

(No Model.)

R. C. LIVESAY & H. F. CRANDALL.  
GRAIN SHIELD FOR HARVESTERS.

No. 578,700.

Patented Mar. 9, 1897.

Fig. 1.

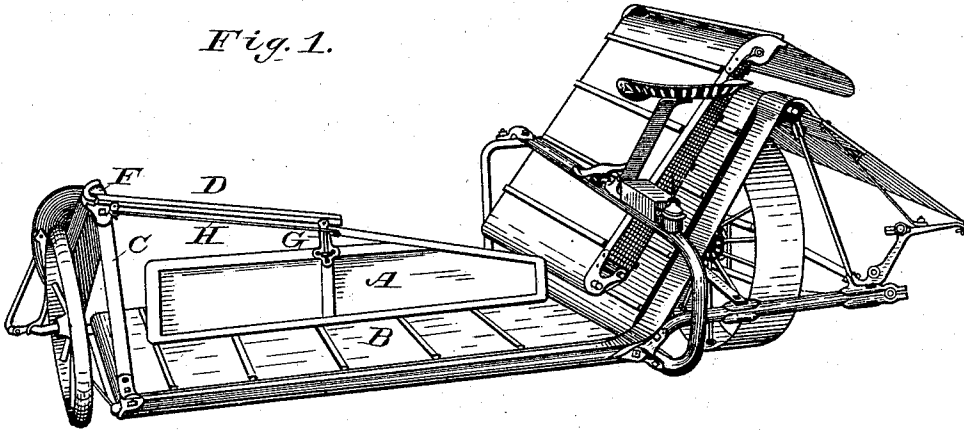


Fig. 2.

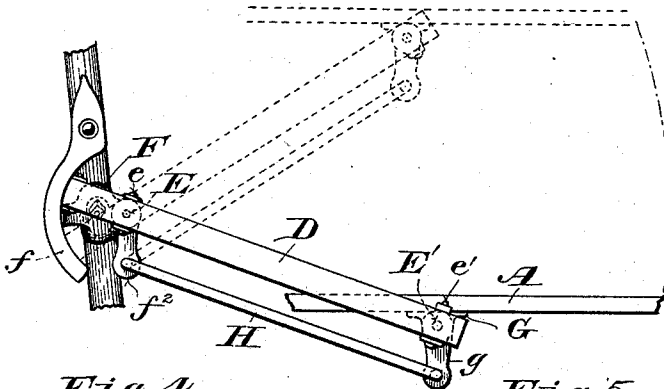


Fig. 6.

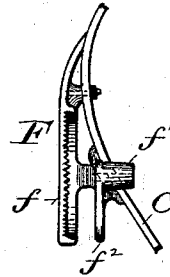


Fig. 4.

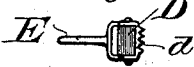


Fig. 5.

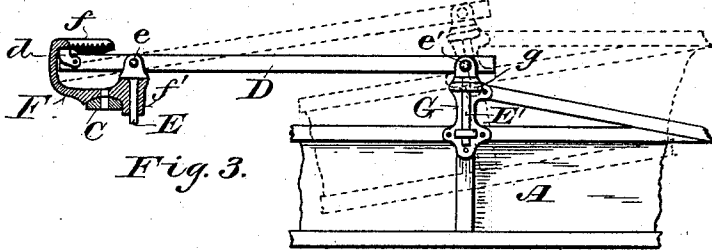
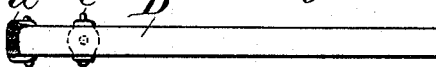


Fig. 3.

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# UNITED STATES PATENT OFFICE.

ROBERT C. LIVESAY AND HENRY F. CRANDALL, OF MILWAUKEE, WISCONSIN, ASSIGNORS TO THE MILWAUKEE HARVESTER COMPANY, OF SAME PLACE.

## GRAIN-SHIELD FOR HARVESTERS.

SPECIFICATION forming part of Letters Patent No. 578,700, dated March 9, 1897.

Application filed September 21, 1895. Serial No. 563,189. (No model.)

*To all whom it may concern:*

Be it known that we, ROBERT C. LIVESAY and HENRY F. CRANDALL, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Grain-Shields for Harvesters; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The main objects of our invention are to avoid obstructing or impeding the passage of long grain from the platform to the elevator, to prevent long grain from falling between the outside divider and the outer end of the grain-shield and clogging the platform conveyer, and generally to improve the construction and operation of devices of the class to which our invention relates.

It consists of certain novel features in the construction and arrangement of the shield and of its supporting and adjusting devices, as hereinafter particularly described, and pointed out in the claims.

In the accompanying drawings like letters designate the same parts in the several figures.

Figure 1 is a perspective view of a harvester to which our improved grain-shield is applied. Fig. 2 is a plan view, on an enlarged scale, of the supporting and adjusting connections of the shield. Fig. 3 is a rear view of the same, and Figs. 4, 5, and 6 are detail views of parts of such connections.

The grain-shield is in many harvesters suspended from the seat-support or some part of the elevator-frame, but this arrangement is objectionable in that the attachment of the shield or its supporting-arm to parts of the machine adjacent to the inner end of the platform next to the elevator interferes with the passage of long grain, which frequently overhangs the shield, from the platform into the elevator. In some harvesters the guide is supported from the rear side of the platform. This leaves between the outside divider and

the adjacent end of the guide a space into which the heads of long grain can fall and thus clog the platform conveyer. By supporting the shield from the outside-divider point and dispensing with all connections with the machine adjacent to the opposite end of the platform these objections are obviated.

Referring to the drawings, A designates the grain-shield, which is designed to be carried over the platform B lengthwise thereof and parallel with the finger-bar, so as to guide grain of different lengths to the elevator. It is adjustably supported in this position from the outside-divider point C by an arm D, which is hinged at or near its ends upon horizontal pins *e e'* in the forked heads of vertical pivot-pins E E'. These pins E E' have bearings in castings F and G, attached to the outside-divider point C and to the shield A, respectively.

The casting F, which is bolted to the divider-point, is formed or provided with a horizontally-disposed overhanging segment or arc *f*, concentric with the socket or bearing *f'* for the pivot-pin E and serrated on its under side. The outer end of the arm D, which projects under said arc, is provided with a casting *d*, as shown in Figs. 4 and 5, serrated on the upper side to engage with the serrated surface of said arc.

The casting G is attached to the shield A near the middle of its upper edge and is formed with a rearwardly-projecting arm or ear *g*.

The casting F is also formed with a rearwardly-projecting arm or ear *f'*, which is connected with said arm *g* by a rod H, which is loosely hooked at the ends into holes in said arms. This rod H being parallel with the arm D and its pivot connections with the arms *f'* and *g* being the same distance apart as the pivot-pins E E' of the arm D holds the shield A in whatever position it may be set over the platform, parallel with the finger-bar. It will thus be seen that the arm D and the associated rod H may be turned or swung horizontally, as indicated by dotted lines in Fig. 2, so as to carry the shield A forward and backward over the platform to adjust it for grain of different lengths, and they may be

tilted vertically, as indicated by dotted lines in Fig. 3, so as to disengage the outer end of arm D from the arc or segment *f*.

When the shield is adjusted as desired, it is retained in place by its own weight, which, acting through the arm D as a lever, holds the casting *d* in engagement with the arc *f*.

The shield A is formed with its upper edge inclined downwardly from a point at or near the attachment of casting G to its inner end adjacent to the elevator. By this means the advance movement of any long grain which falls over the shield is aided rather than retarded, and as the shield terminates at its inner end some distance from the upper elevator belt or canvas the passage of such grain into the lower end of the elevator is not obstructed or impeded.

We have shown our improved shield and attachments in connection with a harvester having an elevator open at the rear end between the two belts and the seat-support extended in a rearward bend to permit the passage of long grain without obstruction or impediment, and it is with such machines that our improvements will be found of special convenience and advantage. The arm D extending downwardly and in its ordinary adjustment rearwardly to about the middle of the upper part of the shield, and thus bridging the space between the outside divider and the adjacent end of the shield, prevents long grain from falling into said space and guides it to and upon the inclined portion of said shield, thereby avoiding accumulation of grain on the grainward end of the platform and clogging or obstruction of the platform conveyor.

We do not wish to be understood as limiting ourselves to the exact details of construction shown and described, as they may be variously modified in adaptation to different machines within the spirit and intended scope of our invention.

We claim—

1. In a harvester, a grain-shield supported over and parallel with the platform by a horizontally-swinging arm pivoted to said shield and to the outer end of the platform, bridging the space between the outside divider and the adjacent end of the shield, and serving as a guide to support the heads of long grain and conduct the same over said space to said shield, substantially as and for the purposes set forth.

2. In a harvester, the combination of a grain-shield supported over and parallel with the platform by a horizontally-swinging arm pivoted to said shield and to the outside divider, and bridging the space between said divider

and the adjacent end of the shield, and a rod parallel with said arm pivoted at one end to said divider and at the other to an arm on said shield, so as to hold said shield, in whatever position it is set, parallel with the platform, substantially as and for the purposes set forth.

3. The combination with a harvester, of a grain-shield supported over and parallel with the platform by a horizontally and vertically swinging arm having hinge or pivot connections with said shield and with a part of the machine adjacent to the outer end of the platform, and an arc with which the outer end of said arm is adapted to engage, substantially as and for the purposes set forth.

4. The combination with a harvester, of a grain-shield supported over and parallel with the platform by a vertically and horizontally swinging arm having hinge or pivot connections with said shield and with a part of the machine adjacent to the outer end of the platform, and a rod parallel with said arm, pivoted to an arm on said shield and to a part of the machine so as to hold said shield parallel with the platform in whatever position it may be set, substantially as and for the purposes set forth.

5. The combination with a harvester, of a grain-shield supported and held over and parallel with the platform by a horizontally and vertically swinging arm, an associated parallel rod having hinge or pivot connections equidistant from each other with said shield and with a part of the machine adjacent to the outer end of the platform, and a serrated arc attached to the machine, concentric with the pivot connection between it and said arm and adapted to engage with the outer end of said arm and thereby hold said shield in any desired position in which it may be set, substantially as and for the purposes set forth.

6. The combination with a harvester, of a grain-shield supported over and parallel with the platform from a part of the machine adjacent to the outer end of the platform and inclined on its upper edge downwardly toward its inner end, which terminates at a distance from the elevator so as to facilitate the movement of overhanging grain to the elevator, substantially as and for the purposes set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

ROBERT C. LIVESAY.  
HENRY F. CRANDALL.

Witnesses:

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