F. F. BREIHAN.

COTTON PRESS.

APPLICATION FILED APR. 23, 1909.

946,573. Patented Jan. 18, 1910.

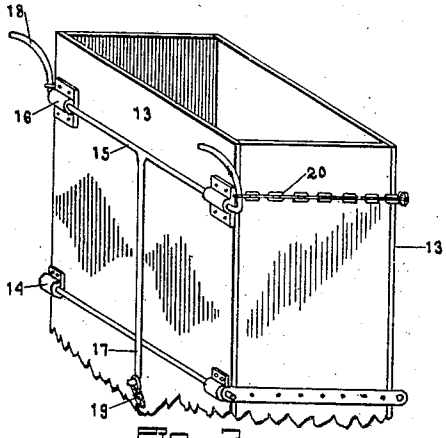

Fig. 3.

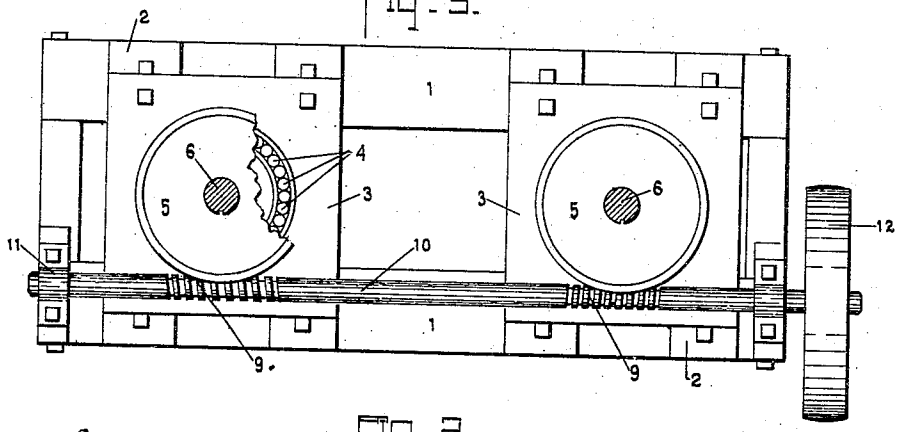

Fig. 2.

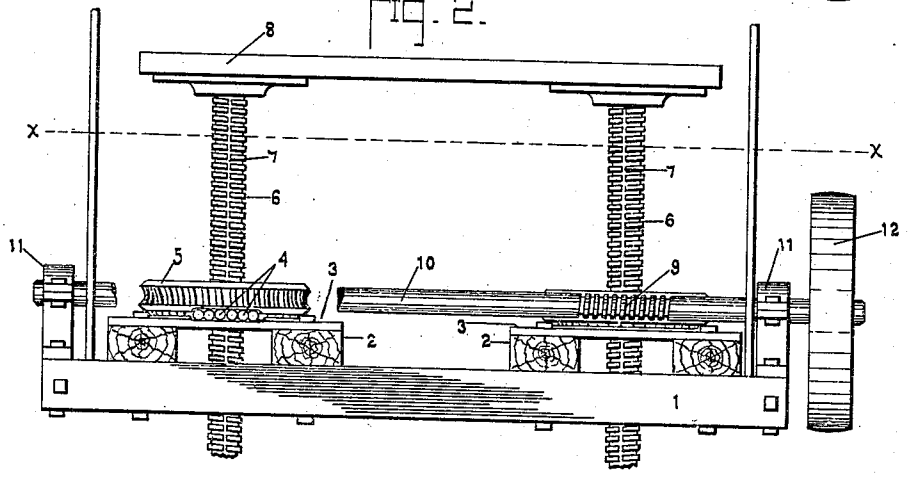

Fig. 1.

WITNESSES:

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FREDERICK F. BREIHAN, OF BARTLETT, TEXAS.

COTTON-PRESS.

946,573. Specification of Letters Patent. Patented Jan. 18, 1910.

Application filed April 23, 1909. Serial No. 491,677.

To all whom it may concern:

Be it known that I, FREDERICK F. BREIHAN, citizen of the United States, residing at Bartlett, in the county of Williamson and State of Texas, have invented certain new and useful Improvements in Cotton-Presses, of which the following is a specification.

My invention relates to new and useful improvements in cotton-presses. Its object is to provide a cotton-press, the pressure for which will be furnished by two screws operated by worm wheels and worms, the latter being upon a single shaft, thus producing a slowly operating press, which will require minimum power.

Another object is to provide a cotton-press, the press-box of which may be opened gradually at its upper extremity to remove the bales of cotton, thus avoiding the shock and strain due to instantaneously relieving the pressure of the compressed cotton.

Finally, the object of my invention is to provide a device of the character described, which will be strong, durable, simple and efficient and comparatively easy to construct, and also one in which the various parts will not be likely to get out of working order.

With these and various other objects in view, my invention has relation to certain novel features of construction and operation, an example of which is described in the following specification and illustrated in the accompanying drawing, wherein:

Figure 1 is a vertical elevation of the press, one of the worms being broken away to show the worm gear behind it. Fig. 2 is a top view of the press, taken on the section line x—x of Fig. 1, a portion of one of the worm gears being broken away to show the ball bearings upon which said gear runs. Fig. 3 is a perspective view of the upper portion of the press-box, showing the device whereby the doors of said box may be opened gradually.

Referring now more particularly to the drawings, wherein like numerals of reference designate similar parts in all the drawings, the numeral 1 denotes the longitudinal girders of the press frame and 2 denotes cross-sills resting upon said girders. The sills 2 support two base plates 3, carrying upon their top surfaces grooved, circular tracks to receive the ball bearings 4. Worm wheels 5 carry upon their under surface a corresponding circular track to receive said ball-bearings upon which said worm wheels rotate. Central, threaded apertures are provided to said worm wheels to receive the vertical press screws 6. One of the screws 6 is provided with right-handed threads and the other left-handed, in order to equalize the transverse strain in the driving-shaft. Both of the screws 6 are provided with vertical slots 7 in their threads, into which fit suitable projecting keys upon the base-plates 3, in order to prevent said screws from turning or twisting when being operated.

The numeral 8 designates the press-block surmounting said screws. The worm-wheels 5 are operated by worms 9 upon a driving-shaft 10. Said shaft is supported in standards 11 and is driven by a pulley 12. The doors 13 of the press-box shown in Fig. 3 are provided with hinges 14. Upon the upper part of one of said doors is mounted a horizontal rod 15 in bearings 16, said rod being provided with a hand-lever 17 at its middle part and curved arms 18 at its extremities. Said lever 17 is held in position by a chain 19 when the press-box doors are closed. Two chains 20 have one extremity attached to the other of said doors and the other extremity provided with a ring to fit over one of said curved arms 18. In opening the doors 13, lever 17 is raised, thus lowering the curved arms 18 and gradually releasing the chains 20.

The upper part of the press, press-boxes, etc., have not been shown, as the drawings have been limited to those parts which embody the novel features of the invention; it is understood, however, that the mechanism herein-described and shown is applicable to both single and double-box presses.

It is obvious that by the use of two press-screws and a worm-wheel drive, a high mechanical advantage is secured, considerably less power being required than is necessary for the ordinary single-screw press driven by miter gears.

I am aware that changes may be made in the form and proportion of parts and details of the device herein-described and shown as a preferable embodiment of my invention, without departing from the spirit or sacrificing the advantages thereof and I therefore reserve the right to make such changes and alterations in said device as fairly come within the scope thereof.

What I claim, is:

1. In a cotton-press, the combination with a press frame, of two base plates supported

thereby, provided with ball-bearing tracks upon their top surfaces, ball-bearings adapted to rotate in said tracks, worm-wheels rotatably mounted upon said ball-bearings, and provided with central, threaded apertures, vertical screws mounted in said apertures adapted to be raised or lowered by operation of said worm-wheels, a groove or key-way longitudinally cut in the threads of each of said screws, a vertical key in the central aperture, provided to each of said base-plates, engaging in said key-way in each screw, and preventing the latter from twisting or turning, a press-block surmounting said screws, worms engaging with said worm-wheels, and a driving-shaft carrying said worms.

2. In a cotton-press, the combination with a press frame, of two base-plates supported thereby, and provided with ball-bearing tracks upon their top surfaces, ball-bearings adapted to revolve in said tracks, worm-wheels rotatably mounted in a horizontal position upon said ball-bearings, and carrying upon their under surfaces circular, grooved tracks to receive said ball-bearings, two vertical screws mounted in central, threaded apertures in said worm-wheels, one of which screws is provided with right-handed threads and the other left-handed, said screws being adapted to be raised or lowered by said worm-wheels, a groove or key-way in the threads of each screw longitudinal therewith, a vertical key in the central aperture provided to each of said base-plates, engaging in said key-way in each screw and restricting the latter from rotary motion, a press-block surmounting said screws, worms engaging with said worm-wheels and operating the same, and a driving-shaft carrying said worms.

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

FRED. F. BREIHAN.

Witnesses:

R. L. BARTOSH,

MARKUS OLIVER VON JULER.