H. D. PRATT.

POWER HOE.

APPLICATION FILED JAN. 29, 1921.

1,437,358. Patented Nov. 28, 1922.

Fig. 1.

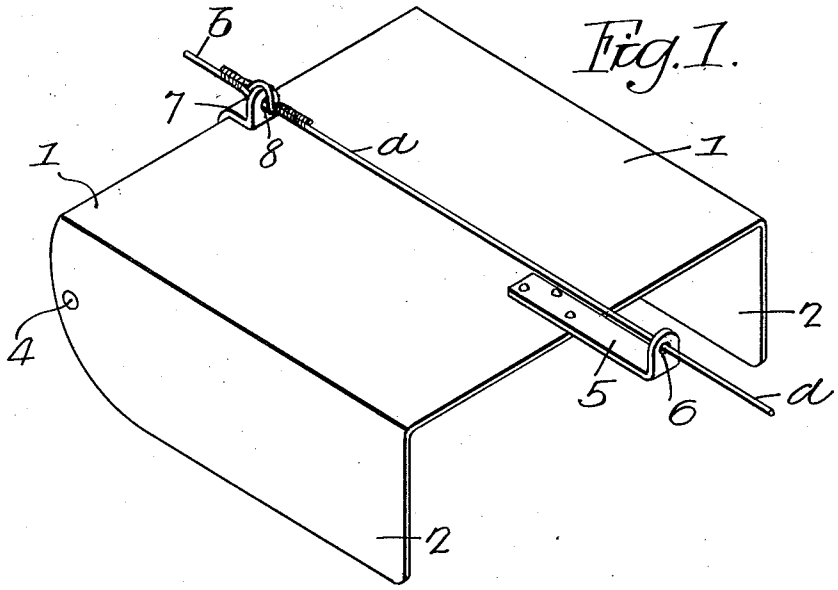


Fig. 2.

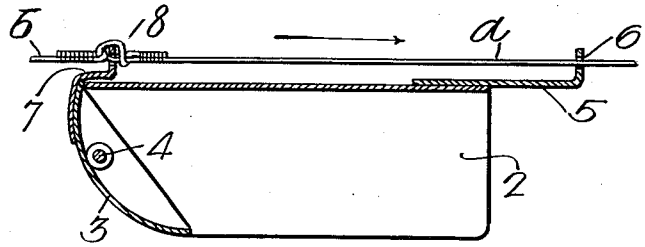


Fig. 3.

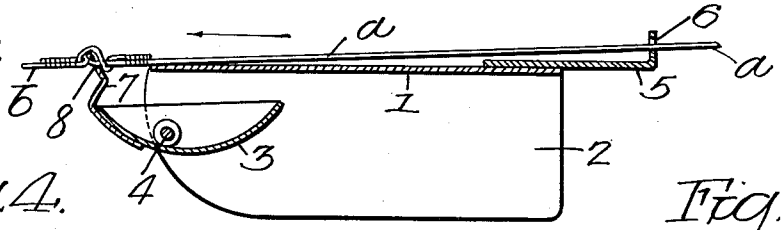


Fig. 4.

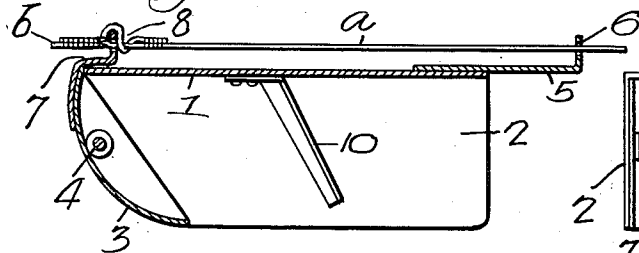


Fig. 5.

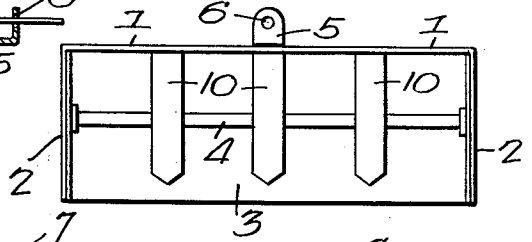
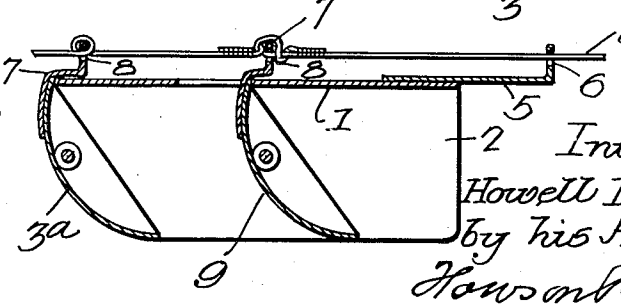


Fig. 6.



Inventor—
Howell D. Pratt.
by his Attorneys
Howson & Howson

Patented Nov. 28, 1922. 1,437,358

UNITED STATES PATENT OFFICE.

HOWELL D. PRATT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO LINK-BELT COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

POWER HOE.

Application filed January 29, 1921. Serial No. 440,887.

To all whom it may concern:

Be it known that I, HOWELL D. PRATT, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Power Hoes, of which the following is a specification.

My invention relates to certain improvements in power hoes, or scrapers, used in transferring granular material. The invention is especially adapted for use in handling bulk material in storage piles and can be used either to pile material on the storage floor, or to remove material from the pile. The invention is an improvement on the scraper for which patent was granted to me on the 14th day of May, 1918, No. 1,266,153.

The object of my present invention is to provide a power hoe, or scraper, of this type with a movable back, which is tilted when the direction of movement of the scraper is reversed, so that the back will more readily ride over the material and will not form undulations in advance of the scraper, particularly when used in transferring fine granular material, or powders.

In the accompanying drawings:

Fig. 1 is a perspective view of my improved power hoe, or scraper;

Fig. 2 is a sectional view;

Fig. 3 is a view, similar to Fig. 2, with the back section tilted;

Figs. 4 and 5 are views showing the prongs within the scraper used for breaking up the surface of the material; and

Fig. 6 is a view showing two pivoted sections, which may be used in scrapers of large size.

Referring to the drawings, 1 is the body of the scraper having side members 2, which act as runners and which imbed themselves in the material so that there is practically no side movement when the scraper is conveying material. 3 is a back section pivoted at 4 to the side members 2. This back section is rounded so as to pass over the material more readily in returning after discharging a load.

Secured to the forward end of the scraper is a bar 5 having an eye 6 and secured to the pivoted back section is an angular bar 7 having an eye 8. This bar preferably extends in advance of the pivot 4 and the hoisting rope *a* passes through the eye 6 of the bar 5 and is secured at the eye 8 of the bar 7. The return rope *b* is also attached to the bar 7 at the eye 8. When the scraper is moving forward, as illustrated in Fig. 2, the tension on the rope *a* keeps the pivoted back section in the position illustrated and the load is carried to the discharge point. When the direction of movement is reversed, as in Fig. 3, then the tension of the rope *b* turns the back section on its pivot 4 so that it will assume the position shown in Fig. 3. While in this position, the back section will ride more readily over the material of the pile and there will be no undulatory movement of the material due to the pressure of the scraper, consequently, the scraper can be returned with less power than heretofore.

Large scrapers may be provided with an intermediate section 9, as in Fig. 6, which is attached to the ropes in the same manner as the section 3^a at the rear so that when the scraper moves forward the sections 3^a and 9 will be held in position and on the reverse movement will be automatically shifted by the ropes to a position such as illustrated in Fig. 3 to pass readily over the material of the pile.

In certain classes of material, such as gravel, which packs very hard, it is desirable to provide inclined prongs 10, which are located as shown in Fig. 4, and are secured to the top plate of the scraper. These prongs are suitably braced so that as the scraper moves forward the prongs will disturb the surface of the material and thus allow the scraper to receive its load more readily. As the scraper, on its return movement, rides over the material, the prongs do not interfere with this movement since they do not extend below the side runners 2.

I claim:

1. The combination in a scraper, of a top plate; side runners; and a curved back plate hung to the runners and arranged to swing into the scraper when turned on its pivots so that the rear curved surface of the back plate will ride upon the material when the scraper is returned after delivering its load.

2. The combination in a scraper, of a top plate; side runners; a back plate pivoted to the scraper some distance from the lower edge of the runners and arranged to swing into the space between the runners; an angular bar attached to the upper end of the

back plate above the pivot; and an operating rope attached to the bar, the back plate, when tilted, riding upon the material.

3. The combination in a scraper, of a top section and side runners; a back section pivoted to the side runners; a bar secured to the front end of the scraper and extending in advance thereof and having an eye; a bar secured to the upper end of the back section and extending in advance of the pivot; and operating ropes secured to the last mentioned bar, one of said ropes extending through the eye located in advance of the scraper so that when the load is being carried the back section is held in position to carry the load and when the mechanism is reversed the tension on the return rope will move the back section on its pivot so that it will ride upon the material.

4. The combination in a scraper, of a top plate; side runners; a back plate; and prongs projecting from the top plate within the scraper in front of the back plate so as to agitate the material to be loaded in the scraper.

5. The combination of a scraper having a top section and side runners; a pivoted back section having a bar projecting in advance of the pivot; and an intermediate pivoted section, also having a bar projecting in front of its pivot, the two bars being secured to the hoisting ropes so that when the scraper is moved forward the tension on the ropes will hold both sections in position to receive a load and when the mechanism is reversed both sections will be turned on their pivots so that they will ride upon the surface of the material of the pile.

HOWELL D. PRATT.