W. S. McKEE & P. M. VILAS.

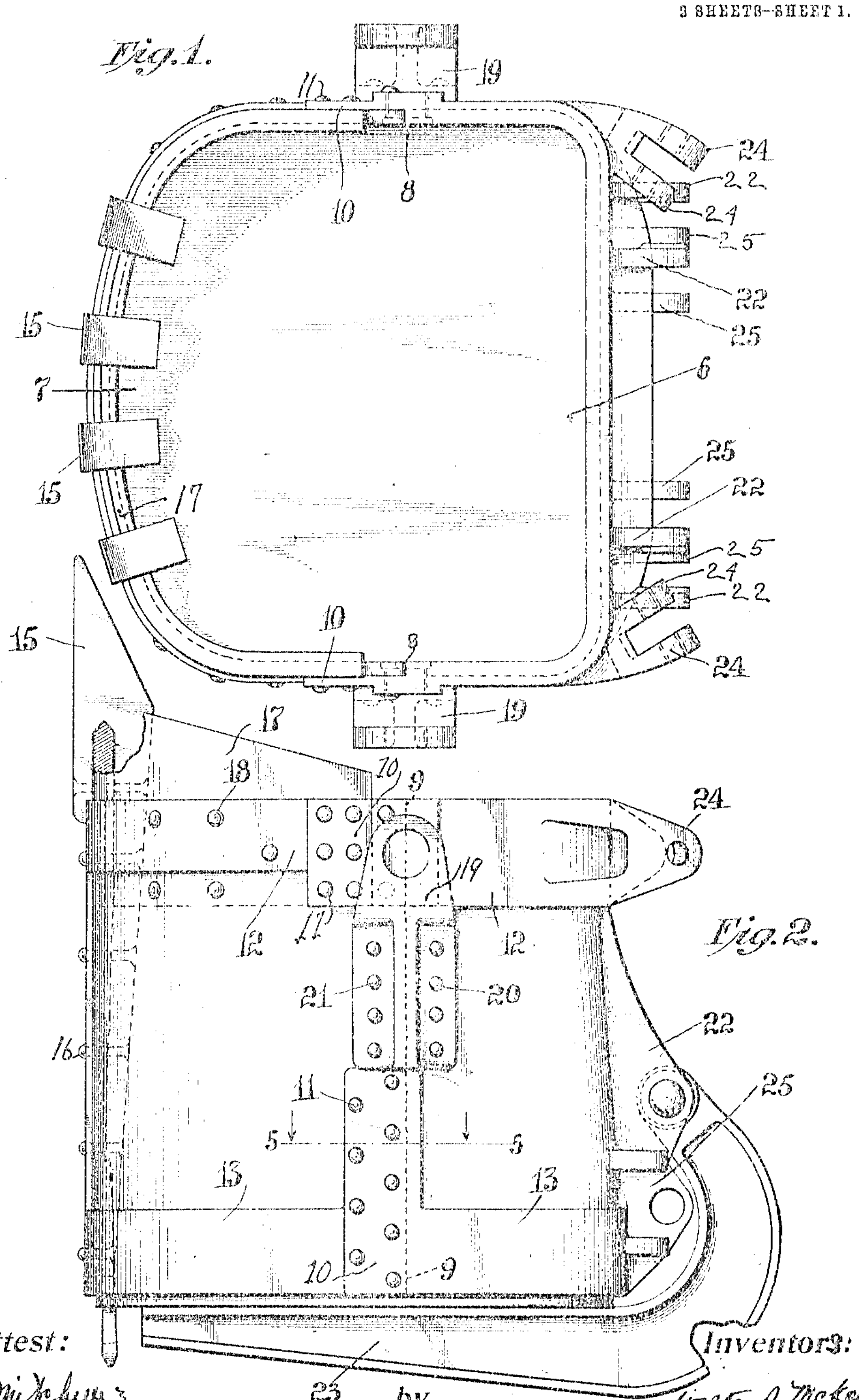
EXCAVATING DIPPER.

APPLICATION FILED JAN. 9, 1911.

1,001,289.

Patented Aug. 22, 1911

3 SHEETS—SHEET 1.



Attest:

[signature]

R. N. [signature]

Inventors:

Walter S. McKee

and Percival M. Vilas

by George Cook Atty.

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2 SHEETS—SHEET 2.

Fig. 3.

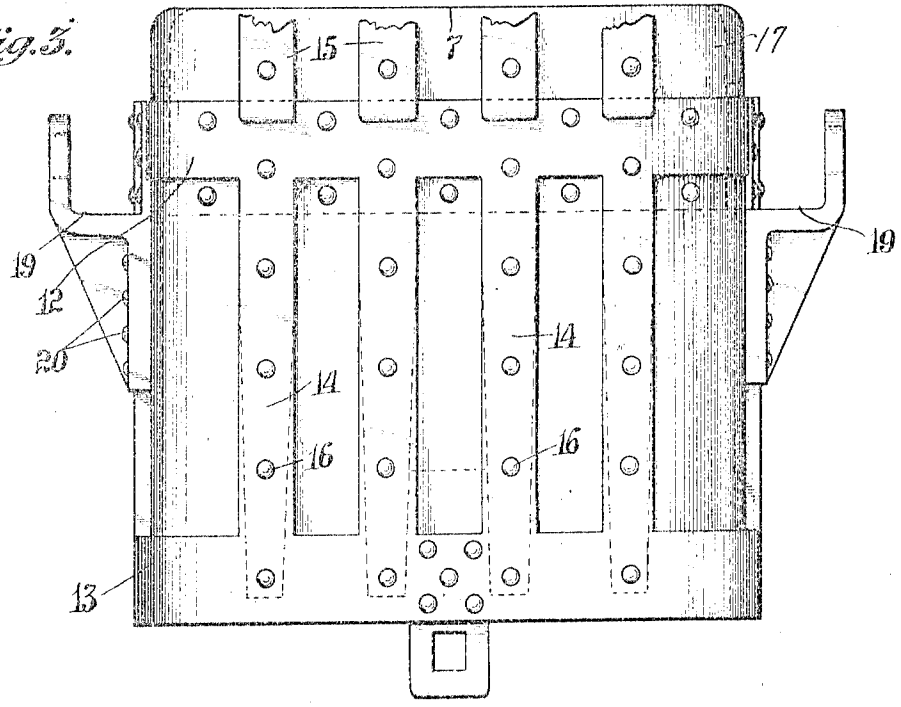


Fig. 4.

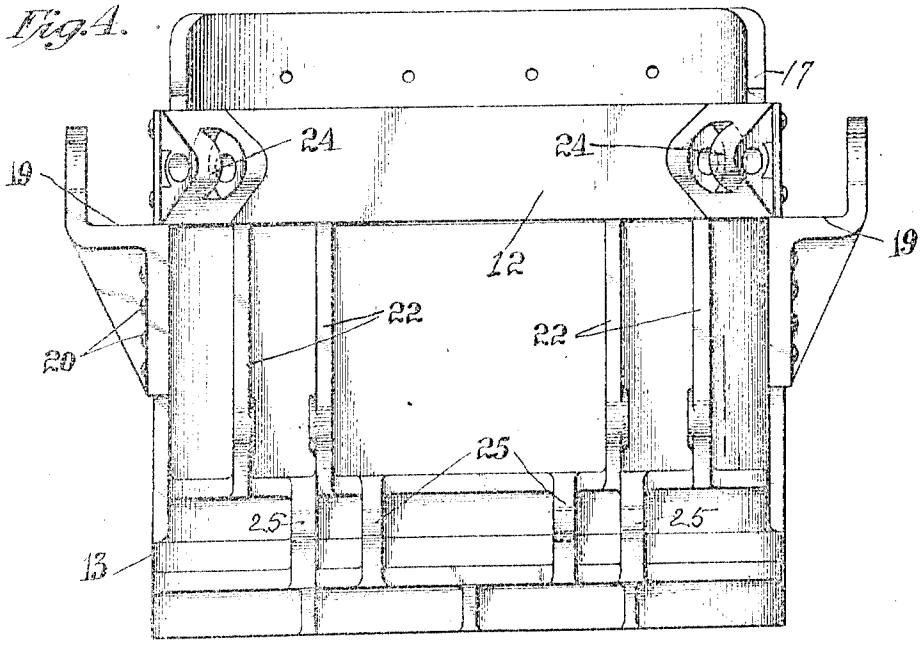
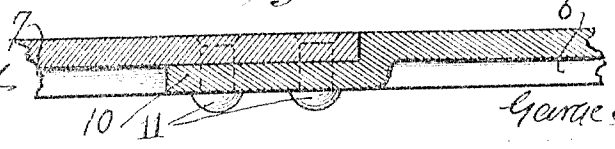


Fig. 5.



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UNITED STATES PATENT OFFICE.

WALTER S. McKEE, OF GLENCOE, ILLINOIS, AND PERCIVAL M. VILAS, OF MINNEAPOLIS, MINNESOTA, ASSIGNORS TO EDGAR ALLEN AMERICAN MANGANESE STEEL COMPANY, OF AUGUSTA, MAINE, A CORPORATION OF MAINE.

EXCAVATING-DIPPER.

1,001,289. Specification of Letters Patent. **Patented Aug. 22, 1911.**

Application filed January 9, 1911. Serial No. 601,687.

To all whom it may concern:

Be it known that we, WALTER S. McKEE, a citizen of the United States, and a resident of Glencoe, in the county of Cook and State of Illinois, and PERCIVAL M. VILAS, a citizen of the United States, and a resident of Minneapolis, in the county of Hennepin and State of Minnesota, have made and invented certain new and useful Improvements in Excavating-Dippers, of which the following is a specification.

Our invention relates to dippers for excavating or dredging machines, and the object thereof is to provide a dipper made up of two parts, each formed from cast metal, the metal being preferably manganese steel, and each of said parts comprising approximately one-half of said body portion. By forming the body portion of a dipper from cast metal, as aforesaid, the cost of producing the same is very much less than in former methods of construction wherein the dipper body is made up of a plurality of plates bent into proper form and secured together, and furthermore, we are, by our method of construction, able to form the dipper body of manganese steel, which is an exceedingly strong and tough material, and to thereby secure a stronger and more durable dipper body.

With the objects above enumerated in view, our invention consists in the improved dipper illustrated in the accompanying drawing, described in the following specification and particularly claimed in the clauses of the concluding claim, and in such variations and modifications thereof as will be obvious to one skilled in the art to which our invention relates.

In the accompanying drawing, Figure 1 is a view showing our improved dipper in plan; Fig. 2 is a view showing the same in side elevation; Fig. 3 is a view showing the front portion of the dipper, this view being taken from a position to the left of Figs. 1 and 2; Fig. 4 is a view showing the back of our improved dipper, as seen from a position at the right of Figs. 1 and 2, and Fig. 5 is a view showing a section of one side of the dipper body upon a plane perpendicular to the axis thereof, as indicated by line 5—5 of Fig. 2.

Referring to the drawings, our improved dipper is formed from two parts, 6 and 7, these parts being formed by casting the same in suitable molds in accordance with the well-known and ordinary foundry practice. These parts are joined together on a plane extending longitudinally of the body portion, the joint between the parts being shown at 8, Fig. 1, and the joint extending vertically through the sides of the body portion as indicated in Fig. 2, the dotted line 9—9 in said figure indicating the position of the meeting edges of the two parts.

The two parts, 6 and 7, each comprise substantially one-half of the body portion of the dipper, and in order to secure a strong connection between the two, the part 6 is shown as provided with projecting portions or flanges 10, which extend over adjacent portions of the front portion 7, a plurality of rivets, 11, extending through these flanges and the front portion 7, whereby the two parts are secured together to thereby form a single unitary dipper body.

The construction above described provides a vertically extending offset or shoulder upon the rear portion 6 of the dipper body at the joint 8, against which shoulder the sides of the front portion 7 abut, whereby an exceptionally strong connection between the two parts is secured, the shoulder or offset taking the greater part of the stress when the dipper is in use, whereas were such a shoulder not present the entire stress in digging would fall upon the rivets.

The parts 6 and 7 will preferably be provided with ribs 12, 13 at their upper and lower portions to thereby strengthen the body portion at its upper and lower edges, and the front portion of the dipper is preferably provided with projecting ribs 14 to strengthen the said front portion at the points where the dipper teeth 15 are secured to the dipper body, the securing bolts 16, whereby the teeth are secured in place, passing through these projecting ribs.

Our improved dipper will be provided with a lip portion 17 as is usual in the dippers for excavating or dredging machines, this lip being shown as secured to the forward portion of the dipper body by means of bolts or rivets 18, although it will be obvious that the lip may be formed in one piece with the forward portion of the dipper body.

To the dipper body are secured two ears

19, which ears receive the lower end of the bail for lifting the dipper, the same not being shown in the drawing. The base portion of these ears is so placed upon the body portion that it extends upon each side of the joint at which the two parts are secured together, and the same is secured to the dipper body by two lines of rivets 20, 21, from which it will be seen that the base portion of the ears serves as an additional securing means for securing the front and back portions of the dipper body together.

The back portion of the dipper body is provided with a pair of lugs 22 which serve as a hinge for securing the swinging bottom 23 to the dipper, and with other pairs of lugs 24, 25 to which the arms are connected by means of which the dipper is operated, all these lugs being formed integral with the back portion as the same is cast, and the lugs being connected with one another by means of suitable ribs upon the back portion of the dipper, these ribs being for the purpose of imparting additional strength to the back and lugs, the number and arrangement of the ribs being a matter of desire.

Such being the construction of our improved dipper body, it will be seen that the same is formed of two pieces only, and by ordinary casting operations, and, from the nature of the material, it will be understood that when the parts are formed from manganese steel an extremely strong and durable dipper body will be procured.

It will be obvious from the construction disclosed that the two parts are very securely held together by the scheme of riveting employed, so that the dipper body in its finished form will be as strong as though formed in a single piece.

Having thus described our invention, we claim and desire to secure by Letters Patent:—

1. A dipper for excavating or dredging machines, the body portion of which is made up of two parts formed from cast metal and secured together to thereby form a unitary body portion and said parts being joined on a plane extending longitudinally of said body portion, one of said parts being provided with a plurality of lugs formed integrally therewith and to which the operating mechanism of the dipper may be connected.

2. A dipper for excavating or dredging machines, the body portion of which is made up of two parts formed from cast metal and secured together to thereby form a unitary body portion, each part comprising approximately one-half of said body portion and said parts being joined on a plane extending longitudinally of said body portion, one of said parts being provided with a plurality of lugs formed integral therewith and to which the operating mechanism of the dipper may be connected.

3. A dipper for excavating or dredging machines, the body portion of which is made up of two parts formed from cast metal and secured together to thereby form a unitary body portion, said parts being joined on a plane extending longitudinally of said body portion, and ears to which a bail may be connected, said ears having each a flange portion extending across the joint between said parts, and the same being secured to the body portion by fastening device located upon either side of the joint between said body portions.

Signed at Chicago, in the county of Cook, and State of Illinois, this 29th day of December, 1910.

WALTER S. McKEE.

Witnesses:
B. F. Clark, Jr.,
Eugene C. Bauer.

Signed at Minneapolis, in the county of Hennepin, and State of Minnesota, this 3d day of January, 1911.

PERCIVAL M. VILAS.

Witnesses:
John C. Sweet,
James S. Garland.