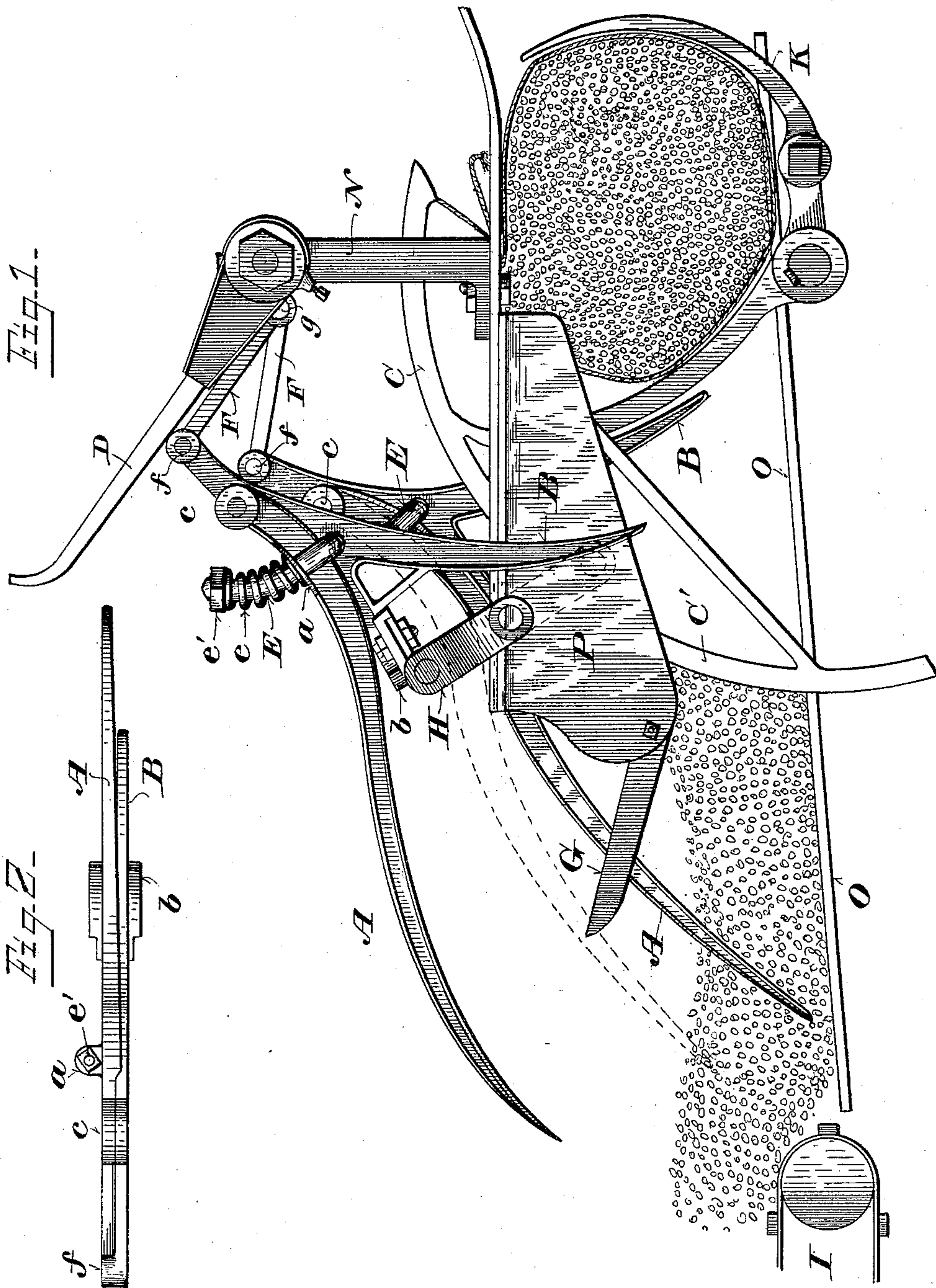


(No Model.)

O. O. STORLE.  
PACKER FOR GRAIN BINDERS.

No. 429,706.

Patented June 10, 1890.



WITNESSES:-  
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# UNITED STATES PATENT OFFICE.

OLE O. STORLE, OF MILWAUKEE, WISCONSIN.

## PACKER FOR GRAIN-BINDERS.

SPECIFICATION forming part of Letters Patent No. 429,706, dated June 10, 1890.

Application filed November 18, 1886. Serial No. 219,232. (No model.)

*To all whom it may concern:*

Be it known that I, OLE O. STORLE, of the city and county of Milwaukee, and State of Wisconsin, have invented certain new and useful Improvements in Packers for Grain-Binders; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The object of my invention is to take the grain as it is discharged by the conveyer and deposit the same against the shield of the needle and allow the packer to yield as the grain accumulates.

In the accompanying drawings like letters designate the same parts in both figures.

Figure 1 is a side elevation of a binder embodying my improvements, and Fig. 2 is a plan view of one of the packers.

My invention consists, essentially, of a yielding tooth arranged to accumulate the grain discharged from the conveyer against the shield of the needle. Packers have been heretofore constructed of rigid teeth, which have not given satisfaction, for the reason that they were not arranged to clear the grain from the conveyer and to allow for the increasing quantity brought by them against the shield of the needle while the latter is binding.

Referring to the drawings, O represents the binder-table, N the binder-frame, C the needle, C' the shield of the needle, D the discharging-arm, K the compressor or trip, I a portion of the conveyer, and P the needle-guard, all of the usual or any suitable form and construction.

G is a guide attached in the usual position to the needle-guard P.

B B are the inner teeth of the packers, hinged at their ends *f f* to links F F, by which they are connected to the binder-frame at *g*, or any suitable part of the machine. To the packer-teeth B B are hinged at *c c* the outer yielding teeth A A, which are arranged to work in the space between the discharging end of the conveyer I and the needle-shield C'. In each of the teeth B B is secured a spring-guide E, curved in an arc struck from

its hinge *c* as a center and passing through an ear *a*, formed on each of the teeth A A. The spring guides E E are threaded at their extremities and provided with nuts *e'*, between which and the ears *a a* are inserted the spiral springs *e e*. The teeth A A are thus permitted by the compression of said springs, when sufficient resistance to their movement is created by the accumulation of grain, to swing back upon their hinges *c c* into a position relative to the teeth B, as indicated by dotted lines in Fig. 1.

The teeth B B are formed with projections *b*, provided with boxes, in which the actuating-cranks H are arranged to work.

The several parts of the binder mechanism, as illustrated in Fig. 1, are shown in the position assumed by them when the bundle has been bound and is ready to be discharged. The needle C being raised above the binder-table O in the operation of binding, the grain is collected by the outer packer-teeth A A against the shield C' of said needle underneath the guide G, the increasing quantity of said grain compressing each spring and allowing each tooth to recede more and more as it is advanced by its actuating-crank H toward the needle-shield C'. The operation continues as described until the needle C descends, releasing the grain back of it and permitting the expansion of said springs *e*, which force the teeth A A forward into their normal position with reference to the teeth B B, and thus throw the grain into position to be acted upon by said inner packer-teeth B B. The tension of the springs *e* may be adjusted by means of the nuts *e'* to permit the teeth A A to yield as desired, according to the degree of resistance encountered by them. The inner packer-teeth B B, working in a space between the outer teeth A A and the compressor or trip K, assist, when the needle is below the binder-table, in advancing the grain against said compressor or trip and in forming the next gavel, and when the needle is raised they operate between the shield C' and the arm of the needle, which prevents contact between them and the grain.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a grain-binder, the combination, with



a needle-arm having a shield, of a packer provided with a rigid and a yielding tooth, the yielding tooth working behind the rigid tooth to accumulate the incoming grain during the operation of binding against the needle-shield, substantially as and for the purposes set forth.

2. In a grain-binder, the combination, with the needle, of packers which feed the grain thereto, each having a rigid and a yielding tooth, one behind the other, in the path of their feeding action, the yielding tooth being adapted to yield toward the incoming grain under the resistance of the packed grain, substantially as and for the purposes set forth.

3. In a grain-binder, the combination, with the binder-arm having a shield serving as a cut-off, of a packer having a rigid tooth operating within the space cut off by the said shield and a yielding tooth operating outside of said shield, substantially as and for the purposes set forth.

4. The combination, in a binder, with a needle having a curved shield, and a compressor operating with said needle to grasp and hold the gavel, of a packer having one tooth working, when the needle is binding, between said shield and gavel, and a yielding tooth working behind said needle and arranged to collect the grain for the next gavel

against the needle-shield, substantially as and for the purposes set forth.

5. In a grain-binder, the combination, with the needle provided with a shield which serves as a cut-off to the incoming grain during the operation of binding, of a packer located and working above the binder-table and comprising a rigid and a yielding tooth, and an actuating-crank connected with said rigid tooth, the yielding tooth being connected with the rigid tooth on the opposite side of its connection with the crank from the point, extending downwardly and rearwardly therefrom behind said rigid tooth and working to accumulate the incoming grain during the operation of binding against the needle-shield, substantially as and for the purposes set forth.

6. In a packer for grain-binders, the combination of an oscillating tooth connected with the frame of the machine, an auxiliary tooth hinged thereto, spring *e*, and crank arranged to operate said teeth, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

OLE O. STORLE.

Witnesses:

CHAS. L. GOSS,  
GEORGE M. GOLL.