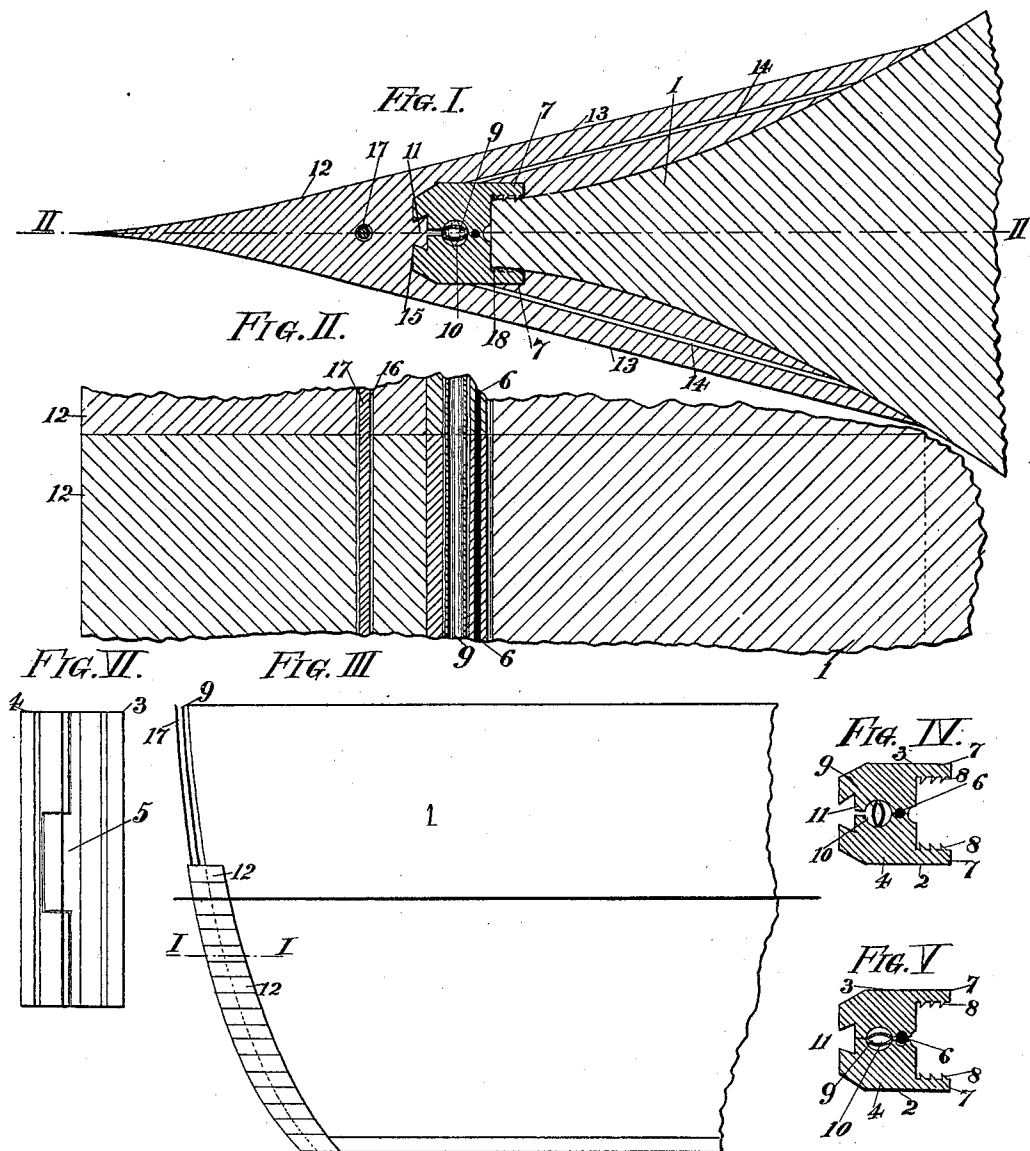


(No Model.)

W. W. BEACH.
SHIP ATTACHMENT.

No. 584,088.

Patented June 8, 1897.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILL W. BEACH, OF LOS ANGELES, CALIFORNIA.

SHIP ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 584,088, dated June 8, 1897.

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To all whom it may concern:

Be it known that I, WILL W. BEACH, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Ship Attachments, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to an improved attachment for ships whereby a detachable wedge-shaped nose is attached to the prow of a ship or other vessel in order to reduce the friction and gain speed and save fuel; and my invention consists in certain features of novelty hereinafter described and claimed.

Figure I is a detail transverse section taken on line I I, Fig. III. Fig. II is a vertical section taken on line II II, Fig. I. Fig. III is a detail side elevation of the prow of a ship, showing my improvement. Fig. IV is a transverse section of a metal core, showing it in position as clamped to the prow of the ship. Fig. V represents a transverse section of the metal core, showing the position it assumes when not clamped to the prow of a ship. Fig. VI represents a rear elevation of one of the core-sections, showing the manner in which they are hinged to each other.

Referring to the drawings, 1 represents the prow of a ship.

2 represents a metal core which is secured to the prow of the ship, said core consisting of a number of sections formed in parts 3 4, which are hinged to each other at 5 by means of a vertical rod 6, which extends through each section of the core.

7 represents clamps on the core having teeth 8, said clamps grasping each side of the prow 1, as shown in Fig. I. The teeth on the clamp 7 are forced into contact with the metal prow by means of an oval bar 9, operating in recesses 10, which extend through the sections of core. Said oval bar, operating in a round orifice, serves to press outward the outer end of the hinged sections of core when the bar has been turned crosswise of the core, as shown in Fig. IV, causing the teeth 8 on the clamps to bite into the metal prow.

11 represents a dovetail mortise in the forward end of the core-sections.

12 represents a V-shaped point formed of rubber or other material having elastic qualities, said point having wings 13 extending on each side of the prow 1.

14 represents spring-rods embedded in the wings of the elastic point, which serve to stiffen the same and at the same time press the wings into close contact with the prow. The elastic point 12 is formed in sections similar to the core 2.

15 represents a tenon on the elastic point 12, said tenon fitting into the mortise 11 in order to assist in holding the elastic points in contact with the metal core. The elastic points are provided with a vertical orifice 16, which permits the points being strung upon a rod 17, to assist in holding the various sections in line with each other. In placing the sections of core in position on the prow I magnetize each section, which holds said sections in position until the bar 9 has been turned in its orifice and the clamps forced into contact with the nose of the ship. By forming the point of rubber or other elastic material I am enabled to attach a false nose to the prow of the ship, which, while adding materially to the speed of a vessel by reducing the friction, does not increase the danger in case of a collision that would be occasioned by the use of a sharp metal prow, as in case of a collision the point would first give, owing to its elasticity, and if the collision was of sufficient force the points would be knocked off entirely before doing any serious injury. By making the points and cores in sections they can be strung upon the rods when the ship is in the water, and can be readily detached for the purpose of cleaning, repairing, &c.

18 represents a recess at the rear of the core which breaks the circuit during the magnetizing of the core, the clamps on either side serving as the negative and positive poles.

I claim as my invention—

1. In a ship attachment, the combination with the prow, of an elastic point formed in sections, and having wings engaging the prow, with spring-rods embedded in said wings, substantially as set forth.

2. In a ship attachment, the combination with the prow, of a metal core formed in sections, an elastic point formed in sections and

secured to the core, and means for securing the core to the prow, substantially as set forth.

3. In a ship attachment, the combination with the prow, of a metallic core, having parts 5 hinged to each other, clamps for engaging the prow, and an elastic point connected with the core, substantially as set forth.

4. In a ship attachment, the combination with the prow, of a metallic core having clamps 10 with teeth thereon, said core being formed in parts hinged to each other, and a rod extending through each section of the core which forms a pivot on which the hinged parts of the core operate, substantially as set forth.

15 5. In a ship attachment, the combination with the prow, of a metallic core formed in sections with parts hinged to each other, clamps on the parts, a central orifice, and an oval bar extending through the orifice for the 20 purpose of clamping the core to the prow, substantially as set forth.

6. In a ship attachment, the combination with the prow, of the core formed in parts hinged to each other, clamps on the core, a dovetail mortise in the core, an elastic point 25 formed in sections and having a tenon adapted to fit into the dovetail mortise in the core, substantially as set forth.

7. In a ship attachment, the combination with the prow of a metallic core having parts 30 hinged to each other, clamps on the core, means for forcing said clamps into engagement with the prow, a dovetail mortise in the core, an elastic point formed in sections, and having a tenon thereon adapted to fit into the 35 mortise, and a rod on which the elastic sections are strung, substantially as set forth.

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Witnesses:

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