

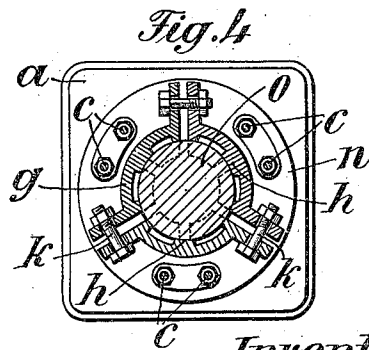
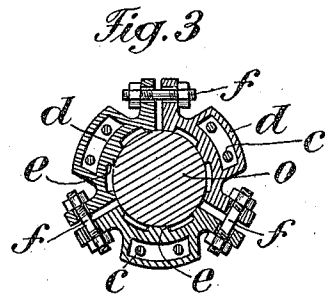
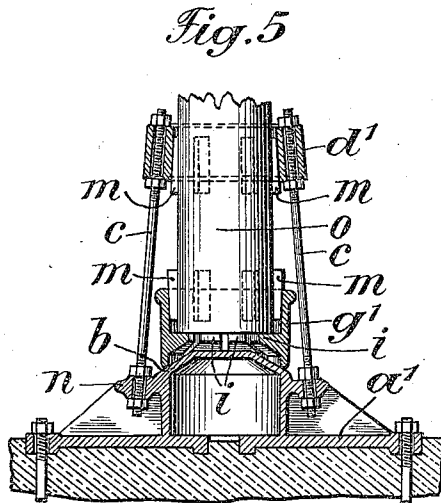
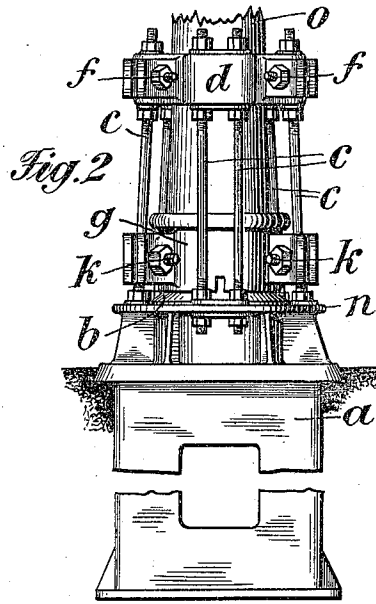
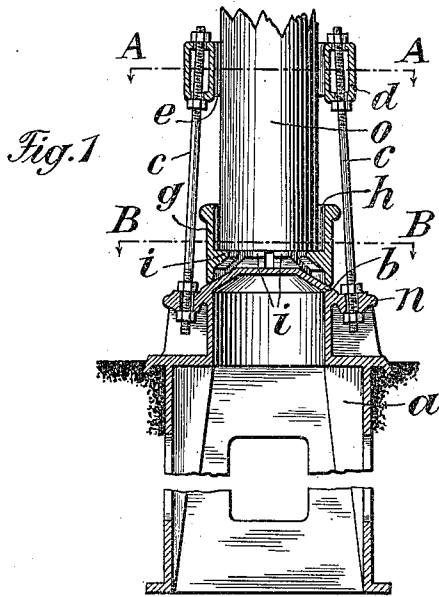
H. BÖLSTERLI.

MAST STEP.

APPLICATION FILED NOV. 29, 1909.

981,610.

Patented Jan. 17, 1911.



Witnesses:

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UNITED STATES PATENT OFFICE.

HEINRICH BÖLSTERLI, OF ZURICH, SWITZERLAND.

MAST-STEP.

981,610.

Specification of Letters Patent.

Patented Jan. 17, 1911.

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To all whom it may concern:

Be it known that I, HEINRICH BÖLSTERLI, a citizen of the Republic of Switzerland, residing at Alte Beckenhofstrasse 31, Zürich IV—U., Switzerland, have invented certain new and useful Improvements in Mast-Steps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Mast sockets or steps are known in which the mast stands on a ball bearing and is secured by rods attached to the mast, so that strains produced by external forces acting on the mast are absorbed by the tension rods as well as by the mast itself and transferred to the bearing.

Now this invention has for its object a mast step having a heel cap loosely mounted on a conical bearing and a holding ring embracing the mast which is connected by tension rods with a flange on the support of the bearing.

Examples of construction of the invention are shown in the accompanying drawings, in which:

Figure 1 is a section of such a step; Fig. 2, an elevation; Fig. 3 is a section on the line A—A of Fig. 1; Fig. 4, a section on the line B—B of Fig. 1; while Fig. 5 is a section of another form of construction.

In Fig. 1, *a* is the base or foundation which is provided in the usual way with an elongated under part of suitable section for embedding in the ground. The upper part *b* of the base or foundation has a conical surface on which the mast rests. This conical surface serves as a seat for a heel cap *g* inclosing the lower end of the mast, the cap being formed in three parts, and having the form of a hollow cylinder. Owing to their small dimensions the tension rods *c* are not connected to the ground independently of the mast support, but their lower ends are fastened to a separate flange *n* of the base. The other ends of the tension rods are attached to a multipart holding ring *d*, the parts of which have on the inside ribs *e* and on the outside flanges to which they are connected by means of bolts *f* (Figs. 2 and 3). The heel cap *g* mounted on the conical bearing consists of several parts with inner ribs

h, under projections *i* and external flanges which are connected by bolts *k* (Fig. 4). By bolting together the parts of the holding ring *d* and the hollow cylinder *g* by means of bolts *f* and *k*, these are caused to grip the mast *o* firmly.

In Fig. 5, *a'* is a foundation or base in the form of a bed-plate for attachment to rocky ground or to a cement base or foundation. The upper part *b* of the socket *a'* has a conical surface which serves as a bearing and seat for a heel cap *g'* inclosing the lower end of the mast and formed in one piece, which like the holding ring *d'*, which is also in one piece, is secured to the mast *o* by means of wedges *m* serving as ribs. The holding ring and the base are connected with one another by tension members *c*.

With the mast step it is possible to erect a mast at various inclinations and to conveniently change its angle. The strains produced by the external forces acting on the mast are therefore absorbed by the tension rods as well as by the mast itself and transmitted to the bearing. Since when the mast is erected the mast end or heel is exposed to the air, rotting is prevented. The open construction allows of an easy supervision. It is also possible to tar the heel of the mast while in use.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, I declare that what I claim is:

1. A mast step comprising a conical bearing having flanges thereon, an annular heel cap on the mast loosely mounted on the conical portion of said bearing, a ring gripping the mast, and tension rods connecting said ring and flanges.

2. A mast step comprising a conical bearing having flanges thereon, a heel cap on the mast loosely mounted on the bearing, a multipart holding ring having projections to engage the mast, means to hold said ring parts assembled and tension rods connected to the ring and flanges.

3. A mast step comprising a conical bearing having flanges thereon, a multi-part heel cap, means for pressing the cap parts against the mast, a holding ring gripping the mast, and tension rods connecting the cap and flanges.

4. A mast step comprising a conical bearing having flanges thereon, a heel-cap composed of a plurality of sections, bolts clamp-

ing the heel-cap sections around the mast, a holding ring composed of a plurality of sections, bolts clamping the ring sections around the mast, and tension rods connecting the
5 ring sections and flanges.

5. A mast step comprising a conical bearing having lateral flanges formed thereon, a heel-cap surrounding the mast composed of a plurality of sections having internal pro-
10 jections extending under the mast and external flanges, bolts connecting the latter, a ring surrounding the mast above the cap and

composed of a plurality of sections having internal ribs engaging the mast and external flanges, bolts connecting the latter, and tension rods connecting the bearing flanges with
15 the ring.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

HEINRICH BÖLSTERLI.

Witnesses:

ERNST FISCHER,
CARL GUBLER.