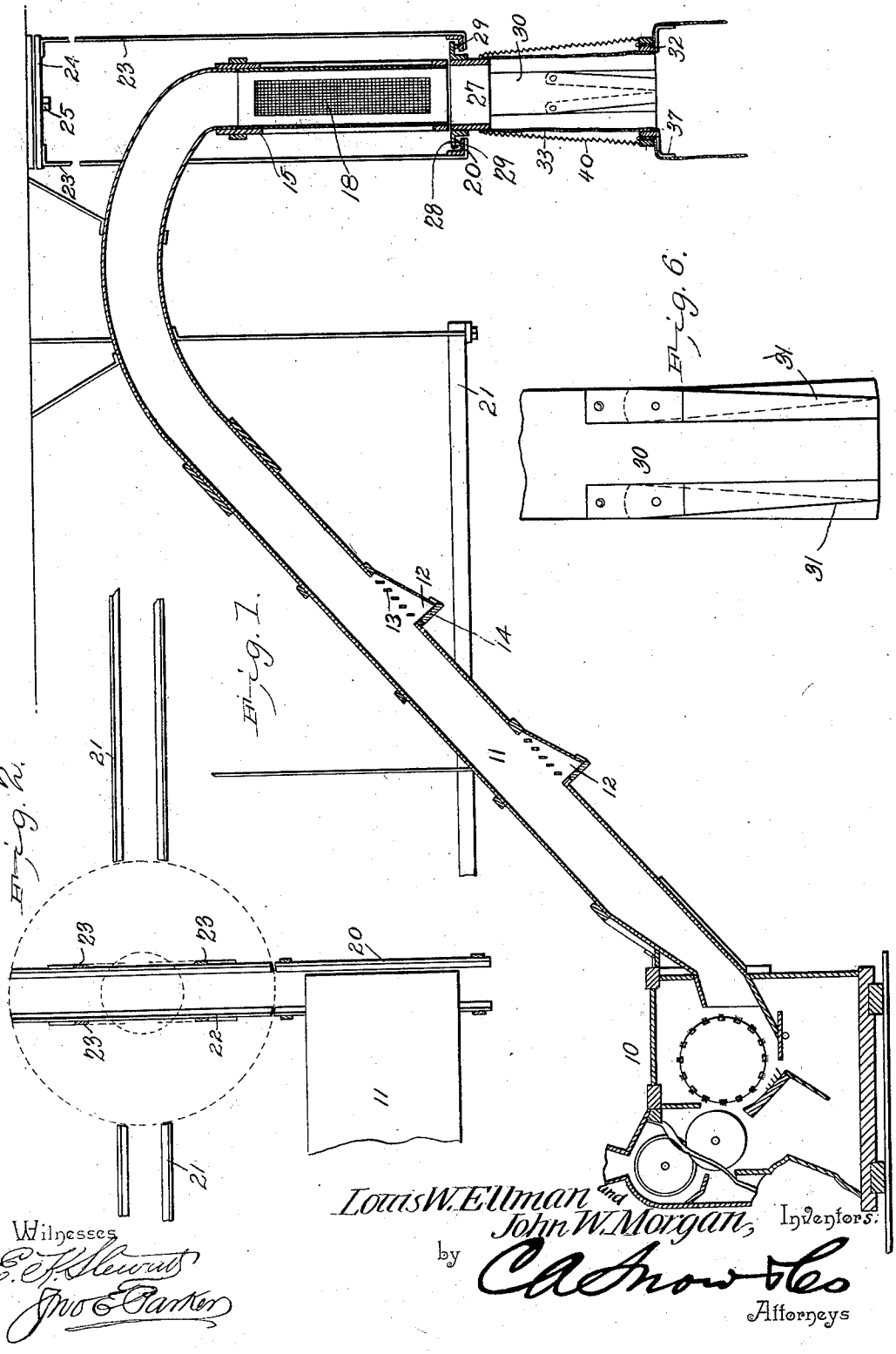
No. 752,662. PATENTED FEB. 23, 1904.

L. W. ELLMAN & J. W. MORGAN.

PNEUMATIC MATTRESS STUFFING MACHINE.

APPLICATION FILED FEB. 3, 1903.

NO MODEL. 3 SHEETS—SHEET 1.



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Fig. 3.

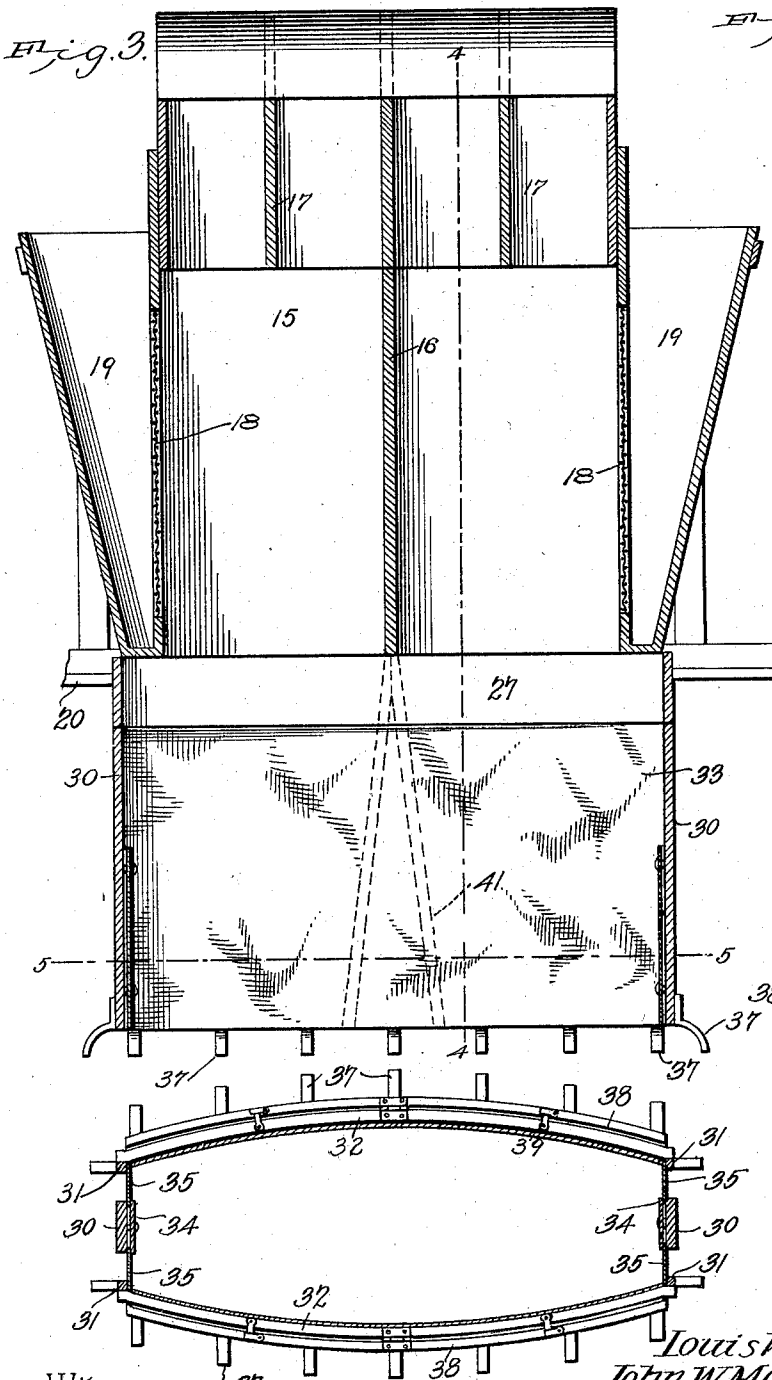


Fig. 4.

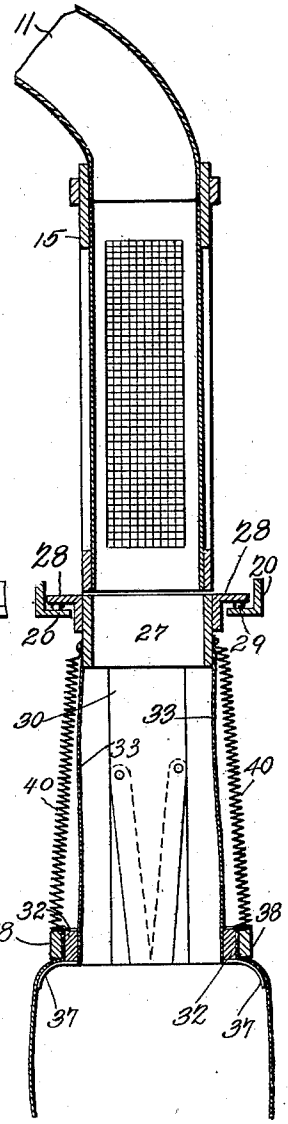


Fig. 5.

Witnesses
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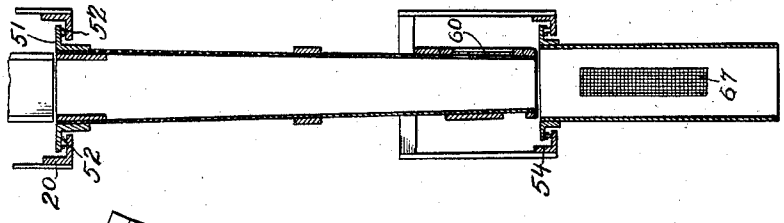


Fig. 8.

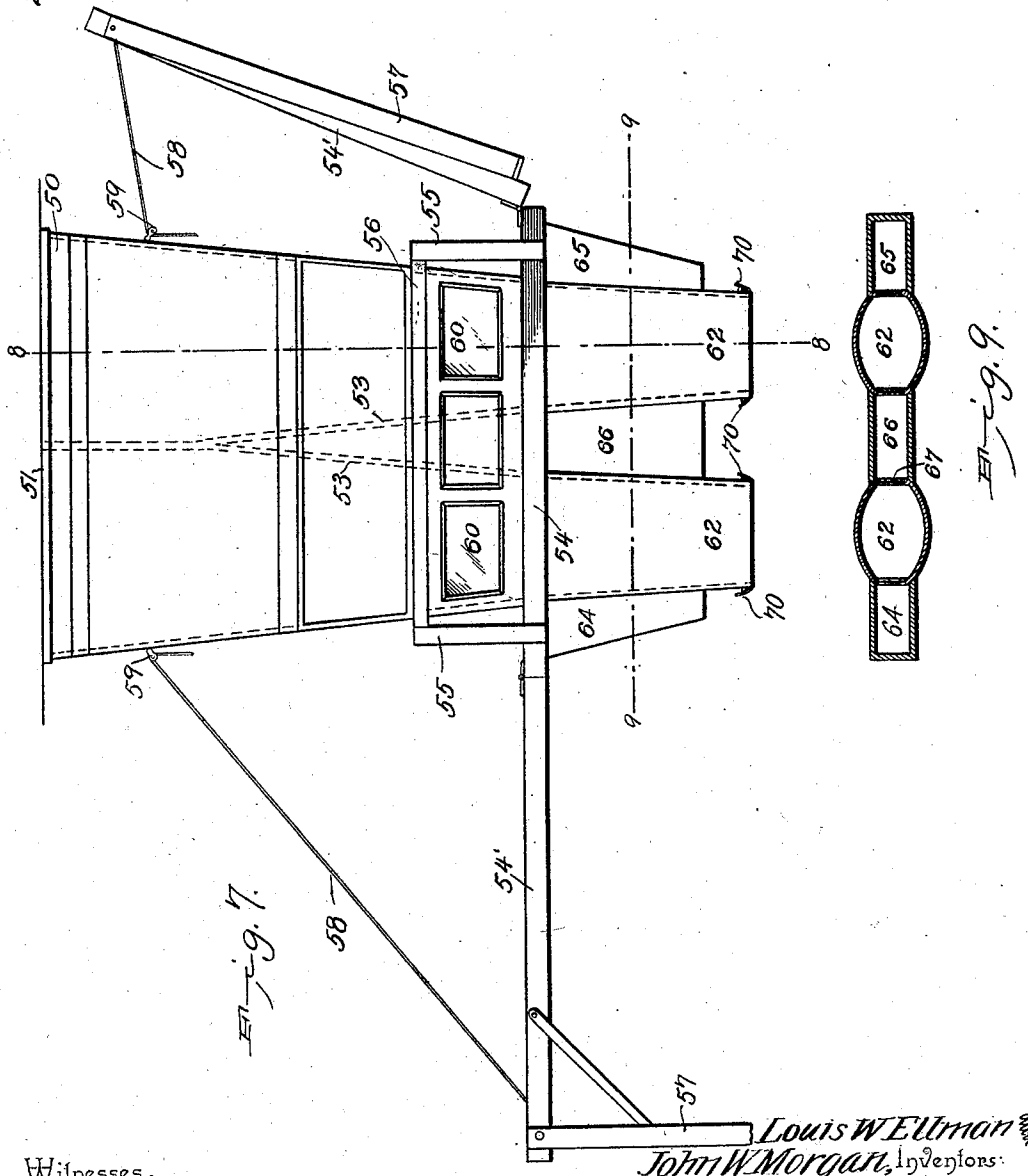


Fig. 7.

Fig. 9.

Witnesses,
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 752,662. Patented February 23, 1904.

UNITED STATES PATENT OFFICE.

LOUIS W. ELLMAN AND JOHN W. MORGAN, OF SAN ANTONIO, TEXAS; SAID MORGAN ASSIGNOR TO JAMES LEWIS DAVIS.

PNEUMATIC MATTRESS-STUFFING MACHINE.

SPECIFICATION forming part of Letters Patent No. 752,662, dated February 23, 1904.

Application filed February 3, 1903. Serial No. 141,720. (No model.)

To all whom it may concern:

Be it known that we, LOUIS W. ELLMAN and JOHN W. MORGAN, citizens of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented a new and useful Pneumatic Mattress-Stuffing Machine, of which the following is a specification.

This invention relates to certain improvements in machinery for stuffing mattresses, and particularly to that class of mechanisms employed for preparing or renovating the fibrous stuffing material and forcing the same under pneumatic pressure into a mattress or pillow tick.

The principal object of the invention is to provide a machine by means of which the entire operation of preparing and cleaning the fibrous material and placing the same in the ticks may be carried on continuously, provision being made for removing filled ticks from the discharge end of the machine and placing empty ticks thereunder.

A further object of the invention is to provide for the escape of dust and dirt from the stuffing material before the latter enters the ticking and to permit the discharge of the air at a point considerably in advance of the mouth of the tick.

A still further object of the invention is to provide an improved mechanism for supporting and handling the ticks at the discharge end of the machine in order to facilitate the removal of filled ticks and the adjustment of empty ticks to filling position without stopping the operation of the machine for any considerable length of time.

A still further object of the invention is to provide improved tick-supporting devices for holding the mouth of the tick suspended and automatically adjustable to accommodate ticks of different size.

A still further object of the invention is to provide devices which may be substituted for the regular tick-supports when it becomes necessary to fill small mattresses or pillows.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a longitudinal sectional elevation of a mattress-stuffing machine constructed in accordance with the invention. Fig. 2 is a plan view illustrating a portion of the elevated trackways for the support of the tick-holders. Fig. 3 is a view corresponding to a portion of the structure shown in Fig. 1, drawn to a somewhat larger scale. Fig. 4 is a longitudinal sectional elevation of the same on the line 4 4 of Fig. 3. Fig. 5 is a sectional plan view of one of the tick-supports on the line 5 5 of Fig. 4. Fig. 6 is a side elevation of one of the tick-supports. Fig. 7 is a side elevation of an attachment which may be substituted for the ordinary tick-support when pillows or the like are to be filled. Fig. 8 is a transverse sectional elevation of the same on the line 8 8 of Fig. 7. Fig. 9 is a sectional plan view of the same on the line 9 9 of Fig. 7.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The cotton or other fibrous material to form the stuffing material is placed in a gin 10 and delivered by the revolving brush of the latter to the lower end of an inclined conveyer-tube 11, preferably of a width about equal to that of an ordinary mattress and provided at intervals with dust-receptacles 12, across which extend louver-strips 13. The dust-boxes are substantially triangular in form and provided with hinged doors 14, which may be opened from time to time to remove the accumulated material. The discharge end of the conveyer-tube is bent downwardly and terminates in a delivery-spout of the construction best shown in Figs. 3 and 4 and comprising a substantially rectangular box 15, preferably divided into two chambers by a partition 16 in order to divide the material when it becomes neces-

sary to simultaneously fill a plurality of small ticks, and to further aid in the even distribution of material the discharge end of the tube is provided with a number of partitions 17. The opposite sides of the box 15 are formed of sheet metal, and at its ends are open spaces covered by sheets 18, of wire-gauze or similar material, through which the air passes and allows the stuffing material to fall by gravity into the tick. At the opposite end of the box 15 are inclined chambers 19 in order to deflect the air-currents, these chambers serving also to receive the particles of dust and dirt carried out through the wire-gauze with the air.

At points immediately below and adjacent to the discharge-spout are trackways 20, forming supports for the tick-carriers, and for convenience in handling the latter additional trackways 21 are provided adjacent to the spout and of sufficient length to support any desired number of carriers. The tracks 20 may be placed in communication with the tracks 21 by means of a turn-table 22, suspended by rods 23, the transverse bar 24 having a central pivot-bolt 25, by which it is connected to a fixed support, the construction being such as to permit the free turning of the table in order to receive carriers with empty ticks from one section of the track and to discharge the filled ticks on the opposite section of the track, so that the filled ticks may be conveyed away to a convenient point for the finishing operation.

The tick-carriers are of the construction best shown in Figs. 3 and 4. The upper portion of each carrier is in the form of an oblong box 27, provided at its opposite sides with angle-bars 28, which may be formed of wood or metal and serve as supports for small rollers 29, the rollers resting on the trackways for convenience in moving the carriers from place to place. At the ends of the oblong frame are depending bars 30 of contracted width at their lower ends, and to the opposite edge of each of these bars is hinged a bar or strip 31, the corresponding bars or strips at opposite ends of the carrier being connected by longitudinal bars 32 and constituting a substantially rectangular frame of which the opposite side members may separate to a greater or less extent, and the side bars may become slightly bowed, as indicated in Fig. 5. In order to prevent the escape of any of the material from the sides or ends of the carriers, the sides are covered by sheets of cloth or similar flexible material, as indicated at 33, and at the ends are overlapping plates 34 and 35, the plates 34 being secured to the rigid side bars 30 and the plates 35 being carried by the pivoted bars 31, the overlapping sheets forming closed ends, while permitting free spreading movement of the carrier.

To the lower bars 32 are secured a plurality of outwardly and downwardly bowed fingers 37, additional fingers being placed at the ends of the carrier, if desired These fingers serve to distend the mouth of the ticking, which is passed over them and placed between the outer faces of the side bars 32 and auxiliary clamping-bars 38, hinged or otherwise connected to the bars 32 and adapted to clamp and hold the ticking in position. These clamping-bars are held in proper position by suitable latches 39, carried by the bars 32, the latches being readily turned when it is desired to remove a filled tick, and to assist in opening the clamps and holding the clamp-bars elevated while a new tick is being placed in position we employ suitable tension-springs 40, extending between the clamping-bars and the side members of the oblong frame 27.

Where two small ticks are to be filled at the same time, the tick-carrier is of slightly-modified construction, a pair of division-plates 41 being placed midway between the ends of the carrier, as indicated by dotted lines in Fig. 3.

The machine may further be utilized for filling pillow-ticks and the like, and where these are of small size and easily handled it is desirable to employ an attachment of the character illustrated in Figs. 7, 8, and 9, the attachment being of such construction that it may be conveniently stored at any part of the track 21 when not in use and then run into position under the discharge-spout when pillows and the like are to filled. The pillow-filling device comprises an upper substantially oblong frame 50, having angle-bars 51, provided with rollers 52, adapted to the tracks 20 and 21 and divided into two compartments by partitions 53, as indicated by dotted lines in Fig. 7. Secured to the lower portion of this filling device are auxiliary tracks 54, the tracks being supported by hanger-bars 55, depending from a rectangular frame 56, arranged near the lower end of the frame. To the opposite ends of the fixed track members are secured hinged extension-tracks 54′, having hinged supporting-legs 57 arranged at their outer ends in order to provide an elongated track for the reception of the pillow-tick carriers. The track-extensions are connected by flexible cords or chains 58 to the frame, the cords or chains being run over small sheaves 59, so that when not in use the track extensions may be drawn up to the position shown at the right of Fig. 7. In one wall of each of the chambers or flues through which the filling material passes are glass panels 60, through which the passage of the material may be observed, the panels being removable or hinged, as shown in Fig. 8, so that access may be had to the interior of the chambers in case of choking.

The pillow-carriers are in the form of tapering spouts 62, formed integral with a casing which is divided into compartments 64, 65, and 66 and the whole structure being hung

on the tracks 54, as shown in Fig. 8. The partitions between the spouts 62 and the compartments 64, 65, and 66 are provided with panels 67, formed of wire-netting to permit the free escape of air and dust, and at the lower end of each spout are small spring-clips 70 for holding the pillow-tick in place. The track, with its extensions, is preferably of sufficient length to hold three or more of the double carriers, so that while one carrier is in position under the filling-spouts the previously-filled ticks of another carrier may be removed and at the same time empty ticks may be placed on a third carrier. In practice, however, it is found more convenient to employ only two of the duplex carriers, these being alternately moved to position under the filling-spouts.

The device may be employed for filling ticks of any size with fibrous material of any character, and the gin illustrated in the drawings may be replaced by any desired form of renovating device, or a simple blower may be employed to force the material up through the conveyer-tube.

Having thus described the invention, what is claimed is—

1. In a device of the class specified, the combination with a conveyer-tube having a flexible depending discharge-spout, of means at the inlet end of the tube for forcing fibrous material therein, and a tick engaging and clamping device disposed at the end of said discharge-spout.

2. In a device of the class specified, the combination with a conveyer-tube having a terminal depending discharge-spout, of a tick-support, and rails arranged adjacent to the spout and adapted to receive and guide said tick-support.

3. In a device of the class specified, the combination with a conveyer-tube, of a spout having reticulated walls or panels, and a pendent yieldable tick-supporting means forming the discharge end of said spout.

4. In a device of the class specified, the combination with a conveyer-tube having a terminal depending discharge-spout, of division-plates arranged within the tube and spout to divide and equalize the material passed therethrough, and a tick-supporting device arranged below the mouth of the spout.

5. In a device of the class specified, the combination with a conveyer-tube, of a discharge-spout comprising a substantially rectangular casing having reticulated walls, an auxiliary chamber disposed at each side of the spout and separated therefrom by the reticulated walls, and means for supporting a tick below said spout.

6. The combination with a conveyer-tube having a terminal depending discharge-spout, of trackways arranged adjacent to the mouth of the spout, main trackways, a fixed support, a turn-table depending therefrom and adapted to place the several trackways in communication, and wheeled tick-supports mounted on said trackways.

7. The combination with a conveyer-tube having a flexible discharge-spout at one end, of a tick-support disposed below the discharge end of the tube, and means carried by the opposite sides of said support for clamping and supporting a pendent tick.

8. The combination with a conveyer-tube, of a tick-support disposed below the discharge end of said tube, a freely-flexible spout member connecting the conveyer-tube and tick-support, means carried by the support for distending the open mouth of the tick, and tick-clamping means also carried by said support.

9. The combination with a conveyer-tube, of a tick-support disposed below the discharge end of the tube, a plurality of outwardly and downwardly curved tick-distending fingers carried by said support, and tick-clamping means also carried by the support.

10. The combination with a conveyer-tube, of a tick-support disposed below the discharge end of said tube, a freely-flexible spout member connecting the conveyer-tube and tick-support, the lower open end of said support being freely expansible and having means for clamping a tick in position.

11. The combination with a conveyer-tube, of a tick-support arranged below the discharge end of said tube and comprising a substantially rigid upper frame, end members having a plurality of hinged sections, lower side bars carried by said hinged sections, tick-clamping means carried by said side bars, and flexible side sections connecting said bars to the upper frame.

12. The combination with a conveyer-tube, of a tick-support arranged below the discharge end of said tube, and comprising a substantially rigid upper frame having depending end members, pivoted bars carried by said end members, overlapping plates carried by the end members and pivoted bars, side bars connecting corresponding pivoted bars, side members formed of textile material connecting said side bars to the rigid frame, and tick-clamping bars connecting to said side bars.

13. The combination with a conveyer-tube, of a plurality of interchangeable tick-supports for engaging and holding ticks of varying size, and trackways adjacent to the discharge end of said tube and adapted to receive and guide said tick-supports.

14. In a device of the class specified, the combination of the conveyer-tube having a terminal discharge-mouth, of the supporting-tracks arranged adjacent to the mouth, and interchangeable tick-supports mounted on

said tracks, one of said supports being provided with auxiliary track members for the reception of pillow-tick-supporting devices.

15. The combination with a conveyer-tube, of the supporting-rails arranged adjacent to the discharge-mouth of the tube, a hollow casing divided by partitions into a plurality of compartments, a track-section carried by said casing, auxiliary hinged track members connected thereto, and pillow-tick supports mounted on said auxiliary tracks.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

LOUIS W. ELLMAN.
JOHN W. MORGAN.

Witnesses as to signature of Louis W. Ellman:

GEORGE B. JOHNSTON,
JOHN KINAHAN.

Witnesses as to signature of John W. Morgan:

CHAS. J. RATZEIL,
A. L. PICKETT.