W. S. BICKLEY.

SNUGLY STOWING STOCKLESS ANCHOR.

APPLICATION FILED JUNE 18, 1908.

907,957.

Patented Dec. 29, 1908.

2 SHEETS—SHEET 1.

Fig. 1.

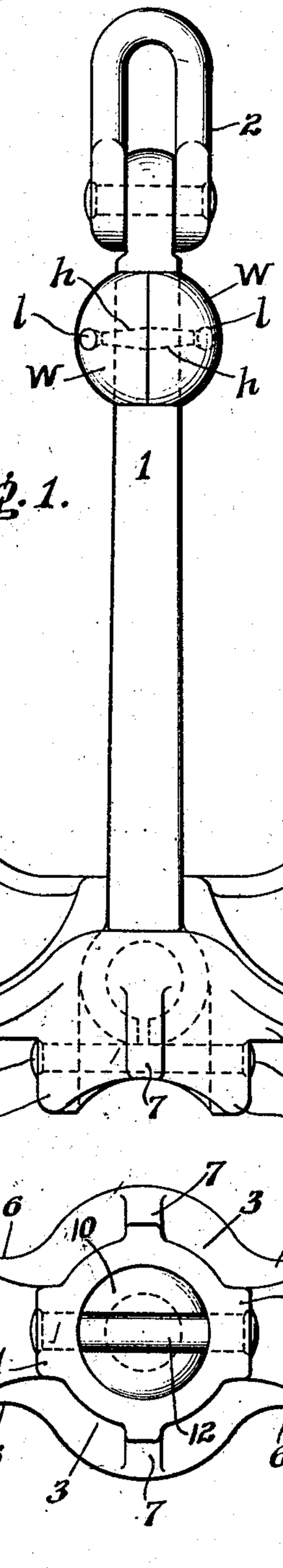


Fig. 6.

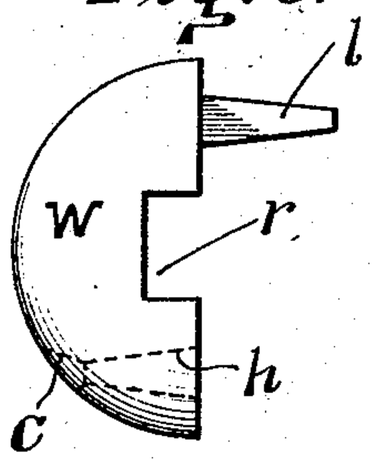
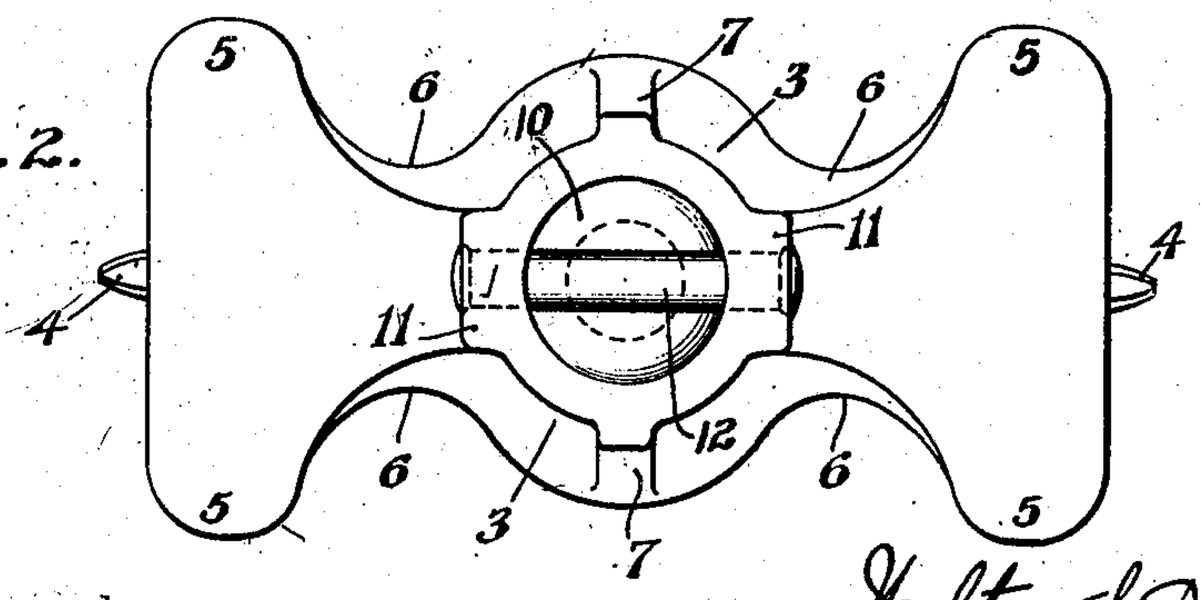


Fig. 2.



Witnesses.

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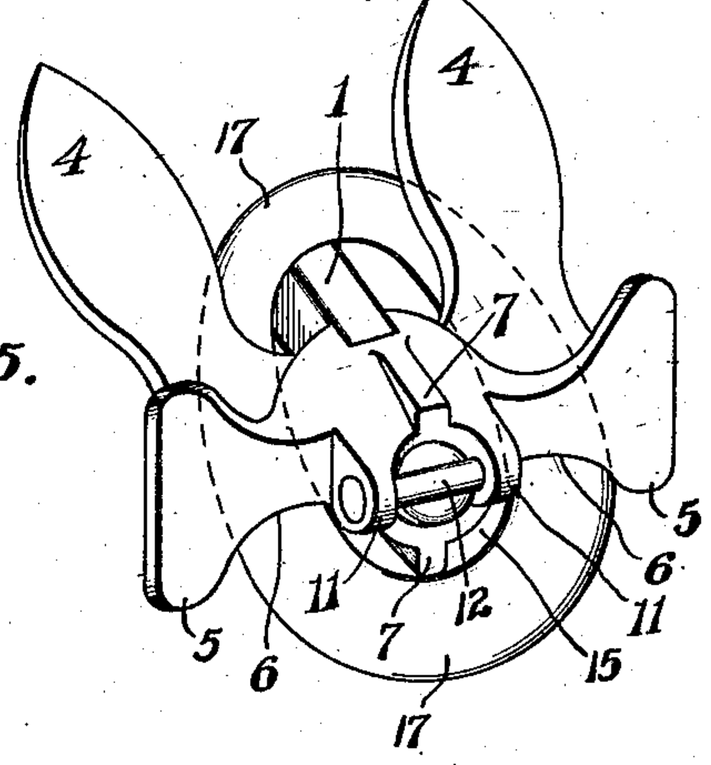

Fig. 5.

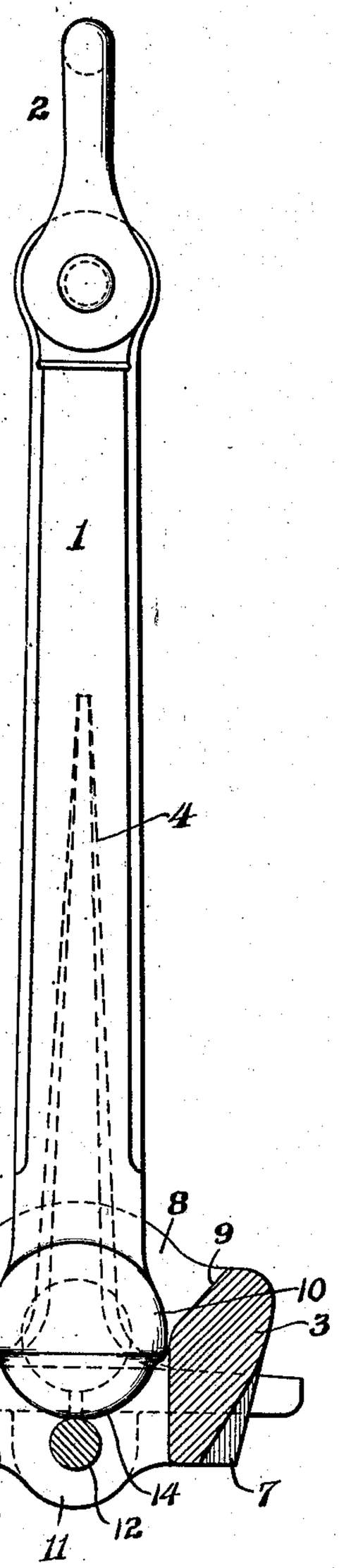

Fig. 3.

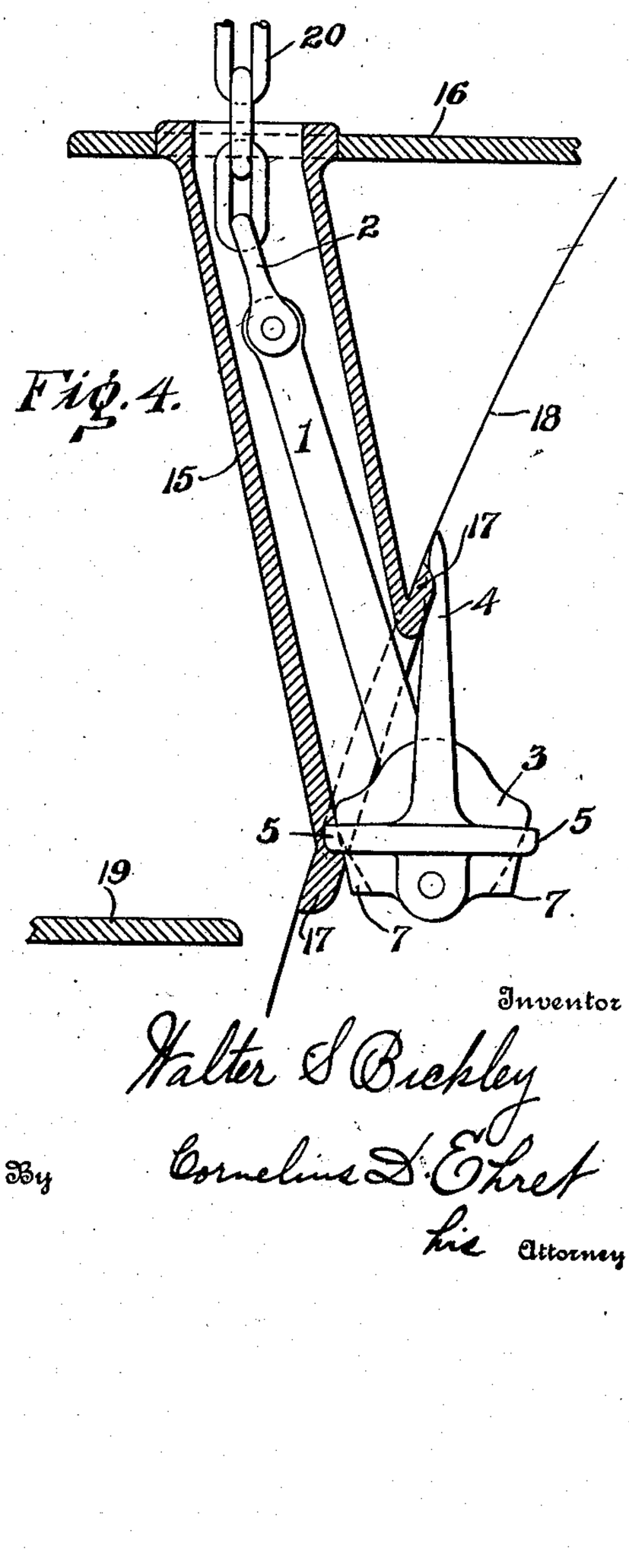

Fig. 4.

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UNITED STATES PATENT OFFICE.

WALTER S. BICKLEY, OF CHESTER, PENNSYLVANIA, ASSIGNOR TO BALDT ANCHOR COMPANY, A CORPORATION OF NEW JERSEY.

SNUGLY-STOWING STOCKLESS ANCHOR.

No. 907,957. Specification of Letters Patent. Patented Dec. 29, 1908.

Application filed June 18, 1908. Serial No. 439,119.

To all whom it may concern.

Be it known that I, WALTER S. BICKLEY, a citizen of the United States, and resident of the city of Chester, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in Snugly-Stowing Stockless Anchors, of which the following is a specification.

My invention relates to stockless anchors, and is an improvement upon the anchor of the type described in prior U. S. Letters Patent No. 570,420, October 27, 1896.

It is the object of my invention to provide a stockless anchor, which shall stow snugly in a ship's hawse pipe and firmly against the sides of the ship, and to operate as an effective stopper in the hawse pipe, and to prevent any movement or pounding of the anchor with respect to the ship. To this end, the head or crown of the anchor, with which the flukes are integral, is provided with long transversely extending ears between which and the center of the crown are deep depressions, whereby the head or crown may clear the hawse pipe lips or flanges and rest upon the ears against the ship's hull, the flukes being divergent outwardly to escape the hawse pipe lips and to rest with their points against the ship's hull. And tripping or deflecting lugs are provided at the middle of the anchor crown or head, such lugs adapted to enter and bear upon the inner wall of the hawse pipe, thereby giving an additional point of support, and for deflecting the flukes against the hull. And the arrangement of the parts is such that the anchor head or crown passes partially into the hawse pipe forming with the shank and other parts a substantial stopper for the hawse pipe, to prevent the rushing of water up through the hawse pipe to the ship's deck.

My invention resides in other features hereinafter pointed out and claimed.

For an illustration of one of the forms my invention may take reference is to be had to the accompanying drawing, in which:

Figure 1 is a front elevation of the complete anchor. Fig. 2 is an end elevation of the same. Fig. 3 is a central section through the anchor head or crown, the shank being shown in elevation. Fig. 4 is a sectional view through the hawse pipe showing the anchor stowed therein. Fig. 5 is a perspective view showing the anchor stowed in the hawse pipe. Fig. 6 is a top plan view of one-half of the shank weight.

The shank 1, carrying the usual shackle 2, is preferably of rectangular or other suitable cross section, particularly where it passes into the anchor head or crown 3 to prevent its rotation with respect to the crown, except in a given plane. The shank 1 tapers slightly from the shackle to the crown and just under the shackle is applied a shank weight W, which may be of spherical or any other suitable form.

The weight W is made in two parts, preferably similar, one of the parts being shown in Fig. 6. A recess *r* is adapted to receive the shank 1, the taper of the shank preventing the weight from dropping down toward the crown. The parts are preferably of cast metal, such as cast steel, and on one side of the recess *r* is provided a tapering lug or pin 1, cast integral with the body, and adapted to pass into a similarly tapering recess or hole *h* on the other side of the recess *r*, in the other half member, so that in each member there is a tapering hole to receive the tapering lug 1 on the other member. When the parts have been placed together around the shank, the ends of the lugs 1 are flattened or riveted over into the countersinks *c* which terminate the holes *h*. This weight serves to overcome the buoyancy or lifting power of an anchor rope secured in the shackle 2, causing the shank to lie substantially parallel with the bottom of the body of water and to prevent it being lifted up or held in an upright position by the buoyancy of a rope or other means attached to the anchor.

Cast integral with the head or crown 3 are the flukes 4, which preferably diverge for the purposes hereinafter set forth. Extending transversely to the anchor head and integral therewith, and disposed at right angles to the plane of the flukes 4, are the ears 5, 5 and between the ears and the center of the crown or head are deep depressions 6. On each side of the crown, approximate its middle, are provided integral lugs 7.

At the middle of the crown is an opening 8 to permit the passage of the shank 1 whose angular movement with respect to the crown is limited by the surfaces 9. On the end of the shank is formed an integral ball or sub-

stantially spherically shaped member 10, for which a suitable bearing socket is provided in the crown 3 to either side of the opening 8. Through the lugs 11 is passed a pin 12 which serves simply to keep the shank 1 from dropping out through the rear opening 13 in the head 3. The lower end of the shank has an enlargement having a continuous substantially spherical shape, without grooves or other features, the spherical surface 14 being here shown of slightly less radius than the radius of the principal ball portion 10. By this construction, the shank 1 may be moved to right or left, as viewed in Fig. 3, against the limiting surfaces 9, 9, the ball 10 serving as the bearing of the shank against the crown 3 and taking the strains, while the pin 12 serves to prevent the shank from dropping out of the head. By this construction, the shank and head portions can be made of cast metal, preferably cast steel, without complications in form, and with a minimum of assembly or machine work.

In Fig. 4, 15 represents the hawse pipe of a ship terminating at its upper end approximate the deck 16, and at its outer end in the lips or flanges 17 fitting the side 18 of the ship. The view here shown is a sectional one looking from the bow towards the stern of the ship, 19 indicating the position of another of the ship's decks. As here shown, the shank 1 is drawn by the chain 20 well into the hawse pipe, the one lug 7 and the hub or central part of the crown 3 riding into the hawse pipe, the lug 7 serving to trip or tilt the crown, so as to throw the flukes 4 in against the side 18 of the ship. With the anchor in this position, it acts as a substantial stopper for the hawse pipe to prevent the flowing of water up through the hawse pipe to the deck 16, as occurs when an anchor is otherwise stowed, and a ship is under substantial headway.

In Fig. 5, which shows the outer and lower end of the hawse pipe, the parts are shown in perspective when the anchor is stowed. Here, the lower lug 7 is seen resting just within the hawse pipe or just beyond the lip 17, the central portion of the crown or head and the shank 1 substantially filling the entry to the hawse pipe. The divergent flukes 4, 4 allow them to pass over to either side of the lips 17, so as not to engage the lips, but to allow the points of the flukes to rest snugly against the ship's side. The ears 5, 5 also bear against the ship's side, the cut away portions 6 serving to allow the parts to clear the lips 17 without engaging them. It follows, therefore, that the anchor may be snugly stowed in the hawse pipe, serving as a substantial stopper, there being bearing points at the ends of the flukes, upon the ears 5, 5, and at the lugs 7 so that the anchor is held tightly, at a plurality of points, against the ship, preventing any movement of the anchor with respect to the ship. This prevents any pounding of the anchor against the ship, such pounding having been possible with anchors of the stockless type heretofore used and which were not adapted to be snugly and firmly stowed.

What I claim is:

1. In a stockless anchor, a crown member having flukes, a shank, a central opening in one side of said crown member to receive said shank, a substantially spherically shaped socket in said crown piece, a ball member integral with said shank and bearing in said socket in said crown piece, the rear surface of said ball member being of continuous substantially spherical shape of less diameter, and a pin extending through said crown piece and in proximity to the continuous substantially spherical end of said shank.

2. A snugly stowing stockless anchor comprising a crown piece, a shank secured therein and movable with respect thereto, flukes upon said crown piece, and ears upon said crown piece disposed at right angles to the plane of the flukes, means for drawing a part of said crown piece into the hawse pipe, and said flukes and ears adapted to clear the hawse pipe lips and bear against the ship's side.

3. A snugly stowing stockless anchor comprising a crown piece, a shank secured therein and movable with respect thereto, flukes upon said crown piece diverging to avoid the hawse pipe lips, and ears upon said crown piece disposed at right angles to the plane of said flukes, means for drawing a part of said crown piece into the hawse pipe, and said flukes and ears adapted to bear against the ship's side.

4. A snugly stowing stockless anchor comprising a crown piece, a shank secured therein and movable with respect thereto, flukes upon said crown piece, ears upon said crown piece disposed at right angles to the plane of said flukes, and a lug approximate the center of said crown piece adapted to bear upon and within the hawse pipe and to deflect said flukes against the ship's side, said flukes and said ears adapted to bear against the side of the ship.

5. A snugly stowing stockless anchor comprising a crown piece, a shank secured therein and movable with respect thereto, flukes upon said crown piece, ears at opposite ends of said crown piece disposed at right angles to the plane of said flukes, and depressions in said crown piece between its middle and said ears to clear the hawse pipe lips, means for drawing a part of said crown piece into the hawse pipe, and said flukes and ears adapted to bear against the ship's side.

6. The combination with a hawse pipe, of a stockless anchor comprising a crown piece a shank secured therein and movable with re-

spect thereto, flukes upon said crown piece, and a lug approximate the middle of said crown piece adapted to enter and bear on said hawse pipe and to deflect said flukes against the ship's side.

7. The combination with an anchor shank, of a weight therefor comprising parts recessed to embrace the shank and each provided with a lug and a hole, the lug on each member passing into and secured in the hole of the other member.

8. The combination with a tapering anchor shank, of a weight comprising members recessed to embrace the shank, each member provided with a lug and a hole, the lug on each member engaging and fastened in the hole of the other member.

9. An anchor weight comprising cast metal parts recessed to embrace an anchor shank, each member provided with a lug cast integral therewith, and a hole, the lug on each member adapted to pass into the hole in the other member and to be riveted therein.

10. The combination with the tapering shank of a stockless anchor, of a weight member embracing said shank approximate the shackle end thereof, the taper of said shank preventing movement of said weight member away from the shackle end of said shank.

11. A stockless anchor comprising a crown piece, a shank secured therein and movable with respect thereto, flukes upon said crown piece, a lug approximate the center of said crown piece adapted to enter and bear within the hawse pipe and to deflect said flukes against the ship's side.

12. A stockless anchor comprising a crown piece, a shank secured therein and movable with respect thereto, flukes upon said crown piece, a lug upon said crown piece, ears upon said crown piece disposed at substantially right angles to the plane of the flukes and having a greater width than said crown piece, and a lug upon said crown piece adapted to enter and bear within the hawse pipe, said flukes and ears adapted to clear the hawse pipe lips and to bear against the ship's side.

In testimony whereof I have hereunto affixed my signature in the presence of the two subscribing witnesses.

WALTER S. BICKLEY.

Witnesses:

N. D. POWELL,

R. J. BENNETT.