P. Staples,

Clamp.

No. 93241. Patented Aug. 3. 1869.

Fig. 3.

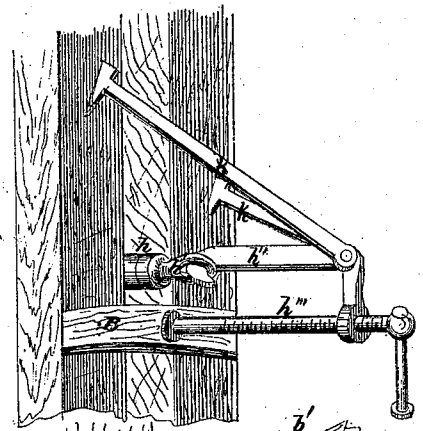


Fig. 2.

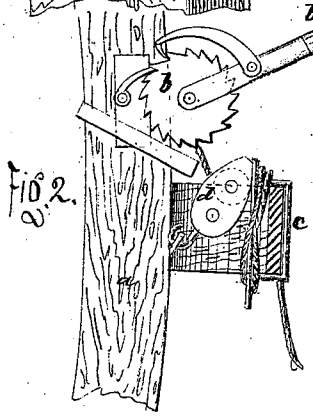


Fig. 4.

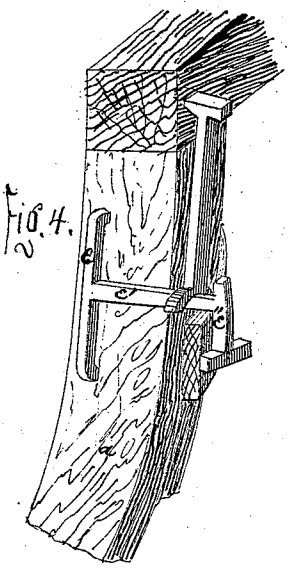
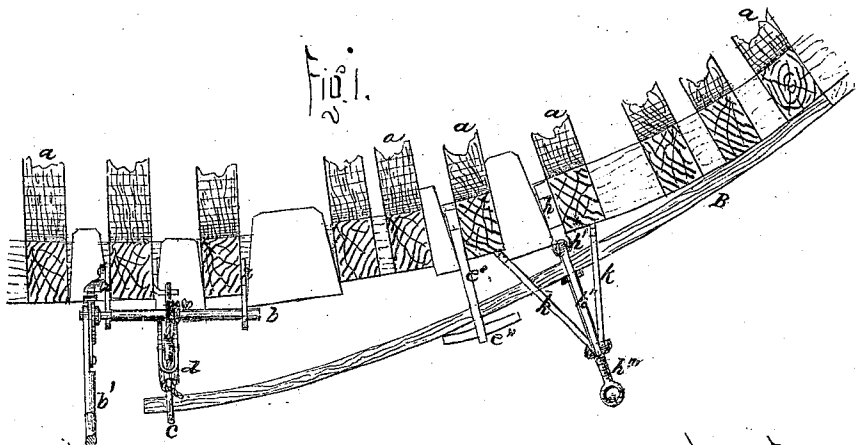


Fig. 1.



Witnesses:

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United States Patent Office.

PELEG STAPLES, OF STOCKTON, MAINE.

Letters Patent No. 93,241, *dated August* 3, 1869.

IMPROVEMENT IN CLAMPS FOR PLANKING SHIPS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, PELEG STAPLES, of Stockton, in the county of Waldo, and State of Maine, have invented a new and improved Apparatus for Planking Ships; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan view of a ship's side, showing the ribs, and the planking in process of application;

Figure 2 is a part of a transverse section through the ship, showing the means by which the planking is brought up to the ribs;

Figure 3 is also part of a transverse section, showing the means by which the planking is held fast to the ribs before bolting; and

Figure 4 is a side elevation, showing the application of a screw to a particular part of a plank.

This invention consists in the application of various mechanical powers to the process of bending planking so as to make it conform to the curve of a ship's side, at the time the planking is attached to the ribs, among which powers may be enumerated the windlass, the screw, the pulley, and the wedge, conjoined with certain clamps for holding the planks so bent, whereby a very laborious manual operation is converted into a very easy mechanical one, and a vast amount of time and labor saved.

In the drawings—

a a, &c., represent a ship's ribs.

B is a plank, about to be fastened to the side. This process begins by bolting one end of the plank to the rib. As no part of a ship's side is straight, it is evident that wherever one end of a plank may be bolted, the other end will stand off from the side to a greater or less distance, according to the curvature. In order to correct this tendency of the plank, I attach a windlass, *b*, to any two of the ribs *a* which may be most convenient to my purpose, by means of brackets, *z z*, fastened at one end to the flanks of the ribs, and projecting beyond the ship's side sufficiently to receive the windlass in grooves made in the brackets for the purpose.

I also pass a metallic loop, *c*, over the free end of the plank, which loop I connect with the windlass *b*, by means of a hempen cable, chain, or rope, the cable passing through a sheave, *d*, secured to the ships side in some place, such that it may be made to assist in the process of drawing the plank into contact with the ribs, which process is carried out by working the windlass through the medium of the bar *b'*.

The plank, having been thus bent into proper shape and position, is secured, before spiking, by clamps, each of which consists of an iron bar, *e*, with prongs at its ends, bent at right angles to the bar, by means of which it is fastened to the flank of the rib, the said bar being itself but a cross-piece upon the head of another bar, *e'*, projecting from it at right angles, the said bar *e'* having, at its opposite extremity, a T-shaped piece, *e''*, parallel, in its general direction, with the bar *e*. Between the cross-piece of the bar *e''* and the rib, the plank is held firmly by a wedge until spiked.

In case any part of a plank stands off further from the side than it should, or is cracked at any particular point, and therefore needs to be forced up, I make use for this purpose, of a clamp of peculiar construction, consisting of a large T-piece, *h*, with prongs on the ends of its cross-piece, by means of which the latter is fastened, like the bar *e*, into the flank of a rib, and provided, at the extremity of the part which projects from between the ribs, with a swivelling-eye, *h'*, in which is placed the hook that is formed on the end of the bar *h''*, which bar is bent at right angles, and is furnished, at its opposite extremity, with a threaded eye, through which is passed a screw-bolt, *h'''*, having a sliding handle in its outer end, that serves in turning the screw.

A wooden glut is placed against the part of the plank requiring compression, and the screw-bolt *h'''* turned up to it, and made to force it against the plank until the latter is closely pressed against the rib.

Braces, *k k*, having spurs at one end for driving into the ribs, are jointed at their other ends to the angle of the bent bar *h''*, so as to firmly hold the same against all pressure.

I use wedges, as seen in fig. 1, filling the space between the brackets, clamps, &c., and the next rib, in order to firmly secure the former to the rib to which they are attached. The wedges may be of any width, from three-quarters of an inch to one foot or more, according to whether the clamps are placed in the narrow space between the two parts of each rib, or between the ribs themselves.

Before applying planks to the bow, stern, or other curved part of a ship's side, it is necessary to steam them, and when the planks are taken out of the steam-box, it is highly important that they should be placed in proper position upon the ribs, and receive the due degree of curvature before they become cold, as then it is impossible to bend them. With my apparatus, this process can be performed with ease, in less than half the time required by the present method, and one man, stationed at the windlass at the free end of the plank, can do the work of six men applying their manual labor to a rope or tackle, in the best way they can under the circumstances, which are very disadvantageous at the best. The windlass is used only upon the outside of the ship.

For applying ceiling or inside planking, I use the

clamp *h*, causing it to project inside the vessel instead of outside. It is obvious, that to get a plank in position in the ceiling, its two ends have first to be placed against the inside of the vessel where the plank is the chord subtending an arc, and that the centre has then to be sprung inward to meet the side. To accomplish this object, I take a clamp, *h*, and place in its eye a bent bar, *h''*, of the proper length, often from six to ten feet, and secure the bar with the braces *k k*, and then apply the screw-bolt *h'''* to the inside of the plank, and force it up. This is a part of the building of a vessel which has always been, by the old methods, very difficult of accomplishment, owing to the fact that there has never been any apparatus that could be applied to the centre of the plank, it having always been found necessary to work from the ends toward the centre. My apparatus effects the end in view in an extremely easy and expeditious manner.

A further advantage resulting from the use of the clamps herein described, is that the spiking, heretofore found necessary for fastening the planks before the treenails can be put in, may be almost entirely dispensed with, thus effecting a saving, in constructing a ship of one thousand tons, of at least one hundred dollars.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The apparatus consisting essentially of the T-piece *h*, provided with prongs and with the swivelling-eye *h'*, the hooked and bent bar *h''*, the screw-bolt *h'''*, and the braces *k*, combined and operating as and for the purpose described.

2. The clamp or holder, made up of the bar *e*, provided with prongs, the bar *e'*, projecting from the former at right angles, and the T-piece *e''*, all arranged to operate as explained.

3. Attaching the windlass *b* to the ribs of the ship by means of the brackets *z z* and suitable wedges, as and for the purpose specified.

PELEG STAPLES.

Witnesses:

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SOLON C. KEMON.