

Aug. 14, 1928.

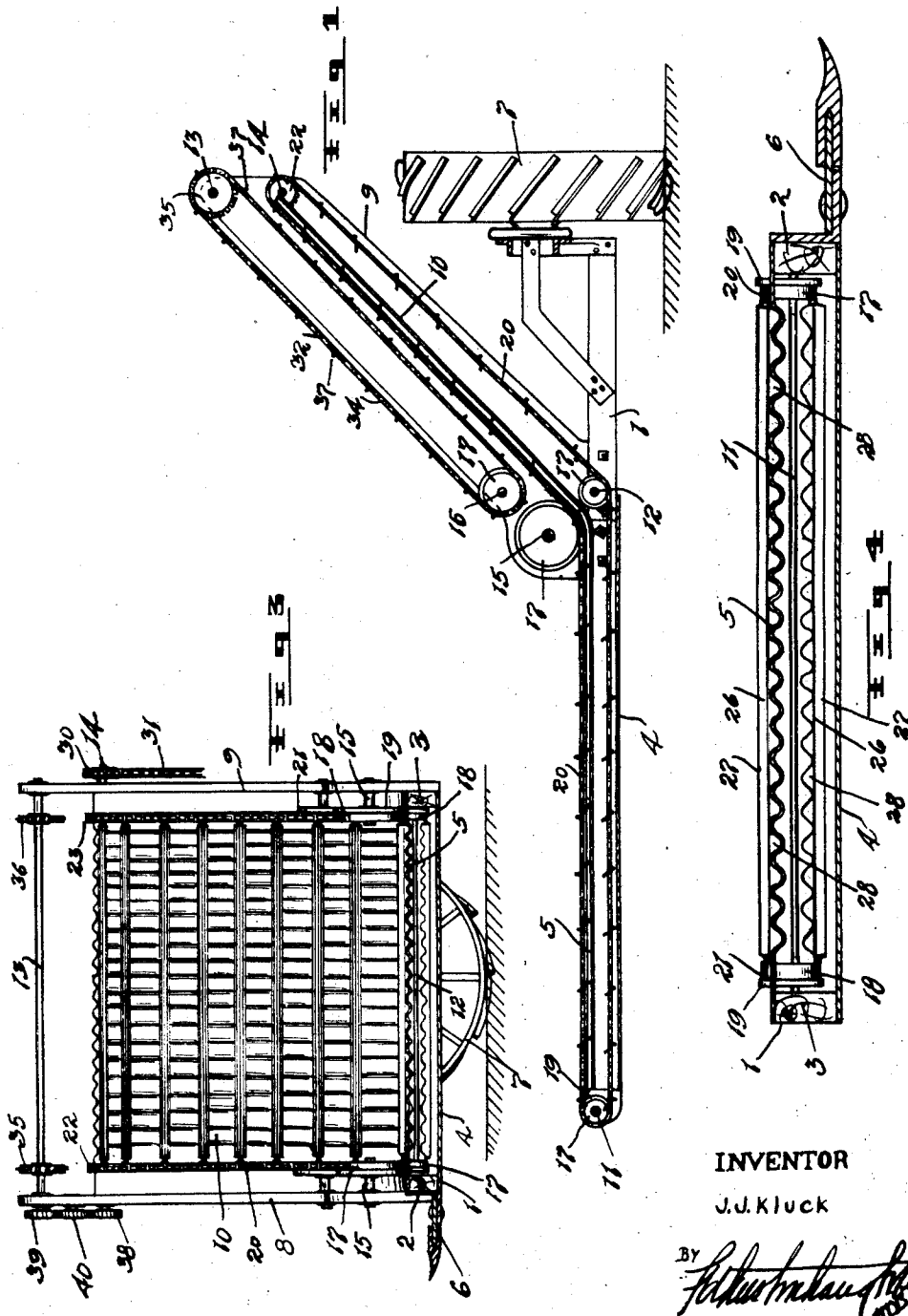
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J. J. KLUCK

BINDING MACHINE

Filed Feb. 19, 1926

2 Sheets-Sheet 1



INVENTOR

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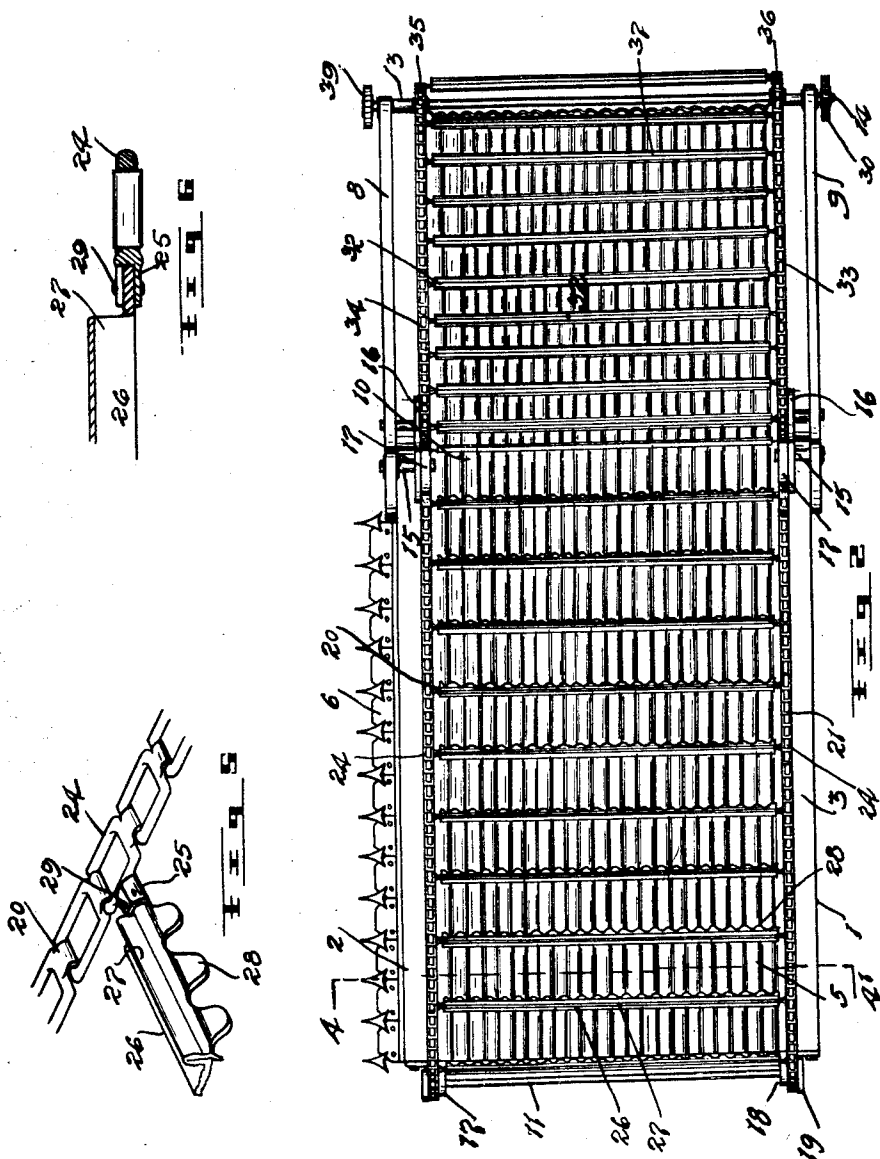
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BINDING MACHINE

Filed Feb. 19, 1926

2 Sheets-Sheet 2



INVENTOR

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UNITED STATES PATENT OFFICE.

JOHN J. KLUCK, OF MACKLIN, SASKATCHEWAN, CANADA.

BINDING MACHINE.

Application filed February 19, 1926, Serial No. 89,466, and in Canada January 25, 1926.

The invention relates to improvements in binding machine, particularly to improvements associated with the platform and elevators thereof and an object of the invention is to provide a binding machine wherein the platform is extended angularly upwardly to underlie the elevator thereby avoiding any possibility of loss of grain at the juncture point of the platform and the elevator.

A further object is to construct the improved part of the machine so that the cut grain will be caught and positively delivered and such that the grain kernels which become dislodged from the heads will be collected and delivered instead of being for the greater part lost on the field as at the present time occurs.

A further object of the invention is to provide a binding machine wherein no canvas with its incident troubles is used but one equipped with chain driven, suitably spaced slat-like collectors operating over a sheet metal pan.

With the above more important objects in view, the invention consists essentially in the arrangement and construction of parts hereinafter more particularly described, reference being had to the accompanying drawings, in which:—

Fig. 1 is a vertical longitudinal sectional view centrally through the platform and elevators of a binding machine equipped with my invention.

Fig. 2 is a plan view of the parts appearing in Figure 1.

Figure 3 is a vertical cross sectional view through the platform and looking towards the bull wheel, the top elevator having been removed.

Fig. 4 is an enlarged detailed vertical sectional view at 4—4' Figure 2.

Fig. 5 is a perspective view of a portion of one of the chains and a portion of one of the collectors.

Fig. 6 is a detailed vertical sectional view showing the manner in which the ends of the collectors are attached to the chain link.

In the drawings like characters of reference indicate corresponding parts in the several figures.

The main frame 1 of the platform presents similar parallel side beams 2 and 3 which are connected on the under side by a guard plate 4 and at the top by a lengthwise corrugated horizontally disposed plate or pan 5. The

customary cutting knife 6 is located at the front of the platform and cuts the standing grain in the usual manner as the machine is drawn over the field, the grain falling backwardly onto the corrugated pan 5 of the platform in the ordinary manner, it being here understood that the customary binder reel, not herein shown, is used.

The bull wheel 7 of the binder and parts associated therewith are as customarily used and underlie the elevator in the usual way. The sides 8 and 9 of the elevator extend angularly upwardly from the inner end of the platform and overhang the bull wheel. According to my invention, however, the corrugated plate or pan 5 is extended beyond the customary inner end of the platform to provide a second lengthwise corrugated upwardly inclining pan 10 extending between the sides of the elevator and it will be here particularly noted that the pans 5 and 10 are continuous, that is to say, there is no transverse opening therebetween as at present occurs between the canvas on the usual platform and the under inclined elevator.

The main frame 1 carries two rotatably mounted cross shafts 11 and 12 and the upper ends of the elevator sides 8 and 9 carry upper and lower rotatably mounted, cross shafts 13 and 14. Two other sets of stub shafts 15 and 16 are also suitably mounted in the elevator sides in a location adjacent but above the shaft 12. The shafts 11, 12, 15 and 16 are each provided within the side frames with a pair of spaced pulleys or rollers 17 and 18 and each roller is provided at the outer side with a guard or flange 19. Similar continuous side chains 20 and 21 are passed around the rollers of the shaft 11 underneath the rollers of the shafts 12 and 15 and around a pair of similar chain wheels 22 and 23 secured to the shaft 14 which latter shaft is utilized as a drive for the chains.

It will be observed that the rollers on the shaft 15 carry the top sides of the chains at the point where the pan 5 is extended into the pan 10 and that the rollers on the shaft 12 carry the down moving portions of the chains and I might here mention that this latter shaft can be adjustable so that it will act as a chain tightener.

At suitable intervals in the chains, I provide special links, one of these special links being shown at 24 in Figures 5 and 6 and wherein it will be observed that the link is

fitted with a socket like side extension 25. The chains are placed so that the special links appear in opposing pairs.

Each pair of these special links carries a
5 slat-like collector 26 which is adapted in the movement of the chains to slide over the upper faces of the pans 5 and 10. I have herein shown these collectors as formed from a comparatively stiff strip of sheet metal bent
10 to provide an upstanding flange 27 and having the forward edge thereof cut to provide a plurality of downwardly and forwardly inclining spaced fingers 28 and the ends thereof shaped to enter the sockets 25 in
15 which they are securely fastened as by rivets 29.

The contour of the fingers and the spaces between the fingers are complementary to the corrugations of the pans with the result
20 that as the collectors are drawn over the pans by the chains, the flanges 27 not only gather and carry the grain delivered onto the platform but the fingers sweep the corrugations of the pans and so collect, carry
25 and deliver the loose kernels of grain and also all short straw which become dislodged from the heads.

I might here remark that in the binder as at present found on the market, there is an
30 open space between the platform canvas and the elevator canvas with the result that the loose kernels on the platform canvas are not discharged to the elevator canvas but onto the ground where they are lost. I might
35 also point out that the under sides of the chains and the collectors carried thereby pass between the plate 4 and the pan 5, the plate 4 acting as an underlying guard.

The shaft 14 which is utilized as the drive
40 for the chains is provided with a chain wheel 30 and a drive chain 31 passes over this chain wheel, the latter chain being driven by any suitable part of the customary binder driving mechanism. The pan 10 and the
45 chains and collectors associated therewith form in reality an under inclined elevator corresponding to the inclined under canvas elevator now used.

In order to hold the ascending grain in place on the elevator and also to assist in
50 the elevation of it, I provide a top overlying elevator indicated generally by the reference numeral 32. This top elevator is formed from similar side chains 33 and 34 which are carried by the pulleys of the
55 shafts 16 and a pair of chain wheels 35 and 36 secured to the shaft 13 and the said latter chains are fitted at intervals with special links similar to those previously described and those links carry cross slat 37 similar to
60 that shown in Figure 5 with the exception that the front edge in advance of the flange 27 lies flat and is not cut to provide fingers.

The upper inclined elevator is suitably driven in the opposite direction to the under-
65 lying elevator. In the present instance, I have shown the rear ends of the shafts 14 and 13 as fitted with gear wheels 38 and 39 and I have placed between these gear wheels
70 an intermeshing gear wheel 40.

I do not desire to be limited to the precise mechanism utilized for driving the chains, nor the peculiar manner in which the collectors or cross slats are connected to the
75 chains, nor to the precise manner in which the various frame structures are erected, as all of these may be obviously materially modified without departing from the spirit of the invention as set forth in the appended
80 claim.

What I claim as my invention is:

In a binding machine, a platform presenting a lengthwise corrugated grain receiving
85 pan, a lower inclined elevator presenting a lengthwise corrugated pan continuous with the former pan, continuous driven side chains associated with the pans, spaced collectors carried by the side chains and presenting upstanding flanges and downwardly
90 extending spaced fingers complementary to the corrugations and adapted to sweep the corrugations in the movement of the chains.

Signed at Winnipeg, this 26 day of January, 1926.

JOHN J. KLUCK.