(No Model.)

O. H. WATKINS.

TWINE FOR BINDING GRAIN, &c.

No. 431,298. Patented July 1, 1890.

Fig. 1

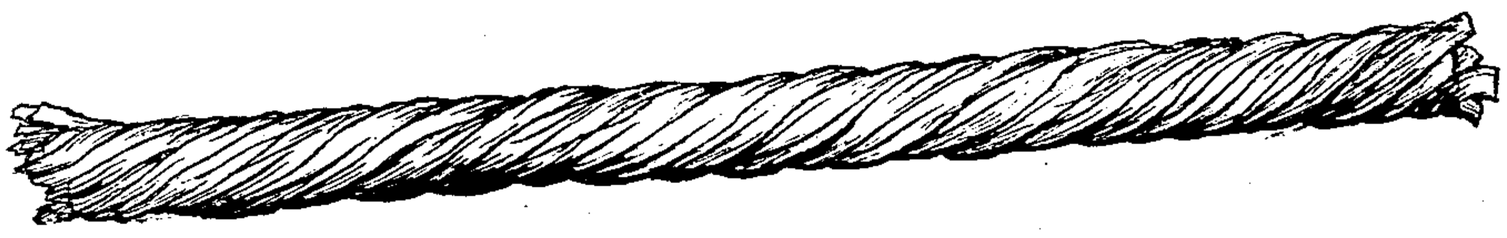
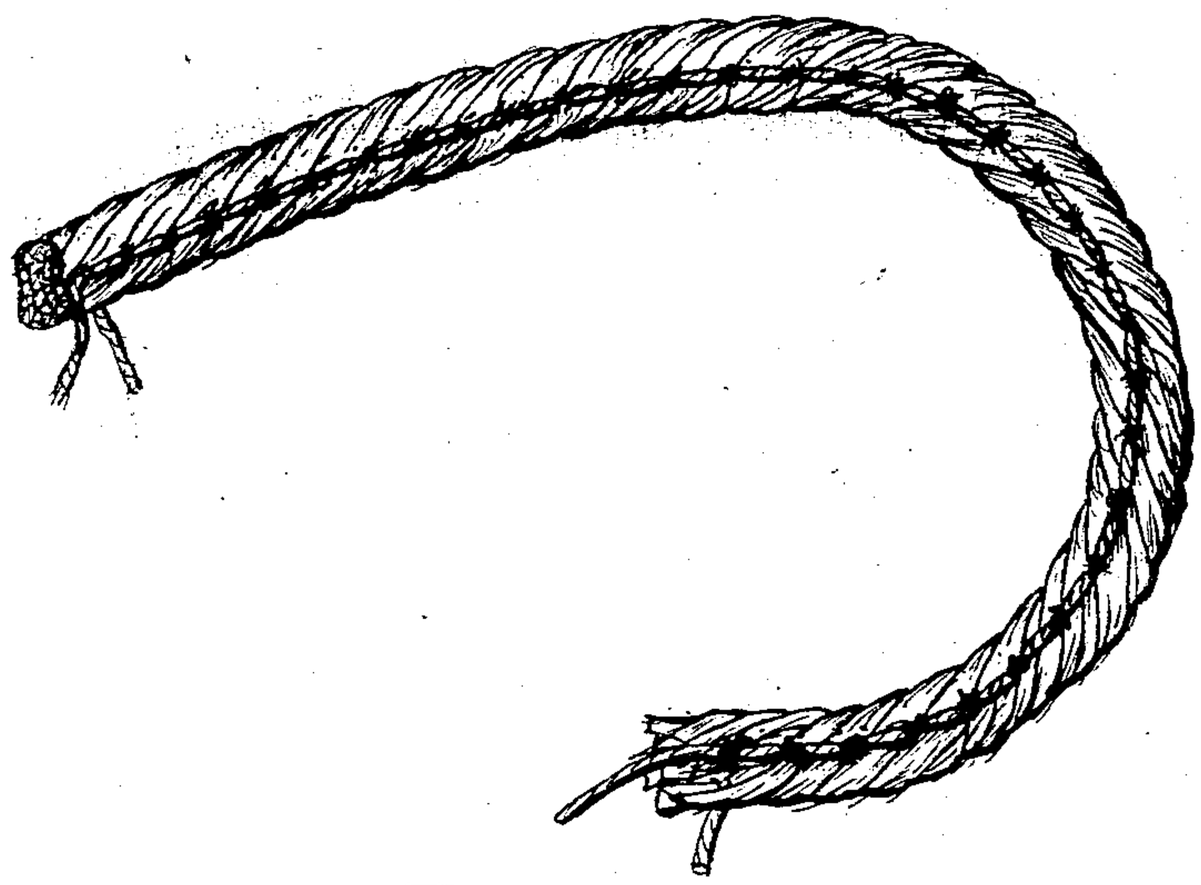


Fig. 2



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UNITED STATES PATENT OFFICE.

ORLA H. WATKINS, OF ELDORA, IOWA.

TWINE FOR BINDING GRAIN, &c.

SPECIFICATION forming part of Letters Patent No. 431,298, dated July 1, 1890.

Application filed March 13, 1890. Serial No. 343,804. (No specimens.)

To all whom it may concern:

Be it known that I, ORLA H. WATKINS, a citizen of the United States of America, residing at Eldora, in the county of Hardin and State of Iowa, have invented a new and useful Twine for Binding Grain, &c., of which the following is a specification.

Heretofore straw has been twisted into bands in various ways for the purpose of binding grain. Continuous ropes of different sizes and lengths have also been made of straw in various ways for various purposes. A twine adapted to be spooled and applied by means of an automatic grain-binder to bind gavels on a harvesting-machine, as it is advanced in a field to cut grain, has also been made by twisting straw and wrapping it with a thread.

My invention consists in a twine composed of straw, grass, or hay, re-enforced by stitching with a thread, as hereinafter set forth, in such a manner that the ends of the straws will be fastened and if the thread breaks the ends of the thread will remain fastened, and the twine will not untwist to loosen the straws, and the thread will not become separated from the straws, but the twine will remain compact and smooth and of uniform thickness, as required, to pass through the eye of a needle and the knot-tying mechanism of a grain-binder machine.

Figure 1 of the accompanying drawings shows a piece of straw-twine twisted, as required, before the thread is applied; and Fig. 2 shows a piece to which the thread has been applied, as required, to produce the finished article of manufacture.

The straw band or twine can be readily formed and twisted by hand or machinery, and then stitched with thread by hand or machinery; but I design producing and using a machine for manufacturing the twine that will simultaneously form and twist and stitch and finish and spool the article at a nominal cost, as required, to supply a compact grain-binding material that is uniform in thickness and sufficiently strong and durable for the purpose contemplated. The thickness of a band, rope, or twine thus constructed of a cheap material that has a limited degree of tensile strength and is re-enforced by stitching with a thread may vary as desired.

The straw may be improved, as required, to prevent brittleness and breaking and decaying by immersing it in lye or a suitable liquid composition before it is twisted or after it is twisted and stitched, and when the finished product becomes dry and stiff it can readily be made pliable by soaking it in water, oil, or any other suitable liquid before it is to be used for binding grain or for any other purpose for which it is adapted.

I claim as my invention—

A band, rope, or twine composed of straws twisted together and re-enforced and fastened by thread stitched therethrough, in the manner set forth, for the purposes stated.

ORLA H. WATKINS.

Witnesses:
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