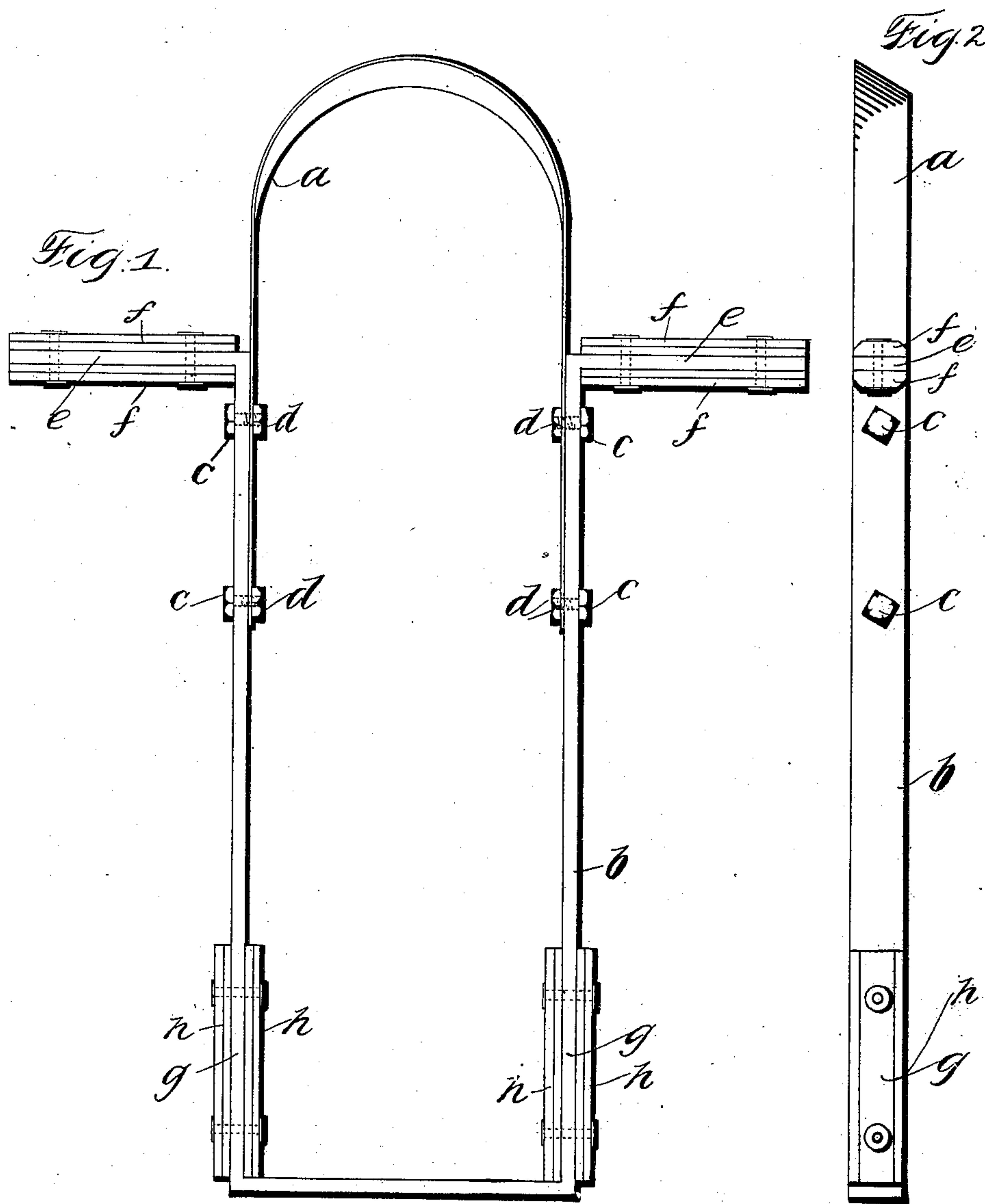


No. 889,192.

PATENTED JUNE 2, 1908.

R. A. BONNELL.
EXCAVATING TOOL.
APPLICATION FILED NOV. 25, 1907.



WITNESSES:

L. S. Ottob
George R. Moore

INVENTOR

Ralph A. Bonnell

BY

H. L. Cragg

ATTORNEY

UNITED STATES PATENT OFFICE.

RALPH A. BONNELL, OF CHICAGO, ILLINOIS.

EXCAVATING-TOOL.

No. 889,192.

Specification of Letters Patent.

Patented June 2, 1908.

Application filed November 25, 1907. Serial No. 403,606.

To all whom it may concern:

Be it known that I, RALPH A. BONNELL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Excavating-Tools, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to excavating tools, and has for its object the provision of an improved hand operated tool for the purpose of excavating clay and other soils.

My invention, in its preferred embodiment, includes a cutting element formed of strip metal so bent or shaped that the intermediate portion thereof is adapted to engage and cut the soil, while the ends of the strip metal are braced so as to maintain uniform the distance between the same.

The tool of my invention is desirably operated by two workmen, to which end the tool is provided with facilities whereby it may be gripped upon one side by one workman and upon the other side by another workman.

The gripping facilities are desirably disposed at the rear and at the front of the tool, the gripping facilities at the forward portion of the tool being located a sufficient distance to the rear of the front end of the tool as to allow sufficient clearance for the hands of the workman with respect to the soil.

The gripping facilities are desirably in the form of handle portions which are added to the structure, and at least two of these handles, namely, the forward two, are desirably projected transversely to the tool, while the remaining two handles, the handles at the rear of the tool, are desirably disposed longitudinally of the tool. By this construction each workman may secure a very firm and effective hold upon the tool.

I will explain my invention more fully by reference to the accompanying drawing, showing the preferred embodiment thereof, in which—

Figure 1 is a plan view of the tool, and Fig. 2 is a side elevation of the structure as it appears in Fig. 1.

Like parts are indicated by similar characters of reference in both figures.

The cutting portion *a* of the excavating tool desirably consists of a strip of metal, preferably spring steel, bent or formed into suitable shape. I preferably form the strip

of metal into a U-shape with the sides of the U substantially parallel as indicated in Fig. 1, though I do not wish to be limited in all embodiments of my invention to this shaping of the said metal strip. The base portions of the cutting element are maintained a fixed distance apart by means of a bracing device which is preferably composed of a comparatively heavy strip of metal *b*, desirably spring steel, which is also desirably bent into a U-shape, the bases of the U-shaped elements *a* and *b* being united by fastening devices *c* which desirably separably join the elements *a* and *b* so that the element *a* may readily be replaced on occasion. The U-shaped elements *a* and *b* are oppositely disposed. The fastening devices *c* are, therefore, desirably in the form of bolts or nuts, the nuts being indicated at *d*.

Handles are provided at the forward portion of the tool, which handles are preferably constituted, in part at least, of angular extensions *e* of the bracing element *b*. If desired, the handles *e* may be faced with wooden strips *f* to increase the size of the handles and to impart better shape thereto. The handles *e* desirably lie in the same plane occupied by the U-shaped elements *a* and *b*, though I do not wish to be limited to this arrangement. In the preferred embodiment of the invention, these handles project at right angles to the sides of the U-shaped elements *a* and *b*. The bracing element *b* is preferably extended sufficiently to the rear of the cutting element *a* as to afford gripping portions *g* at the rear of the tool, which gripping portions are desirably also faced with strips of wood *h* to improve the shapes of these gripping portions.

The space inclosed by the U-shaped elements *a* and *b* is preferably sufficiently clear to permit strips of soil that are cut by the tool to fall through the same without material obstruction, and the bracing element *b* is extended sufficiently to the rear of the tool so as to make this space sufficiently long to permit long strips of soil to fall therethrough.

By reason of the bracing element *b*, a comparatively light strip of metal for the cutting element *a* may be employed, and by separably uniting the cutting element with the bracing element, said cutting element may be readily renewed on occasion.

In order that the fastening devices which are employed separably to unite the cutting and bracing elements may not extend across

the space between the sides of the cutting element and thereby obstruct the falling earth, bolts *c* with short shanks are employed, there being desirably two bolts upon one side of the tool and two bolts upon the other, one side of the cutting element and one side of the bracing element being confined between the heads and nuts of the two bolts, while the other side of the cutting element and the other side of the bracing element are confined between the heads and nuts of the remaining bolts. In other words, the fastening means employed for uniting the contiguous sides of the cutting and bracing elements are individual to said contiguous sides and do not extend across the space between the sides of the cutting and bracing elements, whereby one of the objects of my invention is accomplished.

I use the expression "cutting element" in the sense of an element which, with suitable force behind it, is enabled to cut the soil, not limiting myself, however, to a cutting element possessing a sharpened edge.

It is obvious that changes may readily be made in the embodiment of my invention shown, without departing from the spirit thereof, and I do not, therefore, desire to be limited to the precise construction shown, but,

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

1. A tool of the class described including a U-shaped cutting element of strip metal, a U-shaped bracing element uniting the ends of the strip metal, a handle on each side of the tool located rearwardly of the front end of the tool and angularly disposed with respect to the cutting element, and additional handles located to the rear of the aforesaid handles, the forward handles lying substantially in the plane of the cutting and bracing elements.

2. A tool of the class described including a U-shaped cutting element of strip metal, a U-shaped bracing element uniting the ends of the strip metal, and a handle on each side of the tool located rearwardly of the front end of the tool and angularly disposed with respect to the cutting element and lying substantially in the plane of the cutting and bracing elements.

3. A tool of the class described including a cutting element in the form of a curved metal strip, a handle upon each side of the tool near the forward portion of the tool, and handle portions upon each side of the tool to the rear of the aforesaid handles, the first aforesaid handles being angularly disposed with respect to the cutting element and lying substantially in the same plane therewith.

4. A tool of the class described including a cutting element in the form of a curved metal strip, a handle upon each side of the

tool near the forward portion of the tool, and handle portions upon each side of the tool to the rear of the aforesaid handles, the first aforesaid handles being angularly disposed with respect to the cutting element.

5. A tool of the class described including a U-shaped cutting element of strip metal, a U-shaped bracing element uniting the ends of the strip metal, a handle on each side of the tool located rearwardly of the front end of the tool and angularly disposed with respect to the cutting element, and additional handles located to the rear of the aforesaid handles.

6. A tool of the class described including a U-shaped cutting element of strip metal, a U-shaped bracing element uniting the ends of the strip metal, and a handle on each side of the tool located rearwardly of the front end of the tool and angularly disposed with respect to the cutting element.

7. A tool of the class described including a cutting element in the form of strip metal, a bracing element uniting the ends of the strip metal, a handle on each side of the tool located rearwardly of the front end of the tool and angularly disposed with respect to the cutting element, and additional handles located to the rear of the aforesaid handles.

8. A tool of the class described including a cutting element in the form of strip metal, a bracing element uniting the ends of the strip metal, and a handle on each side of the tool located rearwardly of the front end of the tool and angularly disposed with respect to the cutting element.

9. A tool of the class described including a U-shaped cutting element of strip metal, a U-shaped bracing element of strip metal oppositely disposed with respect to the U-shaped cutting element, the base portions of the U-shaped cutting and bracing elements being united, and handles provided upon the sides of the structure.

10. A tool of the class described including a U-shaped cutting element of strip metal, a U-shaped bracing element of strip metal oppositely disposed with respect to the U-shaped cutting element, the base portions of the U-shaped cutting and bracing elements being united, fastening devices individual to the united contiguous sides of the cutting and bracing elements, and handles provided upon the sides of the structure.

11. A tool of the class described including a cutting element in the form of strip metal, a bracing element in the form of strip metal, the strip metal forming the cutting element having its end portions brought into engagement with the bracing element, whereby space is afforded to permit of the passage of soil therethrough, fastening devices individual to the contiguous sides of the cutting and bracing elements, and handles provided upon the sides of the structure.

12. A tool of the class described including
a cutting element in the form of strip metal,
a bracing element in the form of strip metal,
the strip metal forming the cutting element
5 having its end portions united with the
bracing element, and handles provided upon
the sides of the structure.

In witness whereof, I hereunto subscribe
my name this 21st day of November A. D.,
1907.

RALPH A. BONNELL.

Witnesses:

L. G. STROH,
G. L. CRAGG.