J. TAYLOR.

HAY-PRESS.

No. 185,875. Patented Jan. 2, 1877.

Fig. 1

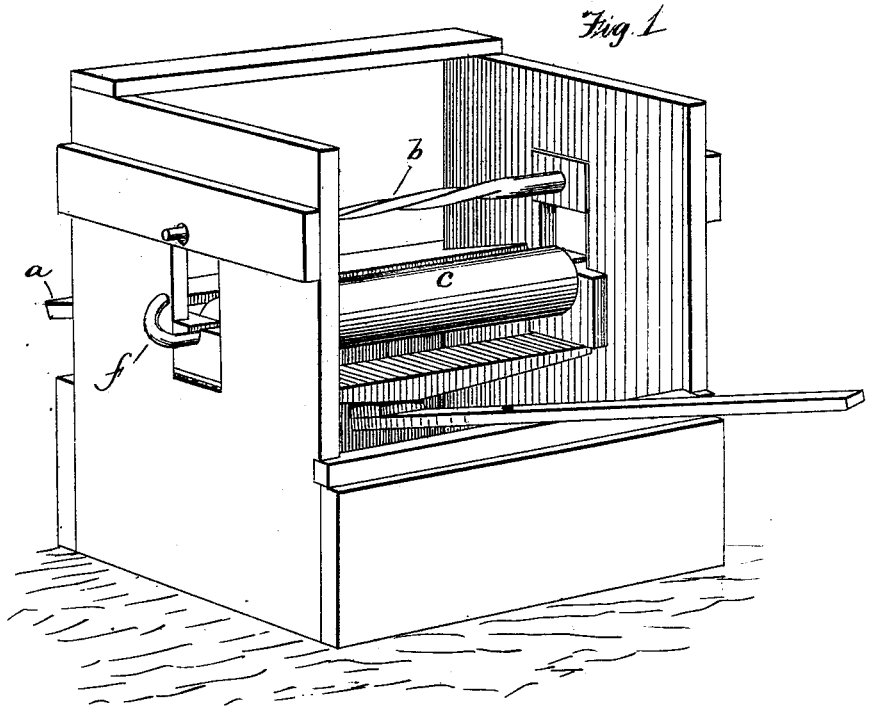
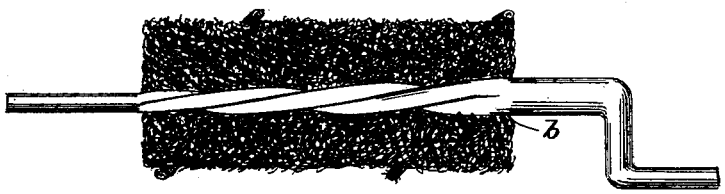



Fig. 2




Witnesses
Grenville Lewis.
M. Church

Inventor.
John Taylor.
By Hill, Ellsworth & Spear
His Attys.

# UNITED STATES PATENT OFFICE.

JOHN TAYLOR, OF ALDEN, MINNESOTA.

## IMPROVEMENT IN HAY-PRESSES.

Specification forming part of Letters Patent No. **185,875**, dated January 2, 1877; application filed December 26, 1876.

*To all whom it may concern:*

Be it known that I, JOHN TAYLOR, of Alden, in the county of Freeborn and State of Minnesota, have invented a new and Improved Apparatus for Forming and Compressing Hay into Bundles; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to the forming and compressing of hay and like material into a compact mass by winding it upon a spindle under pressure, for the purpose of reducing it to a solid compact form, and rendering it fit for fuel. It consists of a machine constructed for the purpose in the manner hereinafter described, and in the article produced by the machine.

The machine is represented in Figure 1 in perspective. Fig. 2 shows the spindle, with the hay wound thereon, the bundle or roll being shown in section.

The object of my invention is to provide a cheap and efficient substitute for wood or coal as fuel. In many parts of the northwestern section of the country, where there is a scarcity of wood and coal, the ordinary wild grasses, which are abundant, have been used as fuel, these grasses being twisted by hand and knotted into as compact a mass as possible by such a method. The utility of an article of fuel of such light inflammable material as dry grass in its natural condition, depends greatly upon the compactness of the mass to which it is reduced. The manufacture of bundles or twisted and knotted masses by hand is slow, and only partially effective; and the use of this material, though it is abundant where wood and coal are wanting, has been only on a limited scale.

In order to form a compact mass, which shall be easily compressed and retained in compressed condition, I have devised the method of rolling it, under pressure, upon a spindle, by which means the hay, being wound in successive layers on itself, will remain in solid condition, needing only such a band as will prevent it from unrolling.

For the purpose of making such bundles or rolls I have found the machine shown in the drawing, simple, cheap, and perfectly operative. In this form of the machine I use an open box, A, having a table, *a*, upon which the hay is fed to the spindle, on which it is wound. This is marked *b*, and is shown more clearly in Fig. 2. It is made of a square bar of metal, tapering, and preferably twisted, so that the corners of the bar shall form a sort of screw-thread. This bar may be provided with a crank for turning by hand, or, if other power be used, instead of the crank, a pulley may be placed on the end of the shaft. The shaft has suitable bearings in the sides of the box, and the parts are so adapted to each other that the shaft may be easily withdrawn. Below the shaft is a roller, *c*, the bearings of which are in blocks, which have free vertical motion in slots *d d* in the box A. This roller is pressed upward toward the spindle by means of a lever, *e*, which I have found sufficient for the purpose, though any other suitable means may be used. The outer end of the roller is provided with a hook, *f*, to which a wisp of hay may be attached for the purpose of twisting a band.

In the operation of my machine the hay is fed to the spindle in suitable quantity over the table *a*, and is connected to the spindle so as to be wound upon it by the revolution thereof. The roller beneath presses each layer as it is drawn under the spindle, and compacts it into a solid mass. When the roll is of sufficient size the feeding of the hay is discontinued, and a band of hay is applied at one end, and wound on by the continued revolution of the spindle. The band need obviously be wound only twice, or a little more, being wrapped around one end, and then swayed over to the other. The end may be secured by drawing it, by means of a hook, under the last fold, as it is wrapped around the roll. The office of the band is simply to hold the roll from unwinding.

In order to remove the roll from the spindle the roll is held fast and the spindle turned a half revolution backward. This, by reason of the twist, starts the spindle backward, and it may then be easily withdrawn. This leaves the roll or bundle in compact well-bound

form, suitable for transportation and use. The bundles are ordinarily made fifteen inches in length and six inches in diameter.

Using the ordinary wild grass, a fuel may be made, in this way, cheaper than wood or coal in most localities. The masses are so compact that they burn slowly and give out a large amount of heat, with very slight residuum of ashes.

I claim as my invention—

1. As an article of manufacture, a roll of hay or like material, formed by rolling and compression on a spindle, and bound, as set forth.

2. A machine for rolling hay into bundles, consisting of a spindle, adapted to revolve in bearings, and a roller, adapted to press the hay as it winds on the spindle, as set forth.

3. The combination of the roller revolving in movable bearings, the lever for pressing it against the hay, and the spindle, as set forth.

4. The combination of the hook fixed on the end of the roller on the outside of the box, as set forth.

5. In the described machine the twisted spindle, as set forth.

JOHN TAYLOR.

Witnesses:

H. B. COLLINS,

THOS. W. WILSON.