(No Model.)

J. D. BRAINARD.

EARTH SCRAPER.

No. 482,711. Patented Sept. 13, 1892.

Fig. 1.

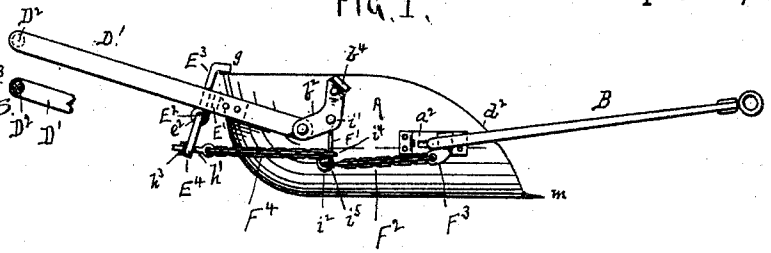


Fig. 6.

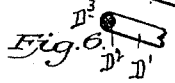


Fig. 2

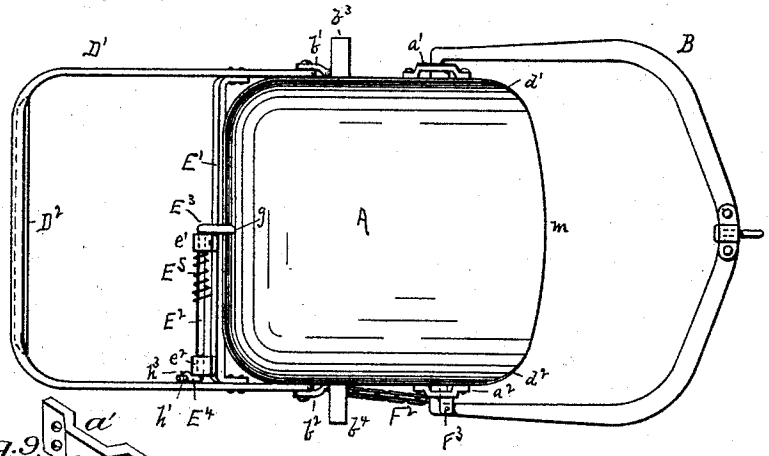


Fig. 9.

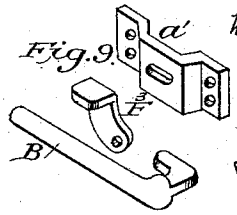


Fig. 3

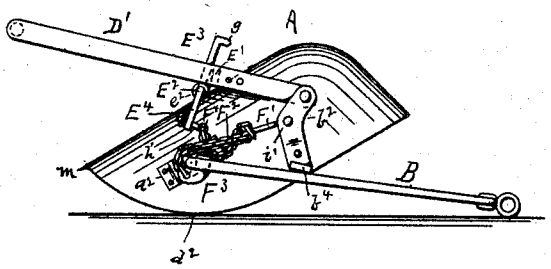


Fig. 7.

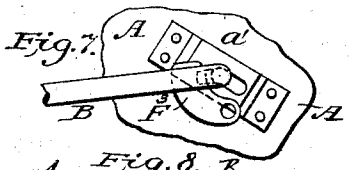


Fig. 8.

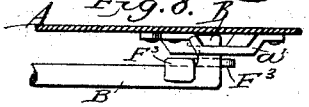


Fig. 4.

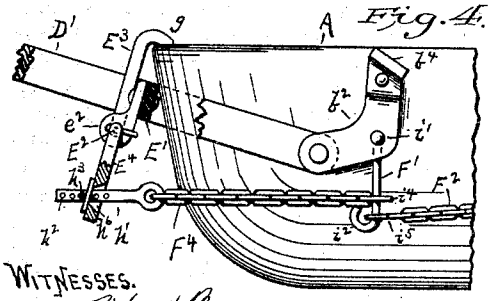
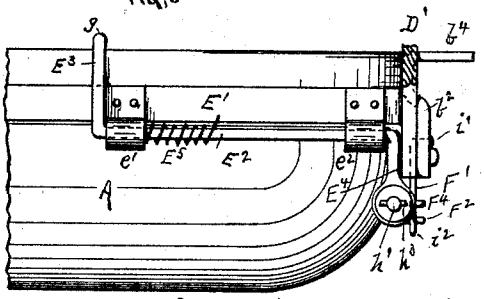


Fig. 5



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Tom Graham

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JULIUS D. BRAINARD, OF ST. PAUL, MINNESOTA.

EARTH-SCRAPER.

SPECIFICATION forming part of Letters Patent No. 482,711, dated September 13, 1892.

Application filed June 5, 1891. Serial No. 395,177. (No model.)

To all whom it may concern:

Be it known that I, JULIUS D. BRAINARD, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Earth-Scrapers, of which the following is a specification.

This invention relates to earth-scrapers; and it consists in the construction and combination and arrangement of parts, as hereinafter shown and described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the scraper as in use ready to be filled, and Fig. 2 is a plan view thereof. Fig. 3 is a side view of the same, showing its position when dumped. Fig. 4 is an enlarged detail, partially in section, of a portion of the rear part, illustrating more fully the construction of the mechanism for dumping and holding the handle of the scraper. Fig. 5 is a rear view of the parts shown in Fig. 4. Fig. 6 is a detached cross-sectional detail of the handle. Figs. 7 and 8 are enlarged details illustrating more fully the manner of connecting the trip-chains to the draw-bail and its coupling. Fig. 9 is a perspective view of the draw-bail and trip-chain coupling mechanism detached.

A is the body or scoop of the scraper; B, the draft-bail, the latter secured in the usual manner by ears or clips a' a^2 to the forward part of the scoop.

D′ is the handle-bail, which is pivoted through straps b' b^2 to the sides of the scraper, near the rear, and extending backward around the back of the scraper, as shown. The side portions of the handle-bail D′ are of flat iron, while the rear part is formed in half-tubular shape, and this half-round portion is filled by a wooden core or strip D^2, as shown more clearly in Fig. 6 at D^3. By thus forming the handle-bail I accomplish two important results—viz., the curved formation greatly strengthens and stiffens it, and the introduction of the wood filling D^2 not only gives a still greater strength to the handle, but also renders the grip of the hands of the operator more certain and agreeable. Moreover, the wood, being a non-conductor of heat, will not absorb as much heat in hot weather as the iron alone would, and will not become as cold in winter. The straps b' b^2 are formed with projecting portions b^3 b^4, standing at right angles to the body A of the scraper and adapted to rest upon the sides of the draft-bail B′ when the scraper is dumped to prevent its turning completely over, but causing it to rest upon the ground by the curved front portions d' d^2 of the sides, as shown in Fig. 3.

E′ is a bar secured across the handle-bail D′ and adapted to come in contact by its upper edge with the rear of the scoop to form a stop to the handle-bail to prevent its being turned up over the scoop. If found necessary, stop-lugs may be attached to the rear of the body A for the bar E′ to strike against. Journaled horizontally by hangers e' e^2 to this cross-bar E′ is a shaft or rod E^2, having one end E^3 turned upward and bent over the top of the rear edge of the scraper-body, as at g, while the other end E^4 of the rod is bent downward and provided with an eyebolt h' through its lower end, the eyebolt being adjustable in the part E^4 by a series of holes h^2 and a pin h^3, as more clearly shown in Fig. 4. The rod E^2 is provided with a spring E^5, by which it is held normally with its bent end E^3 in contact with the upper edge of the scraper-body, as in Figs. 1, 2, 4, and 5.

Pivoted by one end at i' in the strap b^2 is a rod or hanger F′, having an eye i^2 in its lower end, connected by a chain F^2 to a clip F^3, attached to or hooked over the draft-bail B next to its clip a^2, while another chain F^4 connects the same rod F′ above its eye i^2 to the eyebolt h', as shown. The last link i^4 of the chain F^4 clasps the rod F′, so as to slide freely thereon; but this link will be of iron too large to enter the eye i^2. The eye i^2 is not entirely closed, so as to permit the last link i^5 of the chain F^2 to be freely hooked therein. When the handle-bail D′ is elevated, the rod E^3 catches over the body A by its bent end g, and is thus retained in its elevated position, as shown.

The construction of and the manner of applying the hooked clip F^3 are more clearly shown in Figs. 7, 8, and 9, which represent in enlarged details a portion of one end of the draft-bail, one of the draft-bail ears a', and clip F^3. The clip F^3 is formed with the backwardly-curved body portion having a hole in its lower end for the reception of the chain

F^2, and with its upper end turned over upon the bail B, as shown. The strain upon the clip F^3 is constantly backward and downward. Hence it will retain its position in place upon the bail without further fastening. The handle-bail D′ is thus rigidly connected to the body A, the catch *g* preventing any downward movement and the cross-bar E′ preventing any upward movement.

When the scraper is filled and ready to be dumped, it is only necessary for the operator to draw the handle-bail upward, when the cross-bar E′ will carry the rear of the body A upward and cause the nose *m* to catch into the ground. This movement changes the relative positions of the body of the scraper to the draft-bail, so that the clip F^3 is caused to draw slightly upon the chain F^2, and through its connection with the hanger F′ and chain F^4 this drawing motion acts upon the bent rods E′ E^3 and releases the catch *g* from the scraper, so that the continued forward movement of the horses overturns the scraper until the projections b^3 b^4 rest upon the draft-bail B′, as shown in Fig. 3, and with the handle-bail standing about in the same position as when the scraper is being filled, so as to be convenient to the hand of the operator when the scraper is to be restored to its upright position again. By this means it is never necessary for the operator to bend over any farther to restore the scraper than it is to dump it or actuate it while being filled. After the scraper is dumped it is left in the position shown in Fig. 3 and drawn in that condition back to the filling-place again, the friction thereafter coming wholly upon the curved forward edges d' d^2. When the scraper is to be again filled, it is only necessary to draw backward upon the handle-bail, when the scraper will at once return to its upright position and the catch *g* snap into place again and hold it as before.

When the implement is to be transported or when not in use, it is desirable to turn the draft-bail B backward over upon the body of the scraper, so that the implement will occupy less room. The chains F^2 F^4, if rigidly connected, would not be long enough to permit of such a motion being imparted to the draft-bail, and to provide for this movement is the object of forming the connection between the two chains by means of the rod F′, as by that means when the draft-bail is thrown over upon the body A the link i^4 of the chain F^4 slips upward upon the rod F′, and thus lengthens the throw of the chain to an extent sufficient to permit of this extra throw to the draft-bail. By this means no cramping of the parts will take place when their relative positions are changed or when the scraper is being transported.

In some forms of scraper the rod E′ may require two of the parts E^3 and catches *g;* but this would clearly be a mere colorable change and would not effect the operation of the implement or alter or effect its functions. Where the eyebolt *h′* passes through the part E^4, the latter is formed with a countersink h^6, so that the eyebolt will freely oscillate therein, so as to draw squarely against its pin h^3, no matter what angle the chain F^4 may assume.

Having thus described my invention, what I claim as new is—

1. In an earth-scraper, the scoop having the draft-bail B, pivoted thereto at its forward end, a handle-bail pivoted to the side of the scoop near its rear, cross stop-bar E′, connecting the sides of said handle-bail and adapted to rest beneath the rear upper portion of the scoop to limit the upward motion of the handle-bail, and a catch pivoted to said cross stop-bar and adapted to lock said stop-bar and handle-bail to said scoop to prevent the downward movement of the handle-bail.

2. In an earth-scraper, the scoop having the draft-bail B, pivoted thereto at its forward end, a handle-bail pivoted to the scoop near its rear end, cross stop-bar E′, connecting the sides of said handle-bail and adapted to rest beneath the rear portion of the scoop, rod E^2, journaled upon said stop-bar and with upturned end E^3, having catch *g*, adapted to engage with the scoop and hold the handle-bail connected thereto, downwardly-projecting portion E^4 on said rod and having adjustable eyebolt *h′*, hanger F′, pivoted to said scoop, chain F^2, connecting said hanger with a clip upon the draft-bail, and chain F^4, connected by one end to said hanger by a sliding link and by the other end to said eyebolt, whereby when said scoop is overturned said handle-bail is released, substantially as and for the purpose set forth.

3. In an earth-scraper, the combination of the scoop and a handle-bail formed with flat sides and semi-tubular rear and a wood filling or core inserted into said semi-tubular portion, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JULIUS D. BRAINARD.

Witnesses:
C. N. WOODWARD,
H. S. WEBSTER.