Aug. 7, 1928.

N. MADSON

1,680,156

SCRAPER

Original Filed Dec. 27, 1926 2 Sheets-Sheet 1

Fig. 1.

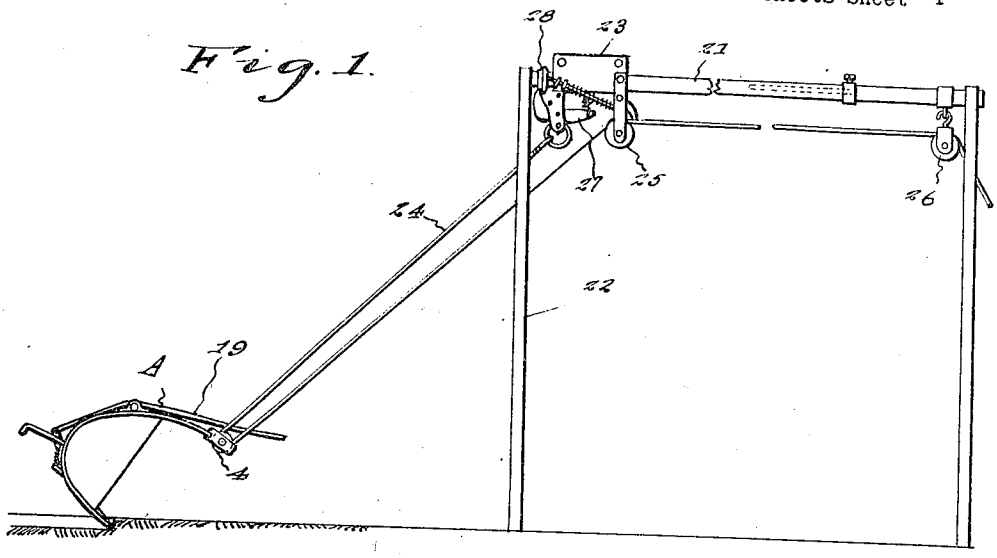


Fig. 5.

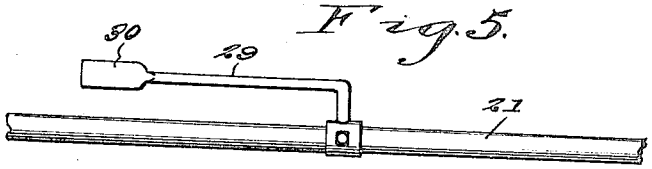


Fig. 6.

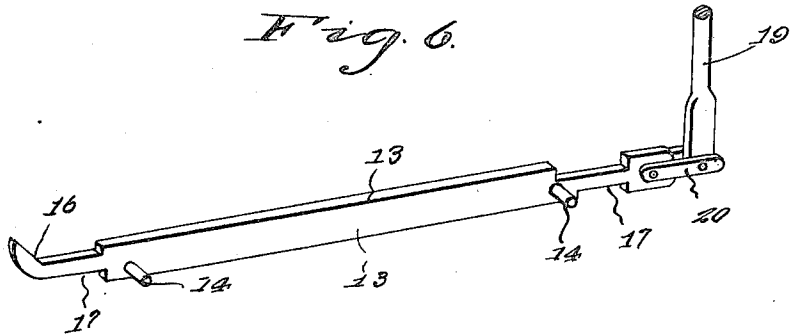
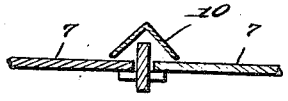


Fig. 7.



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Original Filed Dec. 27, 1926 2 Sheets-Sheet 2

Fig. 2.

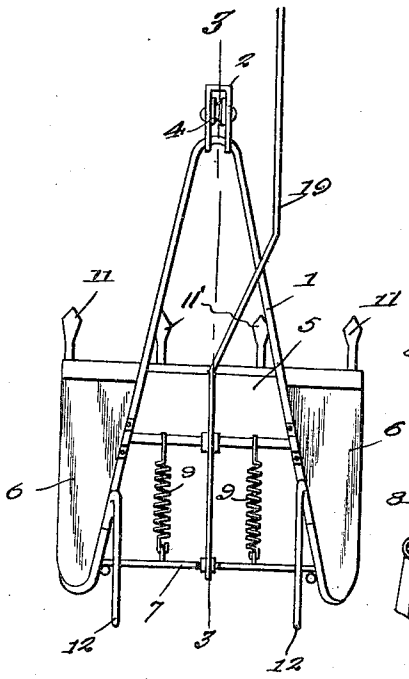


Fig. 4.

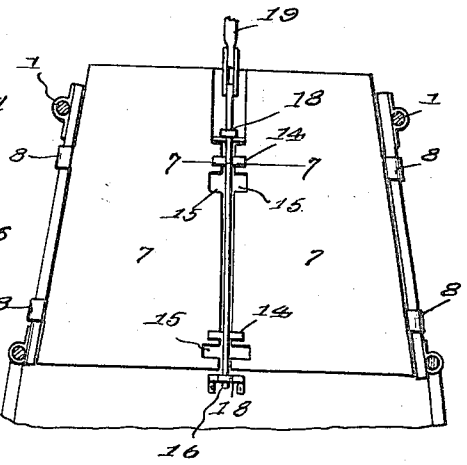
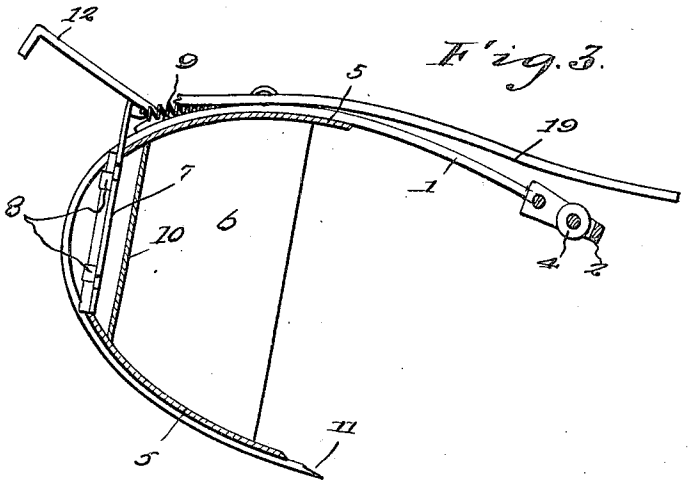


Fig. 3.



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Patented Aug. 7, 1928. 1,680,156

UNITED STATES PATENT OFFICE.

NELS MADSON, OF COEUR D'ALENE, IDAHO.

SCRAPER.

Application filed December 27, 1926, Serial No. 157,379. Renewed June 2, 1928.

This invention relates to a scraper or scoop for handling sand, gravel, rock, coal, etc., the general object of the invention being to provide a scraper which is so formed that when it is pulled along a surface by a cable which is attached to a part of the scraper, it will dig into the surface and thus load itself.

Another object of the invention is to provide the scraper with spring doors, with a lock for holding the doors closed and with a lever which, when moved in a certain direction, will release the locking means to permit the doors to open under the weight of the material therein.

Another object of the invention is to provide a trip on a track which is adapted to be engaged by a car to which the cable of the scraper is attached, which will engage the lever and automatically release the locking means when the scraper reaches a certain point on the track.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

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

Figure 1 is an elevation showing the entire device in use.

Figure 2 is a top plan view of the scraper.

Figure 3 is a section on line 3—3 of Figure 2.

Figure 4 is a fragmentary view of the scraper, showing the doors for closing the rear part of the same.

Figure 5 is a view of the trip on the track.

Figure 6 is a view of the locking lever for the doors.

Figure 7 is a section on line 7—7 of Figure 4.

As shown in these views, the scraper A is formed of a steel frame 1 which is of substantially hook shape, with the upper limb extending beyond the lower limb and this upper limb is formed of a substantially V-shaped part with the bight carrying a clevis 2 which supports a pulley 4. The frame gradually widens out to the terminal of its under portion or limb and sheet metal 5 is fastened to the upper and lower portions of the frame to form the top and bottom of the scoop and sheet metal 6 is arranged at the sides of the frame for forming the sides of the scoop. The rear of the scoop is left open, but is adapted to be closed by the doors 7 which are hinged to the sides of the frame, as shown at 8, and the said doors are kept closed by the springs 9 which are connected with the tops of the doors and with one of the side pieces of the frame. An L-shaped strip 10 is vertically arranged at the rear of the scoop for covering the adjacent edges of the two doors. The extended ends of the lower portions of the frame are shaped to provide the teeth 11 and other teeth 11′ are fastened to the bottom of the scoop body, these teeth acting to plow up the surface so as to loosen the material and permit it to be drawn into the scoop as the scoop is pulled along. Handles 12 are connected with the rear part of the frame for permitting the scoop to be manipulated by hand as it is being pulled along. A locking bar 13 is slidably mounted at the rear of the scoop and this bar is provided with the pins 14 which are adapted to engage portions of the two doors to hold the doors in locking position. The doors are provided with notches 15 at their abutting edges so that when the locking bar is moved to a position where the pins will register with the notches, the doors will be free to open. The lower end of the locking bar is formed with a hook 16 which will engage a part of the bottom of the scoop which limits the sliding movement of the bar, the said bar being provided with the reduced parts 17 which engage loop portions of brackets 18 on the scoop for slidably connecting the bar with the scoop.

A lever 19 is pivotally connected with a part of the frame of the scoop and is connected by the links 20 with the sliding bar 13. The free end of the lever extends forwardly beyond the upper part of the frame of the scoop and it is offset from the pulley on the frame, as clearly shown in Figure 2. By pushing this lever 19 upwardly or away from the upper end of the frame of the scoop, the bar 13 will be moved to a position where its pins will come opposite the notches in the doors so that the doors will be free to open.

I prefer to operate the scoop by the means

used for operating the hay fork shown in my Patent No. 1,119,360, dated December 1, 1914, such means comprising a track 21 supported by the uprights 22, the carriage 23 engaging the track and to one end of which a cable 24 is attached, which passes over the pulley 4 and over a pulley 25 on the front end of the carriage and over a pulley 26 at the forward end of the track to a power device. As the cable is pulled upon, the scoop will be pulled along the ground, as shown in Figure 1, until it reaches a point under the carriage, when it will be lifted until its pulley carrying part will strike the locking member 27 which engages a collar 28 on the track so as to release the said locking member so that a further pull on the cable will cause the carriage to move along the track carrying the scoop with it.

A trip bar 29 is fastened to the track at the place where the scoop is to be dumped so that when the lever 19 strikes the broad end 30 of the bar, it will be moved away from the pulley carrying part of the scoop so that the locking bar will be moved to unlocking position and then the weight of the material in the scoop will cause the doors to open and thus permit the material to drop from the scoop. The scoop is returned to its loading position in any desired manner. The springs will close the doors after the material has dropped from the scoop. If the weight of the scoop is not sufficient to cause it to load itself as it is being pulled along the surface, suitable weights can be attached to the body or this can be done by manipulation of the scoop by means of the handles.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

I desire it to be understood that I may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claim.

What I claim is:—

A scoop of the class described comprising a frame of substantially hook shape with its upper limb extending beyond the lower limb, a clevis at the end of the upper limb, teeth formed at the end of the lower limb sheet metal fastened to the upper and lower portions of the frame to form the top and bottom of the scoop, sheet metal attached to the sides of the frame, doors for closing the rear of the scoop, hinges connecting the doors with side portions of the frame, a vertically movable locking bar at the rear of the scoop having projections thereon engaging portions of the doors to hold them in closed position, the free edges of the doors having notches therein for permitting the projections to pass through them during the opening movement of the doors and a lever pivoted to the top of the scoop and attached to the locking bar for adjusting the same.

In testimony whereof I affix my signature.

NELS MADSON.