W. A. BENNETT.

Shingle-Packing Machine.

No. 199,895. Patented Feb. 5, 1878.

Fig. 1.

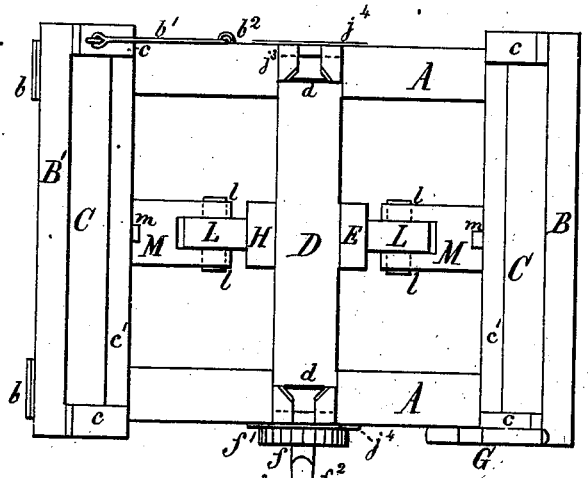


Fig 2.

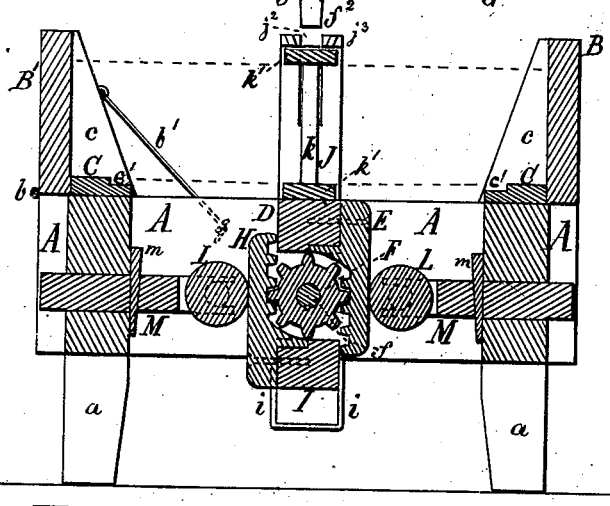


Fig 3

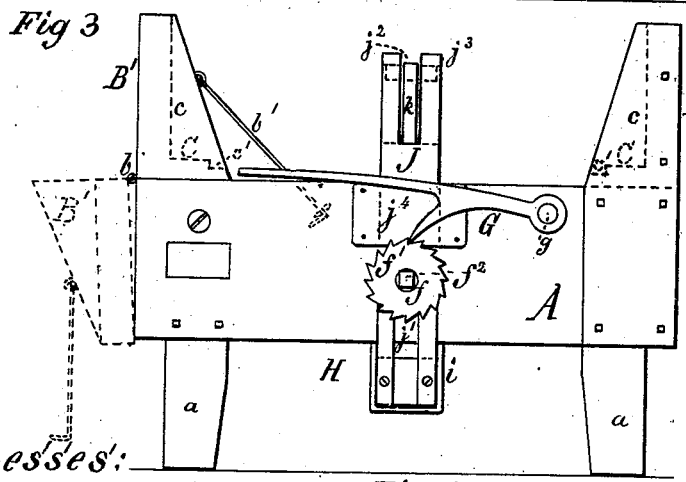
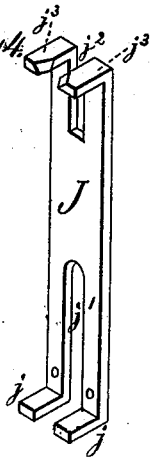


Fig 4.

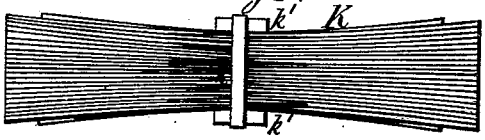


Witnesses:

J. P. Theodore Lang.

J. Rupert Parr.

Fig 5.



Inventor

Wm. A. Bennett

by

Mason Fenwick & Lawrence

Attys.

UNITED STATES PATENT OFFICE.

WILLIAM A. BENNETT, OF AUGUSTA, WISCONSIN, ASSIGNOR TO HIMSELF, LORENZO BENNETT, AND LEMAN A. BRACE, OF SAME PLACE.

IMPROVEMENT IN SHINGLE-PACKING MACHINES.

Specification forming part of Letters Patent No. **199,895**, dated February 5, 1878; application filed November 23, 1877.

To all whom it may concern:

Be it known that I, WILLIAM A. BENNETT, of Augusta, in the county of Eau Claire and State of Wisconsin, have invented a new and useful Improvement in Shingle-Presses, which improvement is fully set forth in the following specification and accompanying drawings, in which latter—

Figure 1 is a plan view of my improved shingle-press. Fig. 2 is a vertical central section of the same. Fig. 3 is a side elevation of the same. Fig. 4 is a detail view of a central pressing-bar used in the same, and Fig. 5 is an elevation of a bundle of shingles "packed" by my shingle-press and "tied" therein.

My invention consists in certain constructions, combinations, and arrangements of parts, hereinafter fully described and specifically claimed, whereby a shingle-press is produced for packing shingles into merchantable bundles, and holding them compressed about their center while they are being tied together.

In the drawings, A indicates a suitable frame, supported by legs *a*, and having upright guides B B′, for guiding the shingles into proper position during the act of packing. The guide B is permanently fastened to the frame A; but the guide B′ is attached to the frame by means of hinges *b* and a brace-hook, b^1, with a staple, b^2. When the brace-hook b^1 is removed from the staple b^2 the guide B′ may be swung back and down on the hinges *b*, as indicated by dotted lines in Fig. 3, and thus a finished bundle of shingles may readily be removed from the machine. The guides B B′ are provided with side boards *c*, and are open on top, in order to facilitate the piling of the shingles into the machine by hand, and preserve, both laterally and longitudinally, the proper shape of the bundle while being pressed. The frame A is provided with ledges C and *c′* between the guides B B′, whereby the thick ends of the shingles are supported. The central support of the shingles consists of a movable bar, D, the ends *d* of which are partly let into the frame A, for the purpose of lateral guidance. The bar D is centrally supported by means of a vertical rack, E, which is operated by a pinion, F, on a shaft, *f*, below the said bar. The shaft *f* has its bearings in the frame A, and is at the outside of the frame provided with a ratchet-wheel, f^1, and a square head, f^2, which latter may be operated by means of a wrench. A hand-pawl, G, pivoted at *g* to the frame A, serves, in conjunction with the ratchet-wheel f^1, to prevent back movement of the shaft *f*. The pinion F operates another rack, H, on the other side, as shown, which rack is fastened to a cross-beam, I, below. This cross-beam I moves vertically between guide-rods *i*, fastened to the frame A, its ends being provided with pressing-bars J, which project above the top of the frame A, and are at the same distance apart as the side boards *c*. The pressing-bars J are hooked at *j*, and let into the lower part of the beam I, to make their connection more secure. One of the pressing-bars J (represented in Fig. 4) has a slot, j^1, in its lower part, through which the shaft *f* is passed, while the other pressure-bar is solid at the same part. The upper part of these pressing-bars are slotted, as at j^2, and at their upper extremities are hooked, as at j^3. The slots j^2 serve to facilitate the placing of the binding-iron bands *k* in a suitable position previous to the tying of the shingles. A couple of wood strips, *k′*, are placed, one upon the bar D and the other across the top of the shingles, and with its ends under the hooks j^3, in order to serve as an upper pressing-bar.

The pressing-bars J are fitted into suitable bearings mortised in the frame A, and two covers, j^3, properly fastened over them to the frame, prevent their laterally giving away from the sides of the frame.

The racks H and E are prevented from giving away from the pinion F by friction-rollers L bearing against their backs, and having suitable journal-bearings *l* in the ends of two horizontal bars, M, which are fitted into the frame, and adjusted in relation to the racks H and E by means of vertical wedges *m*.

Operation: The bar D being at its lowest elevation, and the pressing-bars J at the highest, a wooden strip, *k′*, having a metal band, or other suitable band, attached to each end, is placed across the machine upon the bar D, the band being allowed to incline outwardly through the slots j^2 at either side of the ma-

chine. The guide B′ being also properly fastened, the shingles are then placed upon the ledges c' and C, and the lower strip k' on the bar D, between the guides B B′ and their side boards c and the pressing-bars J, by first laying one row upon the ledge c', with the thick ends toward the guide B, then another row of shingles upon the other ledge c', with the thick ends toward the guide B′, and with the thin ends of this second row of shingles upon the thin ends of the preceding row. This being done, the next layers of shingles are then laid with their thick ends upon the ledges C, with their thin ends over the thin ends of the preceding layers, (said thin ends of each layer of the "pack" being laid so as to "break joints" with each immediately preceding and succeeding layer,) the thick ends of the last or top layers being placed by the hand of the operator in position to correspond with the thick ends of the bottom layers placed upon the ledges c', as signified by such top and bottom shingles in Fig. 5. The upper strip k' is now placed upon the pile of shinges, with its ends under the hooks j^3 of the pressing-bar J. The shaft f is now turned forward by applying a wrench to its head f^2, whereby the strips k' are moved toward each other, thus compressing the central portion of the shingles between them.

During the compression the shingles have a tendency to spread in the shape of a fan at their rear ends by wedging the middle, layers apart and pushing the guide B′ over on its hinges. This and the consequent disfigurement of the shingle-bundle are avoided by the temporary fastenings b^1 b^2 of the guide B′ acting as a brace.

When the desired degree of compression is obtained, the hand-pawl G is moved down upon the ratchet-wheel f', and the compressed bundle of shingles tied by nailing the upper ends of the bands k upon the upper strip k', such nailing being done between the slots j^2 of the pressing-bars J. Thereafter the hand-pawl G is thrown back from the ratchet-wheel f^1, and the ratchet f' turned back until the bar D and pressing-bars J arrive at the limit of their back stroke, whereupon the guide B′ is disconnected from the staple b^2 and swung down, as indicated in dotted lines in Fig. 3, and the compressed and tied-up bundle of shingles K withdrawn from the machine over the turned-down guide B′, ready for transportation.

The central part of the shingle-bundle being raised from below by the rising strip k', the compressed bundle receives a symmetrical shape, with a similar central indentation or slope above and below, as seen in Fig. 5.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a shingle-compressing machine, the combination of the central pinion F, the bar D above and the bar I below the said pinion, the rack E on one side and the rack H on the other side of the said pinion, and the pressing-bars J, whereby a symmetrical compressing effect is produced upon the central parts of the shingle-bundle from below and above, substantially as set forth.

2. The frame A, constructed with the ledges C c', substantially as and for the purpose described.

3. The combination of the racks E H, the pinion F, the friction-rollers L, and the bars M, having adjusting-wedges m, bearing against the frame A, whereby the said racks are kept in position with the pinion, substantially as set forth.

4. The ledges c' and C, in combination with the rigid and swinging guides B B′, side boards c, pressing-bar D, and pressing-bars J, substantially as and for the purpose described.

WILLIAM A. BENNETT.

Witnesses:
C. E. BRADFORD,
B. H. WALRATH.