A. E. HANSON.

DITCHING MACHINE AND TILE DISTRIBUTER.

APPLICATION FILED APR. 4, 1911.

1,026,672.

Patented May 21, 1912.

2 SHEETS—SHEET 1.

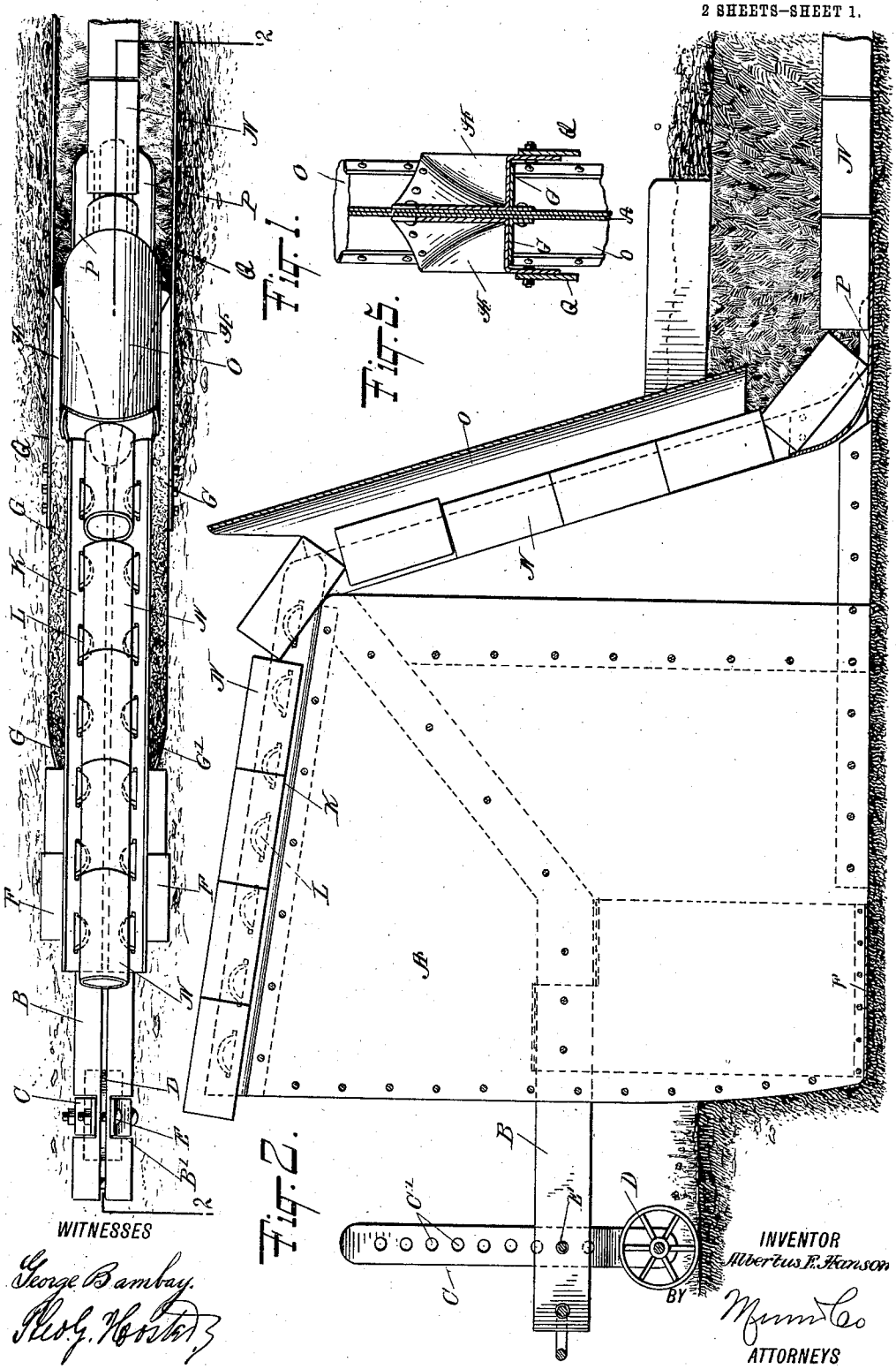


Fig. 1.

Fig. 3.

Fig. 2.

WITNESSES

George Bambay.

Fred'g. Haskell

INVENTOR

Albertus F. Hanson

BY

Munn & Co

ATTORNEYS

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

Fig. 4.

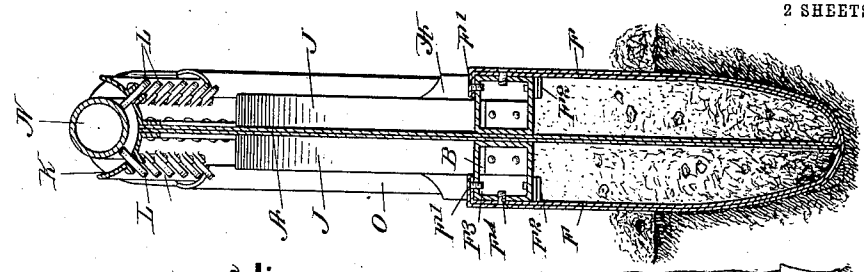
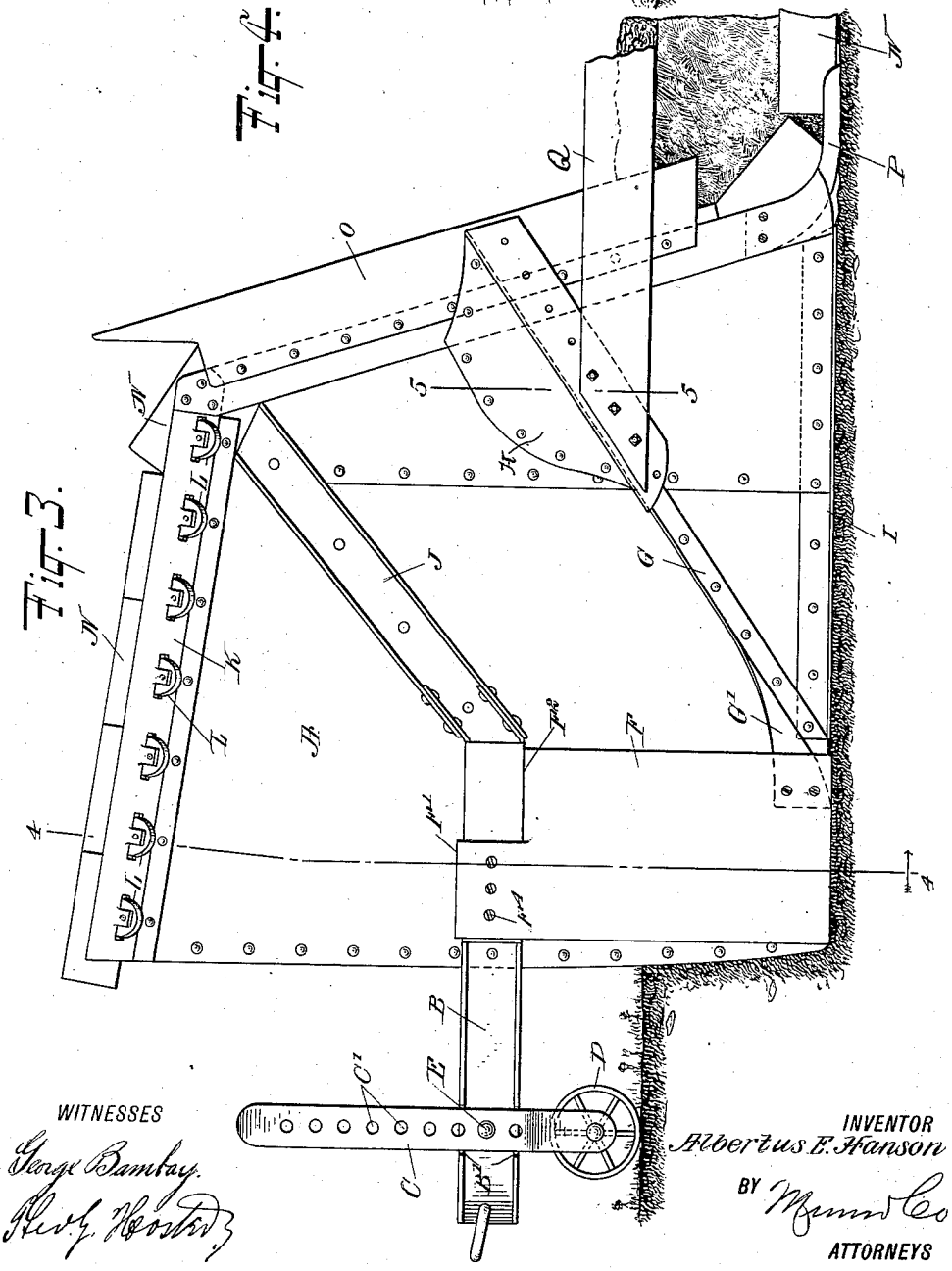


Fig. 3.



WITNESSES

George Bamby.

Rudy. Hoerter.

INVENTOR

Albertus E. Hanson

BY Munn & Co

ATTORNEYS

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALBERTUS E. HANSON, OF MASON CITY, IOWA.

DITCHING-MACHINE AND TILE-DISTRIBUTER.

1,026,672. Specification of Letters Patent. Patented May 21, 1912.

Application filed April 4, 1911. Serial No. 618,795.

To all whom it may concern:

Be it known that I, ALBERTUS E. HANSON, a citizen of the United States, and a resident of Mason City, in the county of Cerro Gordo and State of Iowa, have invented a new and Improved Ditching-Machine and Tile-Distributer, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved ditching machine and tile distributer, arranged to readily form the ditch and deliver the material to opposite sides of the ditch, and to distribute the tiles in the bottom of the ditch, one in front of the other. For the purpose mentioned, use is made of a center plate provided with a plow beam and with cutters on opposite sides at the front, and carrying boards at opposite sides of the said center plate and extending upwardly and rearwardly from the bottoms of the said cutters, to deliver the material to opposite sides of the ditch. Use is also made of a guideway for the tiles and made in sections, of which one extends along the top of the center plate and the other at the rear end thereof to guide the tiles into the ditch.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the ditching machine and tile distributer as applied; Fig. 2 is a sectional side elevation of the same on the line 2—2 of Fig. 1; Fig. 3 is a side elevation of the same and showing the ditch in section; Fig. 4 is a cross section of the same on the line 4—4 of Fig. 3; and Fig. 5 is a cross section of the mold portions at the upper ends of the carrying boards, which throw the material to one side of the ditch.

A center plate A, of a suitable height and length, is provided at its forward end with a plow beam B for the attachment of a team or other means to draw the ditching machine and tile distributer forward with a view to form the ditch and to distribute the tiles therein, as hereinafter more fully explained. The plow beam B is provided with vertical guideways B′ for the passage of standards C, provided at their lower ends with bearings for a wheel D adapted to travel on the top of the ground in front of the center plate A, as plainly indicated in the drawings. A transverse pin E is adapted to pass through apertures in the plow beam B and one of a series of apertures C′ in the standards C, so as to raise or lower the wheel D according to the depth of the ditch to be formed.

The center plate A is provided at the front lower portion thereof and on opposite sides with cutters F, extending from the bottom edge of the center plate A outwardly and upwardly, as plainly indicated in Fig. 4, the upper ends of the cutters F terminating in flanges F′ and F² fastened to the top and bottom of the plow beam B by suitable screws F³, or other means, as plainly indicated in Fig. 4, screws F⁴ being also used to fasten the sides of the cutters F to the sides of the plow beam B. By the arrangement described the ground is divided by the front edge of the center plate A and passes on opposite sides thereof through the openings between the cutters F and the faces of the center plate A, as will be readily understood by reference to Fig. 4, thus forming a ditch of a width corresponding to the distance from one cutter F to the other cutter, the bottom of the ditch being rounded off and the sides of the ditch being slightly tapering, according to the shape given to the lower portions of the cutters F, as shown in Fig. 4. Carrying boards G extend from the lower rear ends of the cutters F upwardly and rearwardly on the sides of the center plate A, so that the material passing through the space between the cutters F and the sides of the center plate A travels up the carrying boards G and is prevented from falling off the sides thereof by upwardly and outwardly curved flanges G′ formed on the lower ends of the carrying boards G. The upper ends of the carrying boards G are provided with mold boards H for deflecting the material in an outward direction at the time the said material is above the top of the ditch so that the cut material is delivered to the side of the ditch as indicated in the drawings.

The lower end of the center plate A in the rear of the cutters F is provided with base flanges I adapted to travel on the bottom of the ditch so as to keep the center plate A in proper central position while the machine is drawn forward as above described. The center plate A is strengthened on both sides by suitable channel irons J

or other means, extending upwardly and rearwardly from the rear end of the plow beam B.

On the top of the center plate A is mounted a trough-like guideway K inclined rearwardly and downwardly and provided with angularly-disposed friction rollers L for supporting the tiles N one in front of the other, so that the tiles readily slide rearwardly and over the rear end of the guideway K into a tubular guideway O held on the rear inclined edge of the center plate A. This tubular guideway O extends into the ditch, and the bottom of the guideway O terminates in trailers P which travel along the bottom of the ditch and guide the tiles N onto the bottom of the ditch one in front of the other, as will be readily understood by reference to Figs. 2 and 3.

In using the machine, the standards C are vertically adjustable on the plow beam B according to the depth to be given to the ditch, that is, the distance between the bottom of the wheel D and the bottom of the center plate A corresponds to the depth of the ditch. When the machine is drawn forward, the ground is cut by the cutters F and the front edge of the center plate A, so that the ground passes on opposite sides of the center plate A through the openings formed between the cutters F and the center plate A, the ground finally traveling up the carrying boards G to be finally discharged over the mold boards H to the sides of the ditch. While the machine is drawn forward, tiles N travel down the guideways K and O and over the trailers P into the bottom of the ditch, one in front of the other, it being understood that the tiles are placed into the forward upper end of the guideway K by hand or tile-feeding means of any approved construction.

In order to prevent the plowed up ground from falling back into the ditch, use is made of rearwardly-extending retaining boards Q attached to the mold boards H and having their lower edges approximately on top of the ground adjacent to the side walls of the ditch.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A machine of the class described, comprising a vertically-disposed longitudinal center plate, front cutters at opposite sides of the said plate and extending sidewise in an outward and upward direction from the bottom edge of the center plate, carrying boards on the sides of the center plate and extending upwardly and rearwardly from the rear lower ends of the said cutters, and a guideway along the upper and rear edge of the said center plate for the passage of tiles.

2. A machine of the class described, comprising a vertically-disposed longitudinal center plate, front cutters at opposite sides of the said plate and extending sidewise in an outward and upward direction from the bottom edge of the center plate, carrying boards on the sides of the center plate and extending upwardly and rearwardly from the rear lower ends of the said cutters, and mold and retaining boards at the upper ends of the said carrying boards for directing the material sidewise.

3. A machine of the class described, comprising a vertically-disposed longitudinal center plate, front cutters at opposite sides of the said plate and extending sidewise in an outward and upward direction from the bottom edge of the center plate, carrying boards on the sides of the center plate and extending upwardly and rearwardly from the rear lower ends of the said cutters, an open top guideway at the upper edge of the said center plate, and a tubular guideway at the rear edge of the said center plate.

4. A machine of the class described, comprising a vertically-disposed longitudinal center plate, front cutters at opposite sides of the said plate and extending sidewise in an outward and upward direction from the bottom edge of the center plate, carrying boards on the sides of the center plate and extending upwardly and rearwardly from the rear lower ends of the said cutters, an open top guideway at the upper edge of the said center plate, a tubular guideway at the rear edge of the said center plate, and trailers at the lower end of the said tubular guideway and extending rearwardly into the bottom of the ditch.

5. A machine of the class described, comprising a vertically-disposed longitudinal center plate, front cutters at opposite sides of the said plate and extending sidewise in an outward and upward direction from the bottom edge of the center plate, carrying boards on the sides of the center plate and extending upwardly and rearwardly from the rear lower ends of the said cutters, a trough-like guideway at the top of the center plate and provided with friction rollers for the tiles to rest on, the said guideway being inclined rearwardly and downwardly, and a tubular guideway at the rear end of the said center plate and inclined downwardly and rearwardly.

6. A machine of the class described, comprising a vertically-disposed longitudinal center plate, front cutters at opposite sides of the said plate and extending sidewise in an outward and upward direction from the bottom edge of the center plate, carrying boards on the sides of the center plate and extending upwardly and rearwardly from the rear lower ends of the said cutters, a trough-like guideway at the top of the center plate and provided with friction rollers for

the tiles to rest on, the said guideway being inclined rearwardly and downwardly, and a tubular guideway at the rear end of the said center plate and inclined downwardly and rearwardly, the adjacent ends of the said guideways being joined.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERTUS E. HANSON.

Witnesses:
C. L. LOOMER,
S. A. KOCH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."