaped frame members 16, so as to leave a substantially rectangular opening between the plate-like member 18 and the web or bottom of the frame members 16. The plate-like members 18 have welded thereto suitable nut-like members 22, that have threaded apertures, which apertures extend through the plate-like member 18.

Extension members or bars 30 project into the openings found between the plate-like member 18 and the web or bottom of the frame members 16. Members 30 may be substantially rectangular in shape, with the corners 32 rounded or cut away. These cut-away portions 32 allow for the curvature of the flanges of the frame members. Suitable set screws 34 threadedly engage the nuts 22 and are provided with cylindrical extensions 36 seated in suitable recesses 38 in members 30. The set screws 34 are used in clamping and locking members 30 in positive relation with respect to the end of the channel-shaped frame members 16. There is one member 30 for each corner of the carriage.

An inverted channel member or bar 40 is located in each end of the carriage and is welded to the under side of the outwardly projecting ends of members 30. The channel member 40 functions as a support in holding the ends of members 30 in fixed spaced relation and at the same time provides a support for the caster which will now be described.

The caster assembly includes a bracket 44 positioned in nested relation with respect to the channel member 40. The bracket 44 includes a downwardly extending internally threaded boss 46 receiving a threaded spindle 48 having an adjustable hand wheel 50. The wheel 50 rests upon a forked member 52 having journalled therein a caster wheel 54. The height of the end of the carriage may be adjusted by rotating the wheel 50, which either screws in or unscrews the spindle 48 on the boss 46. The caster assembly per se is old and conventional as far as torpedo carriages are concerned.

The adjustable members or bars 30 are held in spaced relation near the top by a spacing bar or transverse member 60 having its ends welded to the upper portions of the ends of members 30.

When the torpedo carriages are stored, they may be placed on end. Previously it has been

the practice to support the carriage upon the rim of the hand wheel **50** resting on the ground.

A bumper-like extension or member **62** is welded to the forward or the rear flange of the channel member **40**. This bumper is provided with a portion **64** parallel to the longitudinal axis of the channel member **40** and parallel to the transverse spacing bar or member **60**. The bumper-like extension **62** also includes a pair of diagonally disposed portions **66**, forming supports for the portion **64**. When the carriage is not in use, the portion **64** functions as a base for the carriage oriented upon end and the portions **66** function as legs or supports for the carriage. When the carriage is used in transporting torpedoes or wheeled when empty, the portion **64** functions as a bumper, which absorbs shock and also protects the rim of the hand wheel **50**.

The extensible portion of the carriage, including the extension members **30** and channel members **40**, is provided with a torpedo support **70** consisting of a bar having a pair of diagonally disposed sides **72**, lined with leather or other suitable protective material. The diagonally disposed portions **72** merge into a flat area **74** resting upon an inverted U-shaped bracket **76** forming a support therefor. The extremities of the legs of the U-shaped brackets **76** are provided with horizontally disposed portions **78** resting on top of the web of the channel member **40**. By providing diagonally disposed portions **72**, torpedoes of various diameters may be mounted on the same bracket, the point of tangency depending entirely upon the size of the torpedo.

A pair of blocks **80** are welded upon the tops of the channel-shaped frame members **16**. These blocks form supports for hangers **82** which are used for supporting the main body portion of the torpedo. The hangers **82** are fixedly spaced with respect to each other. The supporting members **70** are adjusted with the extensible ends of the carriage, as may clearly be seen in dotted lines in Figures 1 and 2.

The extension members **30**, in addition to the two holes receiving the screws **34**, as shown in Figures 1 and 2, include a pair of holes **90** near the center of the carriage, as disclosed in Figure 2. These holes **90** form seats for the locking screws **34** when the extensible carriage has been moved into extended position. In order to prevent the extensible ends of the carriage from being pulled too far, stop pins **92** are fixedly secured to the center ends of members **30**. When the extensible portions are moved into extended position, the stops **92** abut the plate **18**, so as to arrest the outward movement of the extension. When the stop pins **92** are in engagement with the plate **18**, the screws **34** register with the cavities **90**. When the extensible portion is withdrawn into shortened position, the channel member **40** abuts the ends of frame members **16**, at which time the screws **34** register with the proper cavities or holes in member **30**. This arrangement expedites the adjustment of the carriage from one length to another. Furthermore, when the carriage has been adjusted to proper length and the screws **34** tightened, member **30** is wedged into position and the screws **34** locked into this position by suitable lock nuts **96**.

The extensible carriage that has been described herein is adapted for use with various types of torpedoes. If a short torpedo is to be transported on the carriage, the extensible ends are contracted and locked in this position. If the torpedo is long, the extensible ends may be expanded. Torpedoes may have various diameters. Irrespective of the diameter, the torpedo snugly fits in position on the inclined surfaces of the supporting brackets. This eliminates the necessity of providing individual torpedo carriages for the various sizes of torpedoes, in that the same carriage may be used irrespective of size.

Although the preferred embodiment of the device has been described, it will be understood that within the purview of this invention various changes may be made in the form, details, proportion and arrangement of parts, the combination thereof and mode of operation, which generally stated consist in a device capable of carrying out the objects set forth, as disclosed and defined in the appended claims.

Having thus described my invention, I claim:

1. A torpedo carriage mounted upon a pair of main wheels, said carriage including a chassis having a pair of parallel channel members supported on said wheels, means at each end of the channel members cooperating with the flanges and the bottom of the channels to form openings, and adjustably mounted extension means having portions extending into said openings, said extension means including a caster wheel adjustably mounted for supporting the end of the carriage and a support for the end of the torpedo, said support being mounted upon the extension means above the caster wheel.

2. A torpedo carriage mounted upon a pair of main wheels, said carriage including a chassis, a pair of extension frames, said extension frames being telescopically disposed with respect to the chassis, there being one extension frame on each end of the chassis, means on the chassis for supporting the body of a torpedo, means on the extension frames for supporting the ends of the torpedo, said extension frames being adjustably mounted with respect to the chassis, and means for locking the extension frames in adjusted position.

3. A torpedo carriage mounted upon a pair of main wheels, said carriage including a pair of channel members, each of the channel members having a pair of plates welded thereto, said plates cooperating with the channel members to form sockets, a pair of extension frames, one for each end of the carriage, said extension frames including a pair of parallel members adjustably projecting into the sockets, means for supporting said parallel members in spaced relation, a caster-like wheel, a support for the caster-like wheel connected to said last mentioned supporting means so as to support the ends of the carriage on said caster-like wheel, the length of the carriage being adjustable by adjusting said parallel members to thereby change the length to accommodate various sizes of torpedoes.

4. A torpedo carriage including a chassis having a pair of parallel channel members, a pair of wheels mounted under the center of the chassis, means at each end of the channel members cooperating with the walls and the bottom of the channels to form openings, extension members extending through the openings, a pair of means for interconnecting the extension members in pairs, each of said pair of means including a supporting member welded to the extension members, and means including a plurality of set screws for securing the extension members in adjusted position, the adjustment of said members changing the length of the carriage.

5. A torpedo carriage including a chassis having a pair of parallel channel members, a pair

of wheels mounted under the center of the chassis, means at each end of the channel members cooperating with the walls and the bottom of the channels to form openings, a pair of extension means including telescopically disposed extension members extending through the openings, a pair of means for interconnecting the extension members in pairs, each of said pair of means including a supporting member welded to the extension members, means including a plurality of set screws for securing the extension members in adjusted position, the adjustment of said members changing the length of the carriage, a pair of caster wheel assemblies one for each of the extension means, said caster wheel assemblies being

mounted under the extension means, each of said caster wheel assemblies including an annular bumper-like horizontally disposed wheel mounted concentric with the vertical axis of rotation of the caster wheel, a pair of bumper-like supports one for each of the extension means, each of said bumper-like supports including a portion extending in a direction normal to the longitudinal axis of the carriage, and a pair of diagonally disposed supporting portions attached to the extension means, said bumper-like supports extending beyond the rim of the bumper-like wheels so as to provide a support for the carriage when it is oriented upon end.

WALTER A. SPEAR.