

No. 624,325.

Patented May 2, 1899.

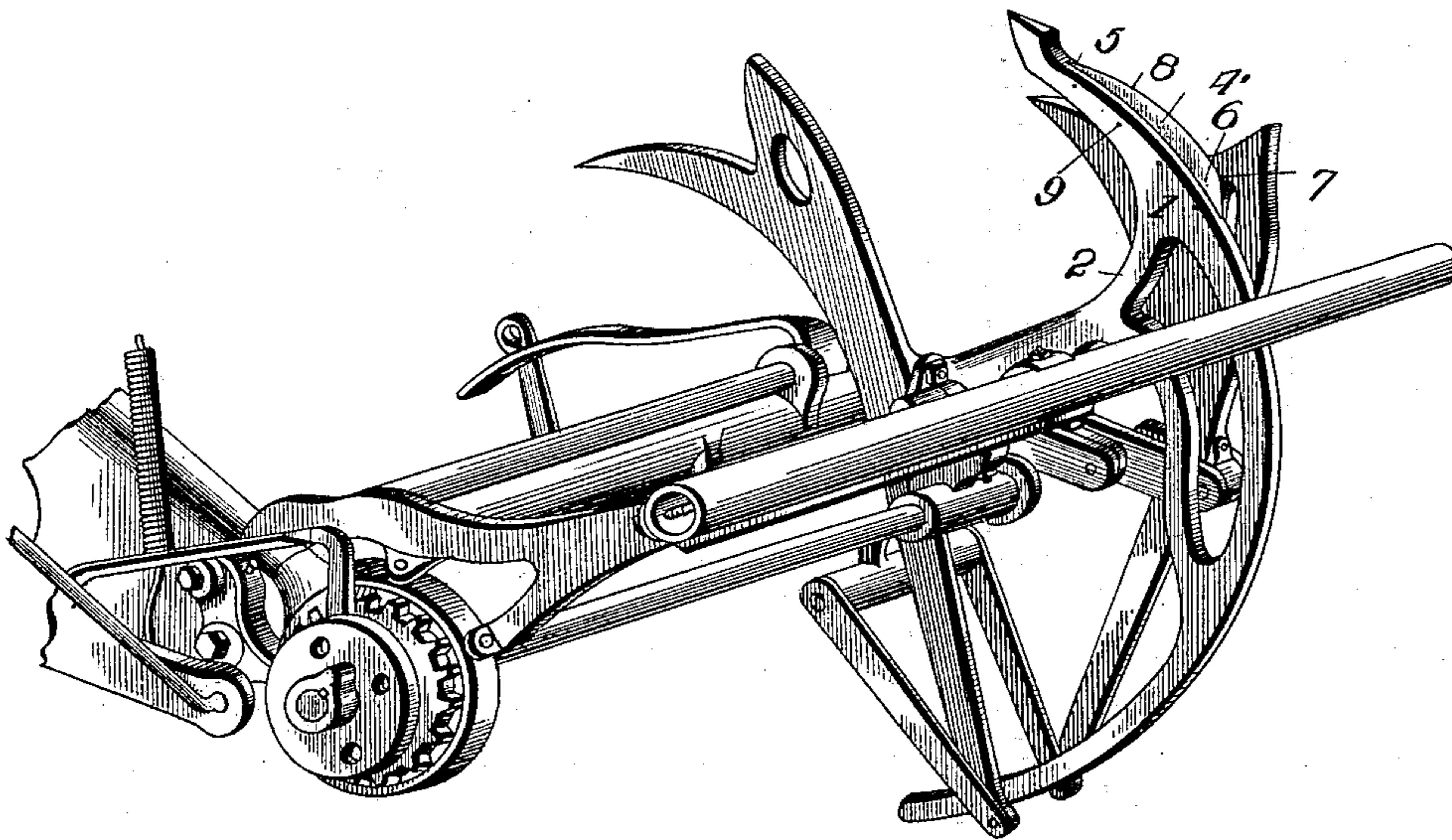
W. A. GLASGOW.  
NEEDLE ATTACHMENT FOR SELF BINDERS.

(Application filed Nov. 14, 1898.)

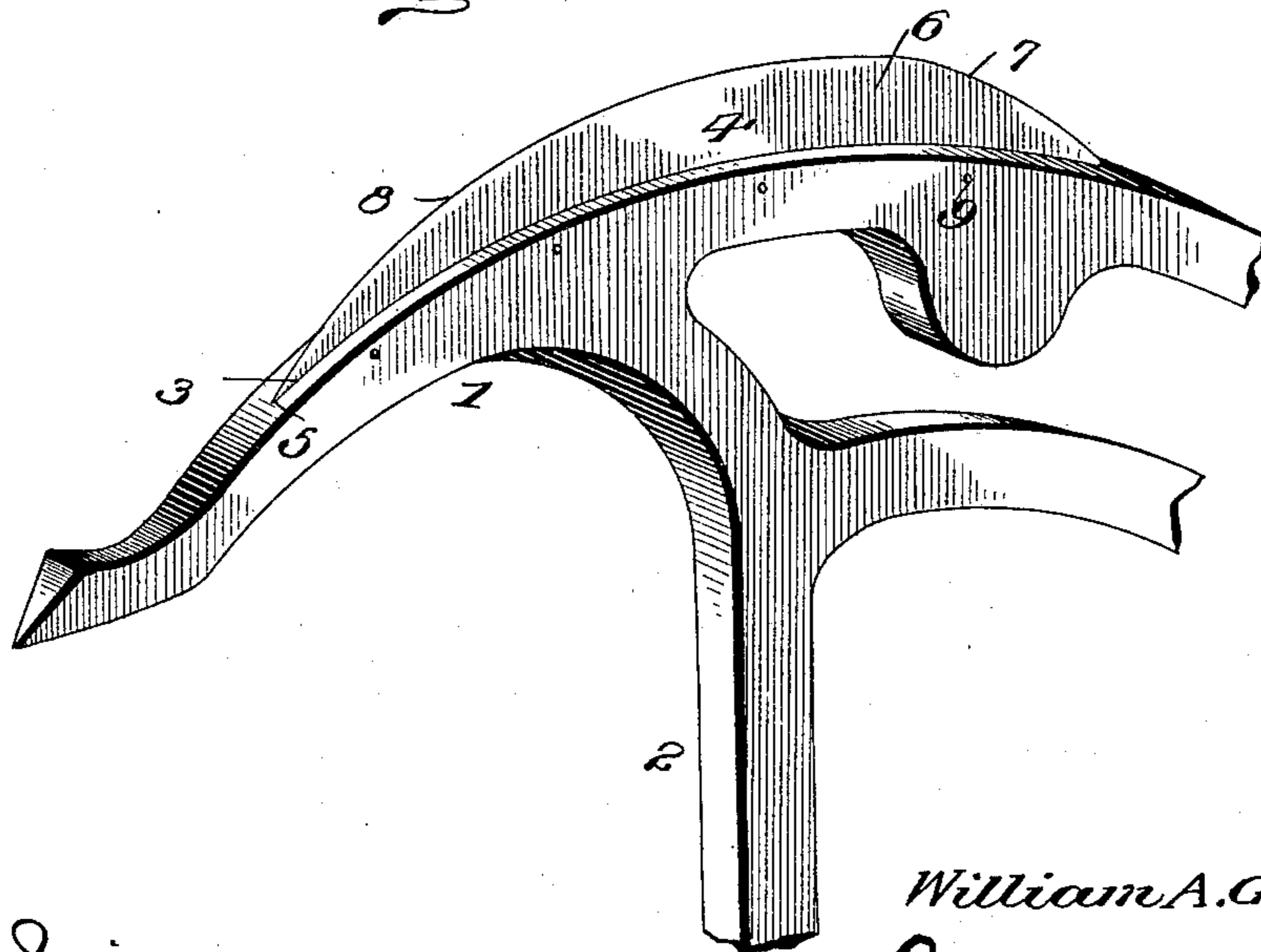
(No Model.)

2 Sheets—Sheet 1.

*Fig. 1.*



*Fig. 2.*



Witnesses

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# UNITED STATES PATENT OFFICE.

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## NEEDLE ATTACHMENT FOR SELF-BINDERS.

SPECIFICATION forming part of Letters Patent No. 624,325, dated May 2, 1899.

Application filed November 14, 1898. Serial No. 696,435. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. GLASGOW, a citizen of the United States, residing at Scandia, in the county of Republic and State of Kansas, have invented certain new and useful Improvements in Needle Attachments for Self-Binders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to needle attachments for self-binding harvesters.

In the operation of self-binders they frequently exceed a normal pull and run, especially in wet tangled grain, on account of the needle which carries the end of the twine sticking fast and not being able to penetrate the mass of grain that has been brought up into place to be tied. In consequence of this resistance to the free operation of the needle the machine as an entirety is often stopped, and to make it run an additional horse-power is required. The improvement completely remedies the previous disadvantages encountered by cutting the wet tangled straws as they come in the way, and thereby permitting the needle to pass freely into place and back again. So few straws are cut that there is no waste or scattering of the same, but they drop into the mass of grain below and are tied in the middle of the next sheaf.

The invention consists in the construction and arrangement of the parts more fully hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a part of a self-binder mechanism, showing the improved device applied thereto. Fig. 2 is a detail perspective view of the needle and knife thereon. Fig. 3 is a detail perspective view of the knife-blade detached. Fig. 4 is a transverse section through a part of the needle and knife shown by Fig. 2. Fig. 5 is a perspective view of a needle, showing a modification in the arrangement of the knife.

Referring to the drawings, wherein similar numerals are utilized to indicate corresponding parts in the several views, the numeral 1 designates a needle-arm, having a radius-bar 2, of ordinary or well-known construction so far as the general form is concerned. As

shown by Figs. 1, 2, and 4, the needle-arm has a slot or recess 3 in its outer edge, and therein is removably fitted a knife-blade 4, which is gradually tapered toward the front end 5 and rearwardly enlarged to a point of maximum width, as at 6, and then again reduced to form a rear heel 7. The knife-blade is similar in both forms and has a convex cutting edge 8 of gradually-elongated form in a regular curve until the beginning of the heel is reached and from whence it slopes inwardly in a curved line or arc having a shorter radius than that of the main edge 8. After the back portion of the blade is seated in the recess 3 suitable fastenings 9 are removably passed transversely through the needle-arm and said portion of the blade.

In operation the needle-arm passes through the grain in a curved plane and the knife is brought to bear upon and gradually sever the resisting or obstructing grain. It will be observed that the heel of the knife-blade is located about the point on the needle-arm at which the strongest resistance will take place, or at that point where the greatest density will exist, and the cut made will be gradual until the said heel is drawn around, which effectually clears the arm at about the time the return upward movement begins. It will also be seen that when the heel of the knife-blade operates on the grain the needle-arm will have penetrated the said grain a considerable distance and the greatest weight will be brought to bear on said arm. At this time the said heel of the blade clears a path for the free movement of the balance of the arm and avoids drag or interference with a continuous easy movement and dispenses with additional operative power.

In Fig. 5 the knife-blade is shown applied to one side of the needle-arm, and by this means the improvement can be easily applied to needle-arms now in use or be primarily attached in this position. The operation of this form of the device is the same as that heretofore described. The blade can be easily removed at any time when worn or broken and another substituted therefor at a minimum expense, or for the purpose of sharpening the same.

Changes in the proportions, dimensions, and minor details could be resorted to with-

out departing from the nature or spirit of the invention.

Having thus described the invention, what is claimed as new is—

- 5 The combination with a continuous regularly-curved unbroken needle-arm for a self-binder having a point at one end, of an unyielding cutting-blade independent of and removably attached to said arm adjacent the  
10 point, the said blade being reduced at the front end adjacent said point of the needle-

arm and gradually widened toward the rear to form a main convex cutting edge terminating at the beginning of a heel from whence it slopes inwardly in a curved line or arc having a 15 shorter radius than said main cutting edge.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM A. GLASGOW.

Witnesses:

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J. G. STOFER.