(No Model.)

F. R. WILLIAMS.

MACHINE FOR MANUFACTURING TWINE FOR USE IN GRAIN BINDING HARVESTERS.

No. 429,829. Patented June 10, 1890.

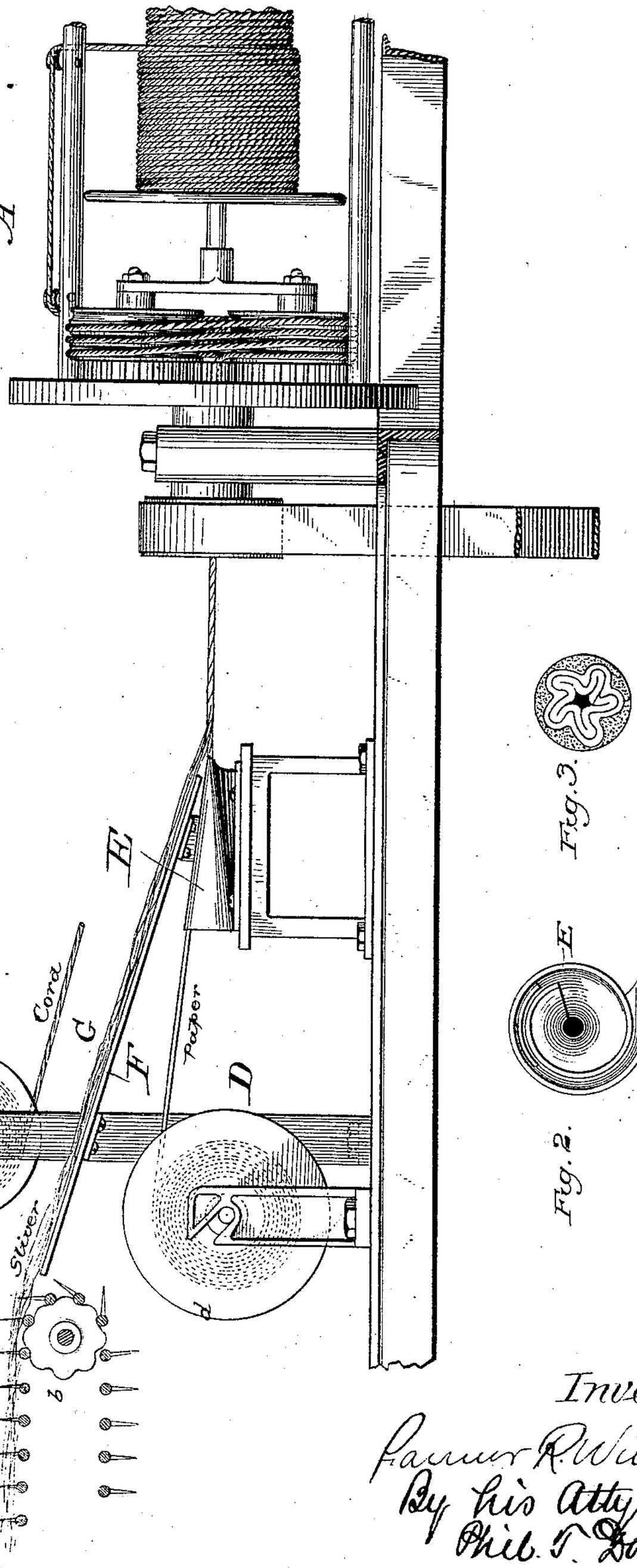

Fig. 1.

Fig. 3.

Fig. 2.

Witnesses.

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UNITED STATES PATENT OFFICE.

FARMER R. WILLIAMS, OF BELOIT, WISCONSIN, ASSIGNOR TO THE WILLIAM DEERING & COMPANY, OF CHICAGO, ILLINOIS.

MACHINE FOR MANUFACTURING TWINE FOR USE IN GRAIN-BINDING HARVESTERS.

SPECIFICATION forming part of Letters Patent No. 429,829, dated June 10, 1890.

Application filed September 18, 1889. Serial No. 324,333. (No model.)

To all whom it may concern:

Be it known that I, FARMER R. WILLIAMS, a citizen of the United States, residing at Beloit, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Machines for Manufacturing Twine for Use in Grain-Binding Harvesters, of which the following is a description, reference being had to the accompanying drawings.

This invention relates to a machine intended more particularly for producing twine composed of a paper core and a fibrous covering wound thereon and twisted therewith, as described and claimed in my application for Letters Patent of the United States filed September 18, 1889, Serial No. 324,332, designated "Case G."

In the accompanying drawings, Figure 1 is a side elevation of my mechanism. Fig. 2 is a rear end elevation of the guide or former to act upon the paper. Fig. 3 is a cross-section of the twine produced by my machine.

Referring to the drawings, A represents a rotary spinning-head having a tubular journal, through which the twine is drawn, and by which it is twisted as in ordinary twine-forming machines. As the details of this machine are familiar to those skilled in the art and foreign to the present invention, it is deemed unnecessary to describe them further herein. They may be of any construction adapted for the twisting or spinning of twine.

B represents a toothed feeding-chain arranged to travel over a sustaining-pulley *b* to deliver a sliver of fibrous material G constantly to an inclined guide F, over which it descends to be twisted into the twine, as will be presently explained.

D represents a long strip of paper coiled upon a supporting-drum *d*, from which it is delivered to the forming and twisting mechanism.

E is a stationary longitudinally-tapered former or guide, having in cross-section a spiral or snail-wheel form, as shown in Fig. 2.

This former is located between the reel and the spinning-head. The paper strip is passed through this former and thence to the spinning-head, being first coiled or folded by the former into tubular shape, after which the tube is collapsed and twisted by the spinning action.

The sliver used as a covering for the paper is delivered between the former E and the spinning-head, and is thus wound spirally around the paper, and also twisted or entwined therewith, so that the two form jointly a smooth, strong, and pliable twine.

It is sometimes preferred to employ the fibrous covering in a twisted condition—that is, in the form of a cord, instead of in the form of a sliver. When the cord is to be thus used, I provide a drum C, on which it is wound, and from which it may be led directly to the paper between the former E and the spinning device.

The product of the machine is a twine having a fluted paper core and a covering of fibrous material, as shown in Fig. 3.

I do not claim herein the combination of the spinning mechanism and the former, this combination being made the subject of a separate application for Letters Patent of the United States filed by me on the 18th day of September, 1889, Serial No. 324,331, designated "Case F."

Having thus described my invention, what I claim is—

1. The combination of a twisting or spinning mechanism, a former E, located in advance of said mechanism and adapted to coil a paper strip into tubular form, and the support arranged to deliver the fibrous covering between the former and the spinning mechanism.

2. In combination with the spinning mechanism, the former E, the reel *d*, a guide F, and a sliver-feeding mechanism B.

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Witnesses:
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