

(No Model.)

O. KUSTEL.
MARINER'S COMPASS.

No. 594,803.

Patented Nov. 30, 1897.

Fig. 1.

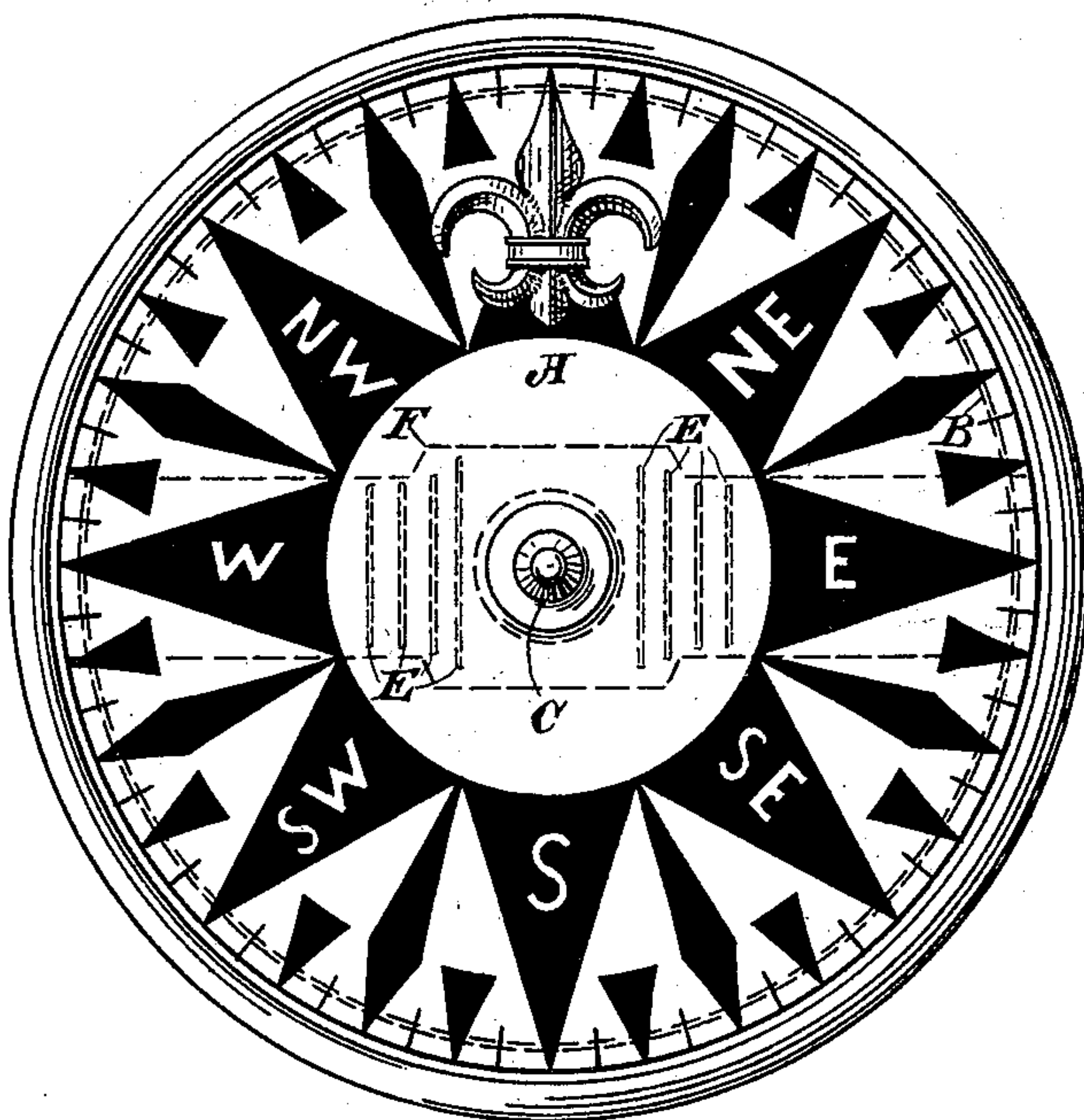
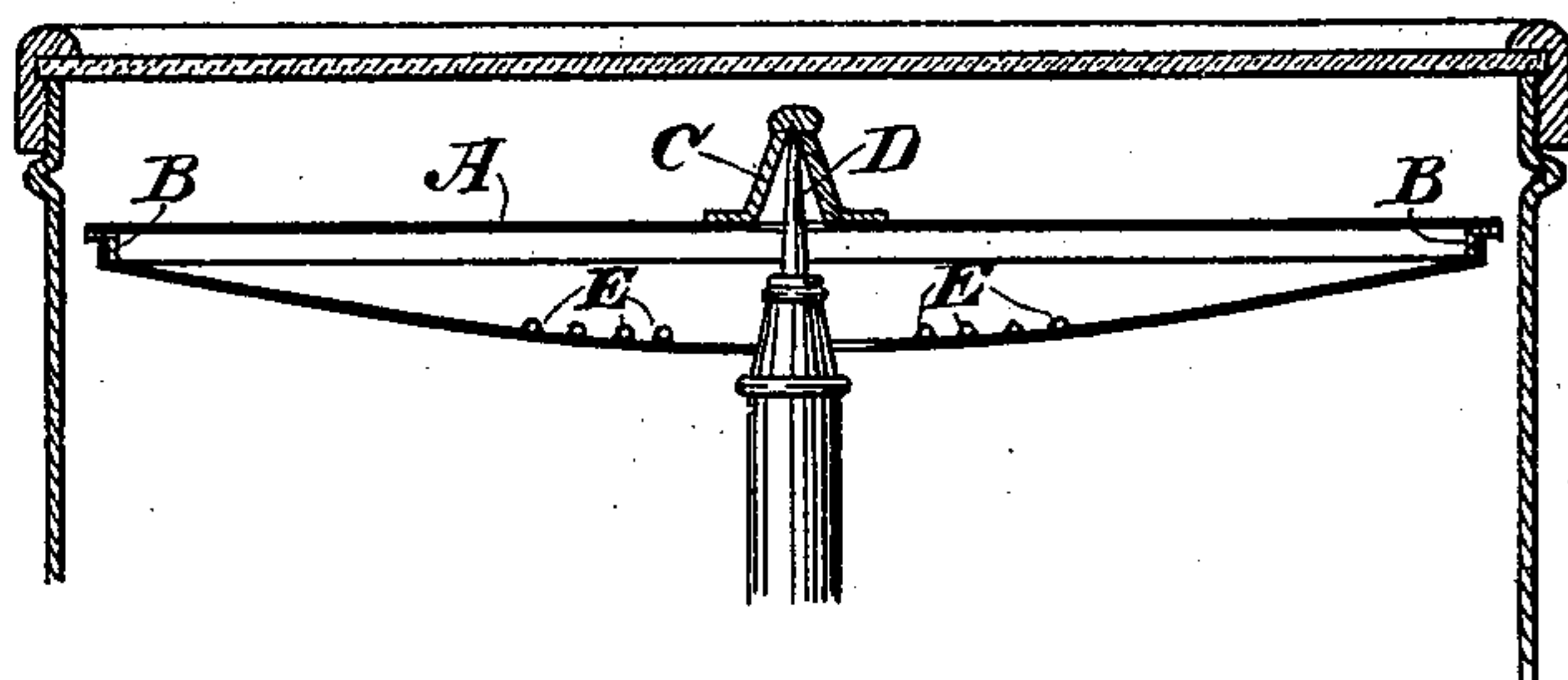


Fig. 2.



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UNITED STATES PATENT OFFICE.

OSCAR KUSTEL, OF SAN FRANCISCO, CALIFORNIA.

MARINER'S COMPASS.

SPECIFICATION forming part of Letters Patent No. 594,803, dated November 30, 1897.

Application filed February 17, 1897. Serial No. 623,823. (No model.)

To all whom it may concern:

Be it known that I, OSCAR KUSTEL, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Mariners' Compasses; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to improvements in a mariner's compass.

It consists in a novel construction of the compass-card and the means for supporting the magnetic needles employed therewith and in details of construction, which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a plan view of my improved card. Fig. 2 is a vertical section showing the card and the magnetic needles.

The object of my invention is to provide a compass-card and support for the magnetic needles employed therewith of the lightest possible construction consistent with permanency.

In the construction of my card I employ a woven texture of any suitable description, preferably of silk. This card A has its periphery fixed to a light aluminium rim B, and at the center is connected with the boss C, which is balanced and turns upon the pivot-pin D below. The points of compass, letters, &c., are marked around the periphery of the woven fabric, which extends in a continuous body from the rim to the center. This construction provides an exceedingly light card, and the material is of such a nature that it

does not warp, expand, or contract unduly or get out of shape in any manner by the action of cold or heat.

The magnetic needles E, which give direction to the card, are fixed in a band F, of woven material, which is also preferably of silk and which may have its ends attached to the peripheral rim B of the card, the band extending across beneath the compass-card and supporting the needles, as shown.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a mariner's compass, a compass-card formed of woven material having the points marked upon it, a supporting peripheral rim, and a band of woven material extending across from side to side of the rim and adapted to support the magnetic needles.

2. In a mariner's compass, a compass-card composed of a continuous circular sheet of woven material with a pivotal center and a peripheral supporting-rim, the surface of the card having the points of compass marked thereon and a support for magnetic needles consisting of a band to which the needles are fixed extending from side to side of the rim and crossing below the center of the compass-card.

In witness whereof I have hereunto set my hand.

OSCAR KUSTEL.

Witnesses:

S. H. NOURSE,
JESSIE C. BRODIE.