

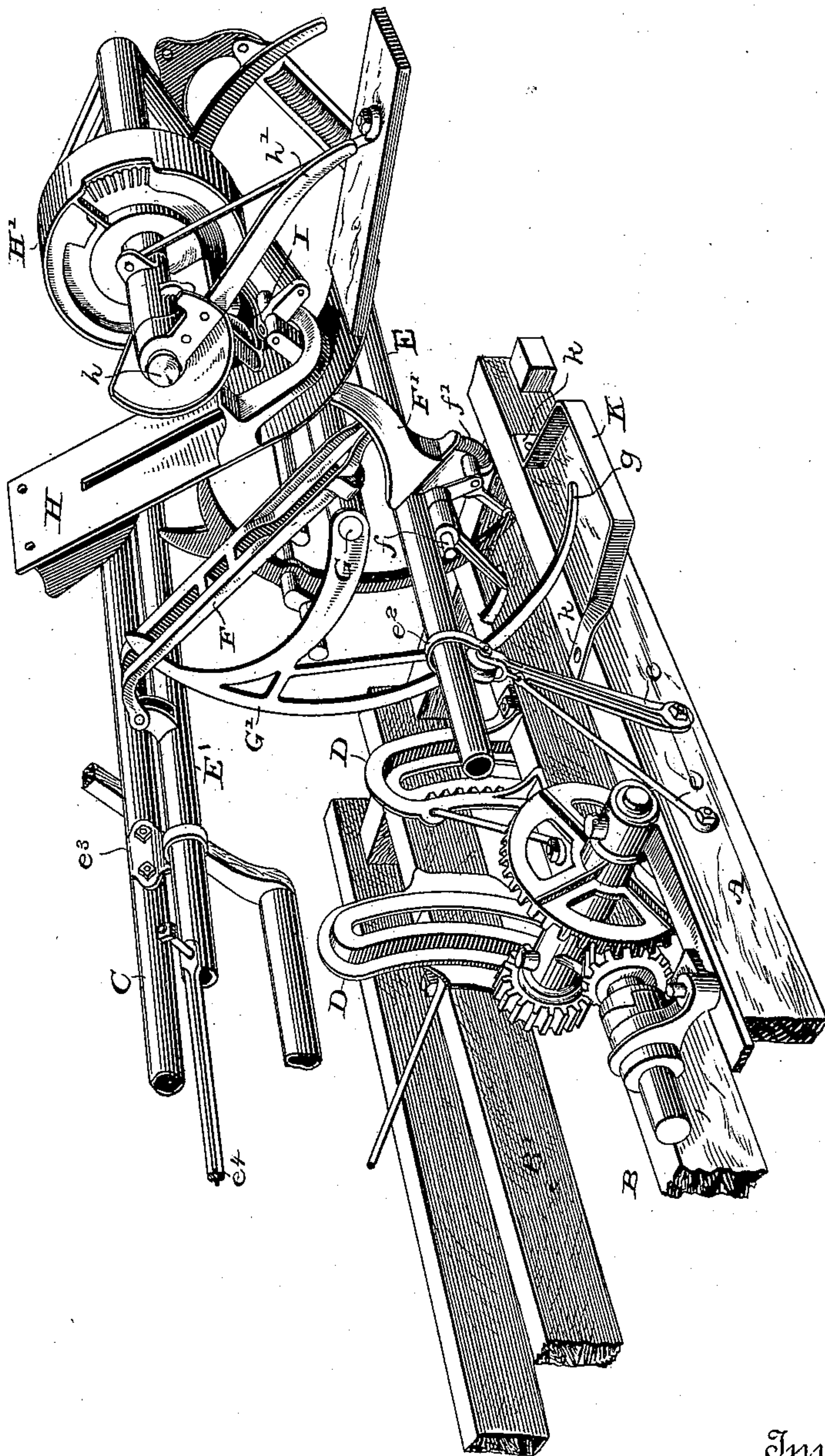
(No Model.)

W. R. BAKER & H. E. PRIDMORE.

GRAIN BINDER.

No. 370,304.

Patented Sept. 20, 1887.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM R. BAKER AND HENRY E. PRIDMORE, OF CHICAGO, ILLINOIS, AS-
SIGNORS TO THE McCORMICK HARVESTING MACHINE COMPANY, OF
SAME PLACE.

GRAIN-BINDER.

SPECIFICATION forming part of Letters Patent No. 370,304, dated September 20, 1887.

Application filed July 10, 1886. Serial No. 207,664. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM R. BAKER and HENRY E. PRIDMORE, citizens 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, of which the following is a specification.

In nearly all binders of the present day using trip-fingers or tripping instrumentalities whereby the band placing, holding, and uniting mechanism is set in motion by the pressure of the accumulating gavel, the binder-arm is provided with a guard-finger described on an arc concentric with its shaft, which serves as a cut-off to hold back the incoming grain when the binder-arm in its movement passes across the grain-passage leading to the trip-fingers or outside compressor and keep it away from the gavel being encircled and bound. Almost invariably the binder-arm is located beneath the grain-table or decking and rises through a slot in that decking when it moves to place the band. This brings the extreme outer end of the guard-finger very low down and near the ground as the arm recedes to its position of rest, and usually causes it to project beyond the end sill or outer lateral bar of the wheel-frame, where it catches in the stubble or is struck by stones or stumps and frequently bent or broken, necessitating a stoppage of the machine until it can be straightened, or until the arm can be replaced. We therefore propose to apply to the end sill of the base-frame, or at the point upon said frame where the heel of the guard-finger comes when at rest, a bridge-strap, or other suitable inclosing-shield, into or between which the heel of the finger may enter as it recedes beneath the decking irrespective of the back-and-forth adjustments of the binder, and which shall be of such strength as to insure adequate protection to said finger.

The drawing represents so much of a binding attachment and harvester-frame as is necessary to a description of our invention.

A represents the end sill of the harvester at the stubble side thereof, and B B' other sills, which form the lateral bars of the wheel-frame.

C is a horizontal bar or beam affixed to the

outer elevator-struts to support the inner side of the binding attachment. Rack-standards D are also shown, secured to the lateral bars of the wheel-frame for the reception of the axle of the wheel, and these will sufficiently indicate the position of the latter.

The binding attachment chosen for illustration is one that is now well known to the trade, and has been for some time on the market, and we will but briefly enumerate its features.

E is a tubular bar supported from the end sill of the harvester by means of standards e , braced by rods e' , and having yokes or keepers e'' , which receive said bar. Of these standards but one is shown. E' is a corresponding and parallel tubular bar adjacent to the before-mentioned beam upon the elevator-struts and supported therefrom by means of keepers e''' . These two bars will of course be connected by cross pieces or timbers, which we have deemed it unnecessary to show, in such manner as to form a rigid supporting-frame for the operating parts of the binder, and by means of a link, e^4 , and operating mechanism this frame will be adjusted back and forth in its supports to compensate for varying lengths of grain.

To the inner tubular frame-bar is pivoted a table-trip, F, extending thence outward to the tripping and compressing fingers F', which are loosely mounted upon a rock-shaft, f , and by means of a spring, f' , are allowed a yielding movement thereon.

Beneath the table-trip runs the binder-arm shaft G, carrying the needle or binder-arm G', of the ordinary form, and provided with the usual guard-finger, g , described from the point of said arm upon an arc concentric or practically concentric with the axis of the shaft, so that it may move constantly in the same line as it is carried through the grain-passage in the rise of the binder-arm to place the cord and hold back the incoming grain without pushing it back, simply stopping it.

Above the table-trip, at a sufficient distance to afford a suitable space for the passage of the grain, is the breast-plate H, and above this the main tyer-wheel H', mounted upon a shaft, h , which carries one of the ejector-fingers h' , while the other is carried by the said wheel.

Knotting, holding, and cutting devices are indicated at I, in position to be driven by this wheel, but need no specific description.

Now, in binding grain the movement of the
5 needle to place the cord in the grasp of the holder and across the knotting-jaws is of such length that the guard-finger is necessarily much longer than the needle itself, so that it may continue to close the passage-way after the
10 needle has reached the holder and may project sufficiently beneath the table-trip or decking to avoid any danger of entanglement. This brings its heel end, when the needle is down in its position of rest, very near to the ground,
15 barely escaping the upper face of the end sill and projecting out beyond that end sill, so that if there are any obstructions—such as stones, or stumps, or heavy stubble—it is liable to be struck and bent. This liability of injury to
20 the machine is greatly increased by the fact that the length of the finger is such that it will bring a powerful leverage on the binder-arm, and if not bent itself will bend the latter or even break it, and also by the fact that it must
25 be made extremely light. To protect it, therefore, when in its position of rest, we secure a bridge-strap, K, or other suitable guard to the end sill, projecting out beyond the end sill sufficiently to allow the heel of the finger to
30 fall to its extreme limit, and since the binder is adjustable back and forth, and the position of the finger along the end sill therefore liable to considerable change, we make this bridge or guard of sufficient length along such sill to
35 compensate for these adjustments.

The bridge-strap, as represented in the draw-

ing, is of wrought-iron, a simple strap of sufficient strength to resist all ordinary obstructions, bent into shape to afford two feet, *k*, one of which is bolted to the side of the sill and
40 one to the top, and this is, in our opinion, the cheapest and most reliable mode of constructing it; but we do not intend to limit ourselves either to the material of which it is composed or to the position which it occupies, the essen-
45 tial point being that it should be so located as to shield the end of the guard-finger when the latter is in its position of rest, and that it should have sufficient strength for that purpose.

We claim as our invention—

1. The combination, substantially as herein-
before set forth, of the binding attachment ad-
justable back and forth upon the harvester-
frame, the binder-arm mounted on a shaft be-
neath the grain-passage and having a concen-
55 tric guard-finger, and an elongated shield upon one of the base-sills of the harvester to receive the heel of the guard-finger and permit of its adjustment back and forth.

2. The combination, substantially as herein-
before set forth, with the end sill of the har-
vester-frame and with the binder-arm and its
concentric finger, of the shield for the heel of
said finger, formed of a metal strap bent into
the shape described, having one foot bolted to
65 the side of the sill and the other foot bolted to the top of said sill.

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Witnesses:

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