(No Model.)

M. W. HANLEY.

GRAIN SHOVEL.

No. 276,684. Patented May 1, 1883.

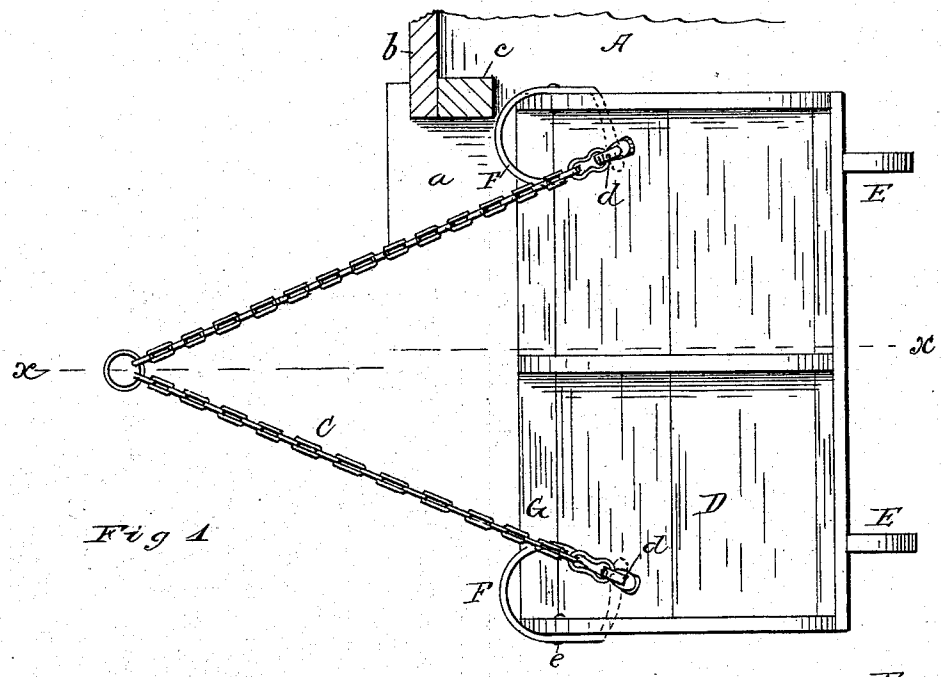


Fig 1

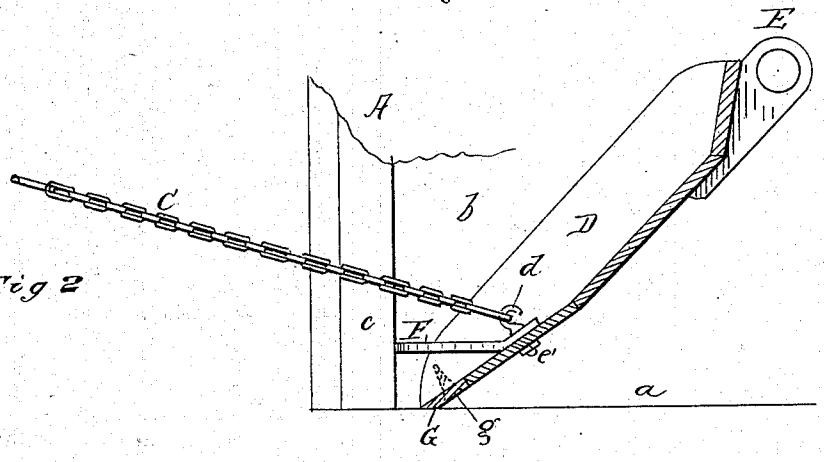
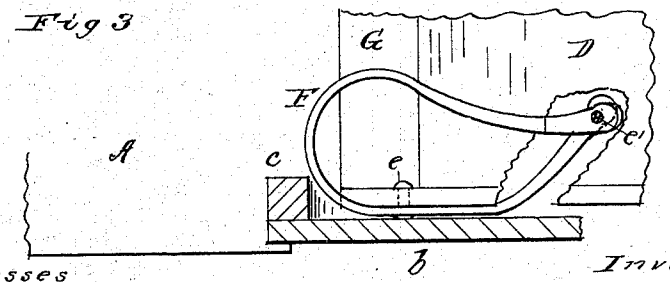


Fig 2

Fig 3



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UNITED STATES PATENT OFFICE.

MICHAEL W. HANLEY, OF CHICAGO, ILLINOIS.

GRAIN-SHOVEL.

SPECIFICATION forming part of Letters Patent No. 276,684, dated May 1, 1883.

Application filed October 30, 1882. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL W. HANLEY, 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 Grain-Shovels, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan view of a grain-shovel containing my improvements, with a portion of a car; Fig. 2, a section of the same, taken on the line *x x*, Fig. 1; and Fig. 3, a detail plan, on an enlarged scale, of one of the lower corners of the shovel.

My invention relates to shovels which are used in unloading grain-cars at elevators. In this operation the foot of the grain-carrying device is set into the car, and the grain is carried to it by large shovels, something like scrapers, which are usually of wood, and are operated by power in the interior of ordinary grain-cars, especially about the doors. There are posts standing inside of the car-sides, and in the operation of the shovels they are frequently brought up with force against these posts and seriously injured or destroyed, so that in the course of the year very considerable expense is incurred in repairing or replacing shovels thus injured.

It is the object of my invention to obviate this difficulty.

I will proceed to describe in detail, and will then point out definitely in the claims, the particular parts which I believe to be new and wish to protect by Letters Patent.

In the drawings, A represents a small section of a car, in which *a* represents the floor, and *b* the side, of the car on one side of the door, and *c* the usual post which stands inside of the car at the doorway.

The shovel D is of ordinary construction in its main features, being shaped something like a scraper, and preferably made of wood, so as to be light and easily handled. These shovels are operated by means of a branching chain, C, the ends of the branches being connected to staples *d* on the shovel, or any other suitable device for this purpose, and at their forward ends connected to the motor, by which the shovel is drawn forward whenever desired. The shovel is also provided with handles E, by which it is guided by an attendant.

The devices thus far named constitute the shovel of ordinary construction.

Now, it will be seen as the shovel is drawn on the floor of the car to move the grain up to the foot of the elevating mechanism it will at times be in danger of coming in contact with the posts on the inside of the car, already mentioned above, and as the shovel is moved with considerable force the shock of this contact will frequently break off the side pieces or bottom of the shovel, and in some instances injure it beyond the possibility of repair. In order to obviate this destruction of shovels, I provide a guard, F, which is preferably a metallic rod of suitable size to give it the requisite strength, and is made in the shape of a bow, and attached to the lower corners of the shovel in such form that the bow projects a little in front of the lower edge of the shovel when the latter is tilted up in position to scoop the grain toward the elevator, as shown in Fig. 2 of the drawings. This bow inclines backward toward the outside of the shovel, and is preferably passed down the outside and then turned under, and is fastened by suitable bolts or rivets, *e e'*, to the side piece and bottom of the shovel. In this instance I have made the fastening-bolt for the bottom in one piece with the chain staple or hook; but this is an optional construction, which may be employed or not. Now, when the shovel provided with these curved guards is in use, if it is brought near the post on the inside of the car the inclined outside of the guard will strike the post before the edge of the shovel does, as shown in Figs. 1 and 3 of the drawings, and because of the backward incline or bend of the guard the shovel will be pushed to one side sufficiently to clear the post, and so prevent all injury.

It will be understood that the main portion of one of these shovels will last a long time. The principal wear comes at the lower edge, which rubs on the floor of the car. In order to make the shovel more durable, I have contrived to easily repair it and make it serviceable, even after this lower edge is slightly worn. This I accomplish by making a narrow section, G, of the shovel-bottom at the extreme lower edge removable, making it a separate and in-

dependent piece, and fastening it to the side pieces by screws *g*, so that it may be taken off quickly and another section put in its place, when the shovel is as good as new. These removable edges are preferably made of hard wood, but, if desired, may be made of metal, or may be made of wood with the edge covered with sheet metal, if desired. The rest of the shovel is made of soft wood.

With these improvements one of these shovels will last a long time, and will save a very considerable expense in the course of a year at large elevators, where they are kept in almost constant use. The manner of bending the guard and of fastening it to the shovel are matters of detail which may be varied. It is only necessary that the guard shall be so shaped and so arranged as to come in contact with the posts or other obstacles in the car before the lower edge of the shovel and operate to shunt the latter to one side; and so I do not limit myself to the particular form, arrangement, and mode of attachment herein described and shown.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A grain-shovel for unloading cars, in combination with a guard at the lower corners, arranged to strike obstructions before the lower edge of the shovel, and inclined to shunt the shovel and prevent its striking the obstruction, substantially as and for the purposes set forth.

2. A grain-shovel, in combination with the guard-rods F, bent as described, and fastened to the sides and bottom of the shovel, substantially as set forth.

3. The grain-shovel B, in combination with the guard-rods F, bent as described, and the fastening bolts or rivets *e e'*, the latter made in one piece with the chain-hook, substantially as shown.

MICHAEL W. HANLEY.

Witnesses:
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