R. H. McCORMICK.

GRAIN-BINDER.

No. 173,130. Patented Feb. 8, 1876.

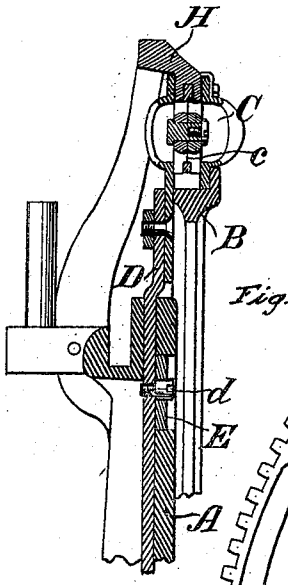

Fig. 3.

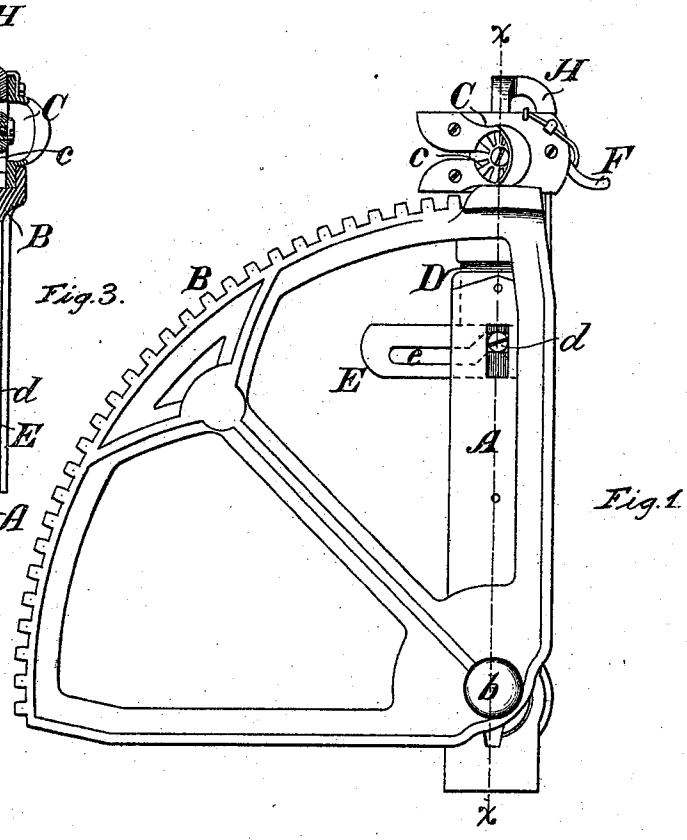

Fig. 1.

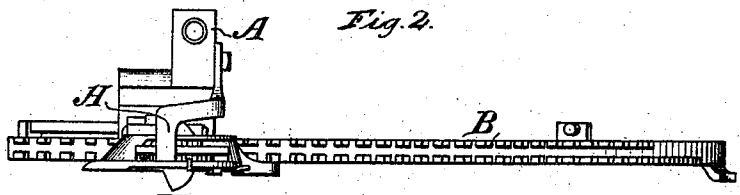

Fig. 2.

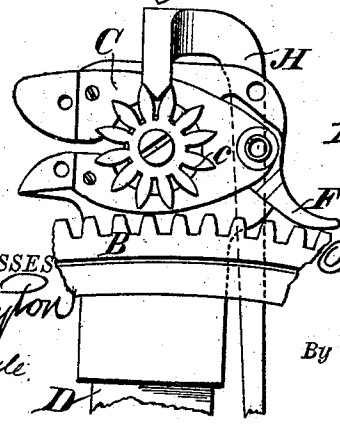

Fig. 4.

WITNESSES

Wm. J. Peyton

Wm. A. Skinkle.

Robert Hall McCormick INVENTOR

By his Attorney

Wm. D. Baldwin

UNITED STATES PATENT OFFICE.

ROBERT H. McCORMICK, OF CHICAGO, ILLINOIS, ASSIGNOR TO C. H. AND L. J. McCORMICK, OF SAME PLACE.

IMPROVEMENT IN GRAIN-BINDERS.

Specification forming part of Letters Patent No. **173,130**, dated February 8, 1876; application filed November 12, 1875.

To all whom it may concern:

Be it known that I, ROBERT HALL McCORMICK, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Automatic Grain-Binders, of which the following is a specification:

My invention relates to automatic grain-binders of that class in which the twisting-wheel is intermittently actuated by a vibrating rack automatically thrown into and out of gear by moving the slide in which the binding-head is mounted toward or from the rack.

The object of my invention is to hold the twister-wheel positively locked when out of gear. To this end my improvements consist in combining with a vibrating slide, which carries the twister-wheel, a fixed stop, against which the wheel abuts when thrown out of gear with the rack, and is thus effectually prevented from turning.

The accompanying drawings show my improvements as embodied in the best form now known to me, and adapted to the well-known Withington binder, manufactured by C. H. and L. J. McCormick, of Chicago, Illinois.

Figure 1 represents a bottom-plan view of so much of the apparatus as is necessary to illustrate the subject-matter herein claimed; Fig. 2, a front elevation thereof, and Fig. 3 a vertical longitudinal section through the binding-head and its carrier on the line *x x* of Fig. 1; and Fig. 4, a view of the twister-pinions and the stop, the face-plate of the binding-head being removed.

The main features of the apparatus represented in the drawings are shown in the application for Letters Patent of the United States filed by Charles B. Withington, March 5, 1874.

The arm or frame A, upon which the mechanism is mounted, is, by preference, reciprocated by a continuously-traversing chain, as shown in that application. The sector-rack B is vibrated on its fulcrum *b* on the reciprocating frame A by a suitable pitman-connection.

The binding-head C is mounted in a bar, D, sliding longitudinally in the frame, and carrying a pin, *d*, working in an annular guide-slot, *e*, in a bar, E, capable of sliding freely in the frame A, and alternately moved in opposite directions by abutting against the arms of a sector-rack, by which means the twister-wheel *c*, mounted in the binding-head, is alternately thrown into and out of gear with the rack.

The mechanism above described so far is that shown in the Withington application above mentioned.

The binding-head C also carries a spring-pawl, F, such as shown in said Withington's application, for locking the lower section of the twisting-pinion for cutting the wire.

In addition to these devices, I have found it desirable to provide means for locking the twister-pinions positively, in order to keep their teeth in proper relation to each other and to the slit in the binding-head, for the reception of the wire while the rack is out of gear. I therefore mount upon the frame A a bent arm or fixed stop, H, in such relation to the twister-pinions that when in gear with their actuating-rack they are free from the stop, but when thrown out of gear the point of the stop enters the space between two of the teeth, and holds both twister-pinions locked. This stop, it will be seen, is strong and not liable to the breakage or to the wear and tear of a movable and spring stop, and has in practice been found very useful.

I disclaim the construction of the twister-wheel in two sections, with an interposed plate, as shown in the drawings, that being the invention of William R. Baker, of Chicago, Illinois.

I claim as of my own invention—

1. The combination, substantially as hereinbefore set forth, of a reciprocating binding-frame, a vibrating sector-rack actuating the twister-pinions mounted on a sliding bar, D, and automatically thrown into and out of gear with the rack, and a fixed stop secured to the frame A, against which the twister-pinions abut when thrown out of gear with the rack, and by which they are positively locked, and prevented from turning until they are again thrown into gear with the rack.

2. The fixed stop, rigidly attached to frame A, in combination with the slide-bar D and twister-pinions, substantially as set forth.

In testimony whereof I have hereunto subscribed my name.

ROBERT HALL McCORMICK.

Witnesses:

JOHN V. A. HASBROOK,
W. R. SELLECK.