

No. 686,203.

Patented Nov. 5, 1901.

J. CAMPBELL.

SCRAPER FOR SCRAPING COAL OR OTHER MATERIAL.

(Application filed Nov. 16, 1900.)

(No Model.)

2 Sheets—Sheet 1.

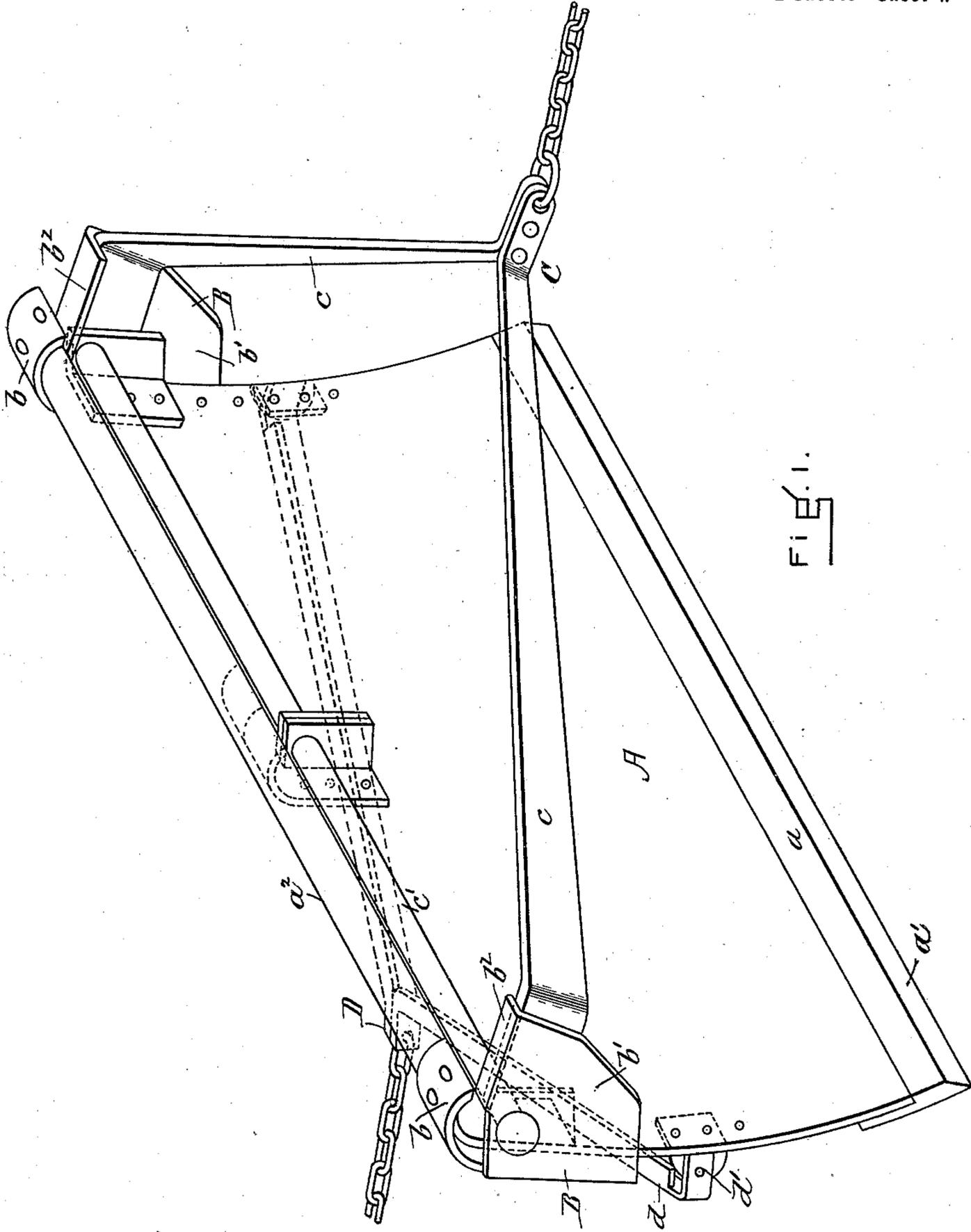


FIG. 1.

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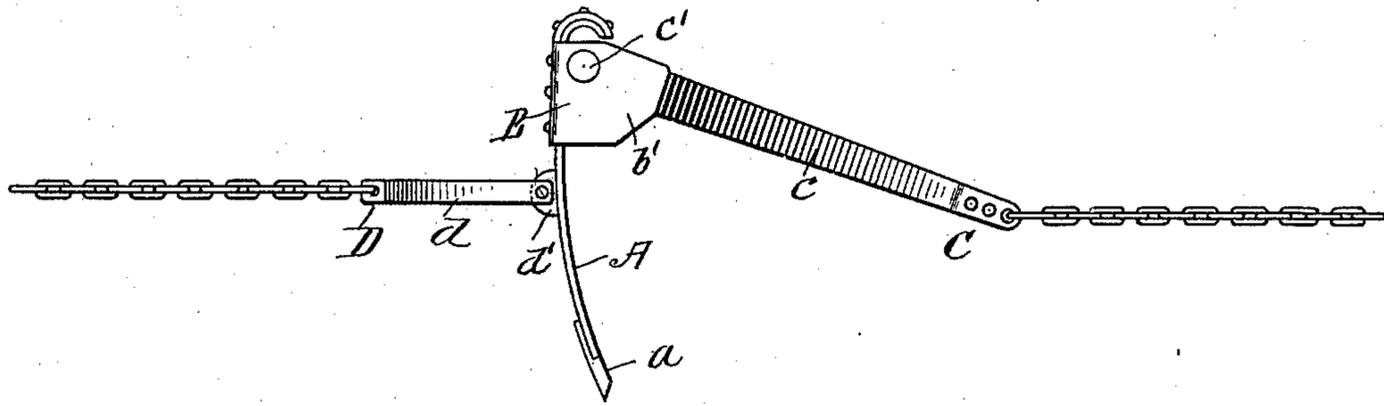


Fig. 1.

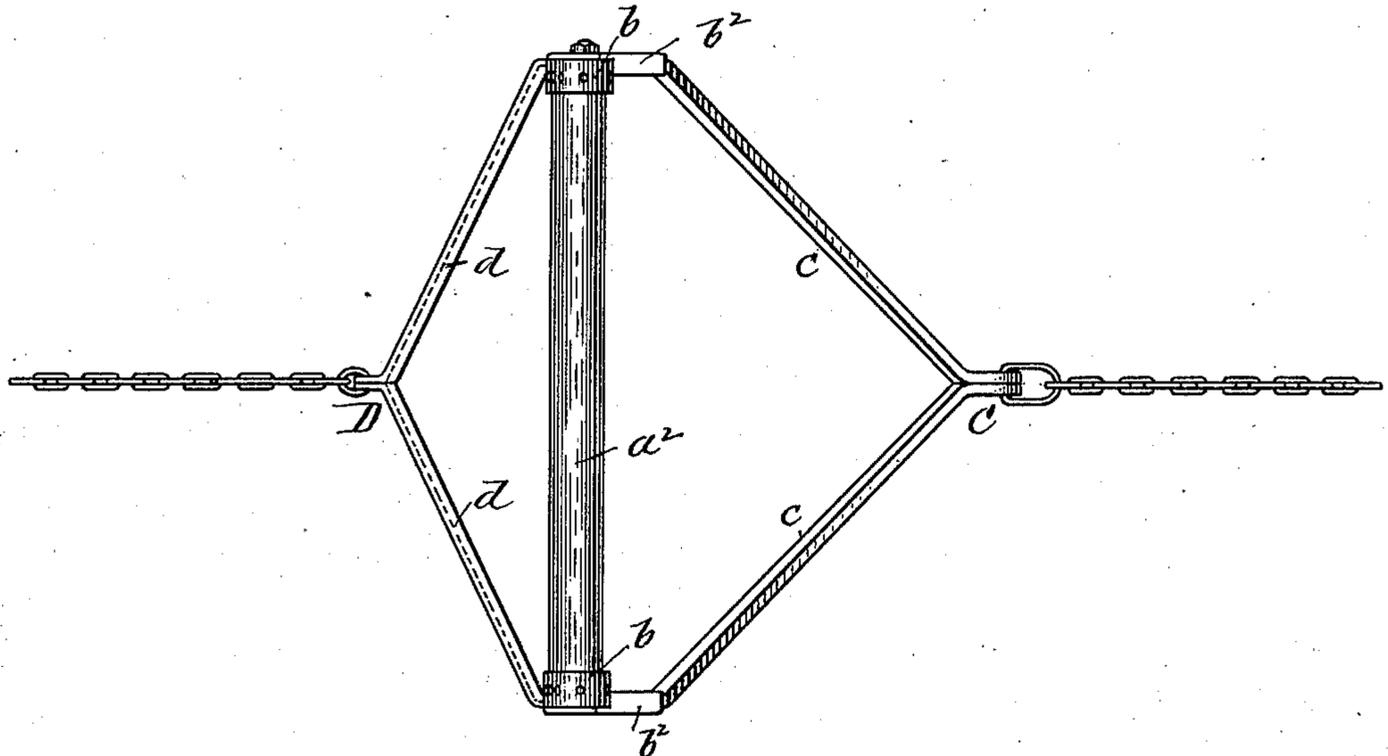


Fig. 2.

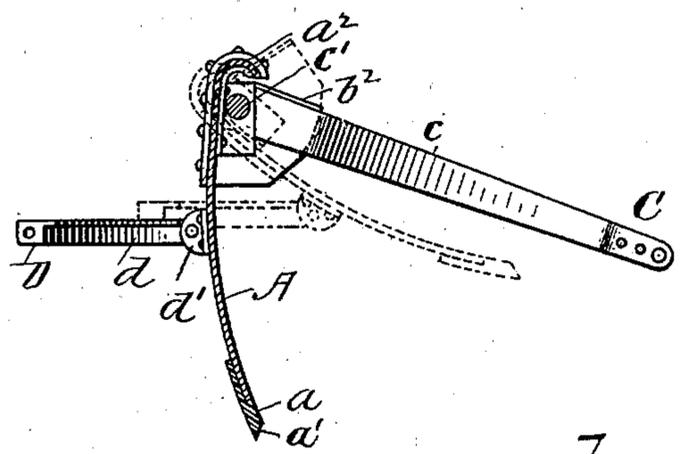


Fig. 3.

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UNITED STATES PATENT OFFICE.

JEREMIAH CAMPBELL, OF NEWTON, MASSACHUSETTS.

SCRAPER FOR SCRAPING COAL OR OTHER MATERIAL.

SPECIFICATION forming part of Letters Patent No. 686,203, dated November 5, 1901.

Application filed November 16, 1900. Serial No. 36,691. (No model.)

To all whom it may concern:

Be it known that I, JEREMIAH CAMPBELL, a citizen of the United States, and a resident of Newton, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Scrapers for Scraping Coal or other Material, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates to a scraper for scraping or trimming coal or other material in piles whether on land or in vessels; and it relates to the specific construction of the scraper and also to the manner in which it is harnessed or hung, whereby it may be moved in one direction in a folded shape and without unnecessary friction upon the coal or material and may immediately engage said coal or material when moved in a reverse direction, no time or material being lost in making said engagement.

In the drawings, Figure 1 is a view in perspective of a scraper or trimmer having the features of my invention. Fig. 2 is a view in end elevation thereof, representing it in engaging position. Fig. 3 is a view in plan thereof; and Fig. 4 is a view in vertical section, representing the engaging position in full lines and the disengaged position of the blade in dotted lines.

Referring to the drawings, A represents the blade of the scraper. It is made, preferably, of boiler-plate iron and is of any desired length and height. It is preferably curved slightly from its upper to its lower end, and its lower edge a is made thicker than the remainder of the blade, being, preferably, a strip of thicker plate than is used for the remainder of the blade and united to the remainder of the blade by riveting, the lower end and remainder of the plate being recessed and shouldered, as represented in Fig. 4, and the lower edge also having the straight surface a' shown in said figure. The upper edge a^2 of the blade throughout its length is rounded or curved, as represented in Fig. 1, to serve as a protection-buffer and reinforcement to the entire blade. At each of the upper corners of the blade there is secured a gus-

set-plate B. Each of these gusset-plates is riveted to the blade and has a rounded corner b , extending over the rounded upper edge a^2 at each corner, serving to further protect each corner of the blade, also the end section b' and the lateral inward extension b^2 , which acts as a stop for the arms c of the draft-bar C. This draft-bar C is mounted, by means of its said arms c , upon the shaft c' , supported by the gusset-plates beneath the rounded section or hood a^2 of the blade. A draft-bar D, divided into arms d , engages by said arms the back side of the blade at d' about midway the height of the blade. The draft-bar C is employed for drawing the shovel against the pile of coal or material for trimming it, and the draft-bar D is used in drawing it backward over the pile to a new engaging position. It is desirable that the scraper in moving forward into the pile should make an immediate engagement with the said material and should also bury itself into it when it is moved and to continue such action with respect to the pile as it is moved, and I have ascertained that this result is accomplished by holding the blade to the draft-bar, so that the draft-bar C and blade shall always bear an acute angle to each other. (See Fig. 4.) By so doing the draft of the drawing-rope upon the lower end of the draft-bar will be below the level of the upper edge of the blade, and the draft-bar will thus serve to hold the blade in its best position for making immediate engagement with the material and will continue said engagement. The curved shape of the blade is also a factor. The connection between the draft-bar C and the blade is such as to prevent the draft-bar from being moved upward from the blade to any greater extent than is permitted by the stops b^2 on the gusset-plates. These stops, however, do not prevent the gusset-plates from being moved toward the draft-bar C, and this movement is necessary in returning the scraper over the material or coal to a new position and when it is drawn downward by the draft-bar D, draft exerted upon the blade through said bar causing the blade to fold toward the draft-bar C and assume a flat position with its upper edge forward. (See Fig. 4.) This permits the downward or return movement of the

scraper to be made over the coal or material without undue friction and without tending to pull it down or away from the pile. It will be understood, of course, that the lower part of the back surface of the blade drags upon the material or ground during said movement. At the beginning of the trimming movement of the scraper the draft of the drawing-rope, which operates upon the draft-bar D, is usually sufficient to move the blade to engaging position, or that represented in Figs. 2 and 4. In some instances, however, it may be desirable to hold said draft-rope stationary for an instant while the draft-rope, working through the draft-bar C, is moved forward and to thereby bring the blade to the operative position represented in Fig. 4. The blade may be united to the shaft *c'* at the center of its length by a bracing connection, as represented in Fig. 1.

I have described the two draft-bars or devices for drawing the blade in reverse directions as comprising vertical arms, the ends of which are attached to the blade at its ends. I do not wish to be understood as limiting the invention to this particular form of draft-bar, as any bar or means for connecting the blade with its operating chains or ropes may be used so long as they are out of line with each other at their point of connection with the blade.

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

1. The scraper above described consisting of a scraper-blade, a draft-bar pivotally connected thereto, and one or more stops located on said scraper-blade and adapted to engage said draft-bar when in position for scraping, as and for the purposes set forth.

2. The scraper above described consisting of a scraper-blade, a draft-bar pivoted to the upper edge thereof, and one or more stops located upon the upper edge of said scraper-blade and adapted to engage said draft-bar

and limit its upper movement, as and for the purposes described.

3. The combination in a scraper of the character specified of a curved metallic blade having a reinforced protected lower edge and reinforced protected upper edge, a shaft within said protected upper edge, a draft-bar pivotally connected with said shaft near each end thereof, and stops for preserving an acute angular relation between the blade and the draft-bar.

4. The combination in a scraper of the character specified of the curved metal blade having the rounded upper edge, gusset-plates at each upper corner of said plate attached to the blade having corner reinforcements and guards, a draft-bar having arms pivotally attached to the blades near each upper corner and controlled as to its movements in one direction by the gusset-plate stops.

5. In a scraper for trimming coal and other material, the combination of the blade, a draft-bar pivoted near the upper edge of the blade and stops for preserving an acute-angular relation between said blade and said draft-bar when the said bar is exerting draft upon the blade, and a second draft-bar for drawing the scraper in a reverse direction attached to the blade below the point of attachment of the said first-named draft-bar, as and for the purposes set forth.

6. The scraper above described consisting of a scraper-blade and two draft-bars pivoted directly to the blade, one pivoted near the upper edge of the blade for exerting draft upon the blade and the other for drawing the scraper in a reverse direction attached to the blade below the point of attachment of the first-named draft-bar, as described.

JEREMIAH CAMPBELL.

Witnesses:

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