A. BONOM.

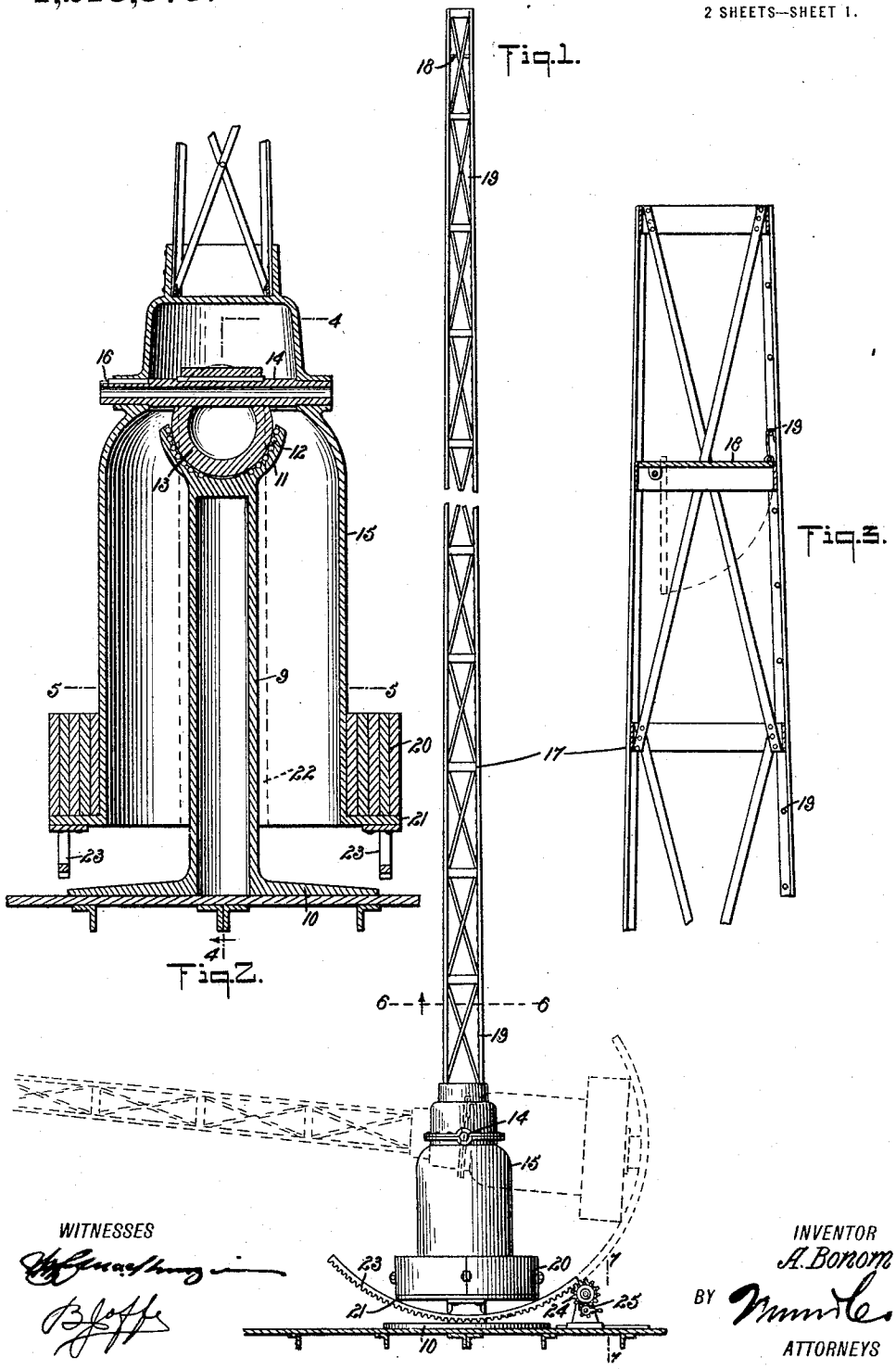
LOOKOUT MAST FOR SHIPS.

APPLICATION FILED APR. 28, 1916.

1,213,579.

Patented Jan. 23, 1917.

2 SHEETS—SHEET 1.



THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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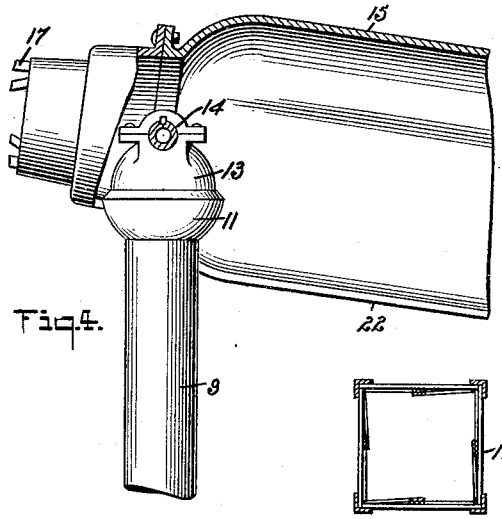


Fig.4.

Fig.6.

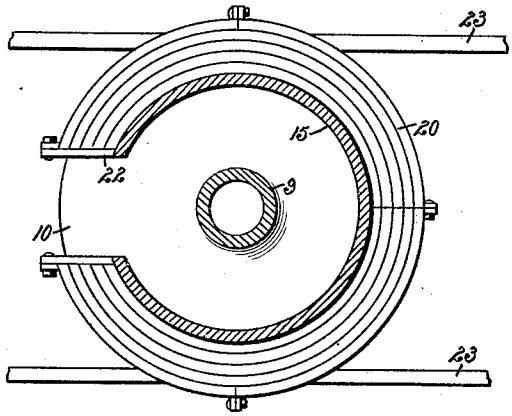


Fig.5.

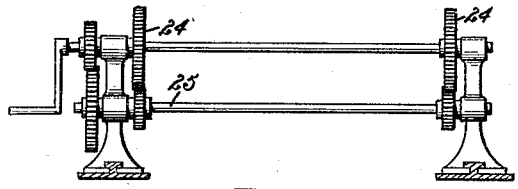


Fig.7.

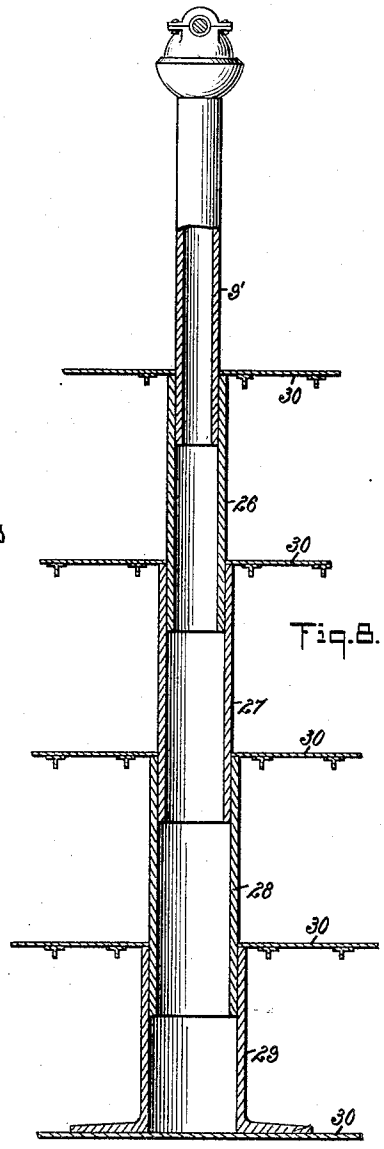


Fig.8.

WITNESSES

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UNITED STATES PATENT OFFICE.

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LOOKOUT-MAST FOR SHIPS.

1,213,579. Specification of Letters Patent. Patented Jan. 23, 1917.

Application filed April 28, 1916. Serial No. 94,283.

To all whom it may concern:

Be it known that I, ALFRED BONOM, a citizen of the Republic of France, and a resident of Paterson, in the county of Passaic and State of New Jersey, have invented a new and Improved Lookout-Mast for Ships, of which the following is a full, clear, and exact description.

This invention relates to a lookout mast and the object thereof is to provide a mast which will not participate in the rolling and pitching of the ship so that the observer will not be hampered in his observation.

Another object of the invention is to provide a simple and inexpensive mast which may rise considerably above the bridge and which may be lowered to the bridge when necessary.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of parts as herein fully described, illustrated and claimed.

In the accompanying drawings forming part of the application similar characters of reference indicate corresponding parts in all the views.

Figure 1 is an elevation of a lookout mast embodying my invention. Fig. 2 is an enlarged axial section of the lower part of the mast illustrating the double bearing of the mast. Fig. 3 is an enlarged vertical section through the top of the mast. Fig. 4 is a section on line 4—4, Fig. 2, the mast being shown in lowered position, a similar position of the mast being indicated in dotted lines in Fig. 1. Fig. 5 is a horizontal section on line 5—5, Fig. 2. Fig. 6 is a cross section of the column structure on line 6—6, Fig. 1. Fig. 7 is a section on line 7—7, Fig. 1, showing in elevation the motion transmission means for lowering the mast. Fig. 8 is a modified structure of the supporting post or standard of the mast.

Referring to the drawings, 9 is the supporting post, which is preferably hollow. It has a flange 10 at one end constituting the base of the post, whereby it may be secured. The top of the post is in the shape of a semispherical socket 11 the center of which lies in the axis of the post. The socket is properly machined to present a smooth surface for balls 12 on which a master ball 13 rests. The ball 13 has a shaft 14 extending transversely of the post axis and constrained to move with the ball. The extremities of the shaft constitute the trunnions on which a dome 15 is mounted to turn, the dome housing therein, the ball and socket and the major part of the base. A detachable key 16 normally locks the dome to the shaft, whereby said dome is constrained to participate in the movement of the master ball, or vice versa.

The dome carries above the shaft 14 a latticed column 17 of suitable height corresponding to the size of ship on which the mast is to be used. The column at the top has a swinging trap 18 which may be hooked into position on one of the rings 19 of the ladder formed on the longitudinal members of the column. This trap constitutes the support for an observer, known commonly in the marine as a crow's nest. The weight of the mast above the center of the ball 13 is balanced by weights 20 mounted on the flanged base 21 of the dome and secured to the dome in any suitable way. The amount of counterweight 20 used is such as to overbalance considerably the part of the mast above the center of the ball, so that gravity will normally maintain the mast in substantially vertical position, and a slight wind or the rolling or pitching of the ship will not disturb the mast on its pivot from its vertical.

The dome 15 has a longitudinal opening 22 in a plane at right angles to the axis of the shaft 14, which clears the way for the post 9 when the mast is to be lowered to the position shown in dotted lines in Fig. 1 and in full lines in Fig. 4. Although any suitable means may be used for lowering the mast when said mast is not very high, in cases where the height of the mast is considerable, curved racks 23 are properly secured to the flanged bottom 21 in planes parallel with the plane of the opening 22. The center of curvature of said racks is in the axis of the shaft 14.

Pinions or gear wheels 24 mesh with the

racks 23, power-transmission means 25 being provided for actuating the pinions. The power-actuating means and the pinions are preferably mounted on a common frame slidable to and from the racks 23. Or, if desired, the power-transmission means with the pinions can be made stationary and the racks 23 may be made detachable from the dome. When it is desired to lower the mast, the rack 23 is engaged with the pinions, the key 16 is withdrawn, and by actuating the power-transmission means the mast may be lowered to the position shown in dotted lines in Fig. 1 and in full lines in Fig. 4. Normally the mast is supported on a rolling pivot formed by the ball and socket, the shaft 14 only serving as means for lowering or raising the mast.

When the height of the mast is considerable and the mast is of a large cross-sectional area, the supporting post is preferably made in a series of interengaging sections 9′, 26, 27, 28 and 29 respectively, each section having an additional support in the successive bridges and decks 30 of the ship, thus considerably strengthening the support for the mast. Also, in cases where the mast allows, in place of providing the column with a ladder as shown, a winding stairs may be formed.

From the above description it will be seen that my mast is in stable equilibrium and will remain vertical no matter what the oscillation of the boat is, consequently facilitating observation from the top of the mast. The use of such a mast on commercial or marine boats would be of great advantage, as it would allow them to detect easily boats of considerably smaller size, such as submarines, for example, before the submarines could see the boat through the periscope. Furthermore, the top of the mast can be provided with a projector or other signaling instrument, if so desired.

I claim:

1. A lookout mast comprising a supporting post, a ball and socket joint on said post, a shaft disposed transversely to the axis of the post and constrained to move with the ball, a dome revolubly mounted on the shaft and coaxial with the post, means normally connecting the dome to the shaft, a column carried by said dome, and weights carried by the dome to balance the column.

2. A lookout mast comprising a supporting post presenting a ball socket, a ball in said socket, a shaft transversely to the axis of the post and rigid with the ball, a dome coaxial with the post mounted to revolve on the shaft, means keying the dome to the shaft, a column surmounting said dome, and weights carried by the dome at a point below the socket in the post to overbalance the column on the dome, said dome having a longitudinal opening to clear the way for the post when the dome is revolved on the shaft.

3. A lookout mast comprising a supporting post presenting a ball socket, a ball in the socket, a shaft disposed transversely of the axis of the column and constrained to move with the ball, a dome housing said post and mounted to revolve on the shaft, said dome having a longitudinal opening to clear the way for the post when the dome is turned on the shaft, means for turning the dome, means for keying the dome to the shaft whereby the shaft is bound to participate in the movement of the dome, a column surmounting the dome, and weights secured to the dome below the socket in the post to overbalance the column.

4. A lookout mast comprising a supporting post presenting a ball socket, a ball in the socket, a shaft carried by the ball transversely of the post axis, said shaft being constrained to move with the ball, a dome housing the ball and post rotatably mounted on the shaft, said dome having a longitudinal opening to clear the way for the post when the dome is turned on the shaft, a detachable pinion and ratchet arrangement associated with the dome for turning the same, detachable means rigidly securing the shaft to the dome to normally prevent the turning of the dome on the shaft, a column surmounting the dome, and weights carried by the dome below the ball and socket to overbalance the column.

5. A lookout mast comprising a gravitationally operable column mounted on a ball and socket joint located in the longitudinal axis of the column whereby said mast is normally maintained in a substantially vertical position, an auxiliary bearing for said column on said ball and socket joint disposed transversely of the axis of the column, detachable means normally preventing the column from moving on the auxiliary bearing, and detachable means associated with the column for moving the same on the auxiliary bearing.

6. A lookout mast comprising a gravitationally operable column, a pivot for said column in the longitudinal axis thereof at right angles to said axis, a rolling pivot in the longitudinal axis of the column in rigid connection with the first pivot, and detachable means securing rigidly the first pivot to the column whereby normally said column is movable on the rolling pivot and gravity maintains said column in a substantially vertical position.

7. A lookout mast comprising a supporting post, a ball and socket joint on said post, a shaft in rigid connection with the ball disposed transversely of the post axis, a dome mounted to revolve on the shaft and housing the post, said dome having a lon-

gitudinal opening to clear the way for the post when the dome is turned on the shaft, curved racks secured to the dome, the curvature of said racks having their center in the axis of the shaft, pinions engaging said racks, motion transmission means for said pinions, detachable means locking the shaft to the dome whereby said dome is prevented from turning on the shaft and constrained to move with the ball, a column rising from the dome, and weights carried by the dome below the socket of the post to overbalance the column.

ALFRED BONOM.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."