

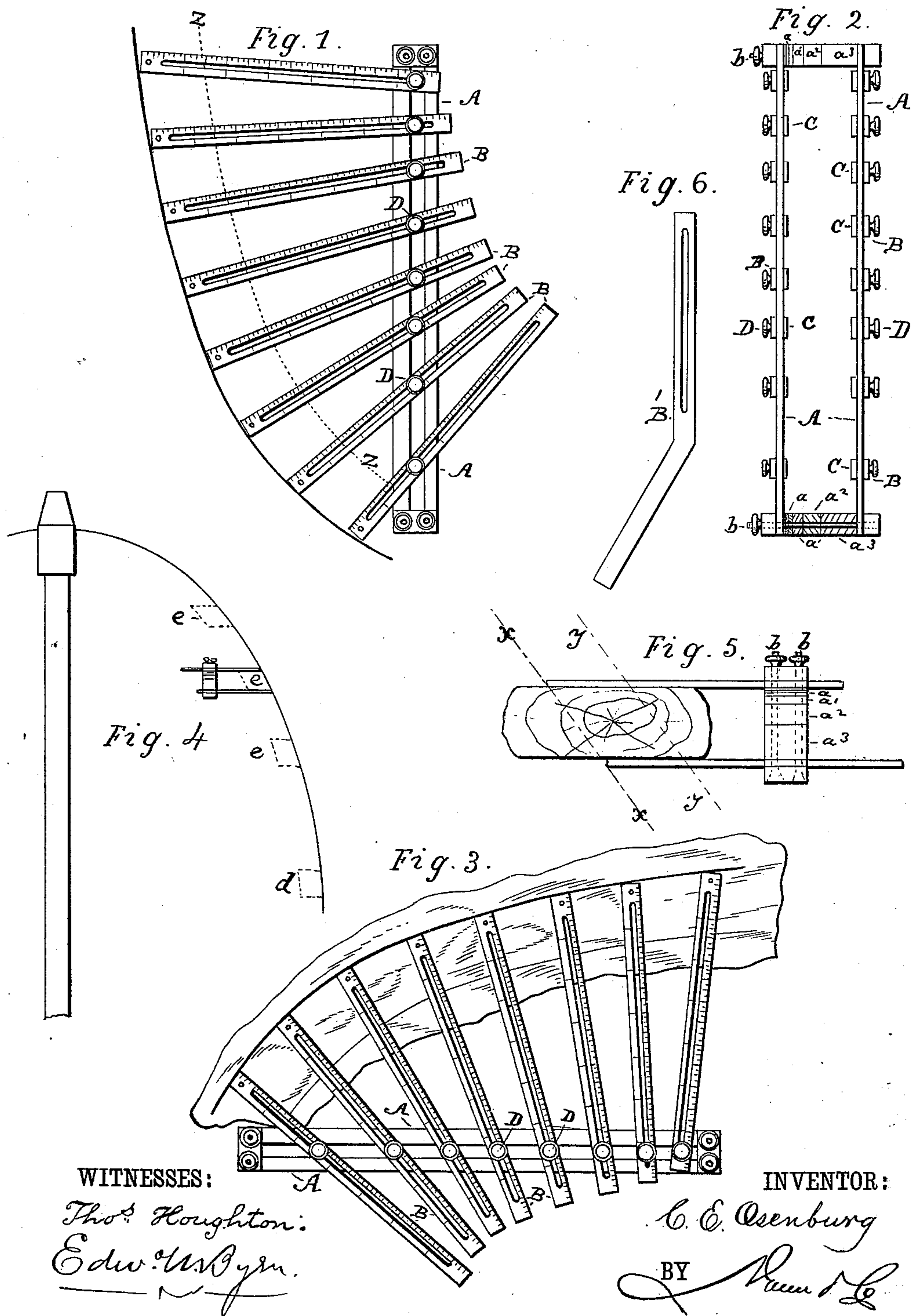
(No Model.)

C. E. OSENBURG.

CONFORMATOR FOR SHIP TIMBERS.

No. 250,835.

Patented Dec. 13, 1881.



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CONFORMATOR FOR SHIP-TIMBERS.

SPECIFICATION forming part of Letters Patent No. 250,835, dated December 13, 1981.

Application filed July 18, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. OSENBURG, of Baltimore city, State of Maryland, have invented a new and Improved Conformer for Laying Out Ships' Timbers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side view of the device, showing it as applied when taking the curve of the vessel's side. Fig. 2 is an edge view. Fig. 3 is a side view, showing the transfer of the curve to a stick of timber. Fig. 4 is a plan view of the bow portion of a boat, showing the device when applied for taking the bevel. Fig. 5 shows the marking or laying off of this bevel upon the stick of timber, and Fig. 6 a modification of one of the arms.

In the ordinary method of laying out ship-timbers the hull is first outlined by strips of wood, named "ribbands," and then molds or patterns are made, which are strips of board made to conform in the curvature of their edges to the curvature of the sides of the hull, and which molds are then laid upon the timber, and the ribs, knees, and frame-pieces cut in accordance with such patterns. In this method of shaping the timbers errors in measurement are likely to be exaggerated, and a great amount of time, labor, and material is expended in the construction of the molds.

My invention relates to a device which I call a "conformer," which permits the work to be accurately and quickly accomplished, and dispenses entirely with the use of molds and their attendant expense.

It consists in two bars held apart at their ends by filling-blocks and tie-bolts, which main bars have two independent series of adjustable arms crossing the same, which arms may be adjusted so that their outer edges conform to any shape of a ship's side, and which shape, when fixed in the conformator by means of set-screws, may, together with the bevels, be directly and exactly transferred to the timber to be cut.

In the drawings, A A represent the two parallel bars, which are preferably straight, as shown, but which may, if desired, be made curved. These bars are connected at their

ends by filling-blocks $a a' a^2 a^3$ and tie-bolts $b b$, by removing one or more of which blocks and placing them on the bolts upon the outside of one of the bars said bars may be brought closer together, to adapt them to varying thicknesses of timbers. These bars are made with a longitudinal slot in each, or two longitudinal slots for larger-sized conformators, and are provided with a corresponding series of slotted arms, B. These arms B are adjustably connected to the bars A by slides C, which move in the slots of bars A, and clamp-screws D, that pass through the slots of the arms B and enter the slides C. This connection allows the arms B to have both a lateral and a longitudinal adjustment. Now, to adjust the conformator to the curvature of the boat's side the device is applied inside the hull, as shown in Fig. 1, and all of the arms adjusted to touch a curved line representing the boat's side, and as fast as they are adjusted they are fixed in that position by tightening the set-screws. The plank-line, as seen at the dotted line $z z$, is then marked on the arms, and the flattened stick of timber is then placed between the two rows of arms of the conformator, the arms nailed to place, and the line laid off on the same from the ends of the arms, as in Fig. 3, which represents the outer convex edge of the timber, while the inner concave edge or plank-line is laid off by the marks on the arms. These two lines being then quickly and accurately established, the piece of framing may at once be sawed out without any hewing.

With this device I am enabled not only to lay off the curve of the timbers, but also the bevels. It will be seen that in the timbers, about midships and along the parallel sides, the cross-sections of the timbers are rectangular, as at d , Fig. 4, and if the longitudinal curve is ascertained there is no difficulty in getting the piece of timber true; but in the curves at the bow and stern the cross-sections of the timbers are not rectangular, but rhomboidal, as at e , Fig. 4, and here the value of my duplicate series of arms comes in, for it will be seen that by applying the conformator as shown in Fig. 4 one set of arms is adjusted farther out than the other by just exactly the amount of bevel required, and after the position of the arms is fixed, the piece of timber being placed be-

tween the two rows of arms, as in Fig. 5, the ends of the arms will mark the outer bevel, as shown by the line *xx*, while the inner bevel is marked by the graduations on the arms, as indicated by the plank-line, in the same manner as before. When a less thickness of timber is to be measured one or more of the blocks *a a'*, &c., are removed and the bars *A A* set closer together. These blocks which are removed I prefer to place upon the extension of the tie-bolts upon the outside of the bars *A*, for safe keeping and for making a more solid and compact connection for the bars. For cutting the reverse bevel for a piece of framing upon the opposite side of the boat, this may be accomplished without taking a new shape for the conformator by simply removing all the blocks and placing the top bar at the bottom and the bottom bar at the top.

In connection with the instrument as thus described, I employ a crooked arm, *B'*, Fig. 6, which I find useful at the end of the series in getting the shape around clamps or any other part of the boat-framing which would afford an obstruction to a straight arm. The conformator is also very useful in molding-lofts to lay off molds for ship-timbers that are cut in the woods. Then one side of the conformator is used only, as they are generally cut without bevel.

In connection with this conformator I propose to use two or more supporting-standards to hold the conformator in place while the arms are being set.

I am aware that a device has heretofore been constructed with a view to taking the outline of a vessel, as shown in Patent No. 103,896. In this case, however, there were not two independent series of adjustable arms, and hence the instrument could not be used for taking the bevels.

My device, it will be seen, is a single and complete instrument, capable of taking both these necessary measurements at once.

Having thus described my invention, what I claim as new is—

1. A conformator for laying off ships' timbers, consisting of two parallel bars combined with two series of arms, *B*, each of which series has an independent adjustment, substantially as and for the purpose described.

2. The combination of the two parallel bars *A* and the adjustable arms *B* with the detachable filling-blocks *a a' a''*, &c., and the tie-rods *b b*, substantially as and for the purpose described.

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Witnesses:

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