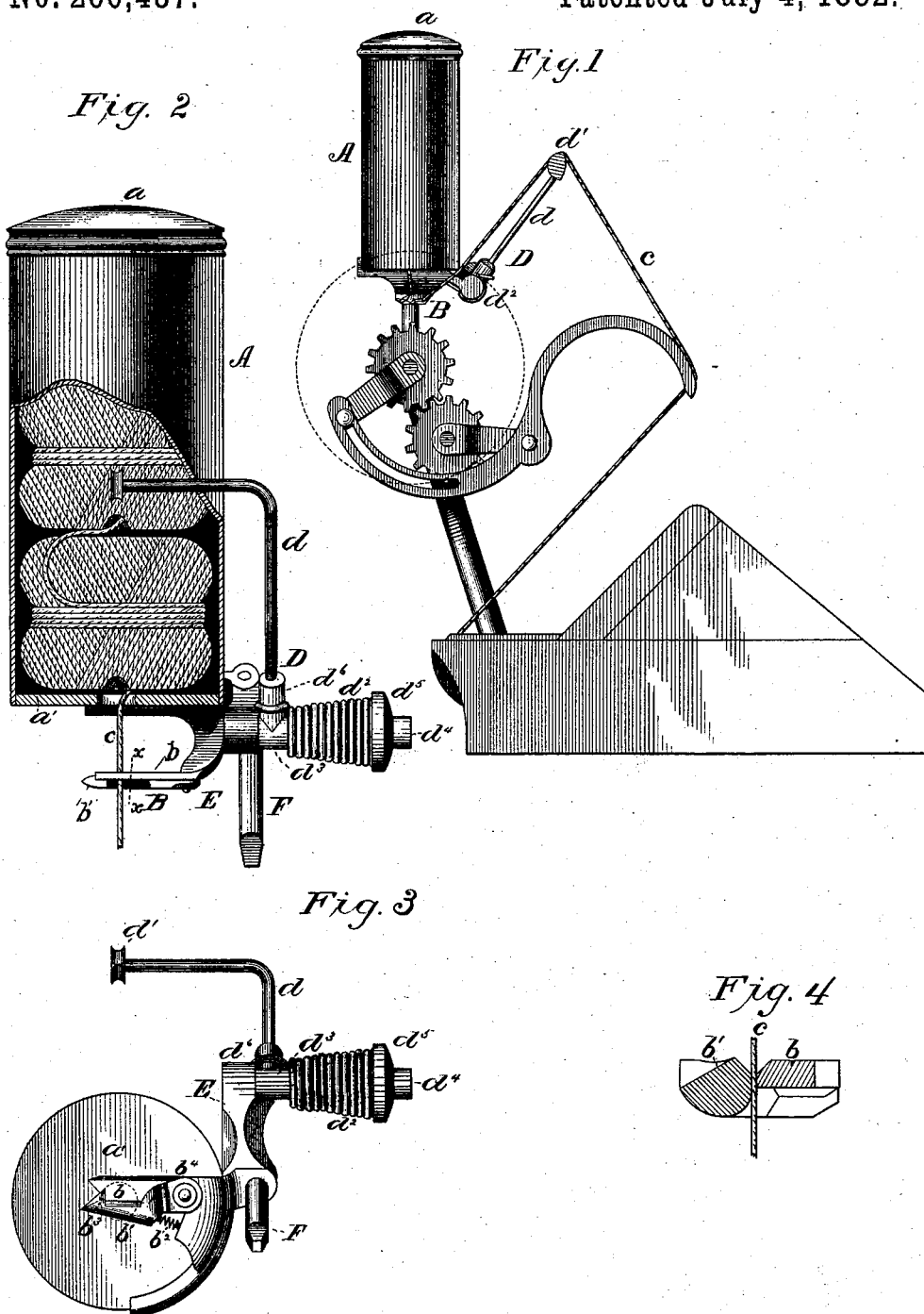


(No Model.)

S. D. LOCKE.
GRAIN BINDER.

No. 260,487.

Patented July 4, 1882.



WITNESSES
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SYLVANUS D. LOCKE, OF HOOSICK FALLS, NEW YORK.

GRAIN-BINDER.

SPECIFICATION forming part of Letters Patent No. 260,487, dated July 4, 1882.

Application filed May 22, 1882. (No model.)

To all whom it may concern:

Be it known that I, SYLVANUS D. LOCKE, of Hoosick Falls, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Grain-Binders, of which the following is a specification.

My invention relates particularly to the devices for holding the binding material and governing it in its passage as it is payed out in the operation of binding; and it consists in combining a cord box or receptacle, a tension device, and a take-up device upon a single supporting-frame, whereby they can be applied or removed together bodily, and in an improved tension device adapted to be used in such combination or separately, all as will hereinafter appear.

In the drawings, Figure 1 is a view showing the application of my improvements to a harvester-binder. Fig. 2 is a front view of the attachment, partly in section. Fig. 3 is a bottom view of the same; and Fig. 4, a detailed sectional view taken on the line *x x*, Fig. 1.

A represents a tubular receiver, which may be of any form and arranged in any manner that will enable it to properly contain a ball or series of balls and to permit the cord to be properly fed therefrom to the binding mechanism. Preferably I construct said receiver in the form of a vertical cylinder, having a hinged top cover, *a*, and a centrally-perforated bottom, *a'*, through the opening of which the cord *c* is led, as shown in the drawings, of a length substantially equal to the length of two or more balls, and of such diameter that said balls may be fitted snugly and tightly therein, so as to be prevented from movement relatively to the walls thereof. This construction, as well as the devices hereinafter described, is especially adapted to supplying band-cord to the binding mechanism by the method made the subject of an application filed in the Patent Office of the United States on the 14th day of March, 1879, and of which the present application is a division, which method consists in arranging a series of round balls in the receptacle, end to end, connecting the outer end of the cord of one ball to the inner end of the cord of the adjacent ball, and unwinding them successively by the operation of the machine; but neither the receptacle nor the other devices are necessarily confined to use with said method.

B is a spring-jaw tension device, through which the cord passes immediately after leaving the cylinder or receptacle. It is preferably constructed with a fixed jaw, *b*, a pivoted jaw, *b'*, and a spring, *b²*, to press the jaw *b'* against the jaw *b* or against the cord passing between them. One of the jaws is provided with guard-shoulders *b³ b⁴*, to prevent the cord from escaping, and both jaws are beveled or rounded off on the side through which the cord is introduced.

So far as my general combination of holder for the binding material, tension device, and take-up device is concerned, the particular construction of the elements here described is not essential, but any other equivalent construction may be substituted for them in the combination. The cord, after leaving the tension device, passes over a take-up device. (Shown at D.) As here represented, this latter device consists of a rocking arm, *d*, having a grooved or forked head or sleeve, *d'*, at its free end, said arm being held in position with a yielding force by means of a spring, *d²*.

In the particular construction shown the arm *d* is attached at right angles to a hub or sleeve, *d³*. The sleeve fits upon the arm *d'*, projecting from the supporting-frame. The spring is of spiral form, and is placed around the sleeve and secured by a concave disk or head, *d⁵*, affixed to the arm *d'*. One end of the spring bears against a notch or shoulder in the head *d⁵* and the other against the sleeve or the arm *d* or the protuberance *d⁵*, in which the lower end of said arm *d* is held. The spring *d²* is made with one end of its coil of larger diameter than the other end. The end which is secured to the movable part—to wit, the sleeve or the arm *d*—is of the same, or nearly the same, diameter as the sleeve, but the outer end, which is attached to the movable disk *d⁵*, is considerably larger, so as to gradually recede from the sleeve, and it is supported and held in this position by the flanged or cup-like head or holder *d⁵*, thereby insuring greater freedom of movement by preventing that portion of the spring attached to the stationary bearing from doubling down, and consequently rubbing upon the moving hub as the latter turns.

All the parts hereinabove described are attached to and supported by a frame, E, which may be of any form and construction adapted

thereto. The frame itself is mounted upon a standard, F, of any convenient length and suitable shape, which standard is set in a socket prepared for it at the proper place in the harvesting or binding machine.

5 The lower end of the standard should be squared, or of some angular or eccentric form, to prevent it from turning in its socket. The whole apparatus, it will be observed, is so organized and combined together that it can be handled as a single instrument or element of the machine, and can be attached to or removed therefrom by simply inserting or removing the standard in or from its holding-socket.

15 Of course any form of plate can be employed as a standard, and any form of clamping, locking, or other adequate holding device can be used in lieu of the socket; but I recommend the latter as the simplest and most convenient.

20 The standard might even be omitted, and the frame E, which combines all the working parts together, may, in that case, be clamped or locked to the machine in any suitable manner by which it can properly be held in place, the

25 essential elements being the holder for the binding material, a tension device, a take-up device, and a frame which holds them together capable of attachment and removal with them to and from the machine.

I have denominated the feed end of the box 30 "the lower end," although if the box be used in other positions, or the cord taken from the upper end, the term should be understood as meaning the feed or discharging end, through which the cord passes to the other mechanism. 35 The springs of the tension and take up devices may be adjusted by any suitable means for the purpose of regulating the tension and take-up.

I claim—

1. The box A, having the central aperture, 40 in combination with the frame E, the spring-jaw tension device, and the spring-arm take-up device, substantially as described.

2. The combination of the fixed tension-jaw b with the pivoted tension-jaw b', having the 45 cord-retaining shoulders b³ b⁴, and with the spring for holding the jaws closed against the cord, substantially as described.

3. The scissors-form tension-jaws beveled off on the side the cord is introduced, and having the cord-retaining shoulders, and combined with a spring for holding them closed against the cord. 50

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Witnesses:

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