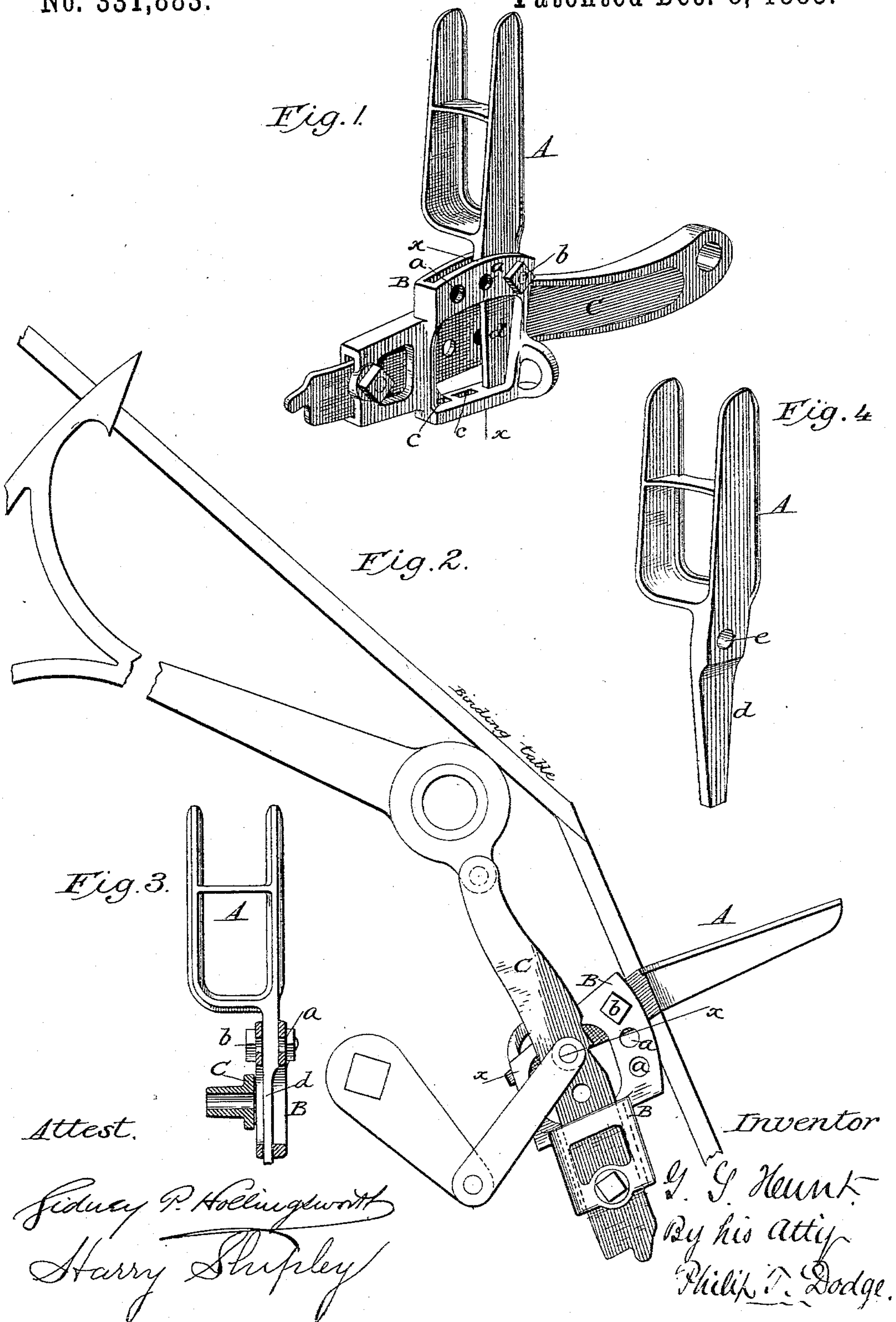


(No Model.)

G. G. HUNT.
GRAIN BINDING MACHINE.

No. 331,883.

Patented Dec. 8, 1885.



UNITED STATES PATENT OFFICE.

GEORGE G. HUNT, OF PLANO, ILLINOIS.

GRAIN-BINDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 331,883, dated December 8, 1885.

Application filed February 16, 1884. Serial No. 120,944. (No model.)

To all whom it may concern:

Be it known that I, GEORGE G. HUNT, of Plano, in the State of Illinois, have invented certain Improvements in Grain-Binding Machines, of which the following is a specification.

This invention has reference to that class of automatic binding machines wherein the binding mechanism proper is thrown into engagement with its driving-gear by means of a spring-supported "trip-arm," so called, against which the grain to form the gavel is compacted, the arrangement being such that the trip-arm will yield and cause the binder to operate whenever the gavel reaches a predetermined size, so as to overcome the resistance to the arm.

The improvements are designed more especially for application to machines of the type represented in my application for Letters Patent of the United States filed on the 30th day of November, 1883, No. 113,235.

The improvement relates to the construction of the "trip-arm" or "trip-hook," as it is sometimes called in the art, and the devices immediately connected therewith, whereby an adjustment of the arm is facilitated to secure the production of bundles of different sizes.

Referring to the accompanying drawings, Figure 1 represents a perspective view of my improved devices. Fig. 2 is an elevation of the same, looking from the opposite side, other parts with which it co-operates being also shown in outline, that its action may be more clearly understood. Fig. 3 is a cross-section on the line *x x* of Figs. 1 and 2. Fig. 4 is a perspective view of the trip-arm.

Referring to the drawings, A represents the trip-arm proper, against which the grain is compacted; B, a vertically swinging plate, to which the lower end of the trip-arm is firmly but adjustably attached, and C is a vertically swinging arm, to which the plate B is pivoted. In their general construction and mode of action these parts resemble those now in use. The arm C is lifted, and during the accumulation of the gavel is held in its elevated position, by ordinary mechanism, embracing a supporting spring so as to maintain the upper end of the trip-arm above the binding-table or receiver in position to receive the pressure of the grain. After the completion of the binding operation the arm C is permitted to fall in order to depress the trip-arm below the table

and permit the bound bundle to escape over them. The plate B is connected through intermediate parts to the mechanism by which the binder driving-gear is thrown into action, and the pivotal motion of said plate upon the arm C is for the purpose of allowing the trip-arm to yield slightly backward under the pressure of the gavel, for the purpose of throwing the binder into action, this motion being comparatively slight, so that the arm remains in position to retain the gavel until the completion of the binding operation.

The above-described action of the parts and the mechanism by which they are effected are essentially the same as in existing machines, and are described herein for the purpose of giving a better understanding of the object of my improvements for permitting the adjustment of the trip-arm A, which I will now describe.

The plate B, in which the arm is mounted, is slotted or mortised vertically, to permit the shank of the arm to be inserted therein. At its upper edge the plate is provided with a series of transverse holes, *a*, through one or another of which a fastening bolt, *b*, may be applied to secure the arm. At its lower edge the plate is provided with a series of holes or mortises, *c*, corresponding in number with the holes *a* at the top, each adapted to receive in its turn the lower end of the arm. As shown in Fig. 4, the arm is constructed with a forked or divided upper end, which may, however, be modified in form, and with a downwardly-extending shank or stem, *d*, which is adapted at the lower extremity to fit within the holes *c*, and provided at a suitable distance above the lower extremity with a hole, *e*, to receive the fastening bolt *b*. The arm is applied by inserting its shank downward through the plate B into one or another of the holes *c*, and securing it in position by inserting the fastening-bolt through the corresponding hole above.

It will be observed that the bolt serves the twofold purpose of preventing a backward motion of the arm with respect to the plate B, and also to hold the lower end of the arm in its seat.

By removing the bolt *b* and changing the arm from one to another of the openings *c*, and making a corresponding change in the position of the bolt *b*, the arm may be moved backward

and forward in relation to the plate B, and thus caused to afford a greater or less space for the accumulation of the gavel between it and the binder-arm or needle, which acts on the opposite side of the gavel. By this adjustment the machine may be adapted to produce automatically gavels of such size as circumstances may require.

It is to be observed as a peculiarity of my adjustment that the angle or inclination of the arm A is not changed by its adjustment, and that consequently it may be maintained under all adjustments in the most advantageous position with respect to the grain. In this regard the device is far superior to those in which the arm is adjusted by swinging it backward around a pivot at its lower end, the effect of such pivotal adjustment being to vary the inclination of the arm, so that when adjusted for large bundles the grain has a tendency to ride upward over its end.

In order to render the device lighter than those of ordinary construction, the plate B is made in a skeleton form, as shown.

I am aware that a trip-arm having a flat base and a transverse rib thereunder has been secured by a vertical bolt to the top of a sup-

porting-plate recessed to receive the rib and slotted to permit the movement of the bolt, and also that a trip-arm has been provided with an adjustable face-plate slotted horizontally at its top and bottom, and secured by horizontal bolts passing through said slots, and to such constructions I lay no claim.

Having thus described my invention, what I claim is—

1. In a trip mechanism for a grain-binder, the combination of the trip-arm and the supporting-plate therefor, provided with a series of holes to receive the shank of the arm, and also with a second series of holes to receive a fastening-bolt, and a bolt inserted, substantially as described, to retain the arm in place.

2. In combination with the trip-arm having the shank *d*, the pivoted supporting-plate B, provided with the openings *c* in its lower edge to receive the extremity of the arm, and with the slot and perforations in the upper edge, and the fastening-bolt applied substantially as shown.

GEORGE G. HUNT.

Witnesses:

JOSEPH W. BLOOD,
WM. H. FRITTO.