

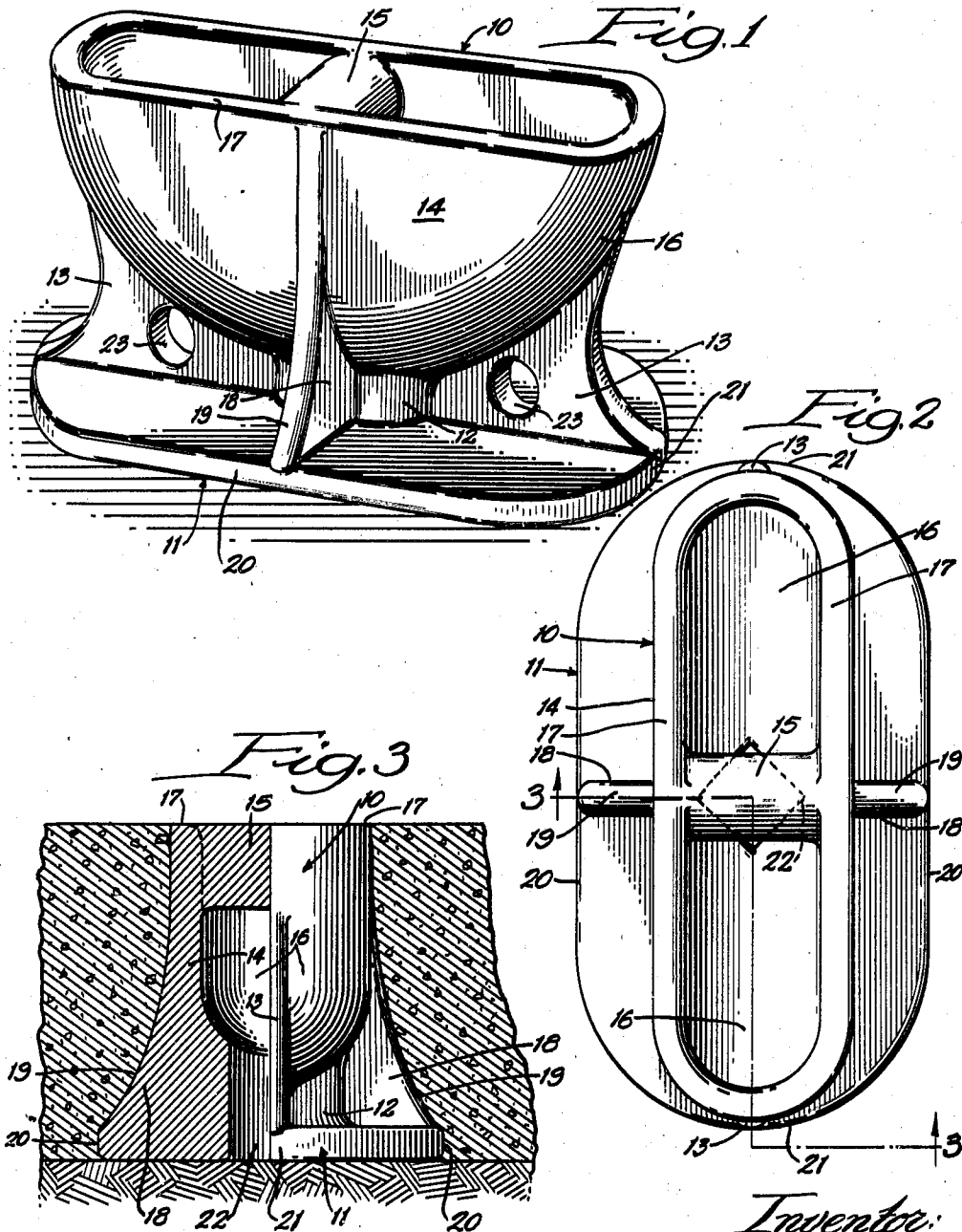
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MOORING BLOCK

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MOORING BLOCK

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4 Claims. (Cl. 189—90)

This invention relates to mooring blocks intended primarily for the mooring of aeroplanes on runways or paved testing areas into which the mooring blocks may be embedded during the pouring of the concrete although the block might be employed with advantage on docks or landings for boats or other marine craft.

In particular the invention is concerned with the formation and configuration of the block in such a way as to permit it to be firmly embedded and anchored within the concrete pavement, and this requires that the block be so configured as to permit the inflowing of the concrete into and around all sides of the block so that firm contact will be maintained therewith, and the formation of voids or cavities will be avoided.

The invention further relates to the formation of the block in such a way that adequate strength and rigidity will be provided in its walls to withstand the severe stresses imposed upon it when in use in anchoring an aeroplane under test and with the propellers exerting a powerful drag on the mooring lines.

Further objects and details will appear from a description of the invention in conjunction with the accompanying drawing wherein—

Figure 1 is a perspective view of the mooring block;

Fig. 2 is a top plan view thereof; and

Fig. 3 is a half cross-section taken on line 3—3 of Fig. 2 and showing the block partially embedded in concrete.

The block comprises in general a body 10 of elongated, laterally flattened bowl-shaped formation, a flat base 11 and a short neck 12 which combines with longitudinally extending webs 13 in connecting the under side of the body with the base.

The entire block is in the form of an integral casting and all portions thereof are configured to afford flat or smoothly rounding surfaces to facilitate the inflowing of the concrete and to avoid contact therewith of sharp corners or edges which under vibration might cause the abutting concrete to wear away or crumble and thus in time present cracks or cavities into which water might enter.

The sides 14 of the body are flat and spaced apart to provide for the insertion of an anchor hook or the like on the mooring line to the aeroplane or other craft.

The sides are connected at the upper rims by a transverse bridge 15 and merge into transversely and downwardly rounding ends 16 which give to the body a bowl-shaped flat-sided formation

having a planate rim 17 which will lie flush with the concrete surface. The rounding bottom of the body bowl provides a most convenient progress surface for the mooring line while being inserted and fastened to the transverse bridge.

The center of the rounded bottom of the body merges into the center neck 12 and into the webs 13 which have concavely rounded end edges which merge into the ends of the body in smoothly flowing curves terminating a slight distance above the vertical center of the body bowl.

The side walls of the body bowl are reinforced by flaring transverse webs 18 of substantially triangular shape which spring outwardly from the sides of the neck and merge into the rounded bottom and flat sides of the body and terminate near the top of the sides. The outer edges 19 of the webs slope downwardly and merge into the edge 20 of the flat base which has rounded ends 21. The base is slightly greater in length than the body bowl and approximately twice as wide. The neck is cored to provide a squared aperture 22 leading from the body bowl through the base to permit drainage to the subgrade and to provide a socket for the reception of a setting tool or stake for positioning the block on the subgrade, and the squared formation prevents twisting or displacement while the concrete is being poured. An aperture 23 in each of the webs 13 allows concrete to traverse and interlock the webs or to permit reinforcing rods to be inserted in cases where this type of construction is advisable.

In preparation for the pouring of concrete, the block will be positioned and staked upon the subgrade with its upper rim at the intended level of the concrete and preferably filled with sand or the like to exclude concrete during the pouring and finishing operations. The rounded under surfaces of the body bowl and the rounded edges of the reinforcing webs permit concrete to underflow readily beneath the body and around the neck, and the absence of sharp corners or edges at all points will ensure contact of the concrete with all exposed surfaces so that no voids or cavities will be formed.

The planate formation of the rim of the body bowl will permit the concrete surface of the pavement to be readily smoothed and leveled without obstruction, and after the operation has been completed the sand or other filler can be readily removed from the body bowl to condition the mooring block for use.

The formation is one which affords adequate strength and reinforcement against fracture or collapse under strain. The flat side walls at their

base are reenforced by the flaring lateral webs which extend upwardly to a sufficient height to afford adequate reenforcement without, however, interfering with the pouring and underflowing of the concrete so that the exposed upper rim of the body bowl presents a smooth contour throughout unbroken at its sides by laterally offset protrusions which if continued up to the rim, would afford irregularities tending to promote disintegration of the concrete adjoining the rim of the body.

The upper edges of the body bowl are interiorly reenforced by the bridge 15 which acts powerfully as a spreader across the center of the body and immediately opposite the termini of the lateral webs so that despite the relative thinness of the body walls the points subjected to the heaviest stresses will be adequately reenforced.

The base being much wider than the body will present a broad flat surface for contact with the overlying concrete while at the same time the longitudinal and transverse webs in unison with the center neck from which they radiate serve to tie the base and body together into a rugged unified structure in which, however, the body is sufficiently elevated above the base to permit a thick and massive volume of concrete to underflow the body and superpose itself above the surface of the base to permit the latter in full degree to subserve the anchoring function afforded by its extended upper surface.

In like manner the rounded ends of the body bowl and the relatively thin formation of the supporting webs permit thorough embedment of the body without obstructing the anchoring function of the base while the rounding up of the ends of the body progressively increases the depth of the concrete mass which is superposed upon the ends of the base thereby exposing the base to the resistance of as large a mass of concrete as is commensurate with a proper shaping of the body to permit convenient attachment of a mooring anchor hook or the like, and with the necessary strengthening of the body itself to withstand severe strains.

It will thus be seen that the formation of the present mooring block is such as to afford abundant internal strength in the block itself to prevent disruption or fracture while at the same time making adequate provision for its embedment within the concrete in such a way as to distribute stresses throughout a sufficient mass of concrete to prevent the block from being torn loose from its anchorage.

I claim:

1. A mooring block comprising an elongated bowl-shaped body presenting a rounded contour throughout on its under surface and having a planate rim of uninterrupted exterior contour adapted to lie flush with the surface of a concrete runway or the like, a bridge extending transversely across the upper portion of the body, a flat base spaced below the body and of greater width than the body to expose a substantial surface area below the sides of the body, a neck of reduced cross dimensions as compared with the body and connecting the center of the body with the base, and having a drain opening through its interior and through the base, and relatively thin webs radiating from the neck and uniting the base, neck, and body, the structure as a whole being configured to permit underflowing of concrete between the bottom of the body and the top surface of the base to afford

effective anchorage of the base against a substantial mass of overlying concrete.

2. A mooring block comprising a bowl-shaped body presenting a rounded contour throughout on its under side and having a planate rim adapted to lie flush with the surface of a concrete runway or the like, a bridge spanning the body and having its top surface flush with the rim, a flat base spaced below the body and of greater width than the body to expose a substantial surface area beyond the sides of the body, an exteriorly rounded neck of reduced cross dimensions as compared with the body and connecting the center of the body with the base having a drain opening through its interior and through the base, and relatively thin longitudinal and transverse webs radiating from the neck and uniting the base, neck and body, the structure as a whole being configured to permit underflowing of concrete around the neck and between the bottom of the body and the top surface of the base to afford effective anchorage of the base against a substantial mass of overlying concrete.

3. A mooring block comprising an elongated, flat sided, round ended, bowl-shaped body presenting a rounded contour throughout on its under side and having a planate rim adapted to lie flush with the surface of a concrete runway or the like, a transverse bridge spanning across the middle of the body and having its top surface flush with the rim, a flat base spaced below the body and of greater width than the body to expose a substantial surface area beyond the sides of the body, an exteriorly rounded neck of reduced cross dimensions as compared with the body and connecting the center of the body with the base having a drain opening through its interior and through the base, and relatively thin longitudinal and transverse webs radiating from the neck and uniting the base, neck and body, the structure as a whole being configured to permit underflowing of concrete around the neck and between the bottom of the body and the top surface of the base to afford effective anchorage of the base against a substantial mass of overlying concrete.

4. A mooring block comprising an elongated flat-sided, round ended bowl-shaped body presenting a rounded contour throughout on its under side and having a planate rim adapted to lie flush with the surface of a concrete runway or the like, a transverse bridge spanning across the middle of the body and having its top surface flush with the rim, a flat base spaced below the body and of greater width than the body to expose a substantial surface area beyond the sides of the body, an exteriorly rounded neck of reduced cross dimensions as compared with the body and connecting the center of the body with the base and having a drain opening extending through its interior and through the base, and relatively thin longitudinal and transverse webs radiating from the neck and sloping downwardly and outwardly to the rim of the base and merging therewith, the structure as a whole being configured to permit underflowing of concrete between the rounded bottom of the body and the top surface of the base to afford effective anchorage of the base against a substantial mass of overlying concrete and the webs terminating below the body rim to avoid interruption in the smooth external contour of the rim.

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