2 Sheets—Sheet 1.

A. L. BECKER & F. W. VOLKMAN.

BOTTLE COVERING-MACHINES.

No. 183,040. Patented Oct. 10, 1876.

FIG. 1.

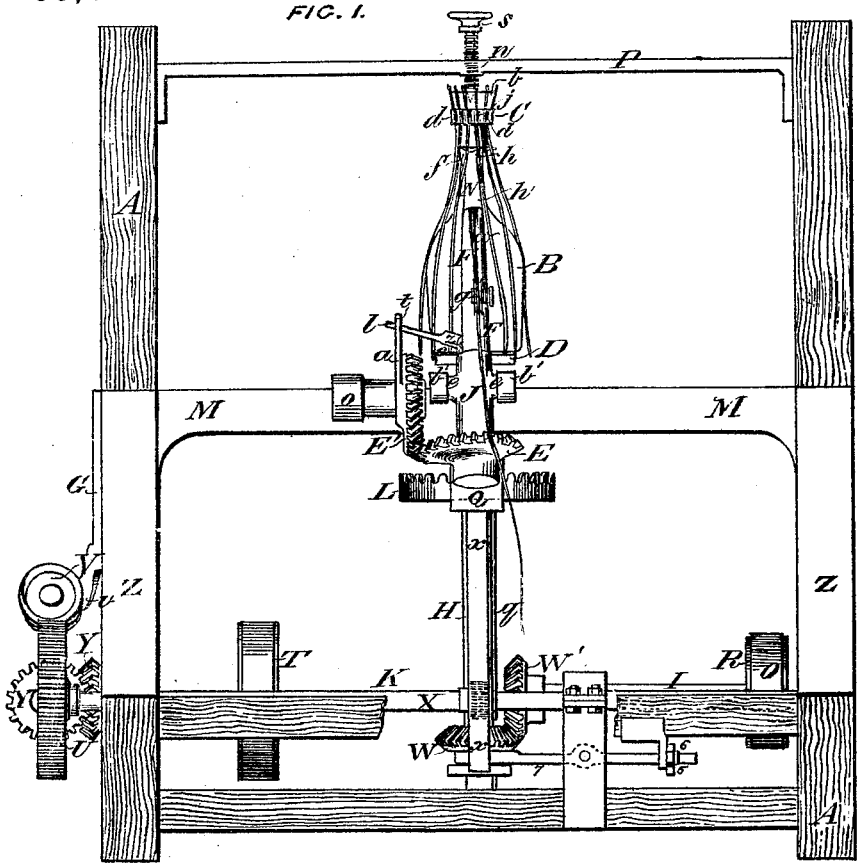
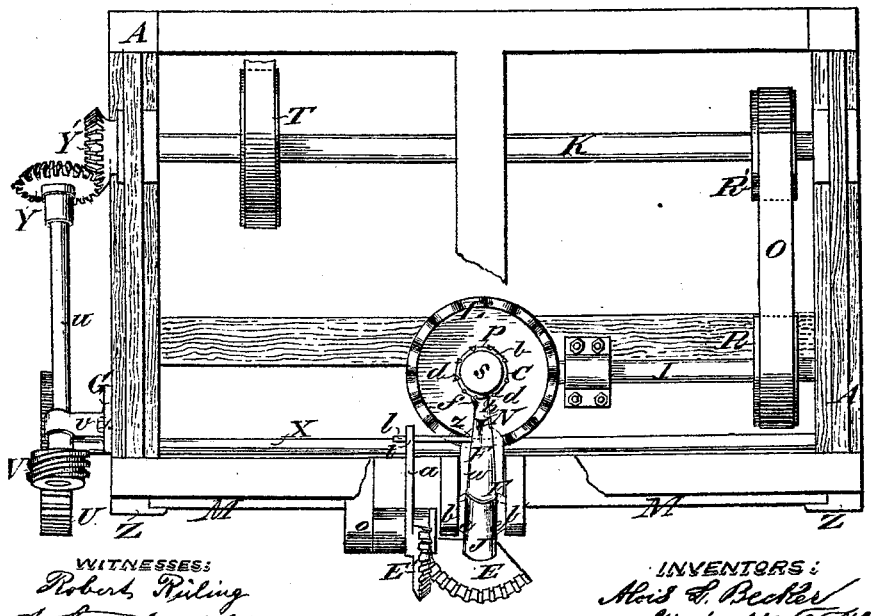


FIG. 2.



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JAMES R. OSGOOD & CO. BOSTON.

2 Sheets—Sheet 2.

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BOTTLE COVERING-MACHINES.

No. 183,040. Patented Oct. 10, 1876.

FIG. 3.

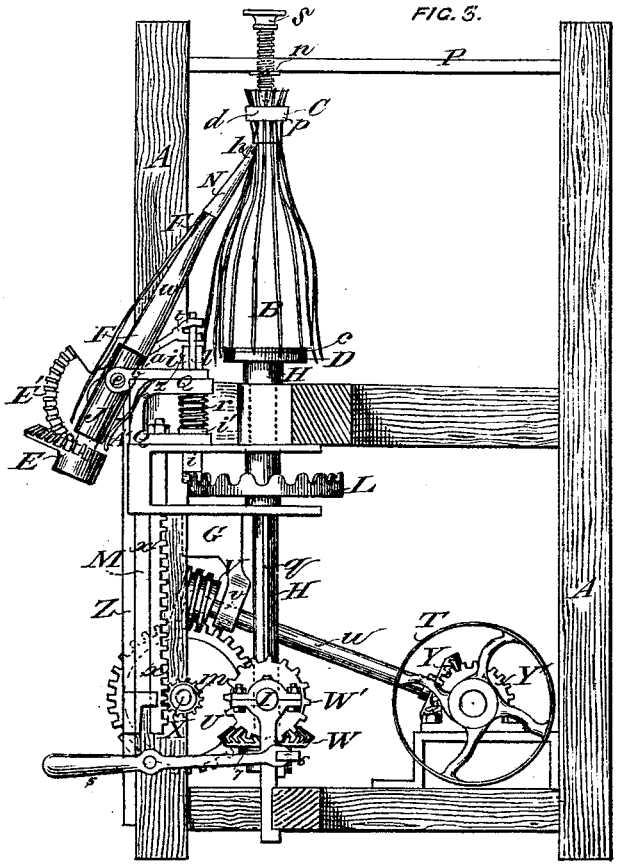


FIG. 10.

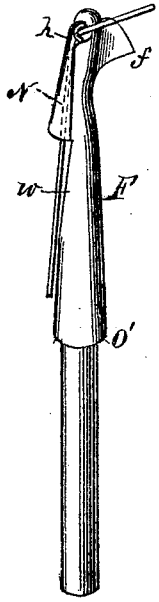
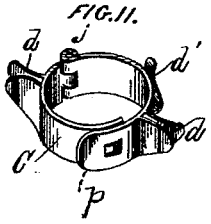


FIG. 11.



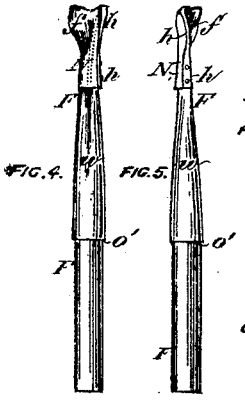


FIG. 6.

FIG. 7.

FIG. 8.

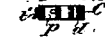
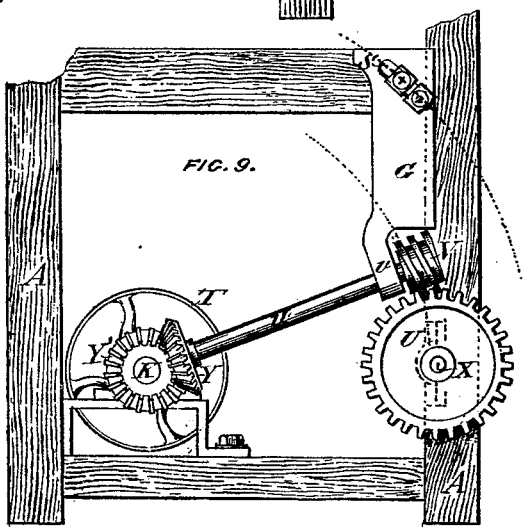


FIG. 9.



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UNITED STATES PATENT OFFICE.

ALOIS L. BECKER AND FREDRICK W. VOLKMAN, OF SAN FRANCISCO, CAL., ASSIGNORS OF PART OF THEIR RIGHT TO HENRY DE VEUVE AND LIONEL VARICAS, OF SAME PLACE.

IMPROVEMENT IN BOTTLE-COVERING MACHINES.

Specification forming part of Letters Patent No. **183,040**, dated October 10, 1876; application filed August 1, 1876.

To all whom it may concern:

Be it known that we, ALOIS L. BECKER and FREDRICK W. VOLKMAN, of the city and county of San Francisco, State of California, have invented a Machine for Covering Bottles, crockery-ware, &c., with rattan, wire, and similar material, of which the following is a specification:

Our invention consists, essentially, of a machine whereby a clamp that adjusts, at equal distances, several rattan or wire threads vertically around a bottle, from top to bottom, and a stand with the bottle resting thereon, are made to rotate on their axes, while a feeder interlaces rattan or wire threads horizontally with these vertically-placed strings, by being drawn therefrom in the rotation of this bottle, the interlacing being effected by an oscillating movement imparted to the feeder as it meets each alternate vertical rattan or or wire thread, whereby it is made to lift and pass under alternate threads and to cover over the others, thus forming a basket-work covering for bottles, demijohns, crockery-ware, &c., similar to that manufactured at present by hand.

Figure 1 is a vertical longitudinal elevation of the machine embodying our invention. Fig. 2 is a plan of the same. Fig. 3 is a vertical transverse section of Fig. 1. Figs. 4 and 5 are a front and end view, respectively, of the feeder F F. Fig. 6 is a side view of the adjustable screw and grooved block *b*. Figs. 7 and 8 are plan and side views, respectively, of the spring-clamp C. Fig. 9 is an end view of the adjusting mechanism to regulate the speed of the carriage M M. Fig. 10 is an enlarged view of the feeder F F. Fig. 11 is an enlarged perspective view of the spring-clamp C.

A A is a frame-work, made of wood and constructed so as to retain the various parts of the machine. B is an ordinary demijohn, about to be covered with a wicker-work covering of rattan. C is a spring-clamp, provided with several spring-catches, *d*, corresponding to the number of rattan threads to be arranged in a vertical position over the bottle about to be covered, and a hook, *d'*, to hold the end of the filling-thread. This clasp C opens on a hinge, *j*, and closes with a spring, *p*, onto the cover-block *b*, so as to force the rattan threads as close to the top of the neck of the bottle as possible. The block *b*, which is placed over the mouth of the bottle, is also grooved for the reception of each rattan thread, and pivots on the conical point of a screw, *s*, which screw operates within a nut, *n*, provided in the metallic-bar plate P, so as to allow of the block *b* with clamp C being lowered or raised to suit the height of the bottle.

D is a metallic disk, provided with a cushion of india-rubber, *c*, for the bottom of the bottle to rest on. This disk D is fixed onto a vertical shaft, H, to which is attached a beveled wheel, W, so as to gear into a similar wheel, W', fitted to a horizontally-placed shaft, I. To this shaft I a pulley, R, is fastened, so as to communicate by a belt, O, with another pulley, R', fitted to the driving-shaft K, on which, also, a pulley, T, is attached for the reception of a belt from any direct motor. By this arrangement, on power being applied to the pulley T, the bottle B is made to rotate vertically on its axis.

F F is the feeder for supplying the horizontal layers of rattan, &c., required in the bottle-covering cloth, and consists of a fluted metallic rod, *w*, fitted at the top with a nozzle, N, such nozzle being provided on one side with a bent flange, *f*, shaped somewhat after the form of the blade of a screw. Within the nozzle itself one, two, or more ridges or tubes are arranged for the reception of one, two, or more wires or rattan threads; and these ridges or tubes are so curved or constructed at the top that they will deliver these threads on the opposite side to that on which the flange *f* is fixed. On the delivery side of this nozzle a spring-holder, *h h*, is fitted for pressing into position these threads as extracted from the feeder by the rotation of the bottle. In order that each such thread may be perfectly taut as withdrawn, a tightener, *g*, similar to those generally used on sewing-machines,

is placed in some convenient position on the channeled or fluted rod *w*, which fluting is expressly constructed for the better holding of the rattan threads as stretched from the tightener to the mouth of the nozzle.

If now the bottle B be actuated by a motor, so as to rotate on its axis, as described, and the feeder F F be held in one position and manipulated so as to oscillate to the left and to the right as each vertical rattan thread meets it, the blade *f* will lift each alternate rattan thread, thus causing the following horizontal thread from the nozzle N to pass under it, while the blade *f* in passing the other alternate threads will likewise cause the same horizontal thread or threads to jump over these vertically-arranged rattan threads, and by this means form an interlaced cloth of wickerwork over the bottle similar to that made entirely by hand for the same purpose.

But, in order to make this feeder automatic and perform by this machine the same movements independently of skilled labor, the following mechanism is employed for such oscillatory and other motions:

To the lower portion of the feeder F F a jacket, J, provided with pins *e e*, is fitted to the carriage-frame M M within the bearings *b' b'*, so that it may swing backward and forward thereon in the direction of the bottle-stand D H, and at the extreme end of the rod *w* a segment of a beveled wheel, E, is attached, so as to gear into a similar segment, E', placed vertically, and also attached to the carriage-frame by the bearing O.

An arm, *a*, terminating in a claw, *t*, is fixed to the boss of the segment E', and engages, by means of this claw *t*, with the long arm of a lever, *l*, that is pivoted at *z* on bearings provided therefor on a plate extending from the frame. The shorter arm of this lever *l* is attached to a vertically-placed spindle, *i*, the bottom of which is cut into shape so as to fit as a tooth to a scalloped-faced wheel, L, arranged loosely on the shaft H, and sustained in position by a frame, Q Q; but this wheel L is so fitted to the shaft H by means of a long key or feather, *q*, that, as this frame Q Q ascends or descends, the wheel and shaft will rotate together in all positions. Between this frame Q Q and plate the spindle *i* is encompassed by a spiral spring, *r*, acting on a collar, *i'*, so that if the spindle is raised by the revolution of this wheel L this spring *r* will instantly, on the release of each tooth, cause a return movement.

By this arrangement each time any one of the teeth of the wheel L meets the spindle *i* it raises it, and, in turn, the spring *r* lowers it, in the spaces between each two teeth, and so on consecutively. These movements cause the segments E E' to have, respectively, reciprocating, vertical, and horizontal motions, while the feeder F, supported within the jacket J by a collar, O', on the rod *w*, will necessarily have an oscillatory movement from left to right, as required.

In order that the feeder F F should descend gradually, according to the speed necessary for it to spread one, two, or more layers of rattan, &c., at a time, a sliding carriage, M M, carrying this feeder and the mechanism, already described, for oscillating the same, is arranged to slide vertically up and down within slide-bars Z Z, and, as the bottle is invariably covered from the neck downward, this carriage has to be timed in its descent. For this purpose a rack, *x x*, is fixed to the top of the carriage-frame, so as to be engaged by a small pinion, *m*, keyed to a shaft, X. At one end of this shaft X a toothed wheel, U, is fitted for gearing into a worm, V, and this worm V is actuated, through its shaft *u*, by means of the beveled wheel Y, which gears directly with a similar wheel, Y', fitted onto the main or driving shaft K.

The toothed wheel U can be changed at will to suit the speed required of the pinion *m*, and the worm V can be lowered or raised for this wheel U by means of its adjustable bearing *v*, which is rendered so by being attached to a plate, G, provided with a slot, S, by which slot this plate is secured, by bolts 1 and 2, to the frame-work A A, so that by the loosening of these bolts this plate G may be adjusted, with the worm V, to the position required.

Again, as this carriage M M gradually descends with the feeder F F, it is found necessary that this feeder should adapt itself to the ordinary swelling shape of the bottle B, and for this purpose a spring, A', is secured to the carrier-frame Q Q, so as to act on the extreme end of the jacket J, and, by this means, press forward the nozzle N, so as to always bear on the bottle.

The clamp C, in addition to the spring-catches *d d d*, for holding the vertically-arranged rattan threads, is also provided with a hook-catch, *d'*, for retaining the end of the rattan thread from the feeder F F, so that it may not slip from its place on the rotation of the bottle and during the horizontal interlacing process.

For throwing the shaft H and connections out of gear a combination-lever, 5 6 7, with clutch, is provided, so that the slide-carriage M M may be raised or lowered while the bottle is stationary.

Two or more feeders may be arranged around the bottle B by applying similar oscillating mechanism to that described, allowing in each case a toothed spindle, such as *i*, to operate within the same toothed wheel L.

We claim as our invention—

1. In a bottle-covering machine, the herein-described oscillating feeder F F, consisting of a fluted rod, *w*, provided with tubular nozzle N, spring-holder *h h*, and bent flange *f*, for alternately lifting and passing over the vertically-suspended rattan, &c., threads from the supply-clamp *c*, all arranged as shown, substantially as herein set forth and specified.

2. In the same, the feeder F F, fitted to the

jacket J *e e* by the collar O′, in combination with the spring A′ and the carrier-frame Q Q, arranged as described, for causing the nozzle N to adapt itself to the shape of the bottle, substantially as herein set forth and specified.

3. In the same, the spring-clamp *c p j*, provided with several spring-catches, *d d d*, hook-catch *d′*, and fitted to the grooved block *b*, in combination with the bottle B, feeder F F, and adjusting-screw *s*, arranged as shown, substantially as and for the purposes specified.

4. The pivoted feeder F J *e e*, provided with beveled segment E, in combination with the segment E′, arm *a t*, lever *l*, toothed spindle *i*, toothed wheel L, carrier-frame Q Q, and feathered rotating shaft H *q*, substantially as and for the purposes herein set forth and specified.

5. The carriage-frame M M, fitted within the slide-bars Z Z, carrying the feeder-oscillating mechanism described, and provided with rack *x x*, in combination with the pinion *m*, fitted to the shaft X, provided with toothed weeel U, geared to the worm V, and actuated by the beveled wheels Y Y′ and driving-shaft K, substantially as herein set forth and specified.

6. The adjustable slotted plate G, fitted to the frame A A by bolts 1 2, and carrying the worm V, and beveled gear Y, connected by the shaft *u*, in combination with the driving-gear K Y and adjustable toothed wheel U, for regulating the speed of pinion *m*, rack *x x*, and carriage M M, as herein set forth and specified.

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