No. 861,376. PATENTED JULY 30, 1907.

J. A. LUSSIER.

FLAX PULLER.

APPLICATION FILED APR. 22, 1907.

2 SHEETS—SHEET 1.

FIG. 1

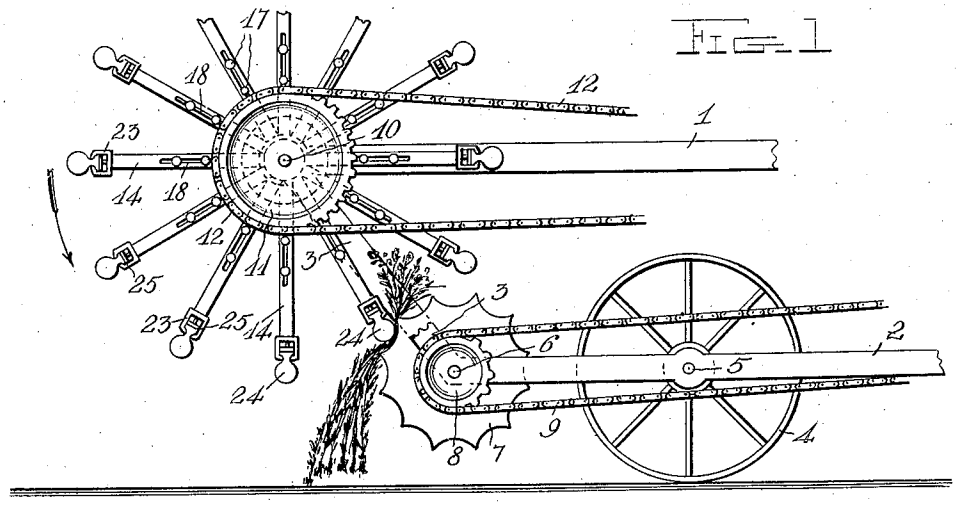


FIG. 2

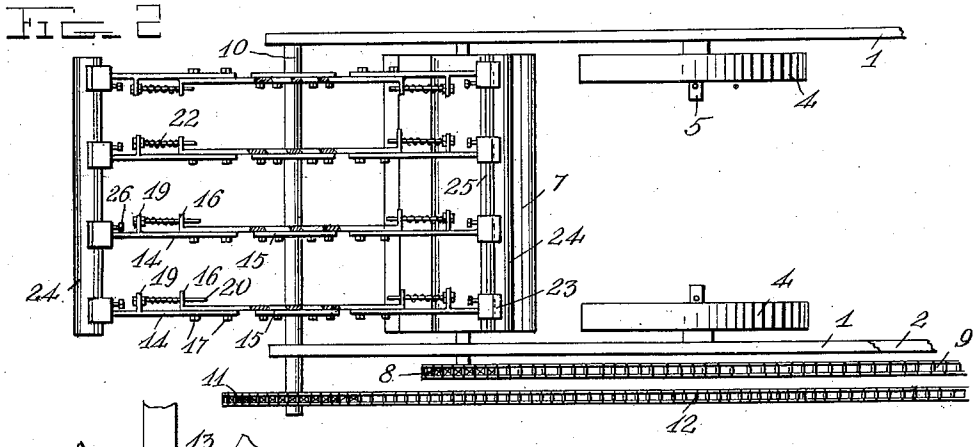


FIG. 3

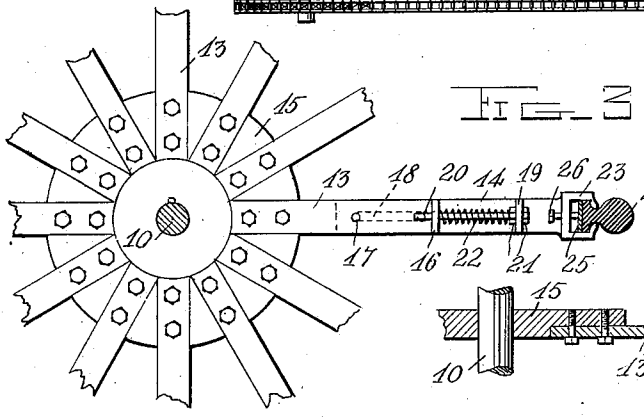
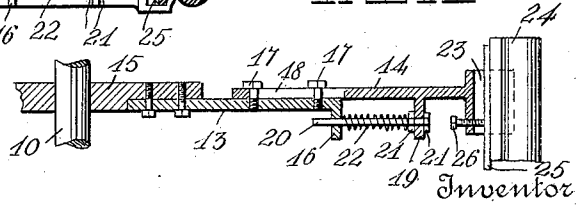


FIG. 4



Witnesses

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2 SHEETS—SHEET 2.

FIG. 5.

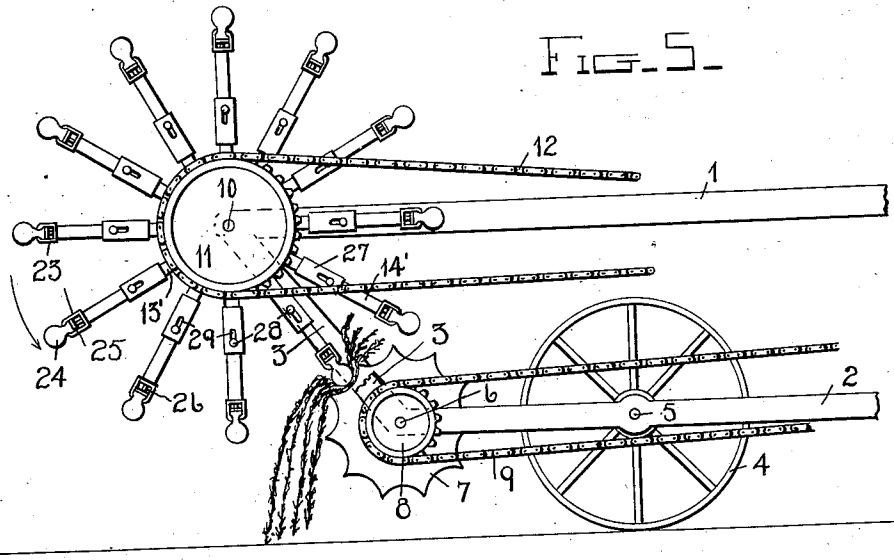


FIG. 6.

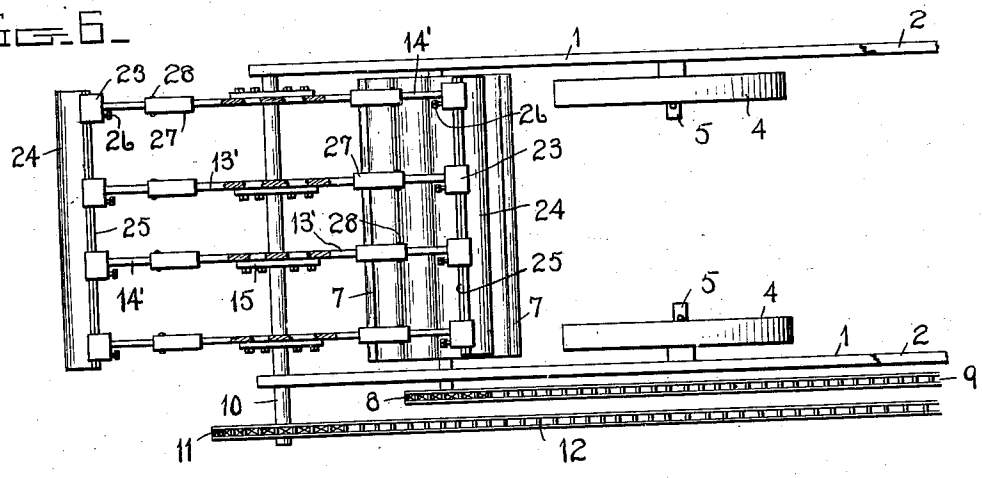
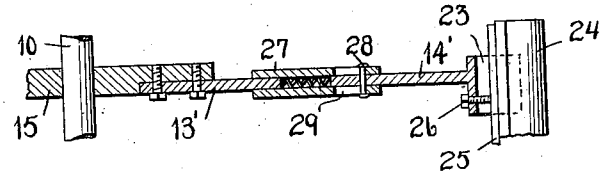


FIG. 7.



Witnesses

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FLAX-PULLER.

No. 861,376. Specification of Letters Patent. Patented July 30, 1907.

Application filed April 22, 1907. Serial No. 369,564.

To all whom it may concern:

Be it known that I, JOSEPH A. LUSSIER, a citizen of the United States, residing at St. Louis Park, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Flax-Pullers; and I do 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 flax pullers.

The object of the invention is to improve and simplify the construction, and increase the efficiency of such machines, and to secure a large saving in the flax being pulled.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a flax puller, as will be hereinafter fully described and claimed.

In the accompanying drawings forming a part of this specification and in which like characters of reference indicate corresponding parts, Figure 1 is a view in side elevation of the machine; Fig. 2 is a top plan view of the same; Fig. 3 is an enlarged detail view of one of the reel arms, and Fig. 4 is a longitudinal sectional view through one of the reel arms. Fig. 5 represents a side elevation of a machine showing another form of reel arm; Fig. 6 represents a top plan view thereof; and Fig. 7 represents a longitudinal section of one of the reel arms shown in Figs. 5 and 6.

The machine is attached to a self-binder, not shown, by frame beams or members disposed on each side of the puller, and which serve also to support the operative portions of the apparatus.

As shown in Fig. 1, each frame beam comprises two approximately parallel members 1 and 2 connected by an angularly-disposed member 3. This form of supporting frame has been found efficient for the purpose, but it is to be understood that the invention is not to be limited thereto, as any other arrangement of frame beams may be employed, if found necessary or desirable, and still be within the scope of the invention.

The frame is supported upon a pair of traction wheels 4 which may be assembled on the frame in any preferred manner, but are herein shown as attached to the beams 2 by stud bearings 5.

Journaled in the frame beams, in this instance at the point of juncture of the members 2 and 3 is the shaft 6 of a fluted drum or pulling cylinder 7, one end of the shaft having keyed or otherwise secured to it a sprocket wheel 8 around which passes a sprocket chain 9 to a suitable source of power, and by which the pulling drum is driven.

Journaled in the frame beams 1, preferably at their point of juncture with the members 3 is a shaft 10, one end of which carries a sprocket wheel 11 around which passes a sprocket chain 12 to a suitable source of power, and by which the shaft is driven. This shaft has combined with it the reel arms which form one of the essential features of this invention, the construction of which is such as not only, by coaction with the pulling drum, to effect the pulling of the flax, but also a saving of a large part thereof that with machines in common use, would be lost. As herein shown, there are four sets of arms, but the invention will not be limited to this number, and as each arm is a counter part of the other, a description of one will serve for all. As is well understood, it is essential in the proper pulling of flax that the contact between the pulling drum and reel arms should be resilient in character in order that there shall be sufficient frictional contact between the drum and the arms to insure the detachment of the flax. Spring-pressed or yielding reel arms are old, but that which differentiates the reel arms of the present invention from those heretofore employed is that in addition to being as a whole resilient, that portion of the arms that contacts with the pulling drum is also yielding in character whereby there may be a greater frictional contact between the reel arms and the pulling drum, without detriment to either. Each reel arm, as shown, in Fig. 3 consists of two members 13 and 14. The member 13 is bolted or otherwise rigidly secured to a disk 15 keyed to the shaft 10 and is provided at its outer end with an orificed offset or ear 16. The member 14 is held assembled with the member 13 by bolts 17 which project through a longitudinal slot 18 in the member 14, whereby to permit the member 14 to have sliding movement relatively to the member 13. The member 14 is provided intermediate of its ends with an ear or lug 19 through which projects a rod or bar 20 that is held rigid with the ear 19 by nuts 21 disposed on opposite sides thereof and bear thereagainst. The inner end of the bar 20 projects through the ear 16, and upon the bar is arranged a coiled spring 22 that bears at its extremities respectively against the ear 16 and the inner one of the nuts 21. From this arrangement, it will be seen that the object of the spring 22 is to hold the member 14 projected, and when the said member is shifted by contact with the pulley drum, it immediately returns it to its normal position.

The outer end of each member 14 carries a channeled head 23, and seated within the heads of each alined series of members 14 is a rubber cushion 24, the outer surface of which is preferably rounded in order to conform to the contour of the flutes in the pulling drum. Arranged within and extending through an alined series of heads, back of the cushions, is a clamp plate 25 that is engaged by set screws or bolts 26, carried by the heads, which, upon being

turned in the appropriate direction force the plate outward and thus firmly secure the cushions in position.

In the operation of the apparatus, the cushions 24 first contact with the pulling drum and pinches in the flutes thereof the flax, the frictional contact between the cushions and the flax being maintained and accentuated by the springs 22 that yield on the rotation of the drum, in a manner that will be readily understood.

In the form illustrated in Figs. 5, 6 and 7 the preferred form of the reel arms is shown. In this form, the arms are composed of two members 13′ and 14′ having their adjacent ends arranged in a sleeve 27 with a coiled spring 22′ arranged between them. This sleeve 27 is riveted or otherwise fixed at its inner end to the member 13′ and the member 14′ has a sliding connection with said sleeve by means of a pin 28 on the arm 14′ which projects through a longitudinally arranged slot 29 in the sleeve 27. The spring is thus protected and permits the arms to yield when it passes the center of the drum 7.

The improvements herein described while simple in character, will be found thoroughly effective for the purposes designed and will result in a marked saving in the amount of flax pulled, inasmuch as by the employment of the cushion 24, no flax that is once forced into the flutes of the roller will escape. Furthermore, the yielding character of the cushions will prevent cutting or meshing of the flax which is an objectionable feature and one that also entails loss as the bruised and mashed portions are liable to fall from the machine before passing to the self-binder.

Having thus described my invention, what I claim as new is,—

1. The combination with a fluted pulling drum, of a reel consisting of longitudinally yieldable reel arms, and cushioned pulling members carried thereby.

2. The combination with a fluted pulling drum, of longitudinally yieldable reel arms, resilient cushions carried by the arms, and means for clamping the cushions in position.

3. The combination with a fluted pulling drum, of a reel comprising a plurality of longitudinally yieldable arms, a channeled head carried by the outer extremity of each of the arms, yieldable cushions carried by the heads, and means for securing the cushions within the heads.

4. In a flax puller, a reel comprising a disk, an arm rigid therewith and provided with a terminal orificed ear, a second arm slidably connected to the first arm and provided intermediate of its ends with an orificed ear, a bar projecting through and rigidly secured at one end in the last named ear and projecting at its other end through the first named ear, a coiled spring mounted upon the bar and coacting with the two ears to hold the second arm normally projected, a channeled head carried by the second arm, and a cushion carried by the head.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOSEPH A. LUSSIER.

Witnesses:
RALPH SOUDER,
M. E. WILSON.