

No. 624,878.

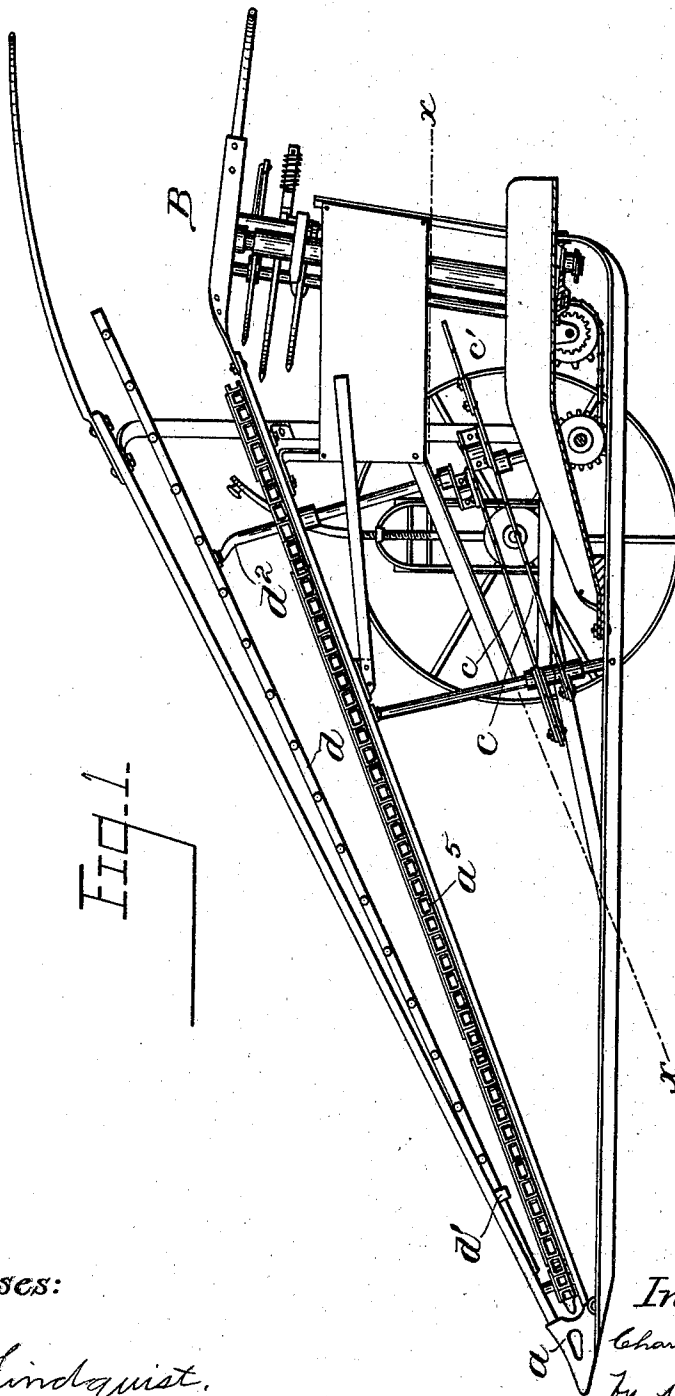
Patented May 9, 1899.

C. S. SHARP.
CORN HARVESTER.

(Application filed Sept. 2, 1897.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses:

Otis Lindquist.
Arthur F. Randall.

Inventor:

Charles S. Sharp

by R. J. Hayes

Attorney.

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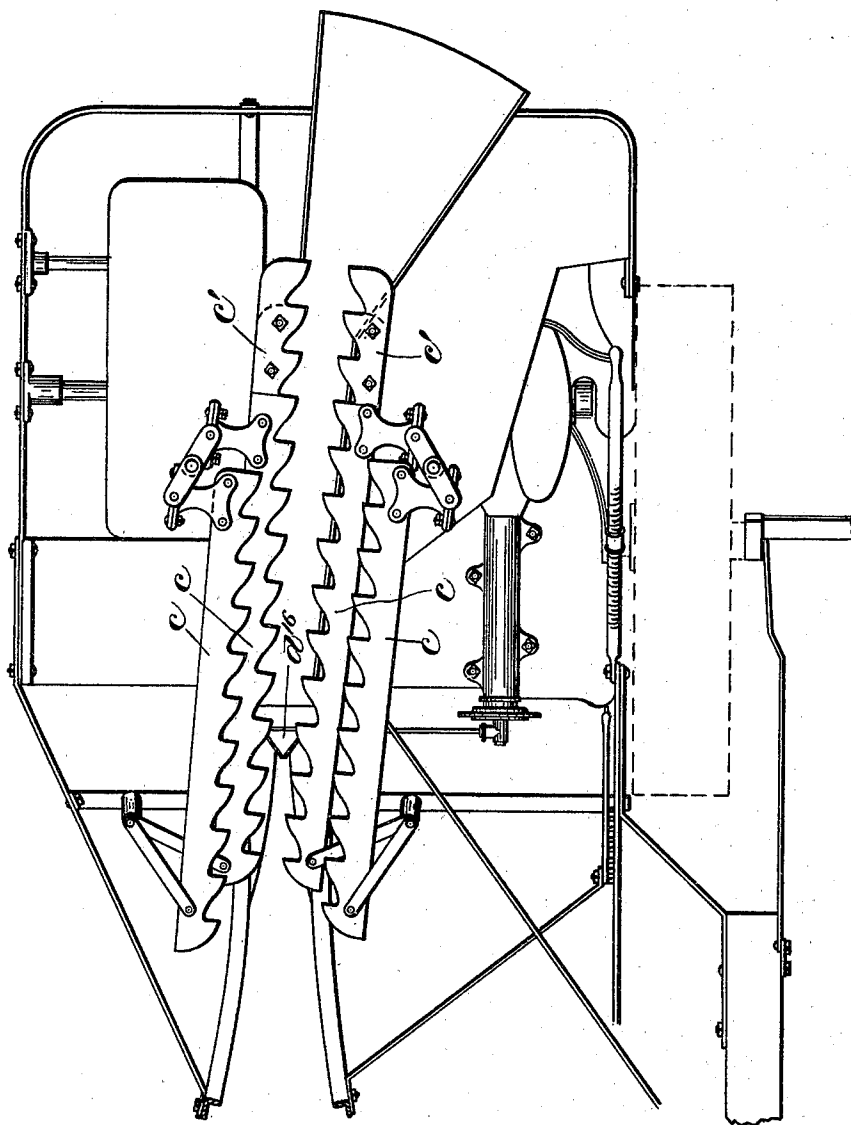
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3 Sheets—Sheet 2.



Witnesses:

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Fig. 2.

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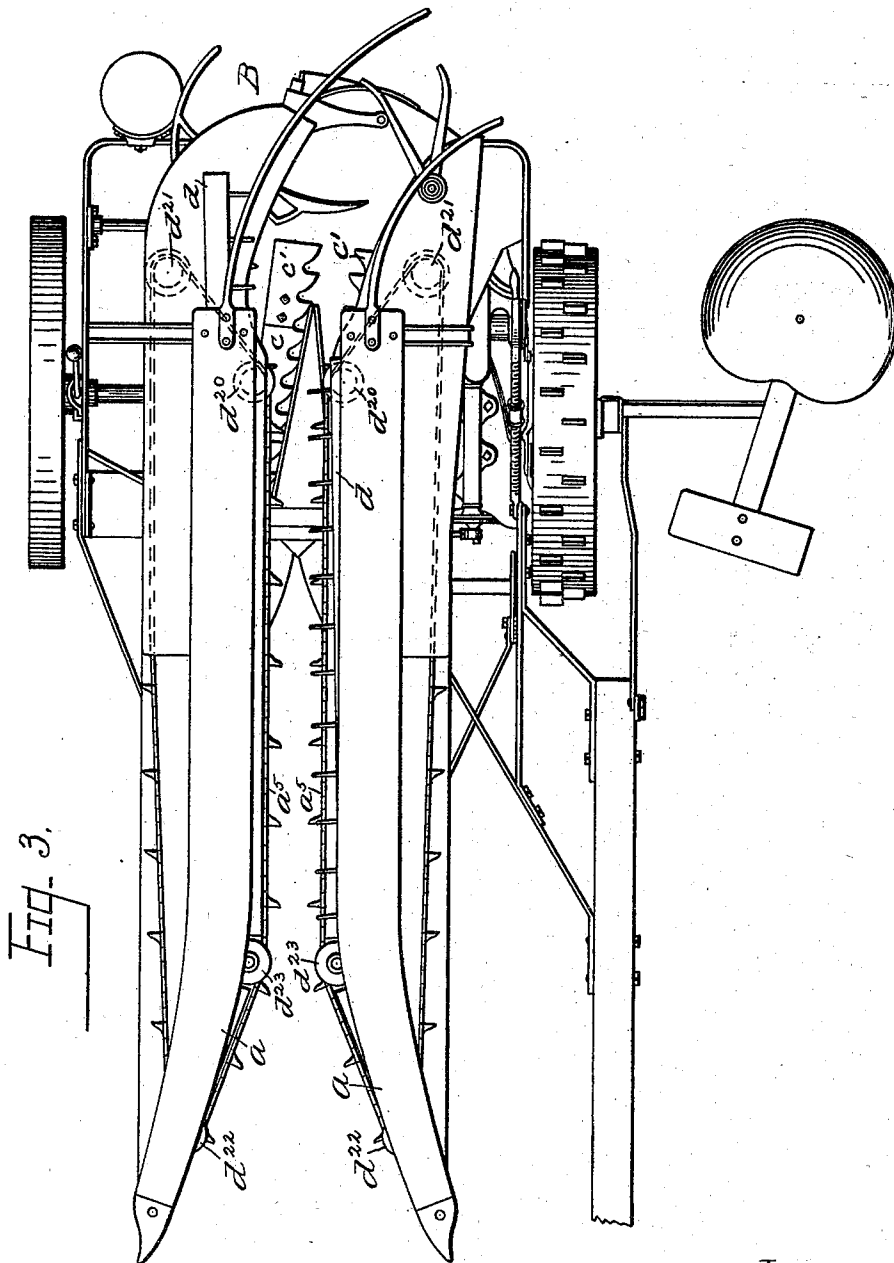
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3 Sheets—Sheet 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES S. SHARP, OF AUBURN, NEW YORK, ASSIGNOR TO THE D. M. OSBORNE & COMPANY, OF SAME PLACE.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 624,878, dated May 9, 1899.

Application filed September 2, 1897. Serial No. 650,361. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. SHARP, of Auburn, Cayuga county, State of New York, have invented an Improvement in Corn-Harvesters, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to corn-harvesters of that type shown in United States patent granted to me, No. 539,830, dated May 28, 1895, wherein the corn is gathered, cut, and fed rearward along a laterally-confined passage-way in standing or upright position to an upright binder and bound "on end;" and it has for its object to provide such a machine with means whereby the severed corn may be conveyed rearward along the laterally-confined passage-way to a binder, yet for a short distance in front of said binder the stalks of corn shall be free to self-adjust or regulate themselves in the passage-way, thereby obviating overcrowding the rear part of said laterally-confined passage-way, which results in choking up the machine in front of the binder.

In carrying out this invention means are provided for feeding the stalks of corn rearward along the laterally-confined passage-way to a position a short distance in front of the binder, and said means are preferably constructed and arranged to continuously feed rearward the stalks of corn, and feeding devices are provided which recurrently enter at the opposite sides of the rear part of said laterally-confined passage-way in front of the binder, engage the butts of the corn and move rearward, and then recede from the passage-way, and feeding devices are also provided which recurrently enter at the opposite sides of the rear part of said passage-way in front of the binder, engage the tops of the corn, move rearward, and then recede from the passage-way, and the stalks of corn will be supported by the side walls of the passage-way when the feeding devices are receding therefrom, and consequently will be free to self-adjust or regulate themselves during such repeated intervals of time. Constant rearward pressure on the corn just in front of the binder is therefore eliminated and overcrowding the

rear part of the laterally-confined passage-way obviated and also undue strain on the binder mechanism prevented.

Figure 1 shows a longitudinal vertical section of a corn-harvester embodying this invention; Fig. 2, a horizontal section of the same, taken on the line *xx*, showing particularly a pair of feeding-jaws which recurrently enter the opposite sides of the rear part of the laterally-confined passage-way in front of the binder, engage and move rearward the corn therein, and then recede from said passage-way; and Fig. 3, a plan view showing the feeding-chains, which, in conjunction with other feeding devices, continuously feed the corn rearward along the passage-way to a point a short distance in front of the binder, and also showing the tops-feeding jaws, which recurrently enter at the opposite sides of the rear part of the passage-way, engage and move rearward the corn therein, and then recede from said passage-way.

The gathering-arms *a*, of which there are two, disposed a short distance apart to provide a laterally-confined passage-way between them and extending from the forward end of the machine rearwardly toward the binder B, and the cutter *d*¹⁶, crossing said passage-way at a suitable distance back of its front end, which severs the corn which is gathered by the gathering-arms and presented to it by the feeding devices, consisting, essentially, of the stalk-feeding chains *a*⁵ and two pairs of reciprocating toothed jaws or plates *c c*, are all substantially as shown in said patent hereinbefore referred to, to which reference may be had.

The feeding-chains *a*⁵, which work rearwardly along the laterally-confined passage-way to a point a short distance in front of the binder B, pass around the driving sprocket-wheels *d*²⁰ *d*²⁰ and around the idle-wheels *d*²¹ *d*²² *d*²³, and the teeth or fingers on said chains project laterally beyond the edges of the boards which form the side walls of the passage-way, thereby entering and working along the said passage-way from the front to a point just at the rear of said driving sprocket-wheels *d*²⁰, and then from such point to the idle-wheels *d*²¹ the feeding-chains move diagonally outward in opposite ways, the teeth or fingers on said chains gradually receding from

the passage-way, and by reference to Fig. 3 it will be seen that from a point immediately in rear of said driving sprocket-wheels d^{20} and continuing rearward to the binder the feeding-fingers of said chains do not enter the passage-way, and consequently so far as said feeding-chains are concerned the stalks of corn therein are free to move and self adjust or regulate themselves in the passage-way, as may be required.

The rear ends of the upper pair of butt-feeding jaws or plates $c c$ when in their rearmost positions terminate a short distance in front of the binder B, (see Fig. 2,) so that they cannot engage or act upon the corn in the rear part of said passage-way in front of the binder.

The lowermost pair of reciprocating jaws $c c$ are provided at their rear ends with extensions c' , which project rearwardly far enough to work across the rear part of the passage-way in front of the binder, and these reciprocating jaws, with their extensions c' , are toothed and are located near the floor of the passage-way, so as to engage and act upon the butts of the corn.

The two pairs of reciprocating jaws $c c$ are connected with and operated by crank-shafts in such manner that first one pair of jaws will enter at the opposite sides of the passage-way, engage and move rearward the corn therein, and as they recede from the passage-way the other pair of jaws $c c$ will likewise enter at the opposite sides and engage and move rearward the corn therein. It will consequently be seen that along the front portion of said passage-way, where both pairs of jaws $c c$ work alternately, the corn will be practically continuously acted upon by them and that along the rear part of said passage-way, where the rear jaw extensions $c' c'$ only work, the corn will be intermittently engaged. The lower pair of jaws $c c$ are operated to simultaneously enter the opposite sides of the passage-way, grip the corn and move rearward, and then recede from the passage-way, and consequently the extensions c' thereof, which alone act upon the butts of the corn in the rear part of the passage-way, will simultaneously enter at opposite sides, engage and move rearward the corn therein, and then recede from the passage-way, and when they have receded from the passage-way the butts of the corn will be free to move to and fro in the passage-way, being held only by the side walls thereof. The stalk-feeding chains a^5 are operated to continuously engage and move rearward the corn in the passage-way and act in conjunction with the two pairs of feeding-jaws $c c$ along the front part of said passage-way to a point where said chains cease to operate and where the pair of jaws $c c$ terminate. However, so far as this invention is concerned, I do not desire to limit myself to any particular form or construction of feeding device for feeding the corn along the passage-way to a point a short distance in front of the binder, although it is preferable to pro-

vide feeding devices which will act to continuously feed it along.

A pair of rake-toothed bars d are located above the feeding-chains a^5 , the forward ends of which enter and work in loops or eyes d' , adapted to receive them, and the said bars d are attached to the upper ends of cranked shafts d^2 , which are rotated by the driving-shaft of the machine to thereby impart to said rake-toothed bars d a reciprocating or intermittent motion, and said bars d are disposed relatively to the passage-way, so that as they are operated they will enter the passage-way, engage the corn, move rearward, and then recede from the passage-way and return during each revolution of the crank-shafts. These rake-toothed bars d , acting, as they do, intermittently upon the corn, are extended rearwardly beyond the feeding-chains a^5 , so as to work across the rear part of the passage-way in front of the binder, and said bars being supported in an elevated position above the feeding-chains will act upon the stalks of corn near the top. They may act together to grip the tops of the corn, or they may act alternately, as desired; but in any event they will act to recurrently enter the passage-way, engage the tops of the corn and move rearwardly, and then recede from the passage-way and return, and after they have receded from the passage-way and while they are returning the tops of the corn will be free to move in the passage-way.

It will be seen that the rake-toothed bars d and jaw extensions c' both recurrently enter at the opposite sides of the rear part of the passage-way in front of the binder, engage and move rearward the corn therein, and then recede from said passage-way, and by thus repeatedly acting upon the corn and thrusting it rearward the corn will be moved along step by step, yet not in a continuously-positive manner so as to clog or choke up the machine in front of the binder, and as these two feeding devices, one for the butts and the other for the tops of the corn, are the only feeding devices acting upon the corn in the rear part of the passage-way in front of the binder the stalks of corn will at repeated intervals be free to self-adjust or regulate themselves in the passage-way during the time that the feeding devices are not working in the passage-way. Furthermore, it will be seen that by acting upon the tops and butts of the corn only the corn will be conveyed rearwardly evenly and without tendency to disarrangement and without subjecting the binder to undue strain.

I claim—

1. In a corn-harvester, the combination of gathering and severing devices, a laterally-confined passage-way extending from the front of the machine rearward to the binder having a floor extending from the severing device rearward to said binder, an upright binder at the rear of said passage-way, means for feeding the stalks of corn rearward along

said passage-way to a point a short distance in front of said binder, feeding devices which simultaneously recurrently enter at the opposite sides of the rear part of said passage-way, in front of the binder, engage the butts of the corn, move rearward and then recede from the passage-way, and feeding devices which simultaneously recurrently enter at the opposite sides of the rear part of said passage-way, in front of the binder, engage the tops of the corn, move rearward and then recede from the passage-way, the stalks of corn being supported by the side walls of the passage-way and thereby allowed to self-adjust or regulate themselves when the feeding devices have receded, substantially as described.

2. In a corn-harvester, the combination of corn gathering and severing devices, a laterally-confined passage-way, an upright binder at the rear of said passage-way, means for feeding the corn along said passage-way to a point a short distance in front of the binder, a pair of butt-feeding devices having an in-and-out and a back-and-forth movement relative to said passage-way, which simultaneously enter the rear part of said passage-way, at opposite sides thereof, grip the corn between them and feed it rearward and then recede from said passage-way, and a pair of tops-feeding devices also having an in-and-out and a back-and-forth movement relative to said passage-way, which also enter the rear

part of said passage-way at opposite sides thereof, engage and move rearward the stalks of corn and then recede from said passage-way, substantially as described.

3. In a corn-harvester, wherein the standing corn is gathered, cut, and conveyed rearward to an upright binder, a laterally-confined passage-way extending from the front of the machine rearward to the binder having a floor extending from the severing device rearward to said binder, two pairs of butt-feeding jaws which intermittently act upon the butts of the corn and continuously convey it rearward along said passage-way to a point a short distance in front of the binder, the jaws of one pair having rear extensions which work beyond the jaws of the other pair, and which recurrently enter the rear part of said passage-way in front of the binder, at opposite sides, move rearward and then recede therefrom, and tops-feeding jaws which recurrently enter the rear part of said passage-way in front of the binder at opposite sides, move rearward and then recede from said passage-way, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES S. SHARP.

Witnesses:

C. O. HOLMES,
S. E. GRANT.