March 22, 1938. F. A. SKOW 2,111,819

EROSION CHECK DAM

Filed Dec. 10, 1936

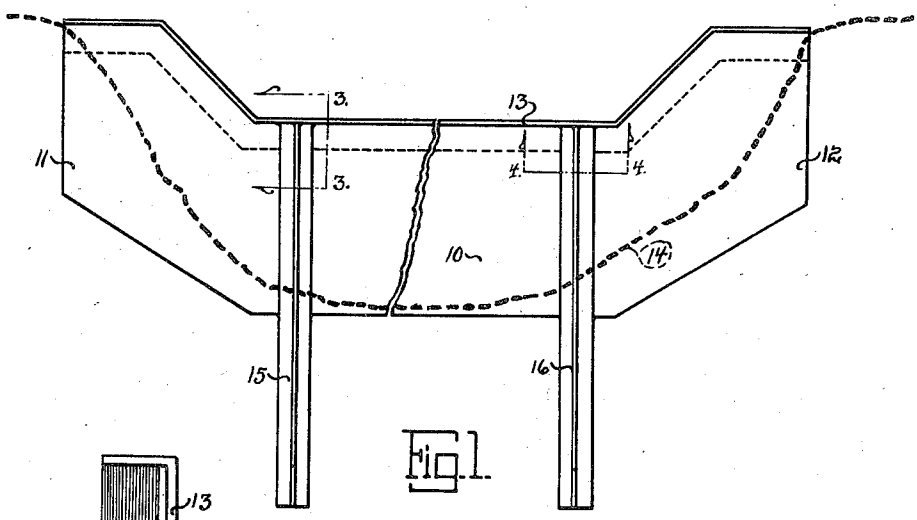


Fig. 1.

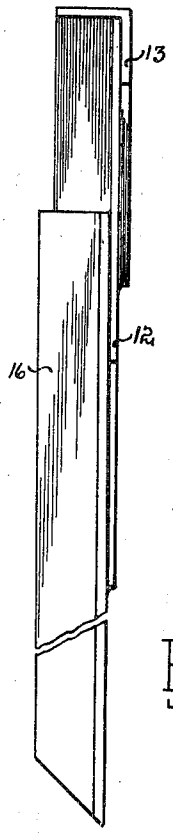


Fig. 2.

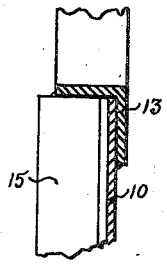


Fig. 3.

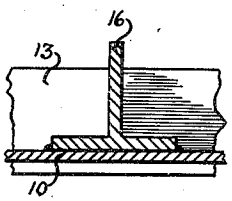


Fig. 4.

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EROSION CHECK DAM

Floyd A. Skow, Knoxville, Iowa

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1 Claim. (Cl. 61—29)

The principal object of my invention is to provide an erosion check dam that may be prefabricated and that may be easily secured in place in wash gullies and the like for the successful checking of soil erosion.

A further object of my invention is to provide an erosion check dam that is rigid in structure to effectively withstand the pressure applied against it, and that provides the proper spill way area in its inherent structure.

A still further object of my invention is to provide an erosion check dam that is extremely economical in manufacture, durable and efficient in use.

These and other objects will be apparent to those skilled in the art.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, pointed out in my claim and illustrated in the accompanying drawing, in which:

Fig. 1 is a rear plan view of my complete device with dotted lines indicating a normal section of erosion channel.

Fig. 2 is an enlarged end view of my device.

Fig. 3 is an enlarged end sectional view of my device taken on the line 3—3 of Fig. 1.

Fig. 4 is an enlarged bottom sectional view of my device and is taken on the line 4—4 of Fig. 1.

In the field of soil conservation, the prime factor of the conservation of the soil is the checking of erosion. This erosion is caused, especially during heavy rains, by the natural tendency of the water to travel to the lowest point, carrying the fertile top soil with it, and producing numerous small channels or gullies. These gullies hinder the efficient tilling of the soil as well as forming a channel through which more water may run which will cause it to become deeper and wider, eventually carrying away and decreasing the amount of fertile soil.

Recently, attempts have been made at checking soil erosion by the building, on the spot, of concrete, wooden, or rock dams to hold the soil and prevent the enlargement of the erosion channel. These are quite expensive to construct and require considerable labor. Consequently, not enough of them can be put in a given channel to prevent serious erosion, and these structures are all subject to freezing and floods, and will wash out. Furthermore, it is often difficult to procure the proper materials and deliver them to the point where they are needed most. The construction of these dams often require forms and the services of a great number of men. I have overcome these disadvantages as will be appreciated and as hereinafter more fully set forth.

Referring to the drawing, I have used the numeral 10 to designate a flat metallic sheet member or the like having upwardly and outwardly extending wing portions 11 and 12 as shown in Fig. 1. These wing portions are in the same plane as the sheet member 10 and are integrally formed with the sheet member 10. The numeral 13 designates an angle iron permanently secured to the forward face of the sheet member 10, following its upper marginal contour and extending rearwardly over the top marginal edge of the sheet member 10 and the wing portions 11 and 12 as shown in the drawing. This angle iron in following the contour of the top marginal edge of the sheet member or barrier is substantially horizontally flat across its central portion, extends upwardly and outwardly at an angle and thence again horizontally to form a spill way in the central portion of the complete assembly. Furthermore, this angle iron 13 reinforces the upper marginal edge of my erosion check dam.

I have used the numeral 14 to designate the approximate ground surface contour of an ordinary wash gully. Secured to the back surface of the sheet member 10 and extending vertically are drive legs 15 and 16 which are securely welded or otherwise permanently secured to the sheet member 10, have their top end portions secured to the rearwardly extending flange of the angle iron 13 and which extend downwardly below the lower marginal edge of the sheet member 10 for a substantial distance. These drive legs may be made of a suitable material, such as T-iron. These drive legs 15 and 16 have their lower ends cut at an angle so that they may be easily driven into the ground and are so positioned horizontally that their upper end portions are a suitable distance from the upwardly and outwardly extending portion of the angle iron 13, thus making it easy to drive these drive legs with a sledge hammer without damaging the upwardly and outwardly sloping walls of the angle iron and to make them easily accessible for this driving operation.

It will here be noted that my specific type of check dam can be made in any suitable length or height to accommodate existing conditions and can be made in several sizes ranging from minimum to maximum gully size as the length of the device is not critical.

The practical operation of my device is as follows: A pre-fabricated check dam of a size com-

mensurate with the type of erosion channel encountered is selected and placed at right angles to the longitudinal axis of erosion channel. The drive legs **15** and **16** are then driven into the ground until the lower marginal edge of the sheet member **10** is firmly imbedded in the lowest point of the channel. This will force the lower portions of the wings **11** and **12** into the ground as well as their outer marginal edges, completely blocking the erosion channel. The drive legs **15** and **16** are of such a length that they will extend far enough into the earth to give a good foundation to the check dam and prevent its being washed out in the case of heavy rains or floods, and, together with that portion of the erosion check dam that is embedded in the ground, will make a rigid barrier in the erosion channel. Thus my erosion check dam is rigidly held in place by the leg members **15** and **16**, the lower and side marginal edges of the sheet member **10**, wings **11** and **12**, and by virtue of the bracing afforded by the T-irons **15** and **16** and the top angle iron **13**. The area way for overflow is constructed at the proper height above the bed of the channel and is of sufficient size to allow excess water to drain over the top of the dam while the bulk of the dam holds the soil from further erosion, backing it up along the channel behind the dam and conserving the soil. These check dams may be put in at such intervals as is deemed necessary for the efficient conservation of the top soil and in view of the general rainfall in that particular section. As the lower and side marginal edges of my check dam extend beyond the limits of the channel, there is no danger of under-washing the dam, and it attains its rigidity by virtue of its inherent structure.

Thus I have provided an erosion check dam that may be easily and readily pre-fabricated, that is simple in its installation, may be quickly and easily set in place, and that efficiently checks soil erosion. Furthermore, my device is inherently stable, economical in construction, and provides the proper amount of area way for overflow over the top of the dam. My device is of special benefit to farm owners who desire an economical erosion check that may be easily put in place, and can be placed in sufficient numbers to efficiently stop erosion.

Furthermore, my device is not bulky, is comparatively light in weight, and is of the proper type of structure for the efficient elimination of soil erosion.

Some changes may be made in the construction and arrangement of my improved erosion check dam without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claim any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim:

In an erosion check dam, a sheet member designed to rest perpendicular to the earth's surface, a cut out portion in the central upper marginal edge of said sheet member, an angle iron rigidly secured to the upper marginal edge of said sheet member, and elongated elements secured to the central portion of said sheet member spaced apart from each other and extending below the lower marginal edge of said sheet member; said sheet member having its lower marginal edge sloping uowardly and outwardly from a point adjacent said elongated elements to the side marginal edges of said sheet member.

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