

(No Model.)

2 Sheets—Sheet 1.

E. T. STARR.

ANCHOR.

No. 377,691.

Patented Feb. 7, 1888.

Fig. 3.

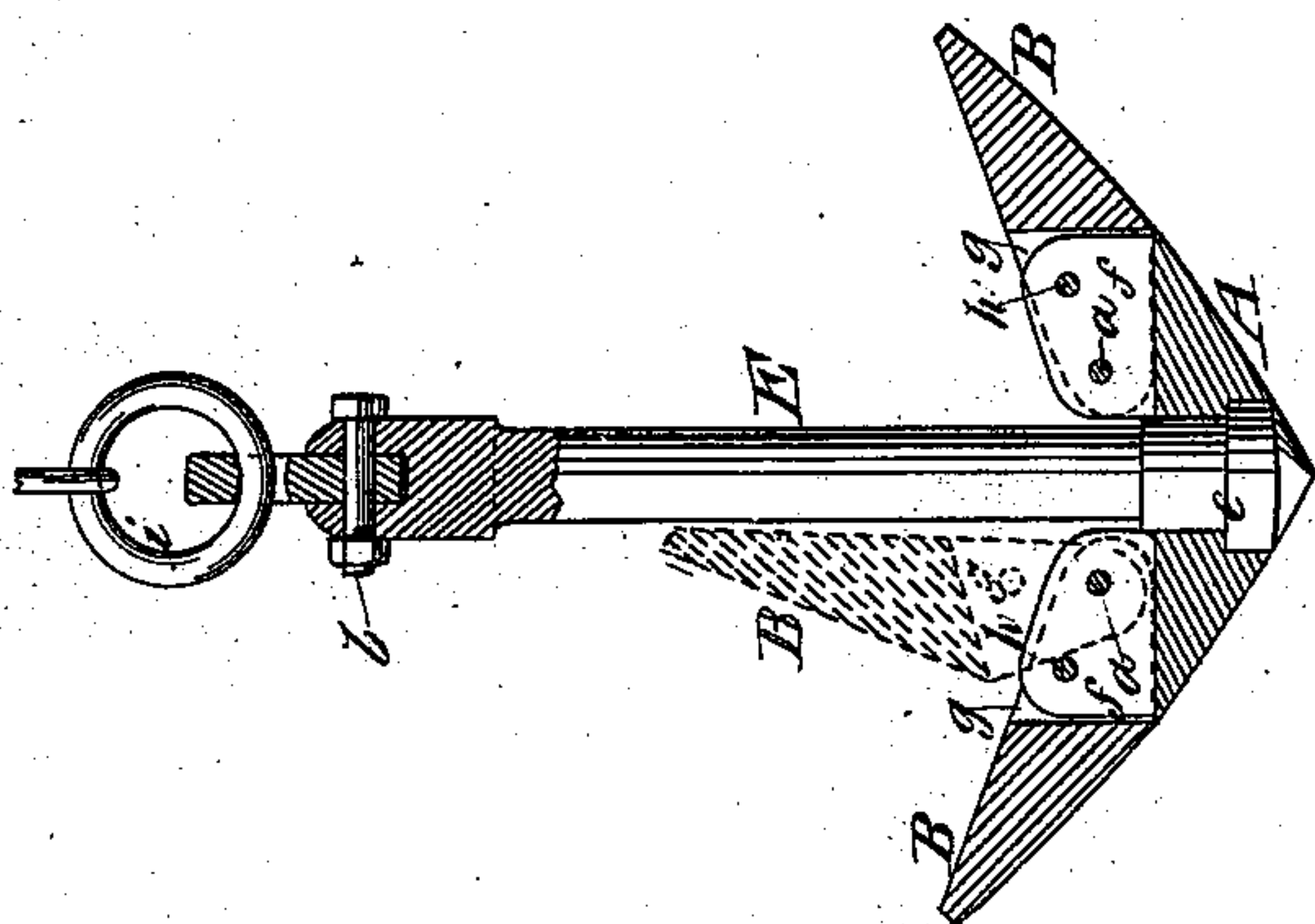


Fig. 2.

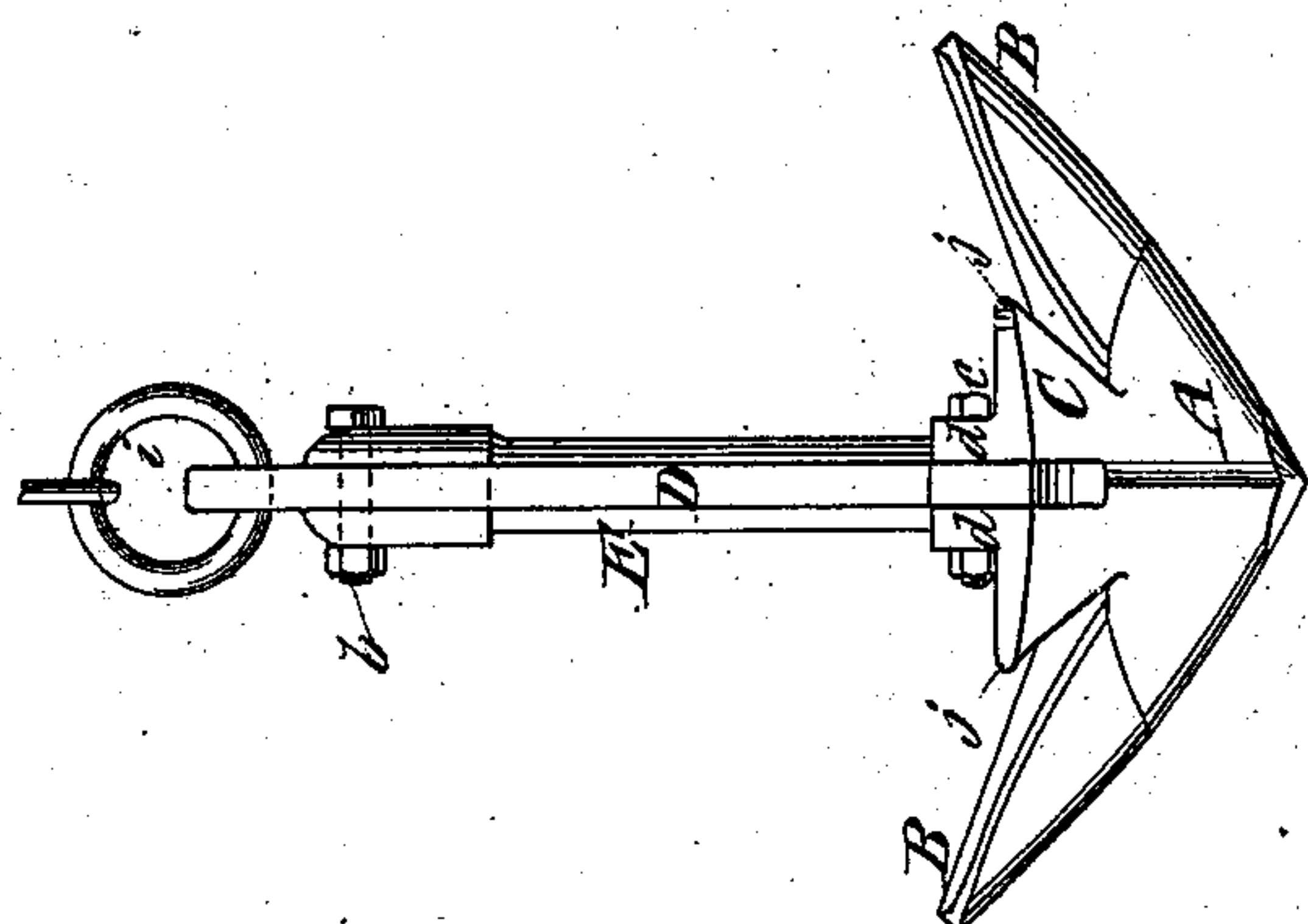


Fig. 1.

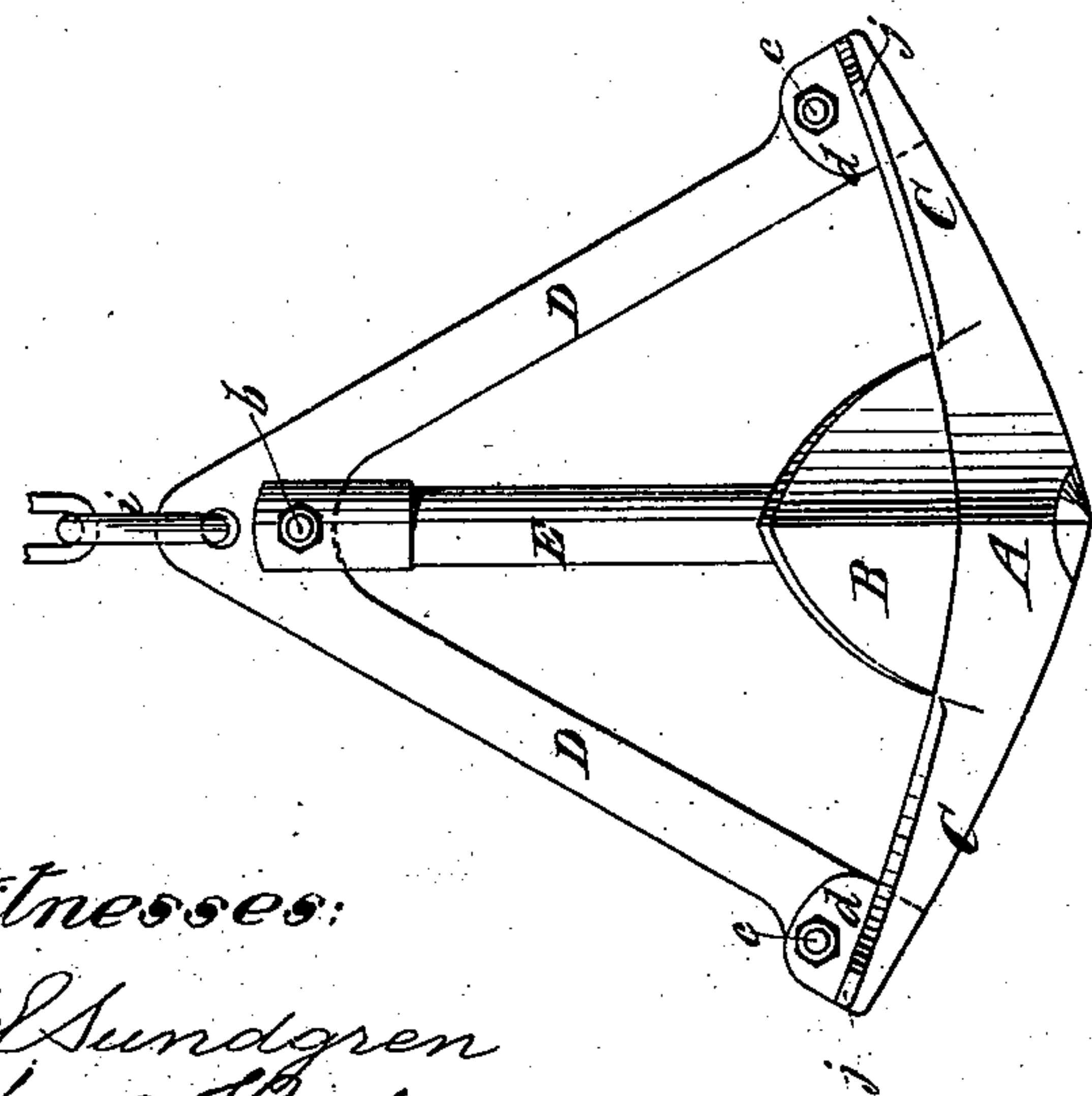
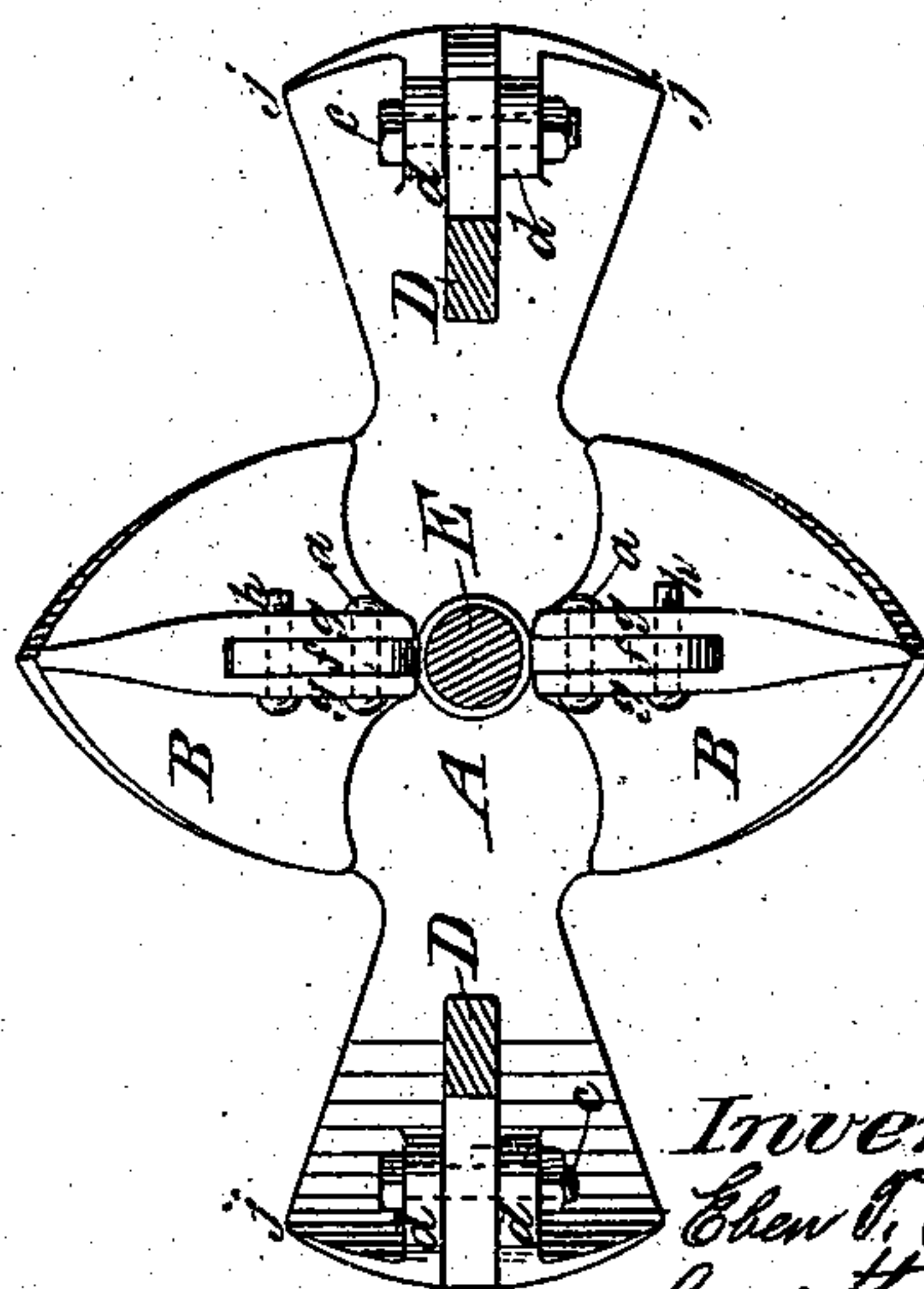


Fig. 4.



Witnesses:

O. Sundgren
Emil Heister

Inventor:
E. T. Starr
by attorneys
Rowntree & Co.

(No Model.)

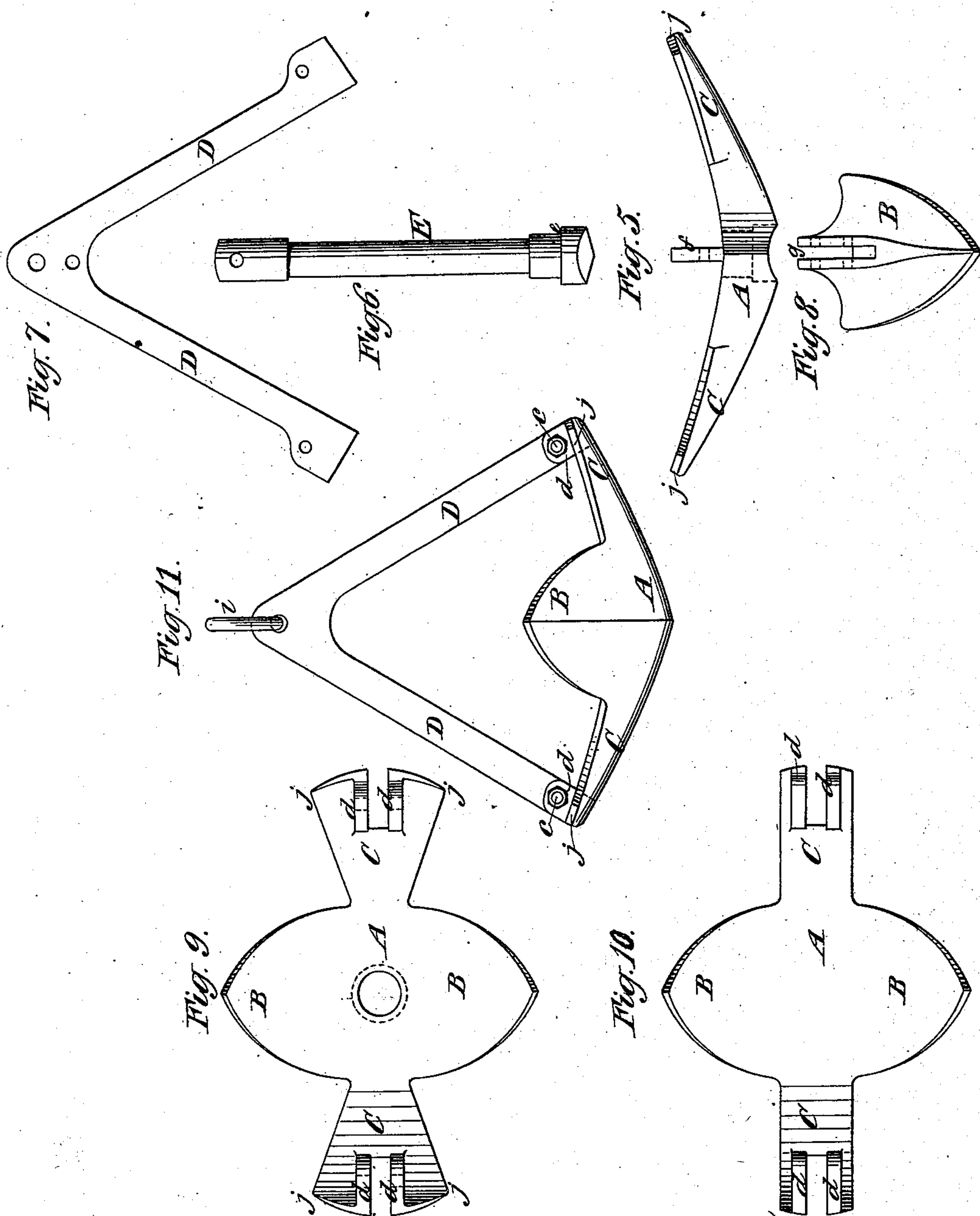
2 Sheets—Sheet 2.

E. T. STARR.

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No. 377,691.

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Witnesses:

O. Sundgren
Emil Herter

Inventor.

E. T. Starr
by attorneys
Brown & Hall

UNITED STATES PATENT OFFICE.

EBEN T. STARR, OF NEW YORK, N. Y., ASSIGNOR OF EIGHT-FIFTEENTHS
TO MADGE STONE, OF SAME PLACE.

ANCHOR.

SPECIFICATION forming part of Letters Patent No. 377,691, dated February 7, 1888.

Application filed June 11, 1887. Serial No. 240,996. (No model.)

To all whom it may concern:

Be it known that I, EBEN T. STARR, of the city and county of New York and State of New York, have invented a new and useful Improvement in Anchors, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to that class of anchors which are made without stocks for the purpose of obviating the fouling.

My improvement consists in a novel construction of anchors of that class, as hereinafter described and claimed, whereby, while the fouling is effectually prevented, very effectual provision is made for bringing the flukes or palms to a position to take hold.

The invention also consists in the construction and combination of the parts of the anchor, whereby its construction is facilitated and it is rendered easy of stowage.

Figures 1 and 2 in the drawings are side views, taken at right angles to each other, of an anchor constructed according to my invention. Fig. 3 represents a nearly central section taken parallel with Fig. 2. Fig. 4 represents a horizontal section taken just above the crown and flukes. Figs. 5, 6, and 7 are respectively side views of the crown and arms, the shank, and the guards for the prevention of fouling, corresponding with Figs. 1 to 4, but showing the said parts detached from each other. Fig. 8 is an inside face view or plan of one of the arms which bear the main flukes, detached. Fig. 9 is a plan showing the crown, arms, and flukes made in one piece. Fig. 10 is a plan corresponding with Fig. 9, but showing arms of different form. Fig. 11 is a side view of an anchor without a central shank, but in other respects like that shown in Figs. 1, 2, 3, 4.

Similar letters of reference indicate corresponding parts in the several figures.

A designates the crown of the anchor, which is provided with oppositely-projecting arms B, terminating in flukes or palms, which may be termed the "main" flukes when the anchor has other flukes, hereinafter described, and termed "auxiliary" flukes. The crown A has also arms C projecting from it in opposite directions at right angles or transversely to the first-mentioned arms B and their flukes.

These arms C are represented as being considerably longer or having a considerably greater projection from the crown A than the arms B and their terminal flukes, but the center lines of all the arms are radial to the center of the crown.

In the examples illustrated by Figs. 1, 2, 3, 4, 7, and 8 the arms B, carrying the main flukes or palms, are represented as attached to the crown by a hinge-joint, *f g*, with a pivot, *a*, so that they may be folded up against the shank E, as shown in dotted outline in Fig. 3, for convenience of stowing the anchor; but in the example shown in Fig. 9 the said arms and their flukes are represented as forged in the same piece with the crown and the guard-arms C.

D D designate the anti-fouling guards, arranged diagonally between and connecting the upper end of the shank and the ends of the arms C. These guards are represented as made of one piece of flat iron of inverted-V shape, and at their convergent angle are received in a mortise in the head of the shank E, wherein they are secured by a bolt, *b*, their lower extremities being received into mortised lugs *d* at the ends of the arms C, and being secured in said lugs by bolts *c*. The guards, instead of being thus bolted to the arms of the crown, might be welded thereto. The shank E is represented as being made of a separate piece with a shoulder, *e*, on its lower part, and, being passed through a correspondingly shouldered bearing in the center of the crown, is held in place by the bolts *b c* and arms D. The ring *i* for the attachment of the cable is represented as passing through the anchor near the junction of the guards D with the shank.

When the arms B, bearing the main flukes or palms, are made of separate pieces and pivoted or hinged to the crown, as shown in Figs. 1, 2, 3, and 4, there is pivoted in the hinge-joint, besides the pivot *a*, a second pin, *h*, which passes through corresponding holes in the mortised and tenoned parts of the joint, as shown in Figs. 3 and 4, to lock and secure the said arms and their palms or flukes in the spread position shown in Fig. 4 and in bold outline in Fig. 3. By withdrawing the pins *h* permission is afforded for the turning up of the arms B and their palms to the dotted po-

sition shown in Fig. 3, in which position they may be locked or secured by reinserting the pin through the mortised portion *g* of the hinge-joint outside of the portion *g*, as may be
 5 understood by reference to the dotted representation of one of the arms B and its palm or fluke in Fig. 3.

The ends of the guard-arms C are rounded in all the examples of my invention, so that
 10 in case of their striking ground they will not catch, but will allow the anchor to roll easily over for the palms or flukes on the arms B to take hold of the ground.

In Figs. 1, 2, and 9 the guard-arms C are shown as spread at and toward their extremities, so that there are formed on the sides thereof the auxiliary flukes *j j*, of which there are two presented in the same direction as
 15 either of the main flukes on the arms B; but instead of being so spread as to form auxiliary flukes they may be straight, as shown in Fig. 10.

The anchor constructed according to either of the represented examples of my invention, if when it reaches the bottom it should strike
 25 upon either of the main flukes on the arms B, will be sure to take secure hold on the ground, and if it should strike on the end of either of the guard-arms C it would turn or fall over
 30 in one direction or the other, so that one of the flukes or palms on the arms B will take the ground; and if the guard-arms C be provided with auxiliary flukes *j* one of those also may take additional hold. In whichever way
 35 the anchor strikes the ground there can be no fouling, for there is no hold for the cable on the flukes on the arms B, and the guards, extending to the ends of the guard-arms C, will prevent any fouling with the latter.

When the main flukes are hinged to fold upward, as shown in Fig. 3, the anchor is made practically flat, so that it can be very conveniently stowed, the guards and the shank
 40 being made of separate pieces and detachably connected with the crown, arms, and flukes, as for the construction of the anchor or for taking it apart for repair, stowage, or transportation.

What I claim as my invention, and desire to
 50 secure by Letters Patent, is—

1. The combination, in an anchor, of two arms projecting radially from the crown in opposite directions and having palms at their extremities, two guard-arms projecting from the crown in opposite directions at right angles to the first-mentioned arms, and upwardly-converging guards connected with the said guard-arms at the extremities thereof, substantially as herein described, and for the purpose set forth. 55

2. The combination, in an anchor, of two shorter arms projecting radially from the crown in opposite directions and having palms at their extremities, two longer arms projecting from the crown in opposite directions at right angles to the first-mentioned arms, and upwardly-converging guards connected with the said longer arms at the extremities thereof, substantially as and for the purpose herein set forth. 60 65 70

3. The combination, with the central shank and crown of an anchor, of arms projecting from the crown in opposite directions and having palms at their extremities, two intermediate arms projecting from the crown in opposite directions at right angles with the first-mentioned arms, and upwardly-converging guards connecting the ends of the last-mentioned arms with the head of the shank, substantially as and for the purpose herein described. 75 80

4. The combination, in an anchor, of two opposite fixed arms and upwardly-converging guards on opposite sides of the crown and two interposed pivoted arms furnished with flukes, substantially as and for the purpose herein described. 85

5. The combination, with the crown A and the arms B, having flukes and pivoted to the crown to be capable of folding, of the fastening-pin *h*, for passing through the crown to secure the pivoted arms either in their spread or their folded positions, substantially as herein described. 90

EBEN T. STARR.

Witnesses:

FREDK. HAYNES,

HENRY J. MCBRIDE.