

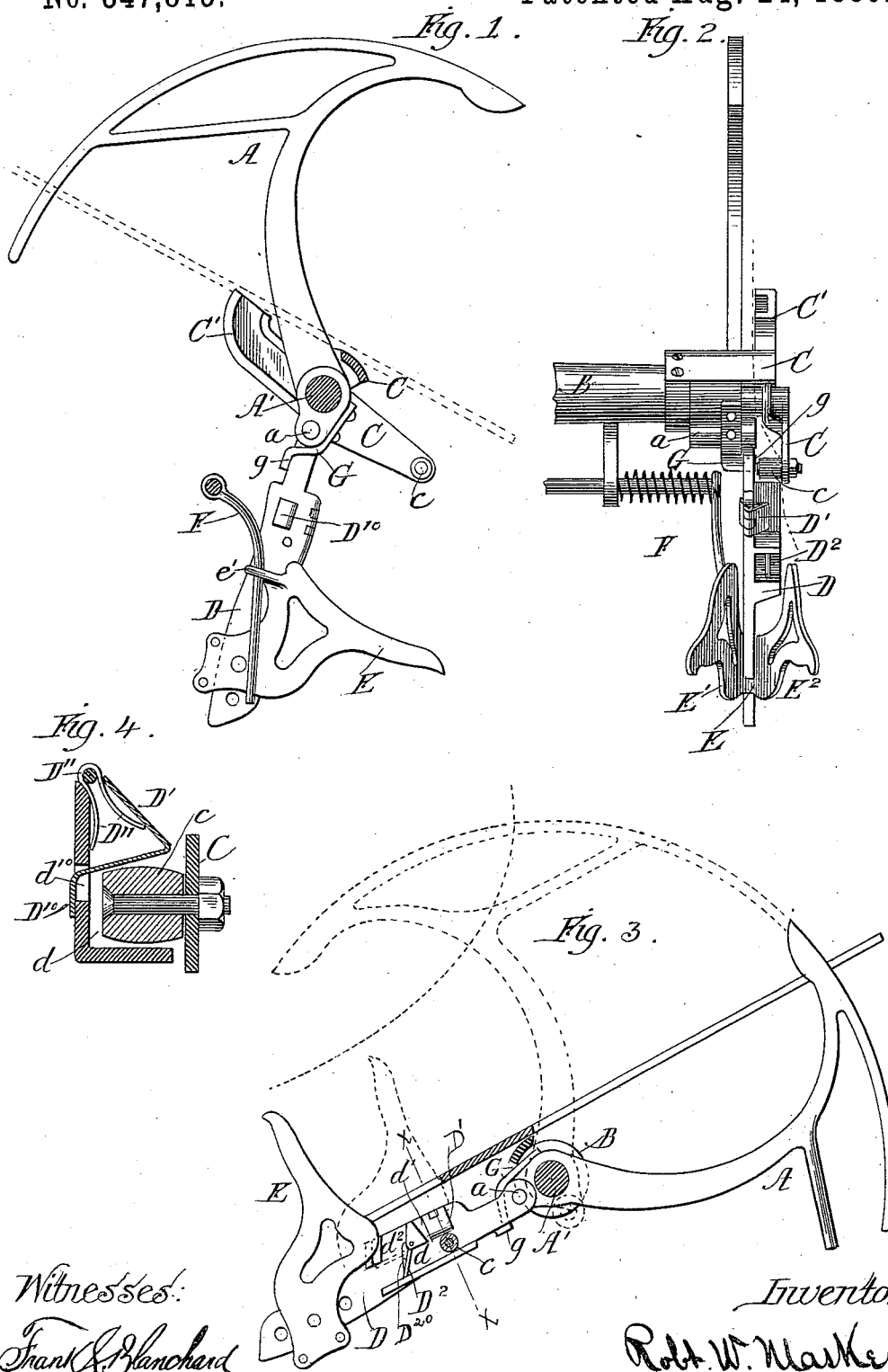
(No Model.)

2 Sheets—Sheet 1.

R. W. MASKE.  
GRAIN BINDER.

No. 347,815.

Patented Aug. 24, 1886.



Witnesses:  
Frank J. Blanchard  
William F. Myers

Inventor:  
Rolt W. Maske  
By Chas. S. Burton  
Attorney.

(No Model.)

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*Fig. 5.*

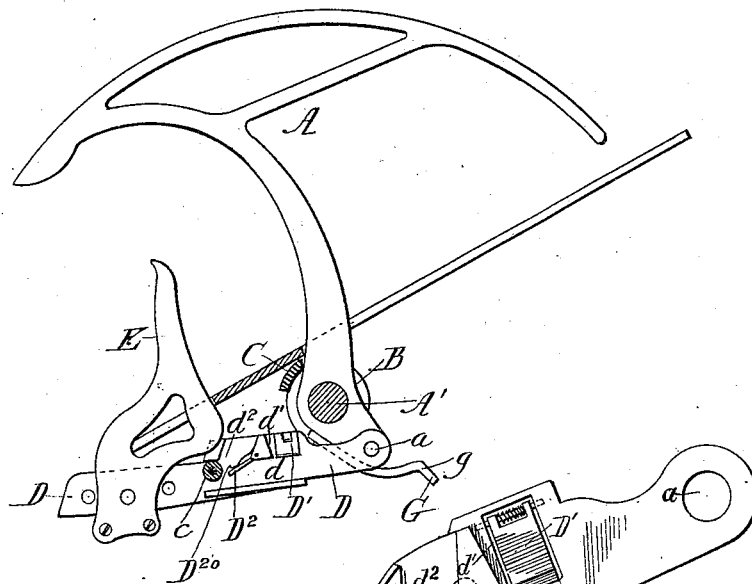
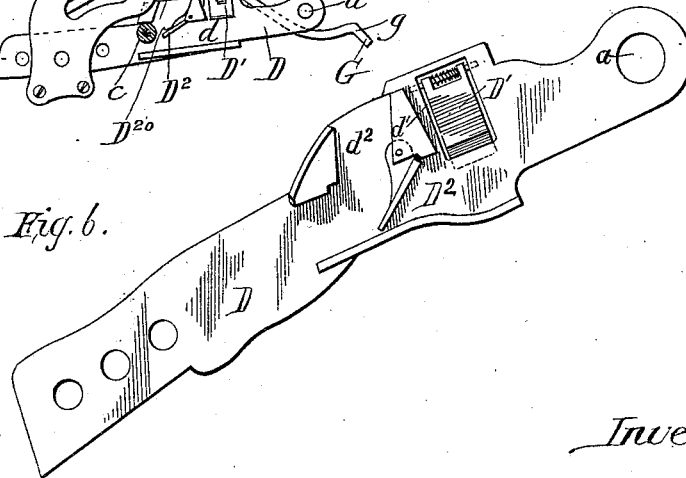


Fig. 6.



Witnesses:

Frank S. Blanchard

William F. Peckers

*Inventor:*

Rolt. W. W. W. W.

By Chas. S. Burton Atty.

# UNITED STATES PATENT OFFICE.

ROBERT W. MASKE, OF CHICAGO, ILLINOIS, ASSIGNOR TO WILLIAM  
DEERING & CO., OF SAME PLACE.

## GRAIN-BINDER.

SPECIFICATION forming part of Letters Patent No. 347,815, dated August 24, 1886.

Application filed October 30, 1885. Serial No. 131,351. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT W. MASKE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Grain-Binders, which are fully set forth in the following specification.

This invention relates to automatic grain-binders, and particularly to the compressor and trip mechanism.

In the drawings, Figure 1 is a side elevation of the needle and compressor at the instant of discharging the bundle. Fig. 2 is a front elevation of the same. Fig. 3 is side elevation of the same parts opposite to that shown in Fig. 1, and showing the position before the needle starts. Fig. 4 is a section through  $x x$ , Fig. 3. Fig. 5 is a view similar to Fig. 3, but with needle at the highest point. Fig. 6 is a side elevation of the compressor-supporting bar.

A is the needle; A', its shaft. B is the arm of the binder-frame, in which said shaft is journaled.

C is an arm or bracket made rigid with the binder-frame arm B, and for convenience it may be made integral with the tucker-cam C', as illustrated. Said arm or bracket C extends forward and slightly downward, and has the roller  $c$  near its forward end. To the hub of the needle, eccentric to its rock-shaft A' at  $a$ , is pivoted the compressor-supporting bar D, near the outer end of which is pivoted the compressor E, made, preferably, with two branches, E' E<sup>2</sup>, the branch E' having the eye  $e'$ , through which the trip-lever P plays, as illustrated. This structure and relation of the compressor and the trip-lever is well known, and I do not claim it, and will not describe it in detail further.

The vertical plane of the compressor-supporting bar D is between the vertical plane of the arm C and that of the needle A, and the roller  $c$  is mounted on the side of said arm C toward the bar D. On the face of said bar D which is toward the arm C there is provided the groove  $d$ , into which the roller  $c$  protrudes. The upper wall of the cam-groove  $d$  has two apertures through it,  $d'$  and  $d''$ . The first is closed by the latch D<sup>1</sup>, of the form shown in Fig. 4, pivoted at the upper edge of the com-

pressor-supporting bar and swinging horizontally in across the groove  $d$ , filling the aperture  $d'$ , and playing through the aperture  $d''$  in the bar D, and having the end D<sup>10</sup> bent down to form a stop engaging against the bar D, to prevent the said latch from swinging too far in. It is provided with the spring D<sup>11</sup>, tending to throw it into position to close the aperture  $d'$ . The second aperture,  $d''$ , is closed by the latch D<sup>2</sup>, pivoted in a plane transverse to the cam-groove  $d$ , at the upper side thereof, and adapted to fall down into and stand across the groove or to lie up flush with the upper wall of the same and close the aperture  $d''$ . Said latch D<sup>2</sup> is preferably somewhat longer than the width of the groove  $d$ , so that when it falls down into the same it cannot swing up on the opposite side of its pivot, but collides with the under side or wall of the groove, and stands aslant across the groove, as seen in Fig. 3. It may have a spring, D<sup>20</sup>, tending to throw it down, lest the action of gravity should be insufficient to overcome any resistance which might be caused by dirt or other obstruction.

To the hub of the needle is secured the arm or finger G, which extends down by the side of the compressor-supporting bar D, near its pivot, and is bent laterally, so that its end  $g$  stands across the vertical plane of the compressor-supporting bar; under or behind said bar.

The initial position of the several parts is shown in Fig. 3. When the pressure of grain against the compressor-branches E' E<sup>2</sup> is sufficient to actuate the trip in the familiar manner of such devices, the binding mechanism being brought into action, the needle A rises, and the pivot  $a'$ , moving back and away from the roller  $c$ , draws the compressor-supporting bar, carrying the compressor backward toward the needle, compressing the bundle. During this movement the said compressor-bar is sustained solely by the roller  $c$ , which protrudes into the cam-groove  $d$ , and guides as well as supports the compressor-bar D, which continues its movement toward the needle until the roller  $c$  stands in the position shown in Fig. 5, at the forward end of the groove  $d$ , the latch D<sup>2</sup> having been lifted by the roll as the bar moved back, and forced up into the dotted position shown in Fig. 3 while the

roll passed under it. At the position shown in Fig. 5 the needle has reached its highest point. The latch  $d'$  has cleared the roll  $c$ , and has fallen again into the groove  $d$ . The needle now starting back, the compressor-supporting bar D begins to move forward, and when the aperture  $d'$  reaches the roll  $c$  the compressor-supporting bar D and compressor E fall, the roll  $c$  passing out through said aperture  $d'$ , and the bundle is allowed to escape. The needle continuing to recede, the arm or finger G immediately engages the compressor-supporting bar D and lifts it as the needle continues to recede. As said compressor-supporting bar D rises the latch  $D'$  collides with the roller  $c$  and is forced aside, swinging on its pivot and compressing its spring  $D''$  until the compressor-supporting bar D has been carried so far up that the roll  $c$  clears the said latch  $D'$  and stands in the groove  $d$ , when the spring  $D''$  reacting throws the latch  $D'$  inward across the groove  $d$ , as at starting. The further recession of the needle pushes the compressor-supporting bar D forward until the cam-roll  $c$  stands again in the position shown in Fig. 3.

I claim—

1. In combination with the needle and its bearing, a guiding-support for the compressor-supporting bar rigid with the needle-bearing, the compressor-supporting bar actuated by the needle, having a bearing to rest upon said support with an interspace or break, and adapted to fall off said support at such break, and a lifting-finger moved by the needle to restore the compressor-supporting bar to said support, substantially as set forth.

2. In combination with the needle and its

bearing, a guiding-support for the compressor-supporting bar rigid with the needle-bearing, the compressor-supporting bar reciprocated by the needle over said support and having its bearing-wall in contact with said support provided with an interspace, and a latch to close said interspace while the compressor-supporting bar is reciprocated over the support in one direction, and open the interspace and allow the compressor-supporting bar to fall when the said bar is reciprocated in the other direction, and a lifting-finger moved by the needle to engage and restore the compressor-supporting bar to the support as the needle recedes, substantially as set forth.

3. In combination with the needle and its bearing, a guiding-support for the compressor-supporting bar rigid with the needle-bearing, the compressor-supporting bar reciprocated by the needle over said support, its bearing in contact with said support, having the apertures  $d'$  and  $d''$ , the latter closed by the latch  $D'$  opening downward, and the former closed by the latch  $D'$  opening sidewise, and provided with a spring tending to close it, and the lifting-finger moved by the needle to restore said compressor-bar to said support by causing the latch  $D'$  to collide with and be forced aside by the latter and admit the same under it, substantially as set forth.

In testimony whereof I have hereunto set my hand, in the presence of two witnesses, at Chicago, Illinois, this 16th day of October, A. D. 1885.

ROBT. W. MASKE.

Witnesses:

CHAS. S. BURTON,

WILLIAM F. WIEMERS.