

G. L. HESS.

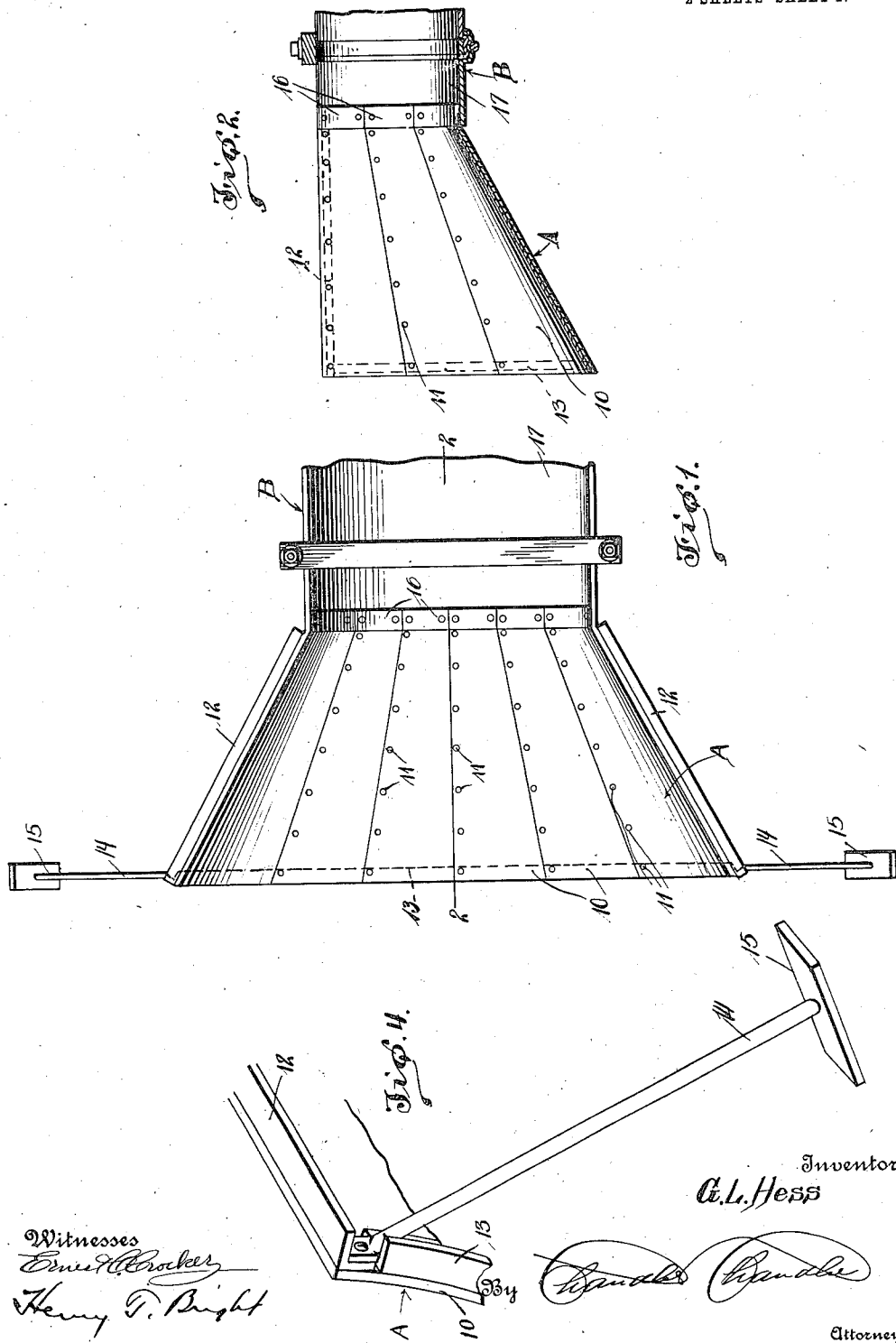
METALLIC APRON INTAKE AND OUTLET.

APPLICATION FILED OCT. 20, 1911. RENEWED AUG. 29, 1912.

1,041,625.

Patented Oct. 15, 1912.

2 SHEETS—SHEET 1.



Witnesses
Emmett C. Crocker
Henry D. Bright

Inventor
G. L. Hess

Charles *Charles*

Attorneys

G. L. HESS.

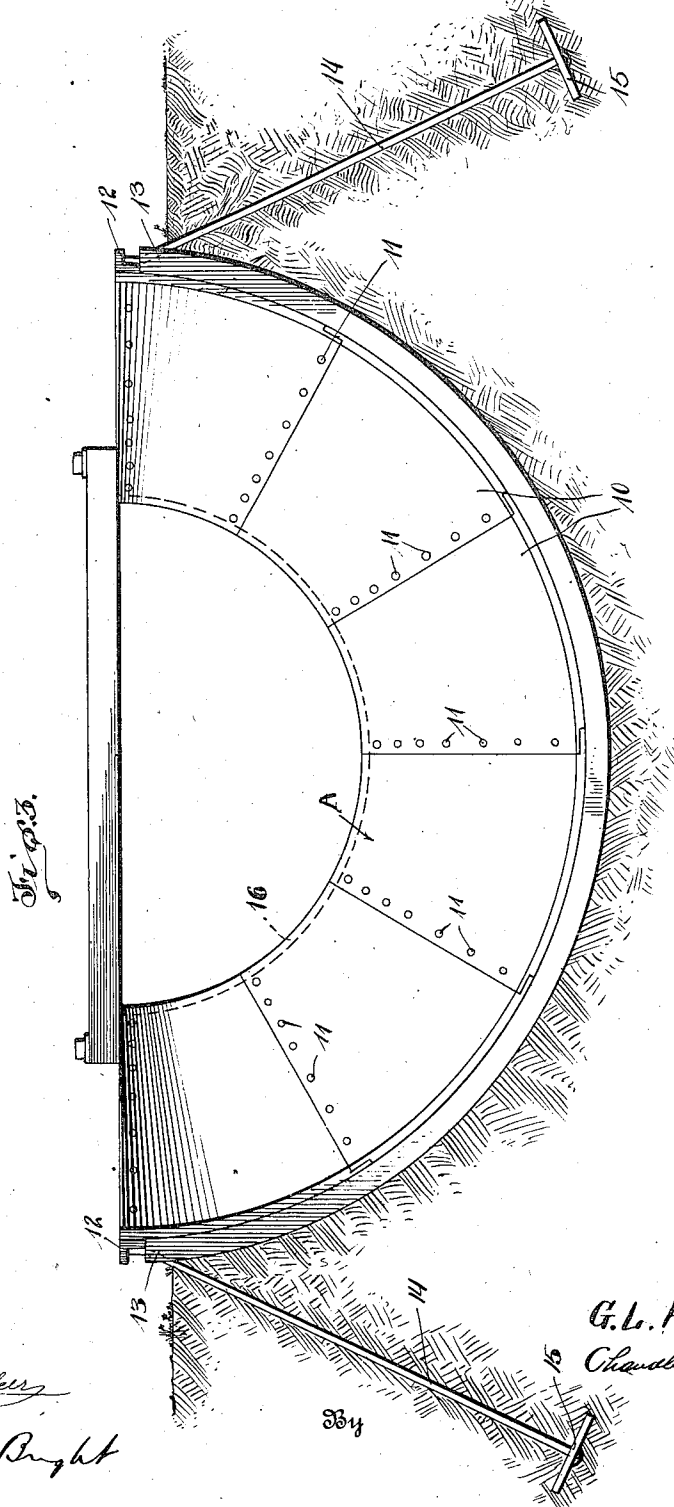
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Witnesses
Ernest Crocker
Henry T. Bight

Inventor
G. L. Hess.
Charles K. Chandler

Attorney's

UNITED STATES PATENT OFFICE.

GEORGE L. HESS, OF DENVER, COLORADO, ASSIGNOR TO HESS FLUME COMPANY, OF DENVER, COLORADO, A CORPORATION.

METALLIC APRON INTAKE AND OUTLET.

1,041,625.

Specification of Letters Patent.

Patented Oct. 15, 1912.

Application filed October 20, 1911, Serial No. 655,733. Renewed August 29, 1912. Serial No. 717,788.

To all whom it may concern:

Be it known that I, GEORGE L. HESS, a citizen of the United States, residing at Denver, in the county of Denver, State of Colorado, have invented certain new and useful Improvements in Metallic Apron Intakes and Outlets; and I do hereby 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.

This invention relates to metallic apron intakes and outlets to be used in tapping canals employed in mining, irrigation and other forms of hydraulic engineering.

The object of the invention resides in the provision of a metallic apron intake and outlet of the type referred to which is adapted to lead water from a supply canal to a flume system by means of which latter the water is distributed over an extensive area; said metallic apron intake and outlet including an improved structure which will enable same to adjust itself to the varying conditions due to the expansion and contraction of the flume with which it is associated, said expansion and contraction of the flume arising upon variations of temperature.

A further object of the invention resides in the provision of a metallic intake and outlet of the character referred to which will prevent leakage therearound and consequent destruction of the embankment in which the apron is embedded.

A still further object of the invention resides in the provision of a metallic intake and outlet apron which may be easily transported over long distances, capable of being installed at very little expense, and which may be manufactured at a comparatively small cost.

With the above and other objects in view, the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully described and particularly pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters of reference denote corresponding parts in the several views, and in which—

Figure 1 is a plan view of an intake and outlet apron constructed in accordance with the invention with a flume section attached

to the outlet end of the apron, Fig. 2, a section on the line 2—2 of Fig. 1, Fig. 3, a view of what is shown in Fig. 1 looking at the intake end of the apron, Fig. 4, a detail perspective view showing the construction of the anchor of the apron and the connections between the latter and the anchor.

Referring to the drawings, the invention is shown as comprising a semi-frusto conical member A which is formed of a plurality of tapering sections 10 having their adjacent edges riveted together as at 11. The side edges of the member A are strengthened by means of angle irons 12 which extend longitudinally of the member and are secured against the outer face of the latter. The major end of the member A is also reinforced by means of an angle iron 13, which latter is also secured against the outer face of the member in any suitable manner. Secured to each of the angle irons 12 is an anchor rod 14 which extends downwardly from said angle iron 12 and carries at its lower end a cross arm 15, said rod and cross arm constituting an anchor for the apron as will hereinafter appear. The sections 10 are provided at their minor ends with registering flanges 16 to which are adapted to be riveted a joint member 17 for cooperation with the adjacent end of a flume section B. The member 17 and the end of the flume section B are connected together by a joint of the type described and claimed in my application filed December 10, 1910, and serially numbered 596,674.

In use the member A is embedded in the embankment adjacent a canal with its lower portion beneath the level of the water. The anchors secured to the angle irons 12 are of course buried in the earth and the cavity in which the member A is seated is of a shape corresponding to the superficial shape of said member. The flume section B is then attached to the minor ends of the apron in the manner heretofore referred to and other flume sections are then attached in succession as desired.

As the water flows through the member A from the canal the pressure thereof will always tend to automatically force the member A into engagement with the surrounding earth and thus provide a water tight joint that will prevent leakage by way of the outer face of the member A and consequent destruction of the embankment. It will also

be apparent that the apron constructed as shown and described will be of an exceedingly flexible type so as to readily give during the expansion and contraction of connected parts and thus prevent cracking or breaking of the intake and outlet with resultant increased durability and prolongation of life.

What is claimed is;

10 1. An intake and outlet apron comprising a semi-frusto conical member, longitudinal stiffening bars secured along the sides of said member, a transverse stiffening bar secured along the major end of said member,
15 anchors secured to each of said longitudinal stiffening bars, an angular flange formed at the minor end of the member, and a flume joint member attached to said flange.

20 2. An intake and outlet apron comprising a semi-frusto conical member, means for anchoring the lateral portions of said mem-

ber, an angular flange formed at the minor end of said member, and a flume joint member attached to said flange.

3. An intake and outlet apron comprising 25 a semi-frusto conical member formed of a plurality of successively connected plates, longitudinal angle bars secured along the sides of said member, a transverse angle bar secured along the major end of said 30 member, anchors secured to each of said longitudinal angle bars, and angular flanges formed at the minor end of each of said plates, said flanges being disposed in continuity, and a flume joint member connected 35 to said flanges.

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

GEORGE L. HESS.

Witnesses:

GEORGE W. LOOMIS,
ROBT. W. CATTERSON.