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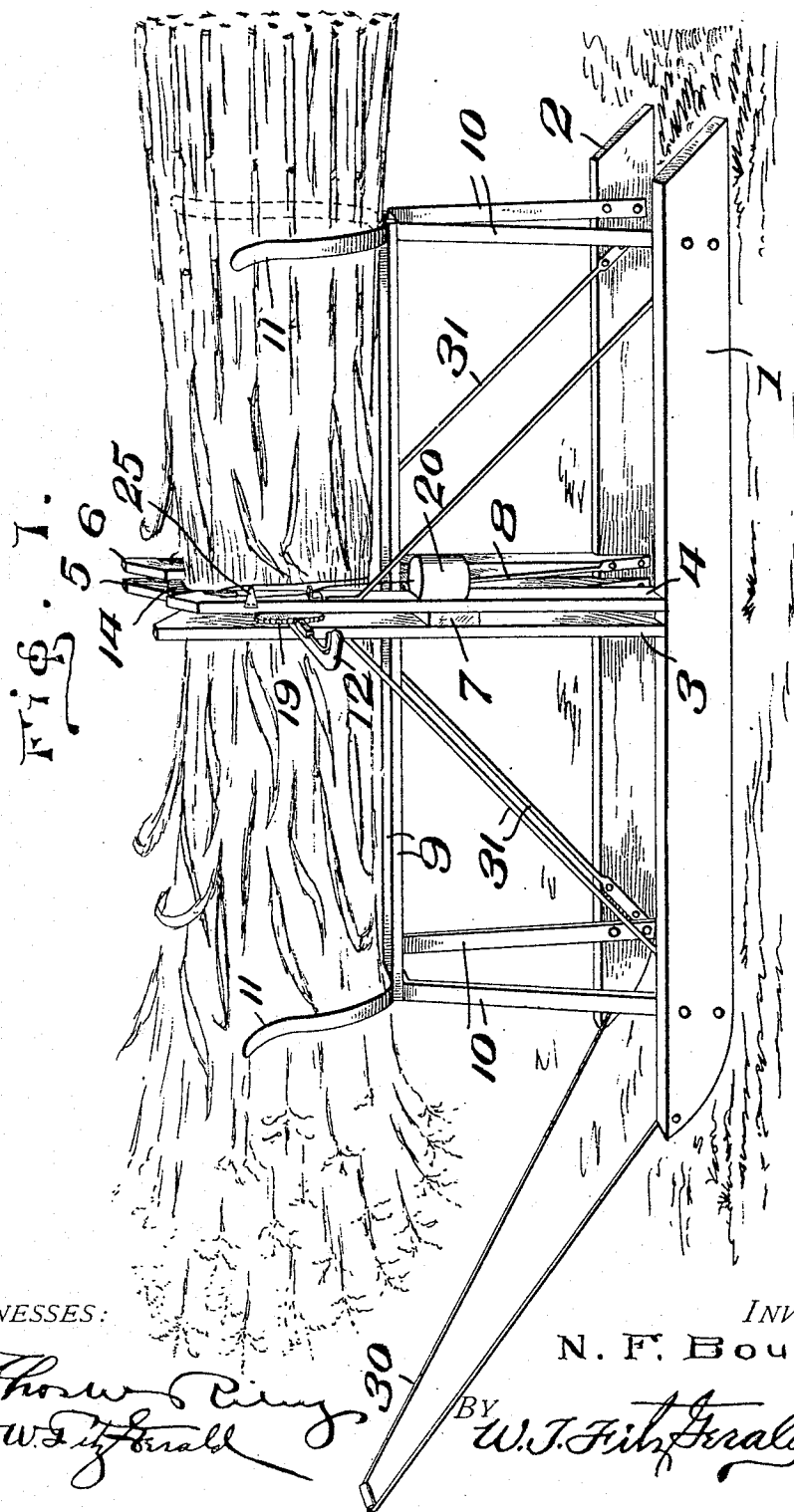
No. 879,356.

N. F. BOURNE.
BINDER.

PATENTED FEB. 18, 1908.

APPLICATION FILED JULY 5, 1907.

3 SHEETS—SHEET 1.



WITNESSES:

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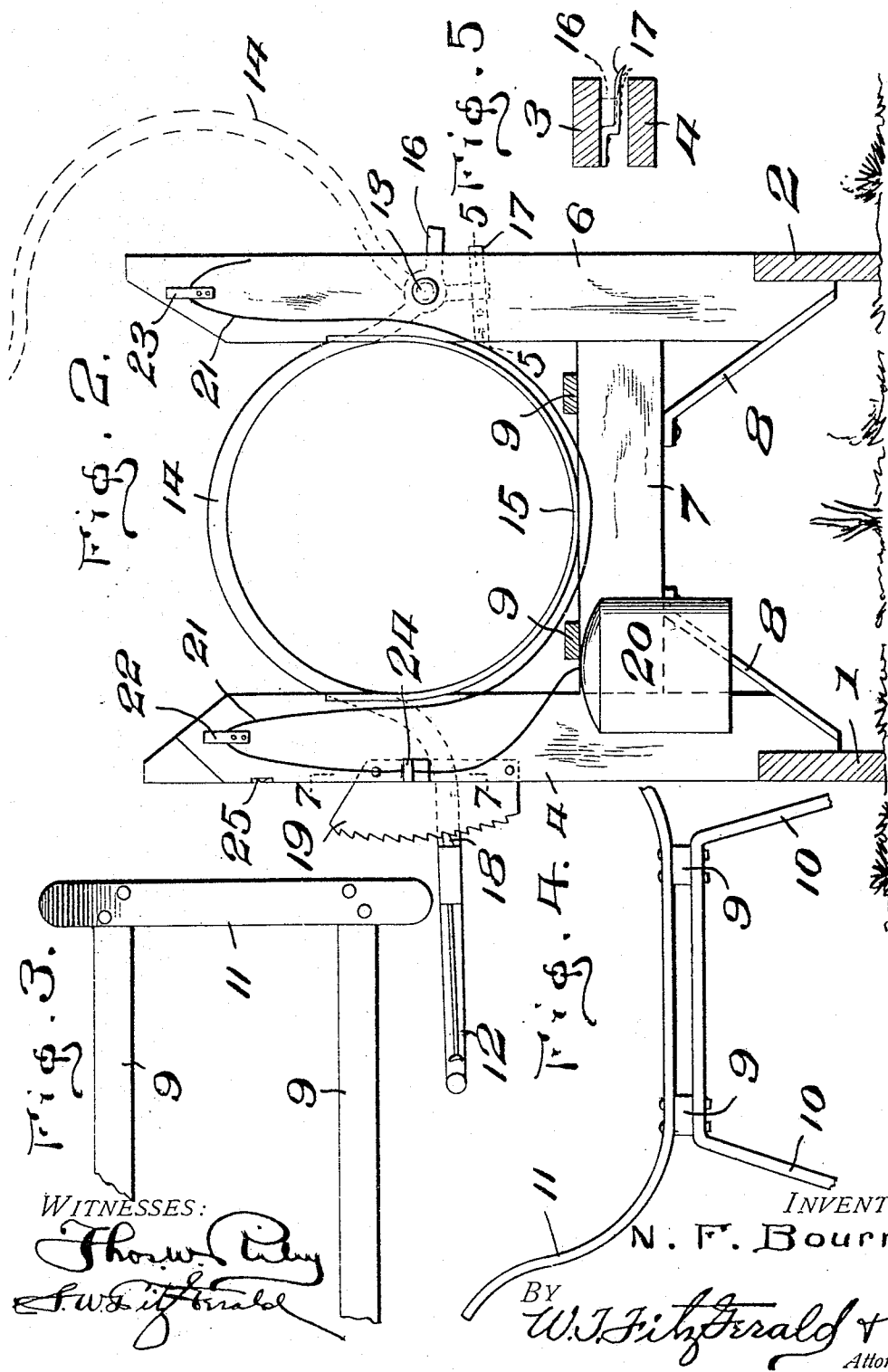
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3 SHEETS—SHEET 3.

Fig. 9.

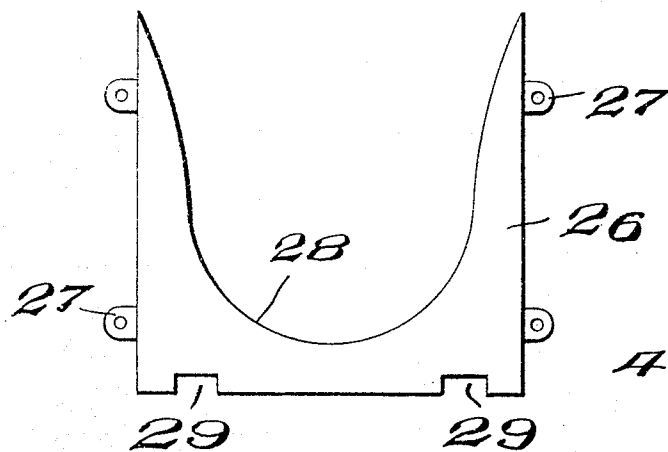


Fig. 6.

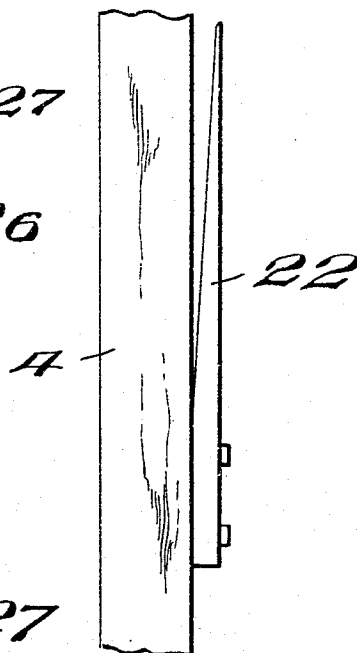


Fig. 10.

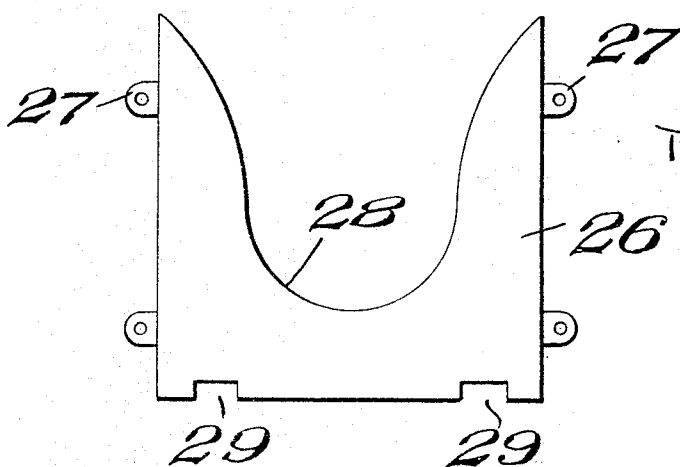


Fig. 7.

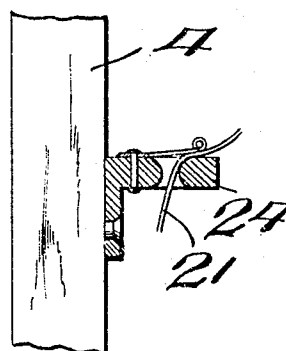
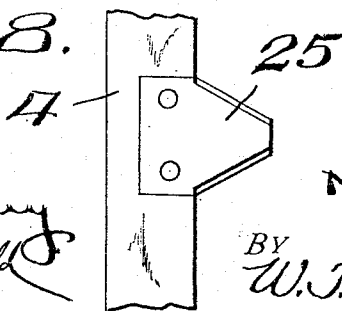


Fig. 8.



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UNITED STATES PATENT OFFICE.

NATHAN FRANCES BOURNE, OF FERRYVILLE, WISCONSIN.

BINDER.

No. 879,356.

Specification of Letters Patent.

Patented Feb. 18, 1908.

Application filed July 5, 1907. Serial No. 382,294.

To all whom it may concern:

Be it known that I, NATHAN F. BOURNE, a citizen of the United States, residing at Ferryville, in the county of Crawford and State of Wisconsin, have invented certain new and useful Improvements in 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.

My invention relates to new and useful improvements in binders, and more particularly to that class adapted to be employed for binding fodder and my object is to provide a device of this class whereby the same may be transported from place to place and the fodder from the shock bound into bundles before or after being husked.

A further object is to provide means for holding the fodder in position on the frame of the binder.

A further object is to provide means for compressing the fodder into a compact bundle and holding the same until tied and a still further object is to provide means for retaining binding cord in position to be readily disposed around the bundle after the same has been compressed.

Other objects and advantages will be hereinafter referred to and more particularly pointed out in the claims.

In the accompanying drawings which are made a part of this application, Figure 1 is a perspective view of my improved binder showing the same in operation. Fig. 2 is a transverse, vertical, sectional view through the binder. Fig. 3 is a detail plan view of the rear of the binder frame. Fig. 4 is a detail end elevation thereof. Fig. 5 is a detail, sectional view as seen on line 5—5, Fig. 2. Fig. 6 is a detail elevation on an enlarged scale, showing the manner of retaining the binding cord in position on the binder. Fig. 7 is a detail, sectional view on an enlarged scale, as seen on line 7—7, Fig. 2. Fig. 8 is a detail elevation of a cutting knife, and a portion of the frame, to which the same is secured, and, Figs. 9 and 10 are detail elevations of bundle forming plates employed in connection with certain classes of fodder.

Referring to the drawings in which similar reference numerals designate corresponding parts throughout the several views, 1 and 2 indicate runners, to which are secured standards 3 and 4 and 5 and 6, respectively, said

standards being arranged in pairs and spaced apart.

Extending laterally between the standards, and having its ends fixed between the two sets of standards, is a beam 7, said beam being placed a distance above the lower ends of the standards and reinforced by means of brace members 8, said brace members being secured at one end to the beam and at their opposite end to the lower ends of the standards.

The beam 7 is arranged to form a support for the central portion of rails 9, said rails extending longitudinally with the runners 1 and 2 and substantially the full length thereof, the outer ends of said rails being supported by means of substantially U-shaped supports 10, the lower ends of said supports being fixed to the runners 1 and 2.

Secured to the supports 10 and immediately over the ends of the rails 9 are bundle forming racks 11, the object of said racks being to retain the stalks of the fodder in position on the binder until such time as the bundle may be compressed and tied.

Pivotally mounted between the standards 5 and 6, and at a suitable distance above the beam 7, is a compressing lever 12, a bolt 13 extending through the standards 5 and 6 and one end of the lever, said bolt forming a pivot pin therefor and the lever is of sufficient length to extend between and beyond the standards 3 and 4.

That portion of the compressing lever between the sets of standards is provided with a bowed or upwardly curved portion 14, which is adapted to extend over the bundle of fodder when the lever is lowered, the bowed portion causing the bundle to assume a semi-circular form and in order to render the bundle substantially circular in cross section, I provide a pair of semi-circular bands 15, the upper free ends of which are secured to the inner edges of the standards 3 and 5 and 4 and 6, respectively, so that the lever, in its downward course, will pass between the upper ends of the bands.

The pivoted end of the lever 12 is provided with a shank 16, which is adapted to extend into engagement with a spring latch 17 when the lever is in its elevated position, thereby holding the lever in its elevated position until such time as it is desired to press the bundle, said spring latch being carried by the standard 5 and between the standards 5 and 6.

In placing the fodder in position to be

bound, the same is introduced from one side of the binder and to this end, therefore, the arms at one end of the racks 11 are made shorter than the opposite arms, so that the fodder may be more readily placed in position on the binder.

In operating my improved form of binder, the lever 12 is elevated to the position shown by dotted lines, shown in Fig. 2 and is held in this position by means of the spring latch 17 engaging the shank 16, after which the fodder is deposited between the standards 3 and 4 and 5 and 6 and between the arms of the rack 11 and after a sufficient amount of the fodder has been so placed, the lever 12 is lowered and by directing downward pressure on the extended end thereof, the fodder will be firmly compressed between the bowed portion 14 and semi-circular bands 15 and the lever is held in this position until such time as a binding cord can be placed around the bundle, by providing a latch 18 on the outer end of the lever 12, which engages with a rack bar 19 carried by the standard 4, and it will be seen that when the lever is depressed and the latch directed into engagement with the teeth on the rack bar, the lever will be held in its depressed position until such time as the latch is disengaged from the rack bar.

In order to conveniently retain a binding cord in position to be readily disposed around the bundle, I provide a box 20, which is adapted to be secured to the standard 4, or other convenient point on the binder, in which is adapted to be disposed a ball of binding twine 21, the upper end of the box being provided with an opening, through which the end of the twine extends and in placing the twine in position to be readily grasped and disposed around the bundle, clamping fingers 22 and 23 are secured adjacent the upper ends of the standards 4 and 5, respectively, the inner faces of said fingers being tapered so that the twine will be clamped between the finger and the faces of the standards.

In placing the twine in position on the binder, the end thereof is first disposed through a spring-controlled tension 24, thence from the finger 22 and the free end thereof directed into engagement with the finger 23, that portion of the twine between the two fingers being given a sufficient slack to hang in a plane below the semi-circular bands 15, so that when the fodder is placed in position on the binder, the twine will extend below the same and in position to be readily tied around the bundle and after the lever 12 has been lowered to compress the fodder, the twine is released from the fingers 22 and 23 and tied around the bundle, after which that portion of the twine between the tie and box is severed by disposing the same in engagement with a knife 25 secured to one edge of the standard 4.

As soon as the twine has been tied around the bundle, the lever 12 is elevated and the bundle removed from between the standards, after which the twine is again disposed in engagement with the clamping fingers to receive a new bundle.

When green corn, or fodder having ears thereon, are to be bound, it is preferable to form the same into smaller bundles and to readily accomplish this result, I provide plates 26, which are provided at each edge with ears 27, through which are adapted to extend bolts and by which means the plates are secured to the standards.

The upper edges of the plates are provided with curved depressions 28, which are adapted to receive the fodder in place of the semi-circular bands 15, said depressions being formed in various sizes to form larger or smaller bundles, and in applying the plates to use, the same are seated on the rails adjacent the faces of the standards 4 and 6, the lower edges of the plates being provided with notches 29, to receive the plates 9.

Secured to the forward ends of the runners 1 and 2 is a tongue 30, by which means the binder is moved from place to place in the field.

The standards 3, 4, 5 and 6 are securely braced and held rigidly in a vertical position by means of rods 31, the upper ends of which are secured to the respective standards, while the lower ends thereof are fixed in any preferred manner to the runners.

It will thus be seen that I have provided a very cheap and economical form of binder and one that can be readily moved from place to place in the field. It will further be seen that I have provided readily operated means for disposing the fodder into bundles and have placed the binding twine where the same will be readily accessible when it is desired to tie the bundle together and it will also be seen that I have provided means for increasing or decreasing the size of the bundles when desired.

What I claim is:

1. In a binder of the class described, the combination with standards arranged in pairs and each pair diametrically opposite each other and spaced apart, runners to support said standards and semi-circular bands connecting said standards; of a lever pivotally mounted between one pair of said standards and adapted to extend between and beyond the opposite pair of standards, a latch on said lever, a rack bar with which said latch is adapted to engage and hold the lever in its lowered position, a shank at the opposite end of said lever and a latch on one of said standards adapted to engage the shank and hold the lever in its elevated position.

2. In a binder of the class described, the combination with runners; of a pair of

standards secured to each of said runners and placed diametrically opposite each other, a beam connecting said standards, rails carried by said beam, a rack at each end of
5 said rails and means to compress fodder between said standards to form bundles.

3. In a binder of the class described, the combination with a pair of runners; of a pair of standards for each of said runners, a beam
10 connecting said pairs of standards, rails carried by said beam, a rack at each end of said rails, a lever pivotally mounted between one pair of standards and adapted to extend between and beyond the opposite pair of
15 standards, said lever having a bowed portion,

means to hold said lever in its lowered position, a shank at the pivoted end of said lever, a latch adapted to engage said shank and hold the lever in its elevated position and means carried by the standards to form the
20 fodder into bundles when the lever is depressed.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

NATHAN FRANCES BOURNE.

Witnesses:

H. L. SHERWOOD,
J. M. THOMSON.