

(No Model.)

A. McDOUGALL.
ANCHOR.

No. 445,816.

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Fig. 1.

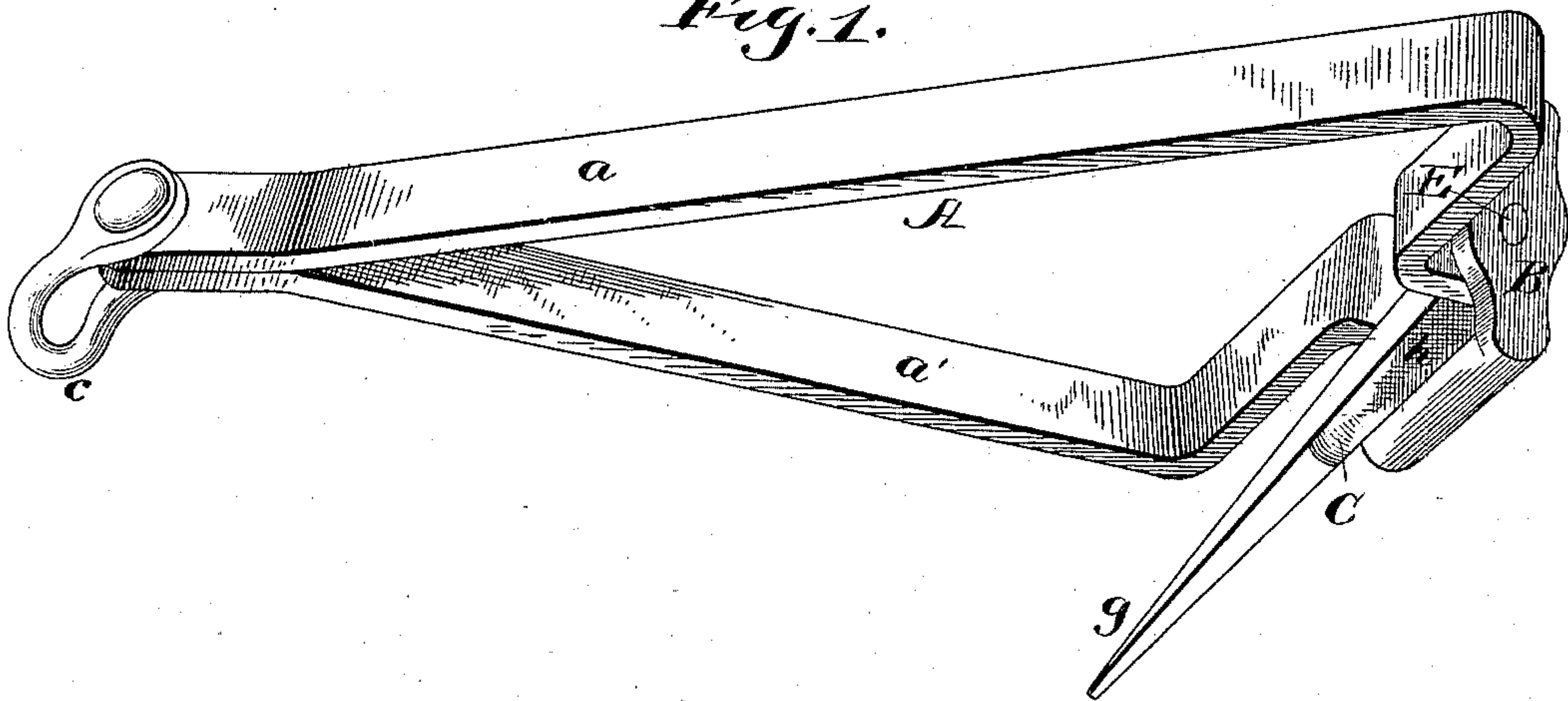


Fig. 2.

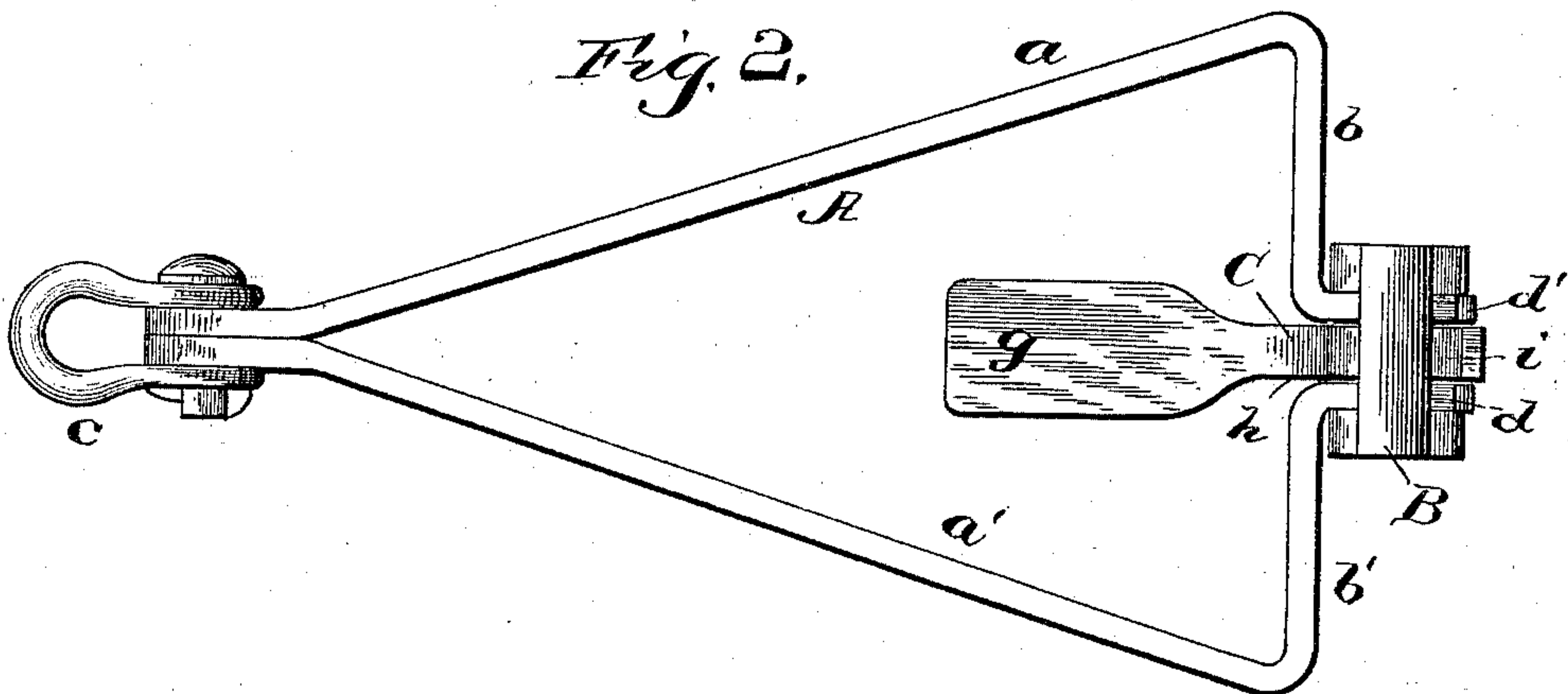


Fig. 3.

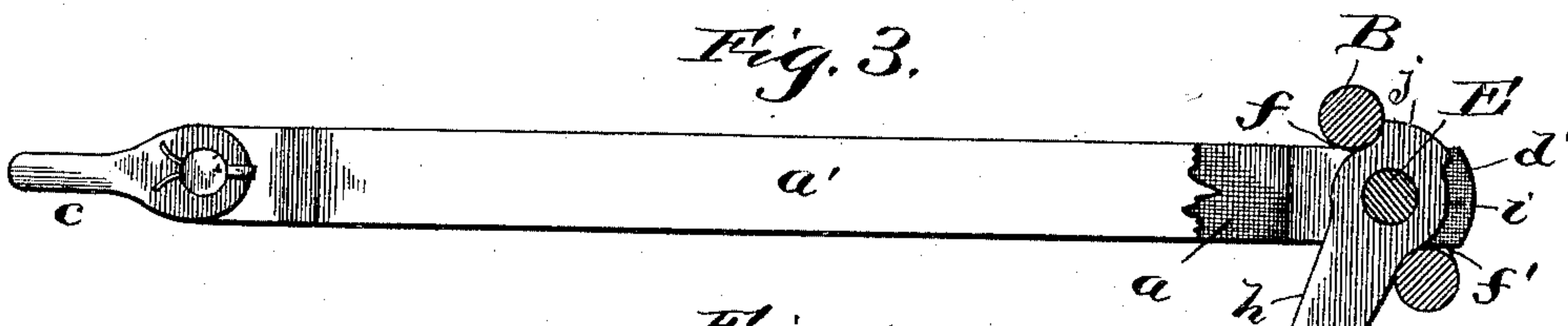
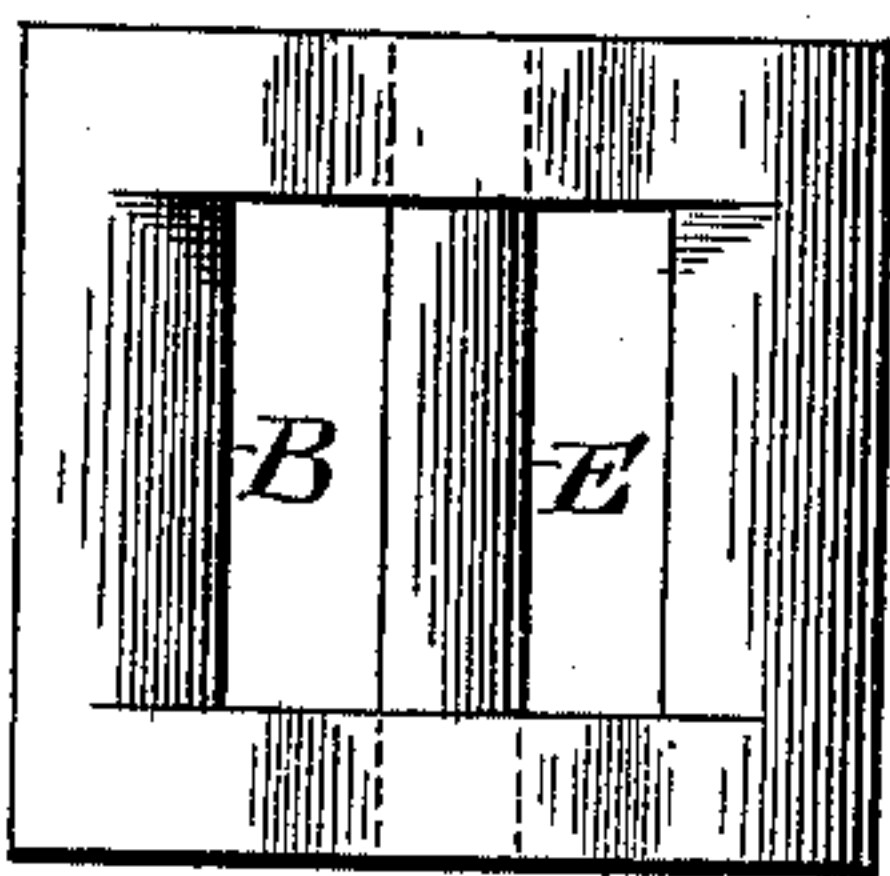


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

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To all whom it may concern:

Be it known that I, ALEXANDER McDOUGALL, a citizen of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Anchors; and I do hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to various new and useful improvements in stockless single-fluke anchors.

The principal objects of my invention are to provide and produce an anchor of that variety which can be manufactured very cheaply, which will be extremely portable and occupy but little space on the deck, and which will be very effective in operation.

To this end the invention consists, generally, of a main triangular metallic frame-work, a single fluke or blade pivoted within said frame, and a pivoted link for limiting the movements of the fluke, all as will be herein-after set out and claimed.

For a better comprehension of my invention attention is invited to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view of my improved anchor; Fig. 2, a plan view of the same; Fig. 3, a side elevation, partly in section; Fig. 4, a separate elevation of the link and pivoting-pin.

In all of the above views corresponding parts are designated by the same letters of reference.

A represents the main frame of the device made of the general rectangular shape shown—viz., with the two inclined sides $a a'$ and the two short connecting sides $b b'$. This frame-work may be made of cast-metal, if desired; but I prefer to make the same of rectangular wrought-iron or steel bars heated and hammered to the proper shape. The two inclined sides at their forward ends are either welded or riveted together, or else these sides may be made of one and the same piece of metal bent around into position. It is more economical, however, to make the frame-work

of two parts, each consisting of a side piece and one of the connecting side pieces b or b' , since both of said pieces will be of the same shape, and they can therefore be constructed very easily and cheaply. At the forward end of this frame-work is a shackle, swivel, or ring c , to which the anchor chain or rope is attached. Each of the connecting side pieces b and b' of the frame is bent over at its inner end to form lugs or ears d and d' , projecting outwardly. Passing through these lugs or ears $d d'$ is a metallic pivoting-pin E , arranged so as to turn easily in said lugs or ears. The ends of this pivoting pin extend out on the sides of the lugs or ears, and are integrally connected with a link B , before referred to, and arranged as shown. This link is of the ordinary construction, and is of the general form shown in the drawings. By this means the link will be allowed a certain limited movement on the pivoting-pin, so that it may be inclined either to the right or to the left, as may be desired. The movements of this link are restricted, as will be evident, by the bearing-surfaces $f f'$ thereof coming in contact with the upper and lower faces of the lugs or ears $d d'$. The fluke C of the anchor is pivoted between the lugs or ears $d d'$ on the pin E and is capable of movement on this pin. The fluke is provided with a blade g , adapted to enter the ground, with a shank portion h , with an enlarged head i , through which the pivoting-pin E passes, and with a small lug j , forming a continuation of said enlarged head. When the fluke is in position on the pivoting-pin, and when it is moved in one direction as far as possible, it will be seen that the portion of the shank h directly below the head i will engage with one of the surfaces f of the link B , and that the lug j thereof will engage with the other surface f' of the link, so that the fluke will be held very rigidly from other movement. It will also be evident that to which ever side the fluke may be moved it will be locked in its proper position by the link B , as I have just explained. This means for locking the fluke in position is very strong and rigid, since the link bears against three immovable surfaces—viz., the pivoting-pin and the upper and lower surfaces of the lugs or

ears $d d'$ —and the fluke bears against three surfaces also—viz., the pivoting-pin and the two surfaces $f f'$ of the link.

The operation of my improved anchor is as follows: The device is lowered from the vessel in the usual way, and will of course rest in a flat position on the bottom. The fluke will drop by its own weight and will enter the ground, and as a strain is brought on the anchor by the movement of the vessel the fluke will be forced farther into the ground until it has reached an angle of about fifty degrees, when its motion will be arrested by the link, as was before explained. As any additional strain is brought on the anchor, the fluke will be caused to bury deeper into the ground until the dirt, sand, or gravel of the bottom is piled up in front of and around the connecting-pieces $b b'$, so that the anchor will be firmly embedded in the ground. Whichever side the anchor may fall on, the fluke will enter the ground with equal facility, since it is pivotally mounted on the pin, and its movement will be restricted by the link B on either side, as will be understood.

Having now described my invention, what I claim as new therein, and desire to secure by Letters Patent, is as follows, viz:

1. In an anchor, the combination of a metallic frame-work, a single fluke pivoted to said frame-work, and a link, substantially as described, pivoted so as to surround the shank of said fluke and limit the movements of the same.

2. An improved anchor consisting of a frame-work of a general rectangular shape having cross-pieces $b b'$ at its rear end and adapted to engage with the ground, lugs or ears formed by a continuation of these connecting-pieces and extending rearwardly, a single fluke pivoted between these lugs, and a link E, mounted on the pivoting-pin b or the fluke and surrounding the shank of the same and adapted to limit the movements of the fluke, substantially as set forth.

3. An improved anchor consisting of a metallic frame having lugs $d d'$ at its rear end, a single fluke pivoted between said ears and carrying a lug j , and a link mounted on the pivoting-pin for the fluke and adapted to limit the movements of the fluke, substantially as set forth.

ALEXANDER McDOUGALL.

In presence of—

C. E. WACHTEL,
W. M. ROSS.