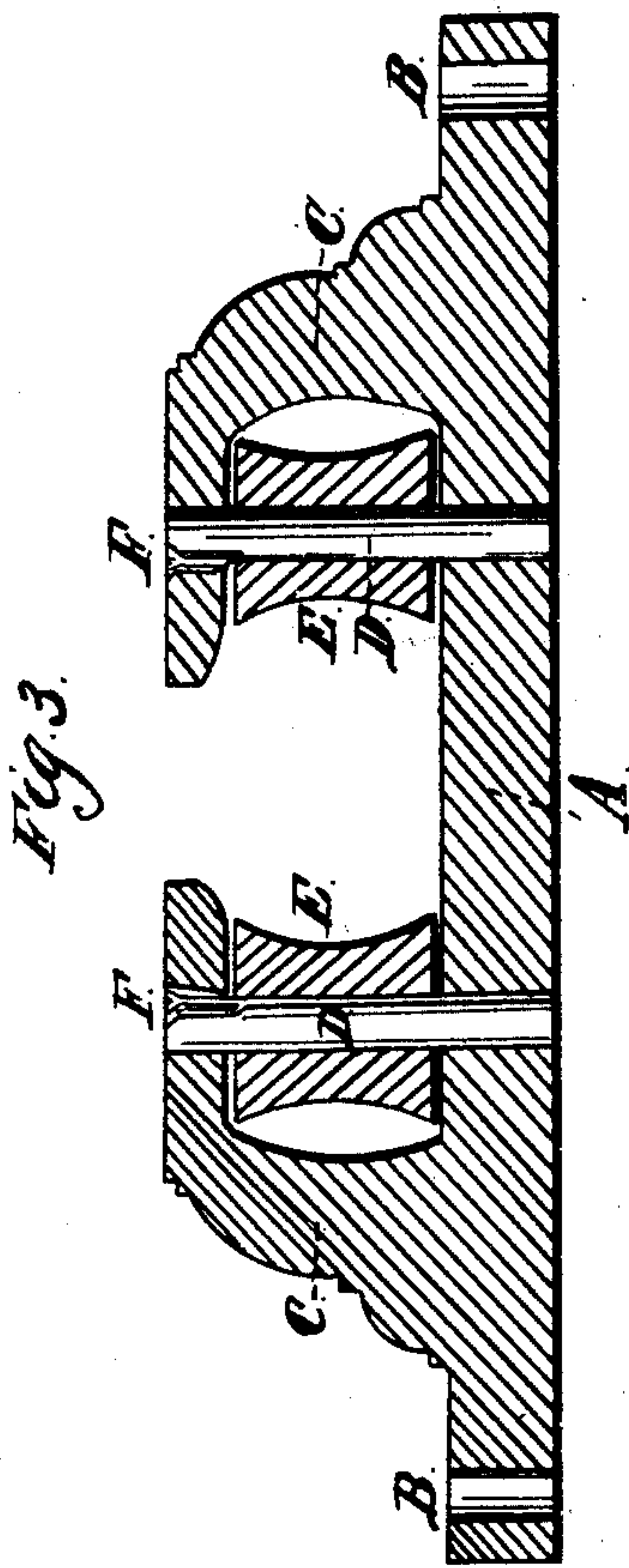
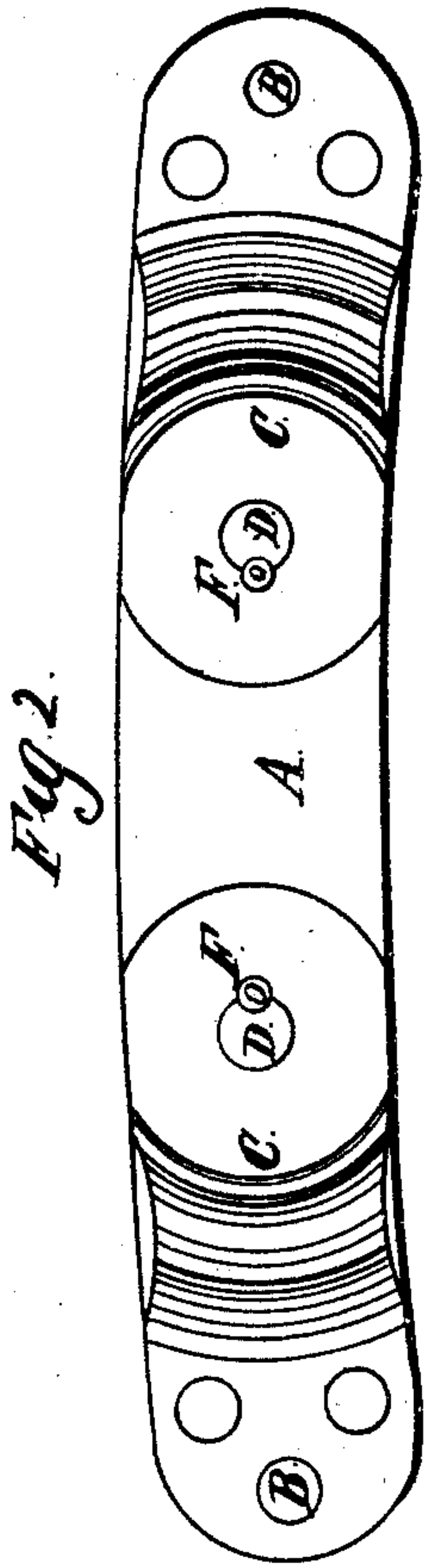
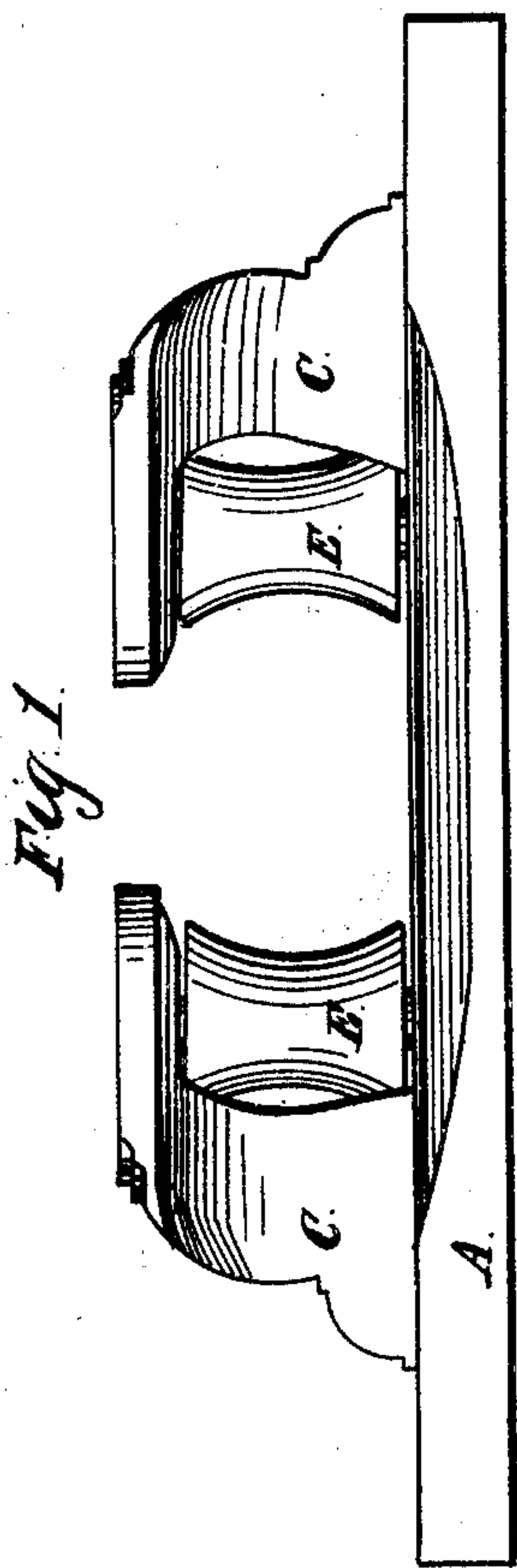


*D. Knowlton.*  
*Cleat.*

*N<sup>o</sup> 24,810.*

*Patented Jul. 19, 1859.*



*Witnesses.*  
*J. Dennis Jr.*  
*Edw. F. Brown*

*Inventor*  
*David Knowlton*

# UNITED STATES PATENT OFFICE.

DAVID KNOWLTON, OF CAMDEN, MAINE.

## SHIP'S WARPING-CHOCK.

Specification of Letters Patent No. 24,810, dated July 19, 1859.

*To all whom it may concern:*

Be it known that I, DAVID KNOWLTON, of Camden, in the county of Waldo and State of Maine, have invented a new and useful  
5 Improvement in Warping-Chocks for Ships and other Vessels; and I do hereby declare that the same is described and represented in the following specifications and drawings.

To enable others skilled in the art to make  
10 and use my improvement I will proceed to describe its construction and operation referring to the drawings in which the same letters indicate like parts in each of the figures.

15 Figure 1 is an elevation of a warping chock with my improvement. Fig. 2 is a plan, and Fig. 3 a section of the same.

The nature of my invention and improvement in warping chocks consists in making  
20 the stock or base and standards of cast iron, and narrowing and hollowing out the stands behind the rollers, so as to let the rope or warp run freely around the rollers, without being chafed by the stand.

25 In the accompanying drawings, A is the base of the warping chock provided with holes B, B, for the bolts to fasten it in the position desired.

C, C, are projections extending up from  
30 the base A, in the form shown in the drawing making firm stands, which stands and base are perforated for the pins D, D, which pass through them and through the rollers E, E, as shown in the section Fig. 3.

35 The rollers E, E, are arranged to turn freely on the pins D, D, and are hollowed out or made smallest in the middle, so as to fit the warp or rope running around them. The projections or stands C, C, are hollowed  
40 out on each side behind the rollers and made narrower than the rollers, at the ends next to the rollers, so as not to chafe or wear the rope as it is drawn around the rollers in warping a ship or vessel.

Every article about the hull of a vessel is 45 so liable to be frequently wet with salt water, which rusts or corrodes iron very fast, and would soon rust the outsides of the pins D, and the insides of the rollers E, so that they would stick fast to the pins, and not turn at 50 all, and therefore increase the friction and wear of the rope passing around the roller. To prevent the rusting of the pin and roller, and to provide for lubricating them, I have made an oil hole F, for each pin and roller 55 drilling a hole partly in the pin and partly in the projection or standard C, as shown in Figs. 2 and 3, so as to always form a ready means of oiling the pin and roller, so as to lessen the friction and make it turn easy, 60 and at the same time prevent the pin and roller from rusting so as to make the roller adhere to the pin and prevent its turning.

It is a great improvement in warping chocks to make the base and stands of cast 65 iron or other metal, and to apply hollowed rollers for the rope or warp to run around; and hollowing out the sides of the stands at the ends next to the rollers, so as to make them less in width than the diameters of the 70 rollers, so that the stands will not chafe or wear the ropes or warps, as they run around the rollers.

I believe I have described and represented my improvements in warping chocks, so as 75 to enable any person skilled in the art to make and use them. I will now state what I desire to secure by Letters Patent viz.

I claim—

The castiron warping chock described as 80 a new article of manufacture.

DAVID KNOWLTON.

Witnesses:

I. DENNIS, Jr.,  
EDW. F. BROWN.