No. 762,727. PATENTED JUNE 14, 1904.

C. H. LANDENBERGER, JR.

DEVICE FOR RECLAIMING AND RETAINING SEA BEACHES.

APPLICATION FILED NOV. 23, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

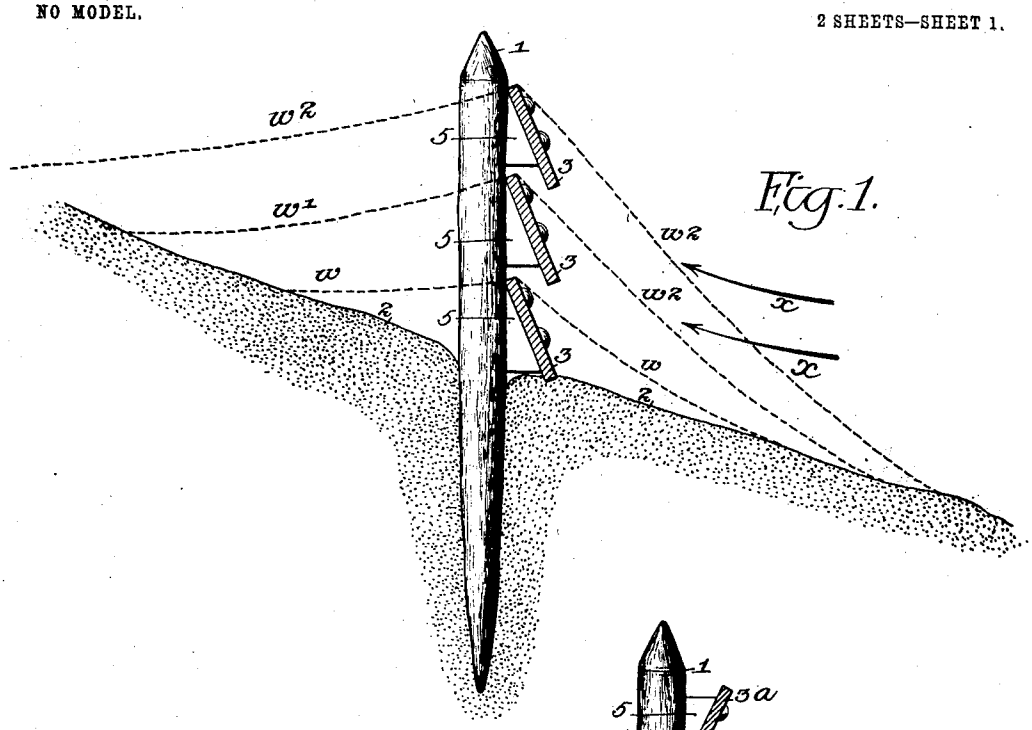

Fig. 1.

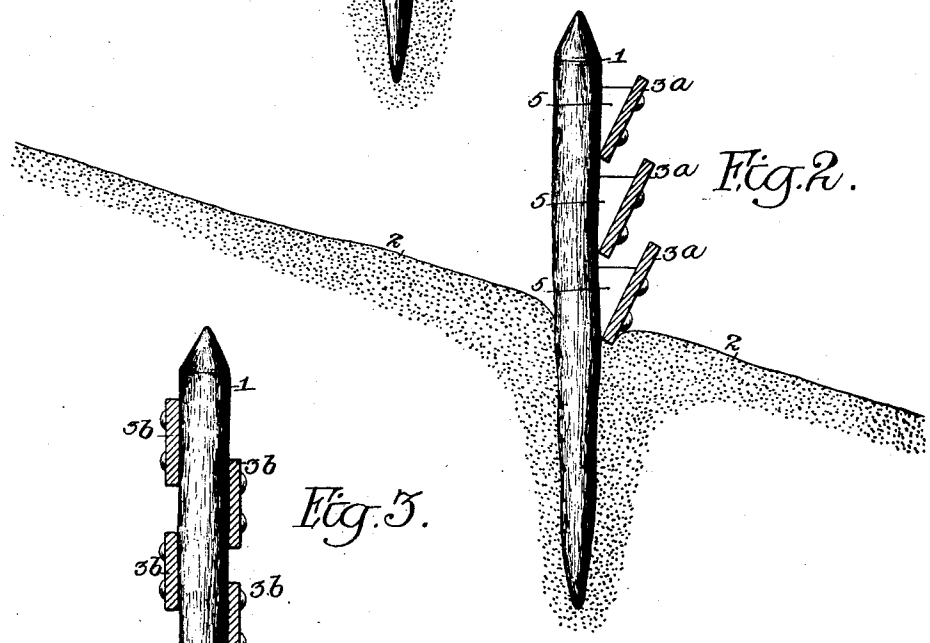

Fig. 2.

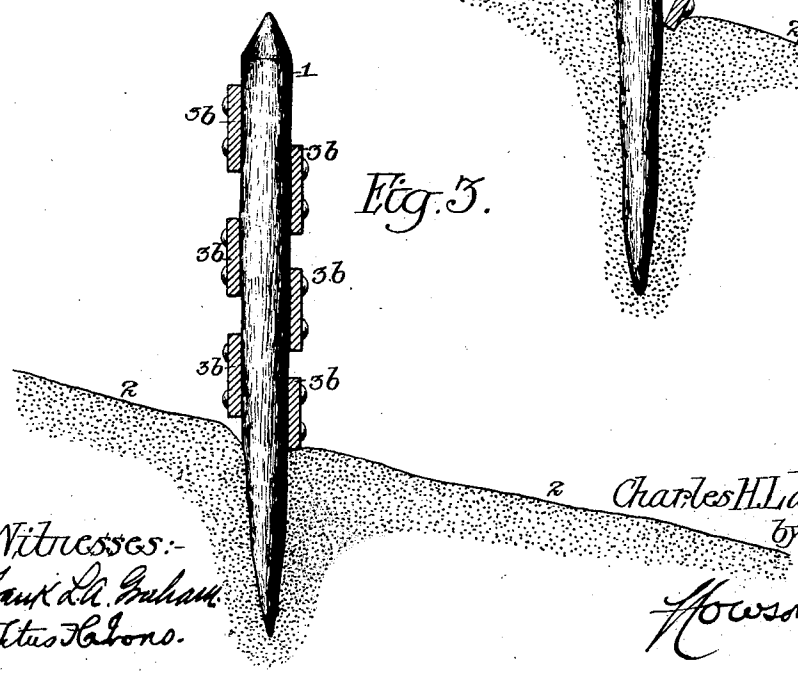

Fig. 3.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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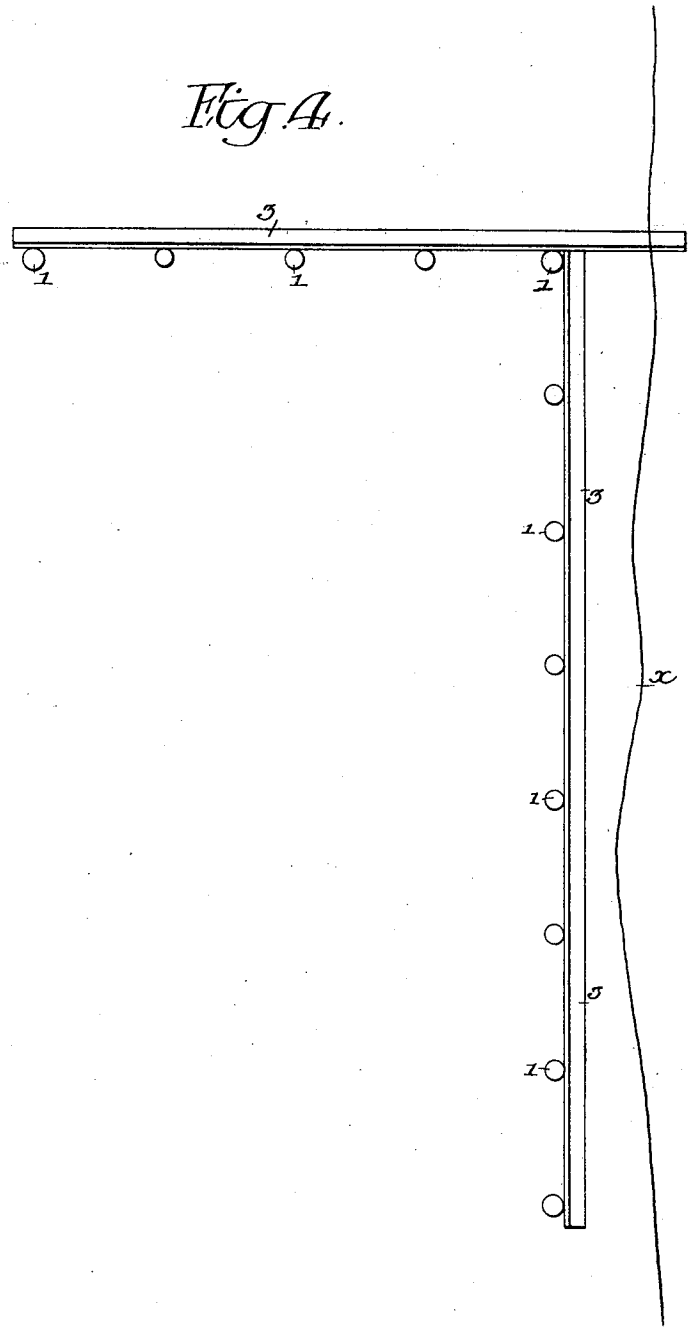
NO MODEL. 2 SHEETS—SHEET 2.

Fig. 4.



Witnesses:
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No. 762,727. Patented June 14, 1904.

UNITED STATES PATENT OFFICE.

CHARLES H. LANDENBERGER, JR., OF PHILADELPHIA, PENNSYLVANIA.

DEVICE FOR RECLAIMING AND RETAINING SEA-BEACHES.

SPECIFICATION forming part of Letters Patent No. 762,727, dated June 14, 1904.

Application filed November 23, 1903. Serial No. 182,289. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. LANDENBERGER, JR., a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Devices for Reclaiming and Retaining Sea-Beaches, of which the following is a specification.

My invention consists of simple and effective means for preventing waves or currents of water from washing away the beach and for so retarding while not stopping the flow of such waves or currents as to afford time for the deposit of the sand or some of the sand held in suspension by the water, the result being a gradual accretion of this deposited material at and near the retarder until the beach has been built up to the level of the top of the same.

In the accompanying drawings, Figure 1 is a sectional view of one form of retarding and retaining structure made in accordance with my invention. Figs. 2 and 3 are similar views illustrating other plans which may be adopted in making such structures in accordance with my invention, and Fig. 4 is a diagrammatic view illustrating the location of the structure on the beach.

The structure comprises a series of posts 1 driven into the beach 2 at proper distances apart and in a line transverse to the direction of movement of the incoming and outgoing waves or other flowing currents of water. These posts carry longitudinal planks 3, which are inclined in respect to the vertical, so that they may overlap each other horizontally, while still providing passages 4 between them for the flow of the water, a convenient means for this mounting of the planks 3 being to insert between the same and the posts 1 triangular filling-blocks 5, having inner vertical faces for bearing against the posts and outer faces at the desired angle of inclination for the planks 3. Waves washing up the beach flow over and through this obstruction, the planks 3, however, checking the direct onward rush of the water in the direction of the arrows x and causing it to change its direction of motion and flow upwardly between the planks 3, and the backward rush of the water is likewise checked and said water is caused to take a downward course between the planks 3, the result being that in either case time is afforded for the deposit of some of the sand held in suspension by the water, and while the sand thus deposited on the seaward side of the retainer may be partially washed away by the returning wave that deposited on the landward side is retained and held, the bottom plank of the series serving to check the undertow. Hence the effect of the device is to cause the building up of the beach, first to the extent indicated by the dotted line w, then to the extent indicated by the dotted line w', and, finally, to the extent indicated by the dotted line w^2, whereupon a similar structure can be erected at a point farther seaward preparatory to a repetition of the operation, the first structure being either permitted to remain covered up or being pulled up for use elsewhere.

Instead of using a single structure of the character described two or more of the same may be erected, one farther seaward than another, so that the building up of the beach may be effected at two or more separate points simultaneously.

The structure shown in Fig. 2 is similar to that shown in Fig. 1, with the exception that the angle of the planks 3^a is reversed, the construction shown in Fig. 1 being preferred for the reason that the weight of the water does not have the same tendency to tear the planks from their fastenings as it would have in the construction shown in Fig. 2.

My invention can also be embodied in a structure in which the planks are not inclined at all—as shown, for instance, in Fig. 3, on reference to which it will be observed that vertical planks 3^b are disposed on opposite sides of the posts 1, so that the planks on one side are opposite to the spaces between the planks on the other side, whereby the desired retardation of the movement of the water forming the waves is effected, with the resultant building up of the beach in the same manner as when the inclined planks are used.

The device constituting the subject of my invention being simply a fence with overlapping planks so disposed as to form spaces between them is a very cheap and simple struc-

ture, and it has been found in practice to be thoroughly effective for the purpose for which it is intended.

My invention is also adapted for preventing the washing away of a beach by currents flowing parallel or substantially parallel therewith, the retarder in such case extending in a direction transverse to the beach or to the flowing currents. Thus in Fig. 3 *x* represents, say, the low-water line of a beach upon which is erected both a longitudinal retarder for checking wave action and a transverse retarder for checking the action of currents.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. As a device for reclaiming or retaining sea-beaches, a fence-like structure comprising a line of posts extending in a direction transverse to the movement of the waves or currents, and having overlapping planks with spaces between them, substantially as specified.

2. As a device for reclaiming or retaining sea-beaches, a fence-like structure comprising a line of posts extending in a direction transverse to the movement of the waves or currents, and having its planks inclined and with overlapping edges separated so as to provide a space for the flow of the water between the planks, substantially as specified.

3. As a device for reclaiming and retaining sea-beaches, a fence-like structure extending in a direction transverse to the movement of the waves or currents, and having its planks inclined outwardly from top to bottom and with overlapping edges separated throughout their length so as to provide a space for the flow of the water between the planks, substantially as specified.

4. As a device for reclaiming and retaining sea-beaches, a fence-like structure extending in a direction transverse to the direction of movement of the waves or currents, and composed of posts, inclined planks mounted thereon with overlapping but separated edges, and triangular blocks interposed between the posts and planks, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

C. H. LANDENBERGER, Jr.

Witnesses:

Henry Noar,

Jos. H. Klein.