H. F. KELLNER.

SILT ACCUMULATOR.

APPLICATION FILED OCT. 20, 1917.

1,281,021. Patented Oct. 8, 1918.

Fig. 1.

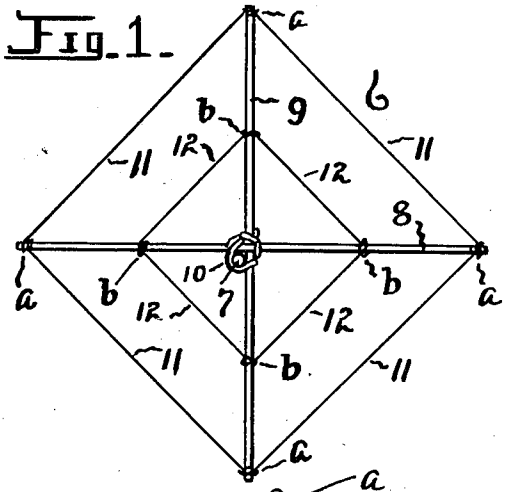


Fig. 2.

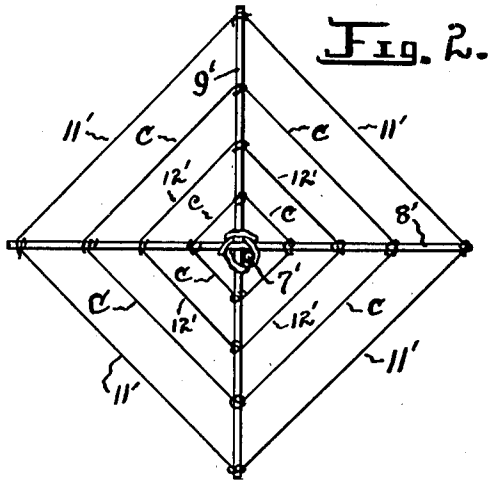
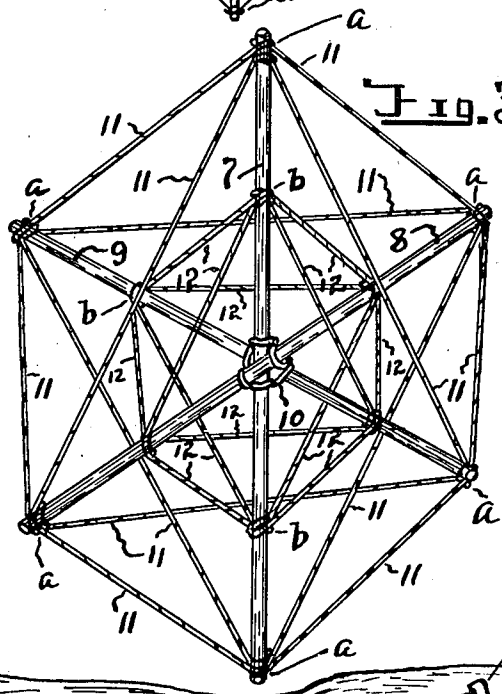


Fig. 3.



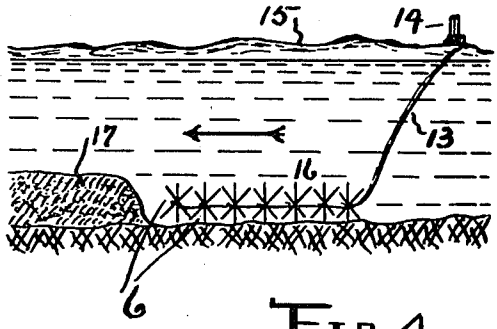
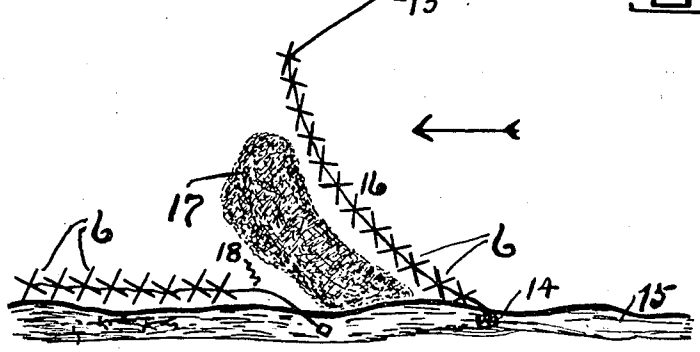


Fig. 4.



Fig. 5.



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UNITED STATES PATENT OFFICE.

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SILT-ACCUMULATOR.

1,281,021. Specification of Letters Patent. Patented Oct. 8, 1918.

Application filed October 20, 1917. Serial No. 197,743.

To all whom it may concern:

Be it known that I, HENRY F. KELLNER, a citizen of the United States, residing at Silver Lake, in the county of Shawnee and State of Kansas, have invented certain new and useful Improvements in Silt-Accumulators, of which the following is a specification.

This invention relates to a silt-accumulator for reclaiming lands from streams which overflow and which, on account of swift movements of the currents and the light or porous condition of the soil, cause erosion or washing away of the banks and land adjacent thereto, and has for its object to provide accumulators or fascines which may be conveniently constructed and will be comparatively inexpensive and of such form that they will remain in swift moving streams without being washed away, and on account of their form will be effective to form sand bars rapidly in silt-bearing streams.

The invention includes accumulators used as units, or connected to form barriers to extend transversely of the current, to form sand bars, or to be used adjacent to the banks of a stream to prevent erosion, and consists of the novel construction, combination and arrangement of parts as described herein and claimed, and as illustrated in the accompanying drawing, wherein,—

Figure 1 is a plan view of a silt accumulator embodying my invention. Fig. 2 is a plan view of a silt accumulator, being a modified form of the invention. Fig. 3 is a perspective view of the silt accumulator shown in Fig. 1. Figs. 4 and 5 are diagrammatic views illustrating the manner of use of the silt accumulators in streams, Fig. 4 being a side view of the silt accumulators when connected and anchored upon the banks, and Fig. 5 being a plan view of the same.

The silt accumulator consists, broadly, of a plurality of strips or poles secured to each other midway between their ends and disposed substantially at right angles to each other. If poles are used, the best results are obtained when they are unseasoned and are heavier than water, unless the strands, metallic or otherwise, which are employed, will add a sufficient weight to cause the accumulators to sink to the bottom of the stream. However, the accumulators as herein described, when anchored to the banks of streams will cause deposits of sand bars when only partly submerged in the water, regardless of the depth of the current.

Referring to the drawing, each accumulator 6 consists, in part, of a plurality of poles or strips 7, 8 and 9 of substantially equal length, secured to each other by a cord 10 or other suitable means, midway between their ends, said strips being maintained substantially at right angles with reference to each other by means of strands 11 and 12, the strands 11 being used to connect the ends of each strip, as indicated at *a* with the ends of the other strips, and the strands 12 being used to connect each strip, as indicated at *b*, midway between its middle and its end, with each of the remaining strips, the connection with the latter being midway between their ends and middle.

It will be appreciated that the strands 12 may be dispensed with so far as maintaining the poles or strips at right angles, the strands 11 being sufficient for this purpose, but said strands 12 are desirable in use since they cause deflection of the water current to advantage. The strands 11 and 12 may consist of wire, hemp, cotton fiber, fabrics, or any flexible or rigid material may be used for this connection, the functions to be discharged by members 11 and 12 being to maintain the strips 7, 8 and 9 substantially at right angles to each other, and especially to deflect the water currents, to form accumulations of silt or sand.

The construction thus described is of great advantage in the work of rip-rapping since it is more effective than ordinary fascines for deflecting the current, another advantage being that no attention is required when depositing the accumulators in the water, the ends of the strips operating as prongs to effect a lodgment in the bed of the stream. A plurality of accumulators 6 may be connected by a cable 13 and deposited in a stream, the cable being secured to anchor-members 14 upon the banks 15, these connected accumulators forming a barrier 16 for causing the formation of sand bars 17 as shown in Figs. 4 and 5, or the accumulators may be connected by a cable 18 and deposited in a stream and anchored to the bank as shown in Fig. 5 to protect the shore or bank.

As described, it may be said that the silt accumulator consists of a plurality of prongs arranged in pairs, said prongs projecting

outwardly from a common center, the prongs of each pair being disposed in alinement, strands being provided for connecting the prongs with each other. Also it will be appreciated that operation would be practical whether the prongs of each pair were disposed in alinement or not.

The modified construction of the silt accumulator shown in Fig. 2 requires no particular description since it is substantially the same as already explained, additional strands *c* being added to coöperate with the strands 11′ and 12′, for maintaining the strips 7′, 8′ and 9′ at right angles to each other, and operating to cause accumulations of slit or sand more effectively than already described, and I may employ any desired number of strands for this purpose, and, as is obvious, members 7, 8 and 9 may be constructed of iron, concrete or other suitable material as may be found to be of advantage.

Having fully described my invention, what I claim and desire to secure by Letters Patent is,—

1. In a silt accumulator, a plurality of prongs having a specific gravity greater than the specific gravity of water, said prongs projecting outwardly from a common center in three planes, and a plurality of strands extending between and connected with said prongs.

2. In a silt accumulator, a plurality of prongs having a specific gravity greater than the specific gravity of water, said strips being projecting outwardly from a common center in three planes, a plurality of strands extending between and connecting said prongs at their ends, and a plurality of strands extending between and connecting said prongs inwardly from their ends.

3. In a silt accumulator, a plurality of strips having a specific gravity greater than the specific gravity of water, said strips being disposed in three planes substantially at right angles to each other and connected midway between their ends, and a plurality of strands connecting the ends of one of said strips with the ends of the remaining strips.

4. In a silt accumulator, a plurality of metallic strips disposed in three planes substantially at right angles to each other and connected midway between their ends, a plurality of strands connecting the ends of each strip with the ends of the remaining strips, and a plurality of strands for connecting each strip between its ends and its middle with the remaining strips.

5. In a silt accumulator, a pair of metallic strips disposed substantially at right angles for engagement with each other midway between their ends, a third metallic strip disposed substantially at right angles to said pair of strips for engagement therewith at its middle, a binder element engaging said strips midway between their ends, a plurality of strands connecting the ends of said pair of strips, and strands for connecting the ends of the third strip with the ends of said pair of strips.

6. In a silt accumulator, a pair of metallic strips disposed crosswise, a third strip disposed at right angles to said pair of strips for engagement therewith, a binder element engaging said strips between their ends, a plurality of strands connecting the strips of said pair at longitudinal intervals between their ends and middle, and a plurality of strands connecting the third strip at longitudinal intervals between its ends and middle with the strips of said pair.

In testimony whereof I have affixed my signature in presence of two witnesses.

HENRY F. KELLNER.

Witnesses:
HIRAM A. STURGES,
ARTHUR H. STURGES.