A. V. ROWE & G. W. ERICSON.

SACK BALER.

APPLICATION FILED DEC. 24, 1917.

1,301,504.

Patented Apr. 22, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

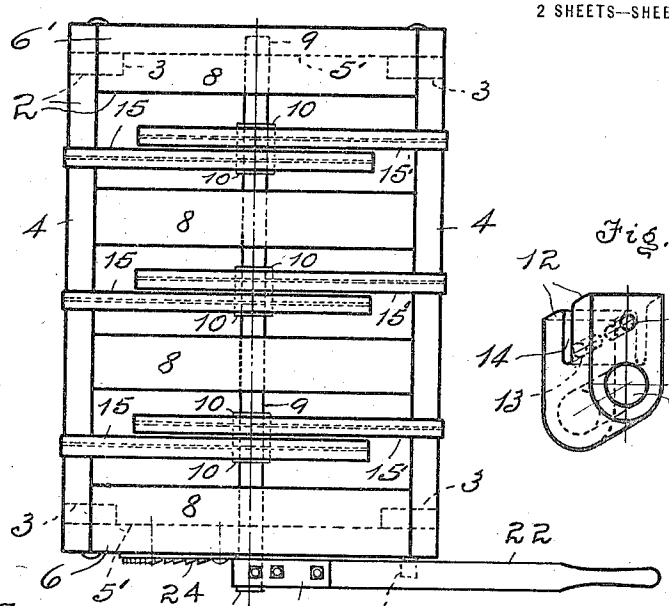


Fig. 2.

Fig. 3.

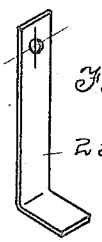


Fig. 4.

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2 SHEETS—SHEET 2.

Fig. 5.

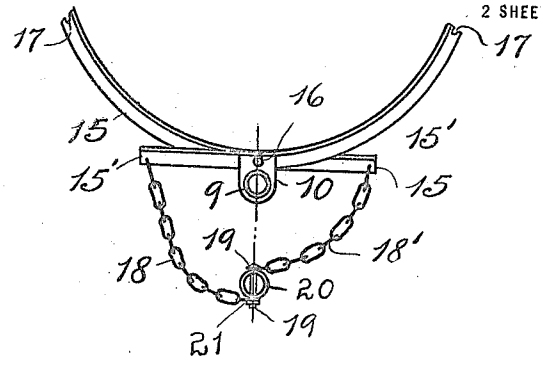
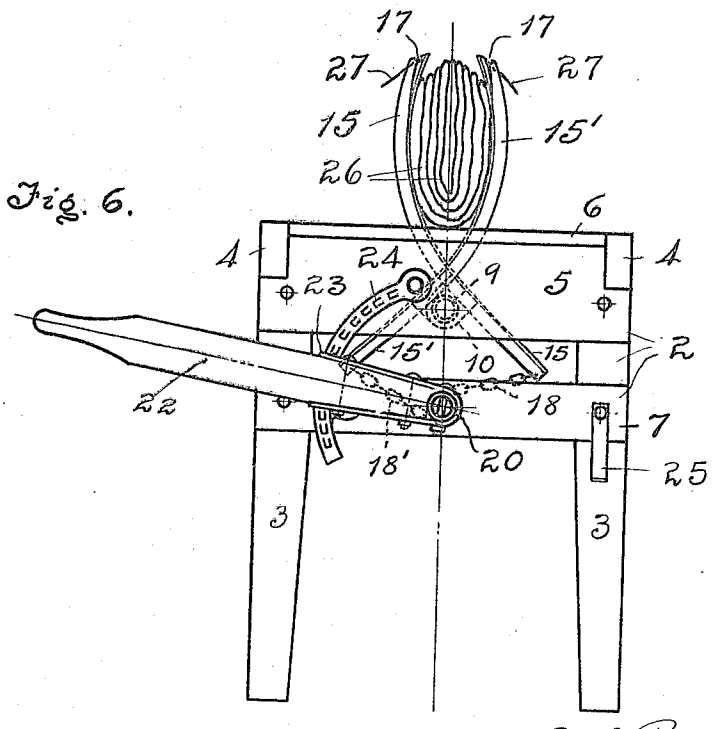


Fig. 6.



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UNITED STATES PATENT OFFICE.

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SACK-BALER.

1,301,504. Specification of Letters Patent. Patented Apr. 22, 1919.

Application filed December 24, 1917. Serial No. 208,624.

To all whom it may concern:

Be it known that we, ALVIN V. ROWE and GEORGE W. ERICSON, both of whom are citizens of the United States, and residents of Galesburg, in the county of Knox and State of Illinois, have jointly invented a new and useful Sack-Baler, of which the following is a specification.

Grain, cement and numerous other kinds of sacks are customarily manufactured of such material and at such cost that they are charged for by the dealer and the emptied ones are returnable to him at a like price. In order to reduce shipping cost and further in order that they may be conveniently handled it becomes necessary to package or bale them.

The primary object of my invention is to generally improve and simplify the construction and to increase the efficiency and utility of devices of this nature.

The invention consists, substantially, in the improvements hereinafter described.

In the accompanying drawings, wherein a preferred embodiment of our improvements is illustrated:

Figure 1 is a top-plan;

Fig. 2, an enlarged perspective detail of one of the clevises;

Fig. 3, a similar view of the lever-holding hook;

Fig. 4, an end view, the part shown in the positions they occupy immediately prior to placing the sacks on their supports;

Fig. 5, an end detail showing the normal positions of the operating chains and levers; and

Fig. 6, an end view showing the parts in different relative positions from those shown in Fig. 4.

Considering the drawings in detail, 2 indicates a frame consisting of legs 3, side-bars 4, end-bars 5, 5′, end-strips 6, 6′, and end-plates 7. 8, 8 indicate bed strips supported between and preferably flush with the upper edges of the bars 4.

9 denotes a dead-spindle the ends of which are secured in the bars 5, 5′. A plurality of clevises 10 are rotatably mounted in coacting pairs on the spindle 9, and may be held in any suitable manner from movement longitudinally thereon. Each clevis, as shown best in Fig. 2, comprises a block having an aperture 11, bifurcated ends 12 penetrated by registering apertures 13, and a transversely cut notch 14. 15, 15′ indicate a plurality of compression levers each of which is T-shaped in cross-section and secured to one of the clevises 10 by a bolt or rivet 16, Fig. 5, the rib-branch of each seating in the notch 14 in the coacting clevis, and the bolt passing through the apertures 13 and through a registering one in said branch. At the outer end of its load-arm each lever is provided with a wire-receiving notch 17. The terminal of the power-arm of each lever 15 engages one end of a chain 18 the other end of which is secured to the head-end of a bolt 19 which passes transversely through a shaft 20 and the corresponding arm of each lever 15′ engages one end of a chain 18′ the other end of which is secured to the foot-end of said bolt. It is to be observed that each of the levers 15 and 15′ is of the first order, and that the levers of each coacting pair are secured to opposite sides of the shaft 20, which lies parallel with the spindle 9 and the ends of which have bearings in the plates 7. 22 designates an operating lever fixed on the projecting end of the shaft 20 by means of a stirrup-strap 23 which serves also to engage selectively the notches of a quadrant ratchet 24 fixed on one end of the baler. A hook 25 serves to support the free end of the lever 22 when the latter is in reverse position.

The operation is as follows: Assume the parts to occupy the relative positions shown in Figs. 1 and 4. The operator will place upon the bed-slats 8 those sacks 26 which he desires to form into a bale, the baling wires 27, cut to proper lengths, having preparatorily been placed in the notches 17. He will then operate the lever 22 to thereby impart to the shaft a one-half rotation and causing the chains 15, 15′ to be accordingly drawn upon. The power-arms of the levers will be moved toward each other to thereby throw the load arms into the positions shown in Fig. 6. During this movement, due to the curvature of the load arms of the levers the sacks will be doubled at their mid-lengths and their outer edges will slide on the flat head-branches of the T-shaped compression-levers, and they will gradually assume the position shown in Fig. 6, where-

upon the strap or dog 23 is to be engaged with a tooth of the ratchet 24 to thereby lock the lever 22 and thereby all the operating parts in such position that the sacks are tightly compressed between the compression levers. The ends of the wires may then be intertwisted in order to complete the baling operation. It will be noted that a single coacting pair of levers 15, 15′ may in some cases be all that is necessary to secure together a number of sacks; that the number of pairs may be greater than that shown; and that the device may be employed for baling articles other than sacks.

Having thus described the nature of the invention we claim as new the following, to-wit:

1. In a baler, a frame, a shaft mounted therein, means for rotating it, a pair of chains secured to opposite sides of the shaft, and a pair of compression-levers secured each to one of said chains.

2. In a baler, a frame, a spindle supported therein, a shaft mounted in the frame, means for rotating it, a pair of chains secured to opposite sides of the shaft, and a pair of compression-levers rotatorily mounted on said spindle and operated each by one of said chains.

3. In a baler, a frame, a spindle supported therein, a shaft mounted in the frame, means for rotating it, a pair of chains secured to opposite sides of the shaft, and a pair of compression-levers of the first order fulcrumed on said spindle and operated each by one of said chains.

4. In a baler, a frame, a spindle supported therein, a coacting pair of compression-levers, each thereof T-shaped in cross-section, a pair of clevises loosely mounted on said spindle and each having a notch in which the web-branch of one of the levers seats, means for connecting each clevis with its coacting spindle, and means for operating said levers.

5. In a baler, a frame, a spindle supported therein, a shaft disposed parallel therewith, a pair of coacting compression-levers fulcrumed intermediate there ends on said spindle, and means operated by the rotatory movement of the shaft, for throwing said levers into compressing positions.

6. In a baler, a frame, a spindle supported therein, a shaft disposed parallel therewith, a pair of coacting compression-levers fulcrumed intermediate their ends on said spindle, and chains each of which is secured to the shaft and to the inner end of one of said levers, whereby rotatory movement of the shaft imparts operative movements to said levers.

7. In a baler, a frame, a spindle supported therein, a shaft paralleling the spindle, a pair of coacting compression-levers fulcrumed intermediate their ends on said spindle, chains secured each to the shaft and to the inner end of one of said levers, whereby rotatory movement of the shaft imparts compression-movement to the levers, and means for locking the levers in compression position.

8. In a baler, a frame, a spindle supported therein, a pair of bowed compression levers fulcrumed near their midlengths on said spindle, a shaft rotatably mounted in the frame, and means for connecting the levers with the shaft whereby to move the former into compressing position.

9. In a baler, a frame, a rotatable shaft therein, an operating lever for rotating it, a locking-element adapted to be engaged by the lever whereby to hold the latter from backward movement, and compression-levers connected with the shaft and movable in opposite directions thereby.

10. In a baler, a frame, a rotatable shaft therein, means for rotating the shaft, and compression levers connected with the shaft and movable in opposite directions thereby.

11. In a baler, a frame, a rotatable shaft therein, means for rotating it, an element projecting from a plurality of sides of the shaft, a pair of compression-levers, and a pair of chains connected one with one of said levers and one of said projections and the other connected with the other lever and the other projection, whereby when the shaft is rotated the chains will be drawn in opposite directions to thereby draw the levers into compressing positions.

In witnesses whereof we hereto sign our respective names this 15th day of December, 1917, at Galesburg, Illinois.

ALVIN V. ROWE.
GEORGE W. ERICSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."