

C. NOHLEN.
JETTY.

APPLICATION FILED OCT. 15, 1920.

1,373,629.

Patented Apr. 5, 1921.

2 SHEETS—SHEET 1.

Fig. 1

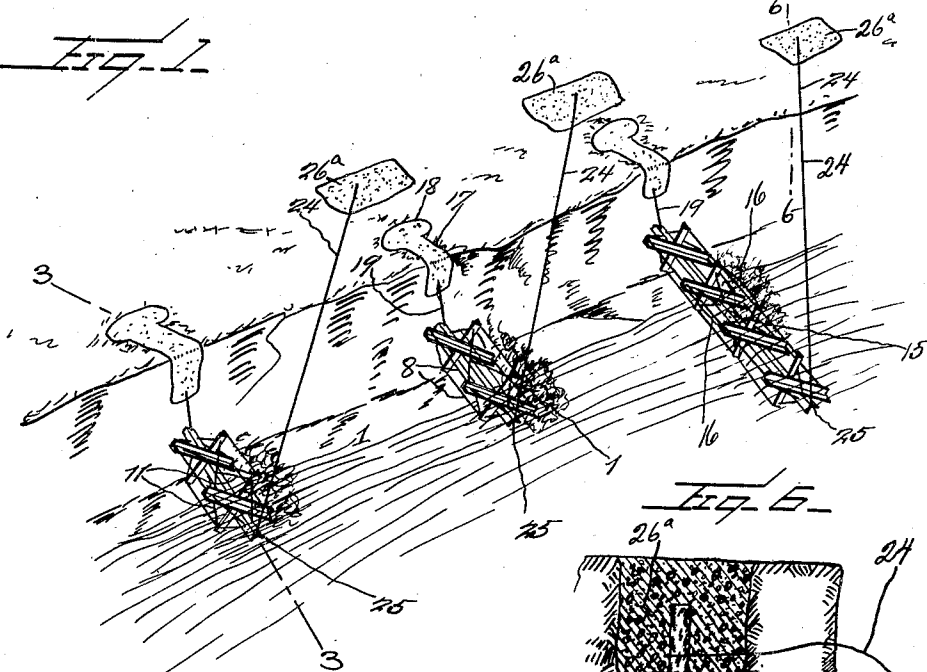


Fig. 5

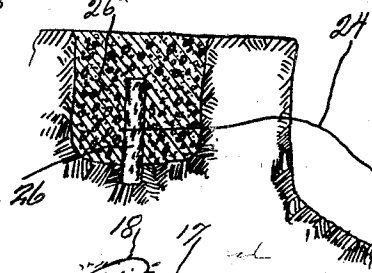
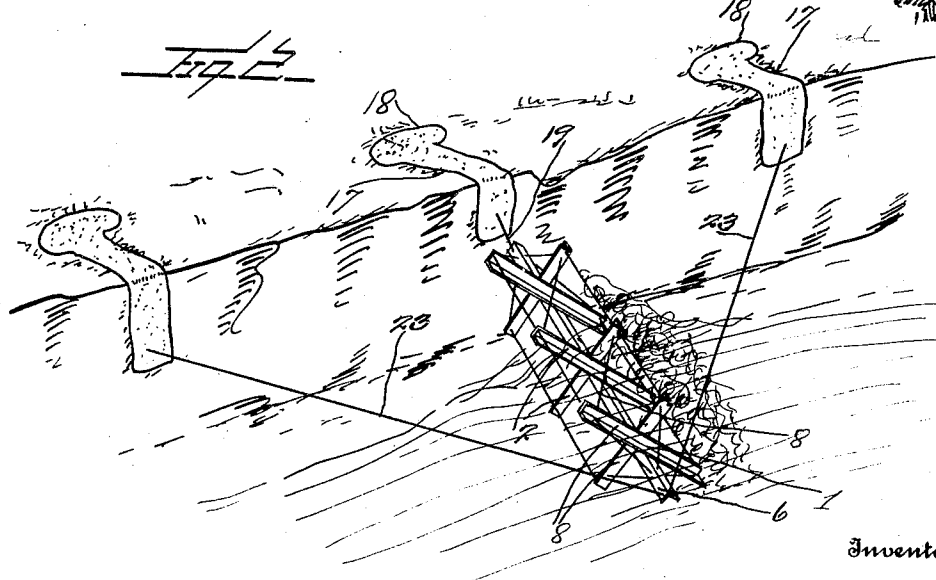


Fig. 2



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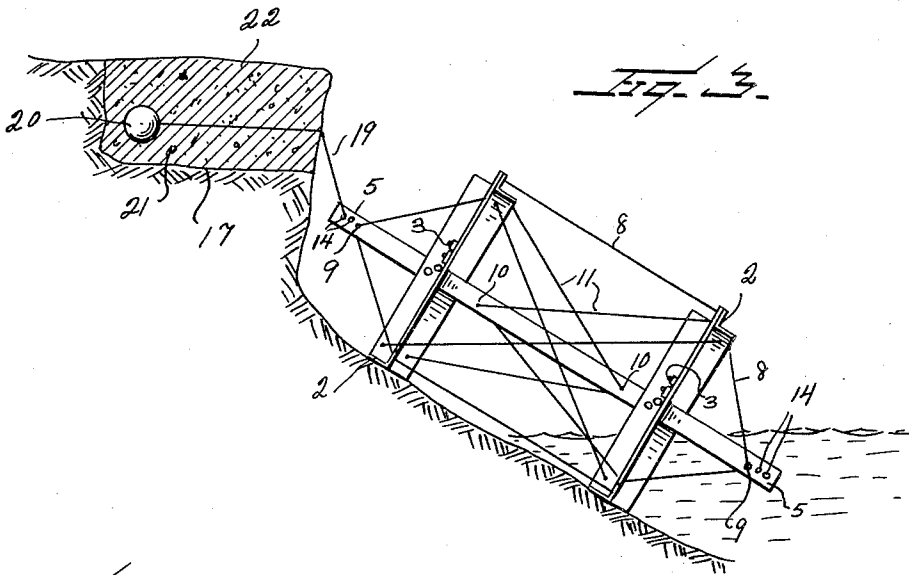


Fig. 4.

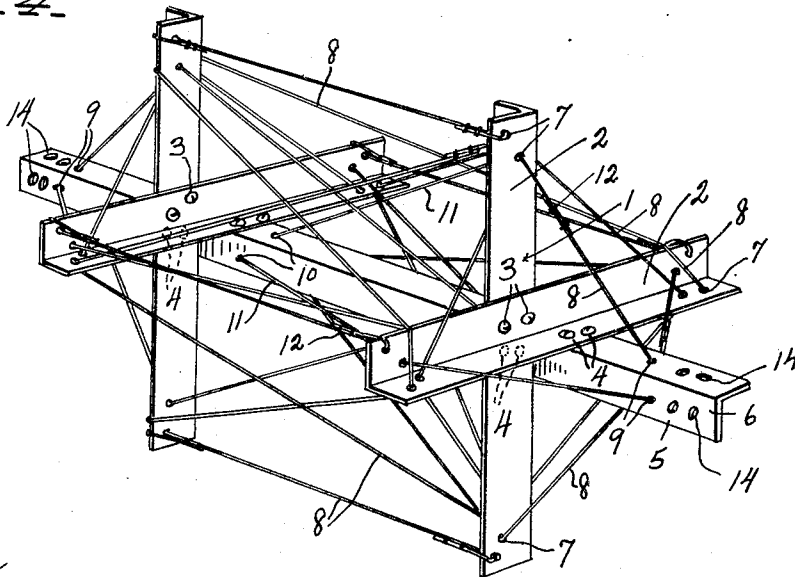
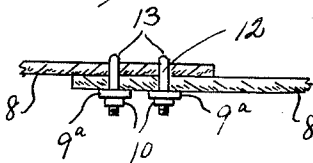


Fig. 5.



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UNITED STATES PATENT OFFICE.

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To all whom it may concern:

Be it known that I, CARL NOHLEN, a citizen of the United States, residing at Cleburne, in the county of Riley and State of Kansas, have invented certain new and useful Improvements in Jetties, of which the following is a specification, reference being had to the accompanying drawings.

The purpose of the present invention is the provision of a device or plurality thereof particularly known as jetties for use along a river or other stream bank, to more or less break up the force of the water.

It is known that in streams or rivers where the water flows with considerable force, the banks are in time washed away or dug out, the over hanging part eventually falling, and after which the force of the water again flows upon the side of the bank and therefore causing a further washing away of the land.

With the present invention, which consists of a plurality of jetties, the force of the stream may not only be retarded or broken up, but the course of the stream may be changed, as well as causing an accumulation of land at the water front or bank. Also the use of the jetties prevents the water from cutting away the land or bank, by keeping the current away from the same, and owing to the accumulation of mud or silt, the bank or the water front is kept more or less built up, and in time willow and cotton wood will take root and grow along the water front or bank.

As a further purpose, it is the aim to provide an improved jetty, which may be used singly, or in numbers, or several attached to each other, and comprising intersecting angle beams such as shown, as connected to a longitudinally extending central beam, with means, such as suitable clamps and the like to fasten such parts together.

Furthermore it is the aim to provide reinforcing or bracing means, such as tie cables or the like between the various angle bars, not only to insure rigidity of the construction, but also to afford an entanglement, which together with the angle bars causes a collection of mud, brush work and silt, which in time becomes more or less solid and firm and tends to build up the bank or water front, where trees eventually take root and grow.

Additionally it is the aim to provide means, such as clamps to secure the ends of

the cables of the entanglement together, so that the various cables may be drawn tight, and hold the bars of the jetty secured. It is the aim to connect the tie cables a substantial distance from the ends of the various bars, so that the bars will be free to dig into and anchor in the bed of the stream.

While the design and construction at present illustrated and set forth is deemed preferable, it is obvious that as a result of a reduction of the invention to a more practical form for commercial purposes, the invention may be susceptible of changes, and the right to these changes is claimed, provided they are comprehended within the scope of what is claimed.

The invention comprises further features, and combination of parts, as will be hereinafter set forth, shown in the drawings and claimed.

In the drawings:—

Figure 1 is a perspective view of the side of a river bank or water front, showing a plurality of jetties arranged along the side of the bank, for the purpose intended.

Fig. 2 is a perspective view of a river bank or water front, showing a modified form of jetty as applied in position.

Fig. 3 is a sectional view on line 3—3 of Fig. 1.

Fig. 4 is an enlarged detail perspective view of one of the jetties, showing the various tie or entanglement cables.

Fig. 5 is a detail view of the clamps, whereby the adjacent ends of a cable may be connected together.

Fig. 6 is a detail sectional view on line 6—6 of Fig. 1, showing the anchoring of one of the cables 24.

Referring more especially to the drawings, 1 designates the jetty as a whole, and it comprises a plurality of angle bars or beams 2 arranged in pairs, the bars of each pair crossing or intersecting each other, and are bolted together as at 3. It will be noted that certain of the flanges of these bars 2 of each pair are disposed in opposite directions as shown, and are secured as at 4 to the flanges 5 of the angle bar 6, which is arranged longitudinally of the jetty.

The intersecting bars 2 are provided with apertures or openings 7, which are engaged by the various cables 8. These apertures or openings 7 are designed to be arranged a substantial distance from the ends of the intersecting angle bars, so that the end por-

tions of the angle bars will anchor or dig into the bed of the stream for the purpose of holding the jetty in position. The end portions of the longitudinally extending angle bar are provided with openings or apertures 9, to receive portions of certain of the cables or the like 8, for the purpose of reinforcing the intersecting bars relatively to the longitudinally extending bar. Furthermore the longitudinally extending bar at points between the intersecting angle bars have additional openings or apertures 10, to be engaged by other cables, as indicated at 11, in order to additionally reinforce the structure. While the drawing discloses the cables or the like as passing through the various openings or apertures, or anchored in the openings, it is to be understood that the device is not to be limited to this particular construction, for it is obvious that the cables may be otherwise attached. Also it is to be noted that any number of cables or tie members may be employed, and furthermore may extend in various directions, either as shown, or otherwise. Where the ends of the cables or tie members are joined, suitable clamps 12, such as indicated in Fig. 5 are designed to be used. Each clamp comprises U-shaped members or staples 13, which straddle the connecting end of the cable with their arms extending through the plates 9^a, there being nuts 10 secured upon the arm, to draw the parts of the clamp together.

In constructing the jetty, it will be noted that the inner faces of the various angle bars face outwardly, and this is especially true in connection with the longitudinally extending bar, so that the exterior faces of the flanges of the various bars may be engaged, and by means of the bolts or the like 3 and 4, the bars may be secured together.

Adjacent the extremities of the longitudinally extending bar 5 apertures or openings 14 are provided, which may be employed for receiving bolts, whereby the adjacent ends of the longitudinal bars of two or more jetties may be bolted together, as indicated at 15 in Fig. 1. Where two jetties are connected together in this manner, they are additionally braced by the tie cables or the like 16, which are connected to certain adjacent intersecting angle bars as shown. By this construction a jetty may be provided, so as to extend considerably out from the bank or water front, to insure collecting silt, mud, brush work and the like.

Also in Fig. 1 it will be observed that single jetties are employed, a double jetty being in advance of the single jetties. However this arrangement may be reversed. For instance the single jetties may be arranged where it is first intended to build up the river bank or water front, such as two in number, and then a pair of double

jetties, and then a pair of jetties which may consist of six sets of intersecting bars, instead of four sets. In other words the jetties may be arranged in gradually increasing numbers, so used as to gradually break up the force of the stream, and thereby more quickly build up the river bank or water front, as well as more readily changing the direction of stream away from the bank.

In order to anchor the jetty to the bank, the side of the bank is provided with cavities or holes, as indicated at 17 in Figs. 1, 2 and 3. The inner portions 18 of the cavities or holes are larger than the outer portions of the holes. In order to anchor the jetty, an anchor cable 19 may be attached to the longitudinally extending bar in one of the apertures 14, in any suitable manner, there being a weight 20 attached to the other end of the cable, which is placed in the cavity or hole, after its lower portion has been partially filled with cement, or other plastic material as indicated at 21. After disposing the cable and the weight in position, as shown in Fig. 3, the cavity or hole is filled up with cement or other plastic material or the like as indicated at 2. When this material becomes thoroughly set or hardened, the cable 19 is anchored securely in position, therefore holding the jetty in place. This construction is also illustrated in Fig. 2, as well as in Fig. 3.

In Fig. 2 the bracing cables 23 are anchored to the side of the bank or river front, in the same manner as the cables 19 are connected.

As shown in Figs. 1 and 6 the bracing cables 24 may be anchored in the bank, by first attaching the cables to the centers of posts 26 constructed of hard wood or iron, which are buried in the ground near the river bank. In anchoring the cables 24 in this manner, holes may be dug in the ground adjacent the river bank, after which the posts of hard wood or iron or the like may be disposed in the hole, and the hole afterward filled up with earth, or earth and stone, or stone and cement, or any other suitable heavy material, as indicated at 26^a. These buried anchoring posts of hard wood or iron are cheaper and more convenient, especially when earth and stone are used to fill up the hole, such a construction of anchoring cables may be used instead of the form for anchoring, shown at 17 in Figs. 1, 2 and 3. However, any suitable anchoring of the cables may be used.

It will be noted that the various bracing cables 8, together with the intersecting bars arranged in pairs, and also the longitudinally extending bar constitute an entanglement, which will cause the collection of mud, silt, brush and the like, in order to build up the side of the river bank or water front,

also to act to break up the retarded force of the stream in its flow, as well as keeping the water away from the bank.

The invention having been set forth, what is claimed as being useful is:—

5 In a silt-bar forming-device, a frame adapted to be placed in moving water, said frame comprising two pairs of angle bars crossing each other at right angles, a longi-
10 tudinally extending angle bar secured in the corresponding crotches of the two pairs of bars, means for fastening the bars of each pair together, reinforcing ties connected to the longitudinally extending bar at points

between the two pairs of bars, and at points 15 adjacent the ends of the longitudinally extending bar and converging outwardly and in turn connected to the corresponding ends of the right angle crossing bars, and reinforcing ties connecting the corresponding 20 ends of the crossing bars, certain of the reinforcing ties which connect the outer ends of the right angle bars intersect each other, thereby additionally reinforcing the frame.

In testimony whereof I hereunto affix my 25 signature.

CARL NOHLEN.