No. 620,584. Patented Mar. 7, 1899.

W. H. HARRELSON.

AUTOMATIC CHAIR MAT FOR CROSS JETTY WORK.

(Application filed May 24, 1898.)

(No Model.)

Fig. 1.

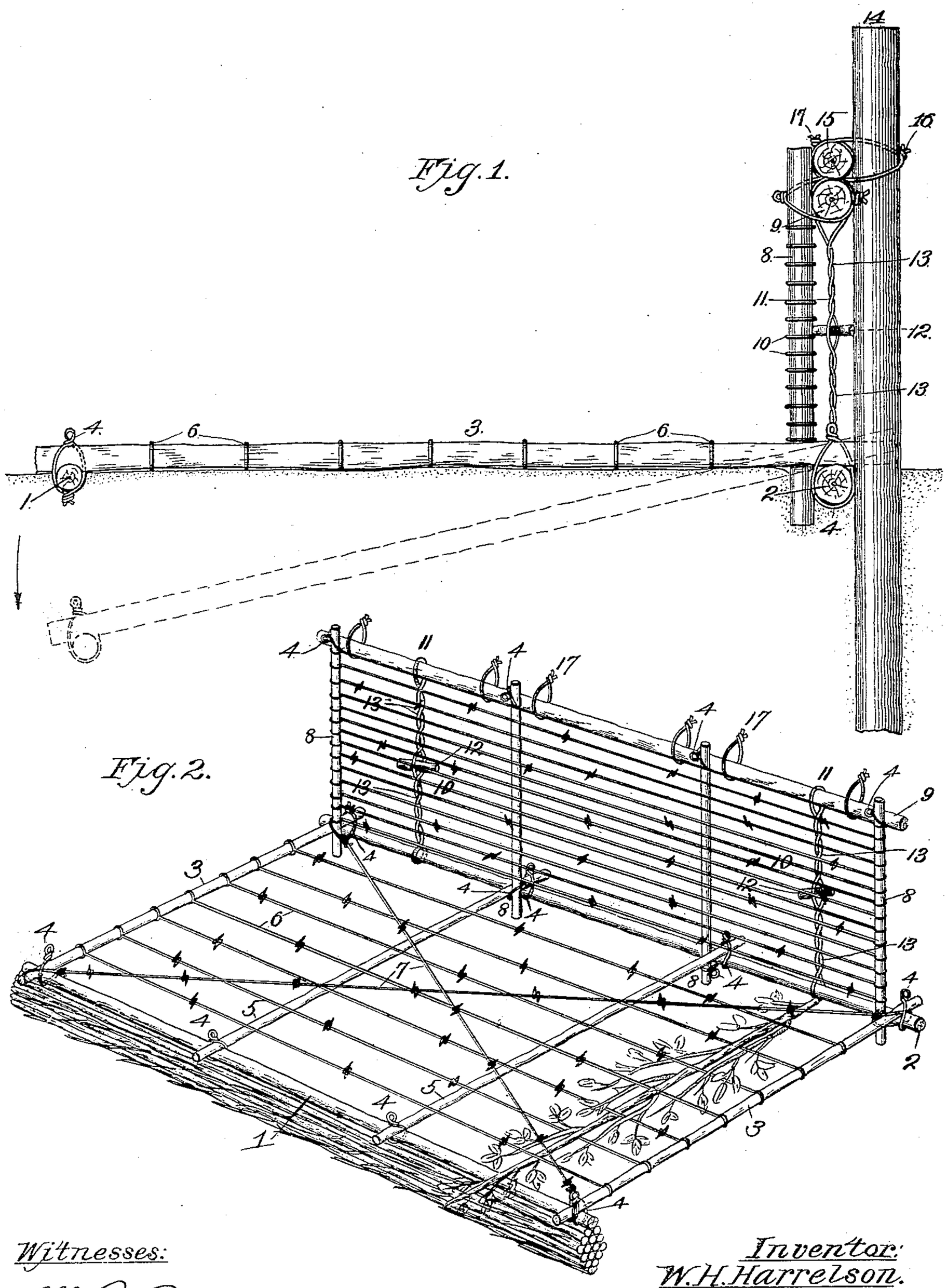

Fig. 2.

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WILLIAM H. HARRELSON, OF KANSAS CITY, MISSOURI.

AUTOMATIC CHAIR-MAT FOR CROSS-JETTY WORK.

SPECIFICATION forming part of Letters Patent No. 620,584, dated March 7, 1899.

Application filed May 24, 1898. Serial No. 681,554. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. HARRELSON, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in Automatic Chair-Mats for Cross-Jetty Work, of which the following is a specification.

My invention relates to automatic chair-mats for cross-jetty work; and my object is to produce a device of this character which can be built and properly disposed in the stream at a comparatively small expense, which is of simple and durable construction, and which automatically accommodates itself to the bed of the stream, and consequently prevents the water from cutting under the structure, and thus destroying its efficiency.

With this object in view the invention consists in certain novel and peculiar features of construction and combinations of parts, as will be hereinafter described and claimed, and in order that it may be fully understood I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 represents the chair-mat properly disposed with relation to the bed of the stream. Fig. 2 represents a perspective view of the chair-mat.

In practice it is desirable to build these mats in sections of from twenty to fifty feet in length in order that the work of disposing them in the stream may be facilitated; but it is to be understood, of course, that I do not confine myself to any particular length or to any number of mats employed in any particular piece of work, it being sufficient to explain that where a plurality of mats are employed they are to be fitted together endwise and preferably lashed to each other.

In the said drawings the seat portion of the mat consists of the parallel longitudinal logs 1 and 2 and the transverse or end logs 3, the latter preferably resting upon and lashed to the former by means of wire loops 4, said loops being of the type illustrated and described in my Patent No. 554,777, granted February 18, 1896, on method of bracing and lashing riprap and jetty-work, reference to which is hereby made for a full understanding of the same. In order to stiffen this frame, I employ additional transverse logs or bars 5, which also rest at their opposite ends upon the longitudinal logs 1 and are lashed thereto by loops 4. The end logs or bars 3 are also connected at intervals of about a foot, more or less, by the wires 6, which extend above the intermediate logs or bars 5, that the latter may relieve them of the greater part of the weight which the seat must sustain, and to give the rectangular frame rigidity I preferably employ the intersecting or obliquely-extending tie wires or rods 7, which are lashed or otherwise suitably secured at their ends to the corners of the frame by preference. The back of the chair-mat consists of a plurality of upright logs or timbers 8, which are fitted in the crotches formed at the intersection-points of log 2 and the logs or bars 3 and 5 and the longitudinal log or timber 9, which connects the upper ends of the uprights 8 and is secured to the same at the points of intersection by means of loops 4, and extending parallel with said log or timber 9 and preferably at intervals of a few inches are wires 10, said wires being secured in any suitable manner at their opposite ends to the end uprights 8. This back is secured reliably but pivotally to the log or timber 2 of the seat portion by means of loops 4, as shown, to the end that the seat portion may operate pivotally when necessary to accommodate a deepening of the channel, and thereby prevent the stream from cutting under the seat portion, as will be presently explained, and in order to make the connection between the seat and the back portion of the mat reliable the top log or timber 9 of the latter is connected to the former by the tie-rods 11, the latter consisting originally of loops connecting said parts and tensioned to the requisite degree by the insertion of a bar or lever 12 through each loop in order to twist it at points intermediate of the logs 9 and 2 and of said twisting bar or lever, as shown at 13.

Preliminary to placing the chair-mats in position a row of piles 14 are erected at suitable distances apart along the line to be occupied by the chair-mats, and secured to the front side of the piling in a direction substan-

tially parallel with the bed of the stream are longitudinal connecting timbers or logs 15, these timbers or logs being secured to the piling by means of loops 16, (like loops 4, if desired,) as shown, or in any other suitable manner, and to the top pole or timber 9 of the chair-back by means of loops 17 or equivalent means. The timbers 15 are so disposed that when the chair-mats are drawn out in the river and deposited at the proper points the top logs or timbers 9 of the chair-backs bear against the front side of the piling and the under side of the timbers 15. Consequently the tendency of the stream is to hold the chair-mat reliably in position. The log or timber 2 also bears against the piling along the bed of the stream, as shown in Fig. 1, and the seat portion rests upon the bed of the stream, as also shown in Fig. 1. Previous to placing these chair-mats in position it is preferable to weave branches or small limbs of trees, cornstalks, or other suitable material into the longitudinal wires of the seat portion, as illustrated in Fig. 2, and it may also be desirable to lash a bunch of branches or equivalent material to and below the front log or timber 1 of the seat portion, as shown in Fig. 2, as these branches or cornstalks will more readily adapt themselves to the bed of the river than would the naked log or timber 1, and therefore more effectually and quickly prevent the water from cutting under the edge of the chair-mat. When the mat is properly disposed and secured to the piling, as described, sand-bags, rock, or equivalent material are dumped down on the seat portion, and owing to the skeleton or open-work construction of said seat portion it is impossible for the water to wash this ballast from position. The deposit of this ballast upon the seat portion forces the latter down upon the bed of the stream, and the water is compelled to find an outlet or passage between the wires 10 of the chair-back of this open construction in order that the water shall not be checked up too fast, because if this occurs it concentrates its pressure upon possibly a weak portion of the jetty and breaks through or else passes around and cuts another channel at an undesirable point. By the construction shown it is checked sufficiently fast for all practical purposes without any possibility of the happening of the contingencies specified. The complete checking of the passage of the water through the chair-back may be facilitated by placing suitable material—such as drift-wood, tree-branches, cornstalks, &c.—up against the front side of the chair-back and lashing it thereto, if desired. When the cross-jetty is completed, it is obvious that any tendency of the water to cut under the same is prevented, because the immense weight of the ballast, the gravitative tendency of the chair-seat, and the immense pressure of the water above force the chair-seat pivotally downward as fast as the water cuts the sand from below it, as illustrated in Fig. 1.

If the stream to be cross-jettied is about six feet deep, I will preferably employ a chair-mat having a seat portion of about twenty feet in width more or less, and a back portion about eight feet in height, more or less. If this chair-mat was of rigid construction, it is obvious that the deepening of the stream would render the mat functionless; but it is obvious that the pivotal connection between the seat and back portions permits the former to settle downward as the river gradually cuts under until ultimately it may assume a position almost vertically pendent from the back portion, and consequently accommodate an increased depth in the river of nearly twenty feet, its usefulness, therefore, extending over a long period of service.

From the above description it will be apparent that I have produced an automatic chair-mat for cross-jetty work which embodies the features of advantage enumerated as desirable in the statement of invention, and it is to be understood, of course, that I may resort to such changes as do not involve a departure from the spirit and scope of the invention.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An automatic chair-mat, comprising a back portion, consisting of uprights connected at their upper ends to a longitudinal log or timber, and provided with a longitudinal series of wires, and a seat portion comprising a skeleton rectangular frame, pivoted to the uprights of the back portion and provided with intermediate cross-bars, and with longitudinal wires resting upon said cross-bars and attached at their opposite ends to the end bars, substantially as described.

2. An automatic chair-mat, comprising a back portion, consisting of uprights connected at their upper ends to a longitudinal log or timber, and provided with a longitudinal series of wires, and a seat portion comprising a skeleton rectangular frame, pivoted to the uprights of the back portion and provided with intermediate cross-bars, with longitudinal wires resting upon said cross-bars and attached at their opposite ends to the end bars, and with intersecting brace-wires which extend from corner to corner of said seat portion, substantially as described.

3. An automatic chair-mat, comprising a back portion having a top pole, and a seat portion pivotally connected to operate in a vertical plane to the back portion and including a back pole, and a twisted loop connecting the top pole of the chair-back with the back pole of the seat portion, substantially as described.

4. An automatic chair-mat, comprising a back portion, and a seat portion pivoted at

its rear edge to the back portion and adapted to swing in a vertical plane, in combination with piling against which the back pole of the seat portion and the top pole of the back portion bear, and longitudinal timbers connecting the poles at a suitable height and overlapping the top pole of the chair-backs, and loops connecting the top pole of the seat portion with the longitudinal timbers of the piling, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

WILLIAM H. HARRELSON.

Witnesses:

M. R. REMLEY,

F. S. THRASHER.