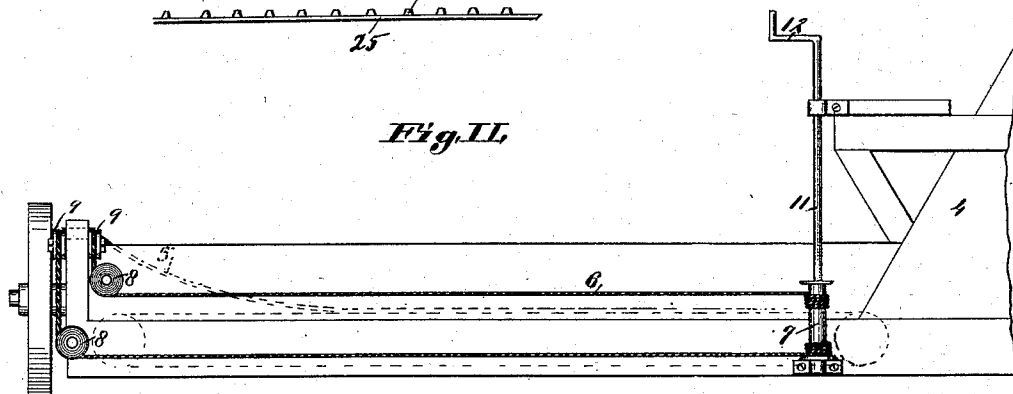
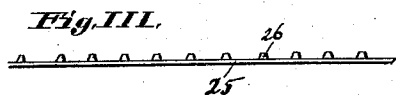
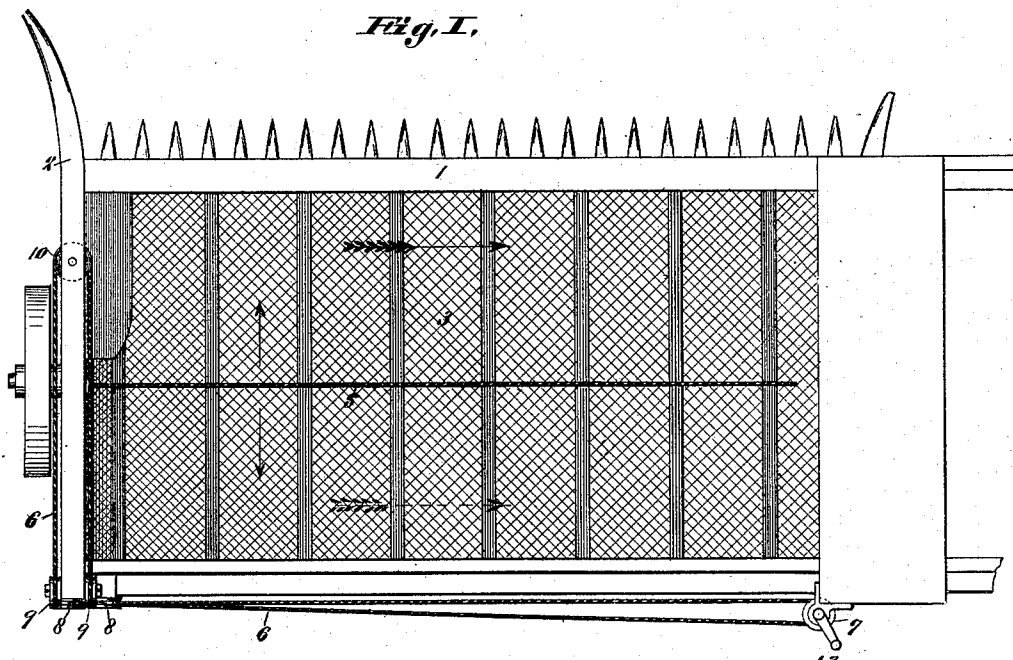


(No Model.)

P. J. SPRAGUE & J. M. McCRAW.
GRAIN RETARDER AND REGULATOR FOR HARVESTERS.

No. 406,789.

Patented July 9, 1889.



Attest:
J. H. Knight
L. O. Crow

Inventors:
Pearley, J. Sprague
James M. McCraw
By *Knight Bros* attys

UNITED STATES PATENT OFFICE.

PEARLEY J. SPRAGUE AND JAMES M. McCRAW, OF ADRIAN, MISSOURI.

GRAIN RETARDER AND REGULATOR FOR HARVESTERS.

SPECIFICATION forming part of Letters Patent No. 406,789, dated July 9, 1889.

Application filed August 20, 1888. Serial No. 283,247. (No model.)

To all whom it may concern:

Be it known that we, PEARLEY J. SPRAGUE and JAMES M. McCRAW, both of Adrian, in the county of Bates and State of Missouri, have invented a certain new and useful Improvement in Grain Retarders and Regulators for Harvesters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure I is a top view illustrating our invention. Fig. II is a rear view. Fig. III represents a modification of the retarder.

It is a well-known fact that in harvesting grain the head ends of the straw strike the apron first, and, being the heaviest, move in advance of the butts on the apron as the straw is carried to the elevator, and the object of our invention is to provide a means of avoiding this difficulty; and to this end our invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, 1 represents the cutter-bar of a harvester; 2, the divider-bar; 3, the apron upon which the grain falls as it is cut, and 4 the elevator to which the grain is delivered by the apron, and which carries the grain to the binding mechanism.

The cutter-bar, apron, and elevator may all be suitably arranged in accordance with any well-known form or pattern, as our invention does not, *per se*, relate to these parts.

As the grain is carried to the elevator by the apron the head ends of the straw, striking the apron first and owing to their superior weight, get in advance of the butts, so that the straw is delivered to the elevator in a diagonal condition; or, in other words, the heads of the straw reach the elevator before the butt-ends, and they are thus not delivered to the binder in good condition, and more or less scattering and loss of grain are caused. To avoid the heads moving in advance of the butts of the straw, we have invented or discovered the idea of a retarder, consisting of a cord, strap, or chain 5. This

is made fast at one end to a longitudinally-movable rope, while its other end is preferably left loose and free. The motion of the apron keeps the retarder parallel with the cutter-bar. As the grain drops upon the apron it falls upon this retarder near its head ends, and as the apron moves in the direction indicated by the arrows in Fig. I the stationary cord or strap acts to retard the movement of the head ends of the straws, and it has been found by practical demonstration that the straw is thus delivered to the elevator in a straight and even condition. If in very ripe or bulky straw the simple cord does not sufficiently retard the movement of the heads, a strap 25, (see Fig. III,) having pegs or ribs 26 secured on its upper side, may be substituted, whereby any desired amount of resistance may be obtained.

As the length of straw is liable to vary considerably, it is desirable to have a means for moving the retarder toward or from the cutter-bar. Our preferred manner of accomplishing this is to connect its outer end to an endless belt 6, moving parallel with the divider-bar for a portion of its length, and which passes from a drum 7, upon which its respective ends are wound, in an outward direction to pulleys 8, journaled in the frame of the apron, and from these pulleys 8 the belt passes upward over pulleys 9 and then forward to a pulley 10, journaled in the divider-bar 2. The drum 7 is on a shaft 11, which is provided with a crank 12, that would be located near the driver's seat, so that by taking hold of the crank and turning the shaft in the desired direction the belt 6 may be moved in either direction, and thus the retarder moved to or from the cutter-bar to suit the length of grain being cut.

We claim as our invention—

1. In combination with a cutter-bar and apron of a harvester, a crank-shaft, a belt operated by said crank-shaft and arranged to move parallel with the divider-bar, and a cord resting upon the apron and made fast to said movable belt, whereby said cord may be moved toward and from the cutter-bar

without stopping the machine, substantially as set forth.

2. In combination with the cutter-bar and apron of a harvester, a retarder consisting of
5 a cord and means for adjusting said cord, consisting of a movable belt parallel with the divider-bar, to which belt the cord is made fast, pulleys journaled in the divider-bar; over

which the belt passes, and a drum and crank-shaft for turning the belt.

PEARLEY J. SPRAGUE.
JAMES M. MCCRAW.

In presence of—

H. P. EDWARDS,
J. P. KINSLEY.