

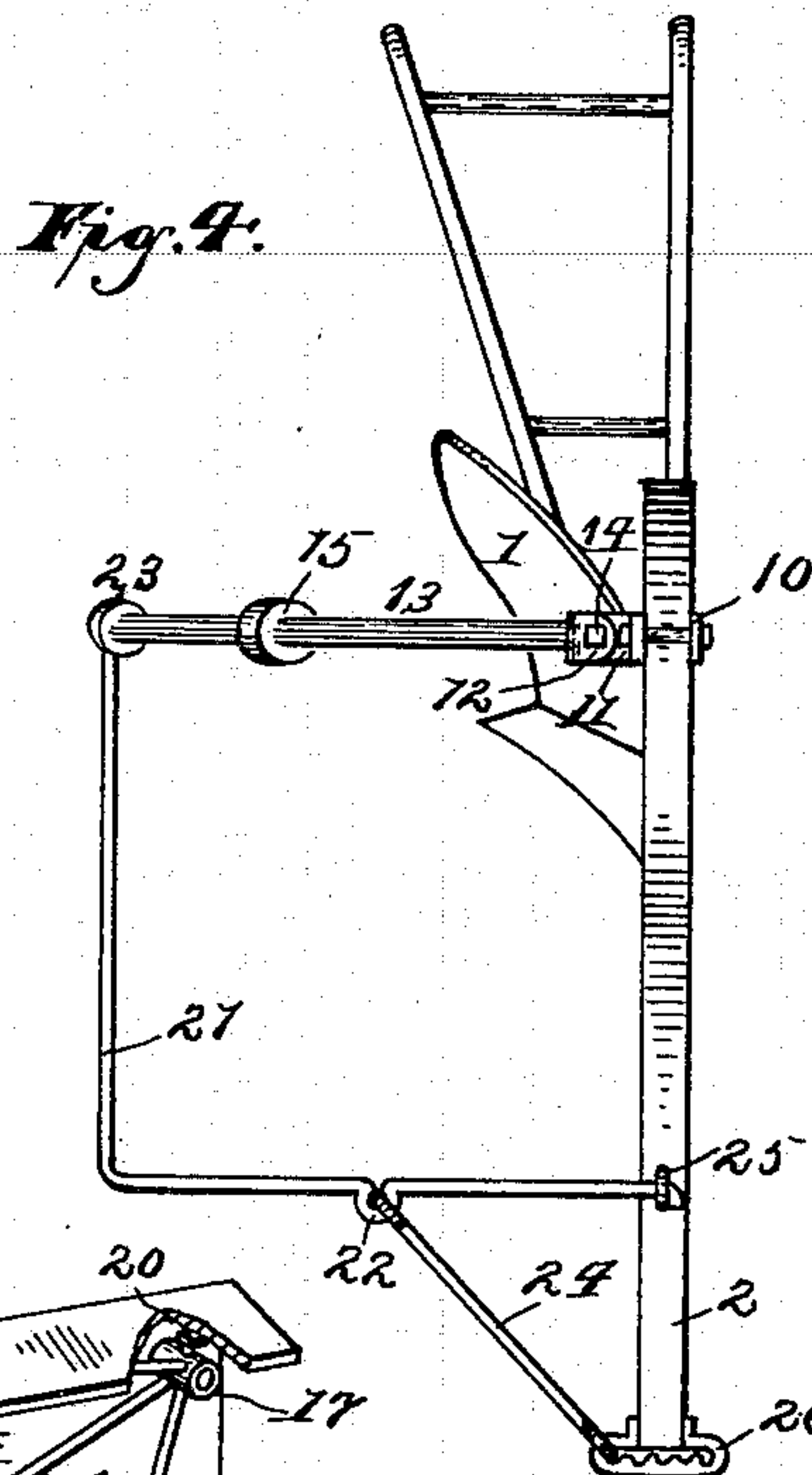
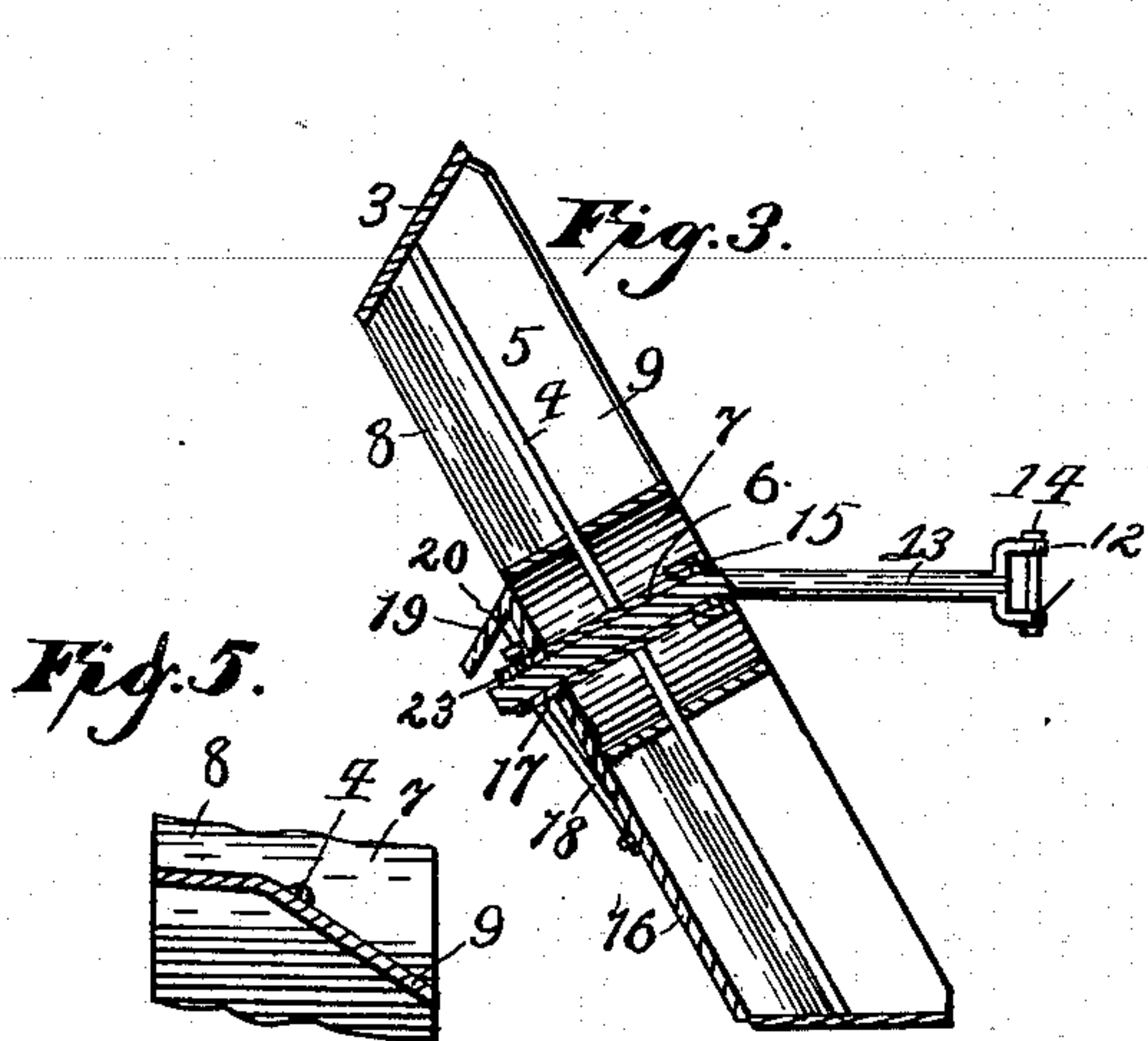
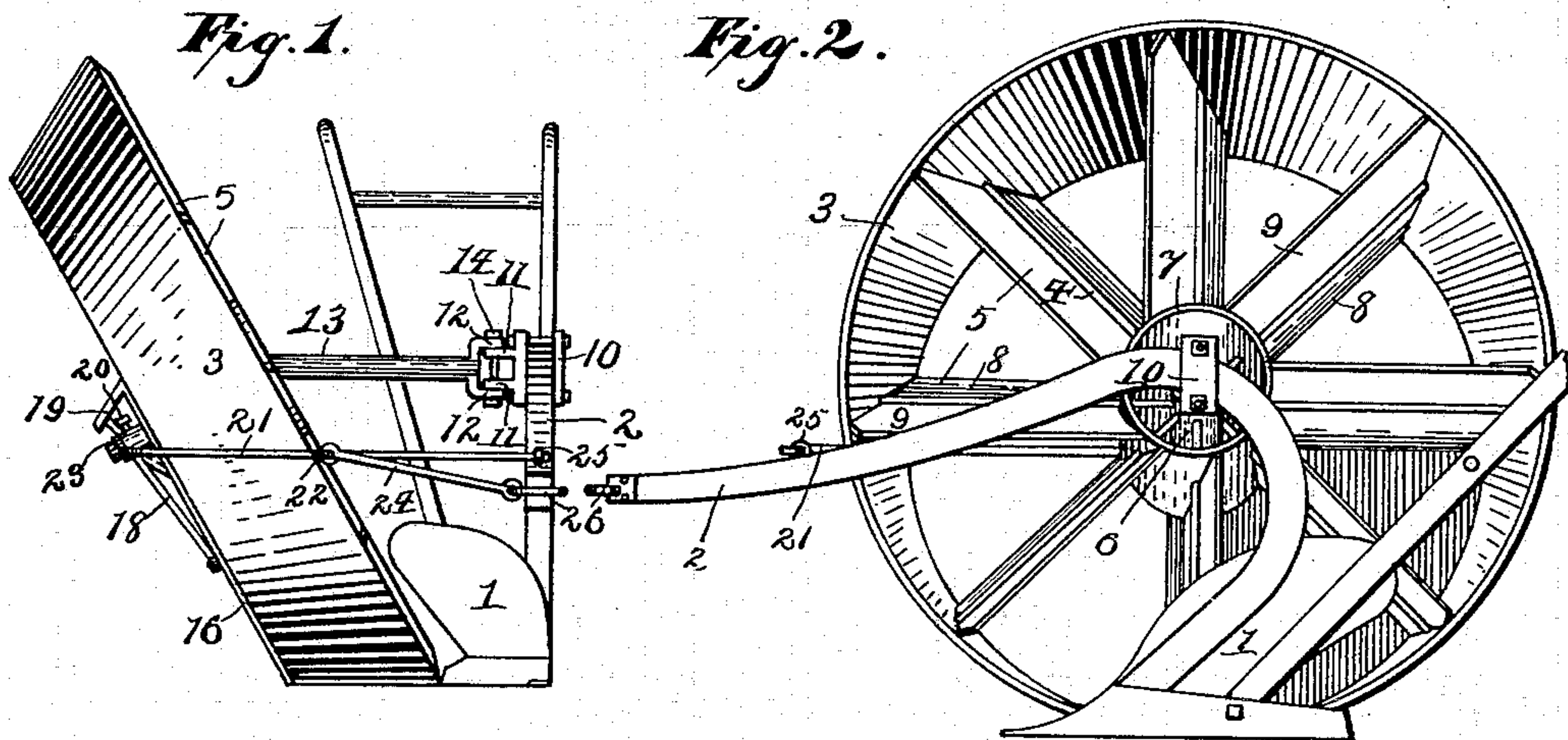
No. 615,374.

Patented Dec. 6, 1898.

L. U. VALENTINE.  
DITCHING ATTACHMENT FOR PLOWS.

(Application filed Jan. 22, 1898.)

(No Model.)



Witnesses:  
C. S. Frye.  
H. E. Paramore

Inventor:  
Leland U. Valentine  
By  
Helen S. Paramore,  
Attorney.



# UNITED STATES PATENT OFFICE.

LELAND U. VALENTINE, OF GREENRIVER, UTAH.

## DITCHING ATTACHMENT FOR PLOWS.

SPECIFICATION forming part of Letters Patent No. 615,374, dated December 6, 1898.

Application filed January 22, 1898. Serial No. 667,638. (No model.)

*To all whom it may concern:*

Be it known that I, LELAND U. VALENTINE, a citizen of the United States, residing at Greenriver, in the county of Emery and State of Utah, have invented certain new and useful Improvements in Ditching Attachments for Plows; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in ditching attachments for plows of the class that are adapted to be used in connection with and attached to an ordinary breaking-plow.

The objects of my invention are, first, to provide a device of the class described that can be used in digging ditches; second, that may be used for cleaning old ditches; third, that can be used for throwing up small levees; fourth, that can be readily attached to any ordinary plow, and, fifth, that will be easily operated and reasonably cheap of manufacture.

My improved ditching device is especially adapted for use in preparing and cleaning irrigating ditches and is designed to save much labor and time. In order to properly irrigate a small farm of even eighty acres, from one to two miles of ditches are required. These ditches are usually from eighteen inches to two feet deep and in some cases are carried above the ground-level, in which case small levees are required. To prepare these ditches by means of shovels requires a vast amount of labor, and an ordinary plow cannot throw the earth out of a ditch of the required depth; neither will it lift the earth to a sufficient height to construct a levee. A large amount of sediment is deposited in the ditches by the water, so that it is necessary to clean them several times each year. This cleaning calls for the removal of four to six inches of sediment from all the ditches and is ordinarily done with a shovel, requiring a large amount of time and labor. The foregoing statement is made in order that the work to which my invention is applied may be understood and

the advantages arising from its use made more readily apparent.

In the drawings, Figure 1 is a front elevation of my improved device attached to a plow. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical sectional view of the device. Fig. 4 is a top plan view of the plow and framework of the device, showing the manner of connecting them. Fig. 5 is a cross-sectional view of one of the earth-lifting blades, and Fig. 6 is a perspective view of the earth-shield.

Referring to the drawings, 1 is a plow having a beam 2. The ditching-wheel is composed of the flaring rim 3, which may be made in a suitable number of sections and is provided with spokes 4, to which the earth-lifting blades 5 are secured. The inner ends of the spokes 4 are secured to the hub 6. A circular shield 7, of the same length as the width of the rim 3, surrounds the hub 6, but some distance therefrom. The series of lifting-blades 5, secured to the spokes 4, extend from the flaring rim 3 to the circular shield 7 and have a portion 8 at right angles to the rim, the main portion 9 being set obliquely to catch the earth as it is thrown off of the moldboard of the plow. The spokes, which are preferably of half-round iron, may be suitably riveted to the rim and the lifting-blades to the flat sides of the spokes. A shackle 10 is secured upon the plow-beam 2 and is provided with bolt-lugs 11, to which the end 12 of the journal 13 is secured by the bolt 14. The journal 13 is bent downwardly at its outer end to form a spindle for the hub 6; a collar 15 supplying its inner bearing. An adjustable segmental shield 16, having a bearing-collar 17, is placed upon the outer end of the journal and secures the hub thereon and serves to hold it against the collar 15. Brace-rods 18 extend from the bearing-collar 17 to the body of the shield 16 in order to stiffen it. The upper edge of said shield is provided with the oblique flange 19. A set-screw 20 is placed in the bearing-collar 17 for the purpose of rigidly securing the shield upon the journal 13 in any desired position. An angular brace-rod 21, having a loop 22, is provided with an eye 23 at one end, which passes over the end of the journal 13, next the bearing-collar 17, and the other end is secured to the plow-beam



by an eyebolt 25 or other suitable means. A guy-rod 24 extends from the loop 22 to the plow-clevis 26 in order to further brace the journal 13.

5 In operation the earth as it is thrown off the moldboard of the plow is caught by the lifting-blades 5, the oblique portions 9 acting as a scoop, while the shield 16 retains the earth upon the blades until the top of the shield is reached, when the earth drops over the flange 19. It will thus be seen that the earth is carried a considerable distance from the plow 1 and is also elevated. The height at which the shield is set is regulated at will  
15 by the set-screw 20 and when raised allows of building a levee of some height or when lowered will deposit the earth to drop from the blades 5 sooner, and consequently nearer the plow.

20 An advantage possessed by my improved machine is that it makes a smoother ditch or levee than is ordinarily made with a shovel, in addition to the great saving of labor. In cleaning ditches the plow is placed in the bottom of the ditch, and as the sediment is thrown  
25 upon the blades 5 it is elevated and dropped outside the ditch. It will be seen that my device may be readily attached to any ordinary plow and that the large wheel may be made in different sizes to adapt it to different sizes of plows and classes of work. The wheel and various described parts may be cheaply but solidly built from sheet-steel and angle-iron and the whole suitably riveted and bolted to-  
30 gether.

35 Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

40 1. A ditching attachment for plows of the class described, comprising a wheel having a wide flaring rim, a series of bent earth-lifting blades, secured upon the spokes of the wheel, a circular shield surrounding the hub thereof, and mounted obliquely upon a jour-  
45 nal, pivotally secured at its inner end, to a plow-beam, a segmental-shaped shield having an oblique flange at its upper edge, secured upon the outer end of said journal, an angular brace-rod, secured to the end of the  
50 journal and to the plow-beam, and a guy-rod, extending from the angular brace-rod to the plow-clevis, all substantially as shown and described.

55 2. A ditching attachment for plows, consisting of a ditching-wheel, having a flaring rim mounted upon a downwardly-bent end of a journal, having its opposite end pivot-

ally secured to a plow-beam by a suitable yoke or shackle, said bent end or spindle, serving to obliquely dispose said wheel, a circular shield surrounding the hub of the wheel  
60 and bent earth-lifting blades extending from the rim of the wheel to the circular shield, said blades being suitably secured to the spokes, a segmental-shaped shield, having a bearing-collar, suitable side braces and an oblique top flange, said shield secured upon  
65 the outer end of the journal against the wheel, an angular brace-rod, extending from the free end of the journal to the plow-beam, and a guy-rod, extending from the angular brace-rod to the plow-clevis, as set forth. 70

3. In a ditching attachment for plows, the combination with the plow, of an obliquely-mounted ditching-wheel, having a flaring rim,  
75 a circular shield, surrounding the hub, a series of bent earth-lifting blades secured to the spokes of the wheel, a segmental-shaped shield, adjustably mounted outside the wheel, a journal pivotally secured to the plow-beam,  
80 by means of a shackle, said journal having its outer end bent downwardly, to receive the ditching-wheel, and segmental shield; the outer end of said journal braced to said plow-beam by means of an angular brace-rod and  
85 a guy-rod, connecting said angular brace-rod, with the plow-clevis substantially as set forth.

4. The combination in a ditching attachment for plows of the ditching-wheel, consisting of the flaring rim 3, the half-round  
90 spokes 4, the bent lifting-blades 5, the hub 6, and the circular shield 7; the journal 13, having its outer end bent downwardly, a collar 15 near the bend, and pivotally secured at its inner end 12, to the lugs 11, of the  
95 shackle 10 by the bolt 14; the segmental shield 16, having the bearing-collar 17, the brace-rods 18 and oblique top flange 19, said collar 17 having the set-screw 20; the angular brace-rod 21, having the central loop 22  
100 and the eye 23 at one end to engage the free end of the journal 13, and the opposite end secured to the plow-beam by the eyebolt 25; and the guy-rod 24, secured at opposite ends to the loop 23, and the plow-clevis 26, thereby  
105 bracing said angular rod 21, substantially as set forth.

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

LELAND U. VALENTINE.

Witnesses:

A. P. MOHR,  
Jos. A. Ross.