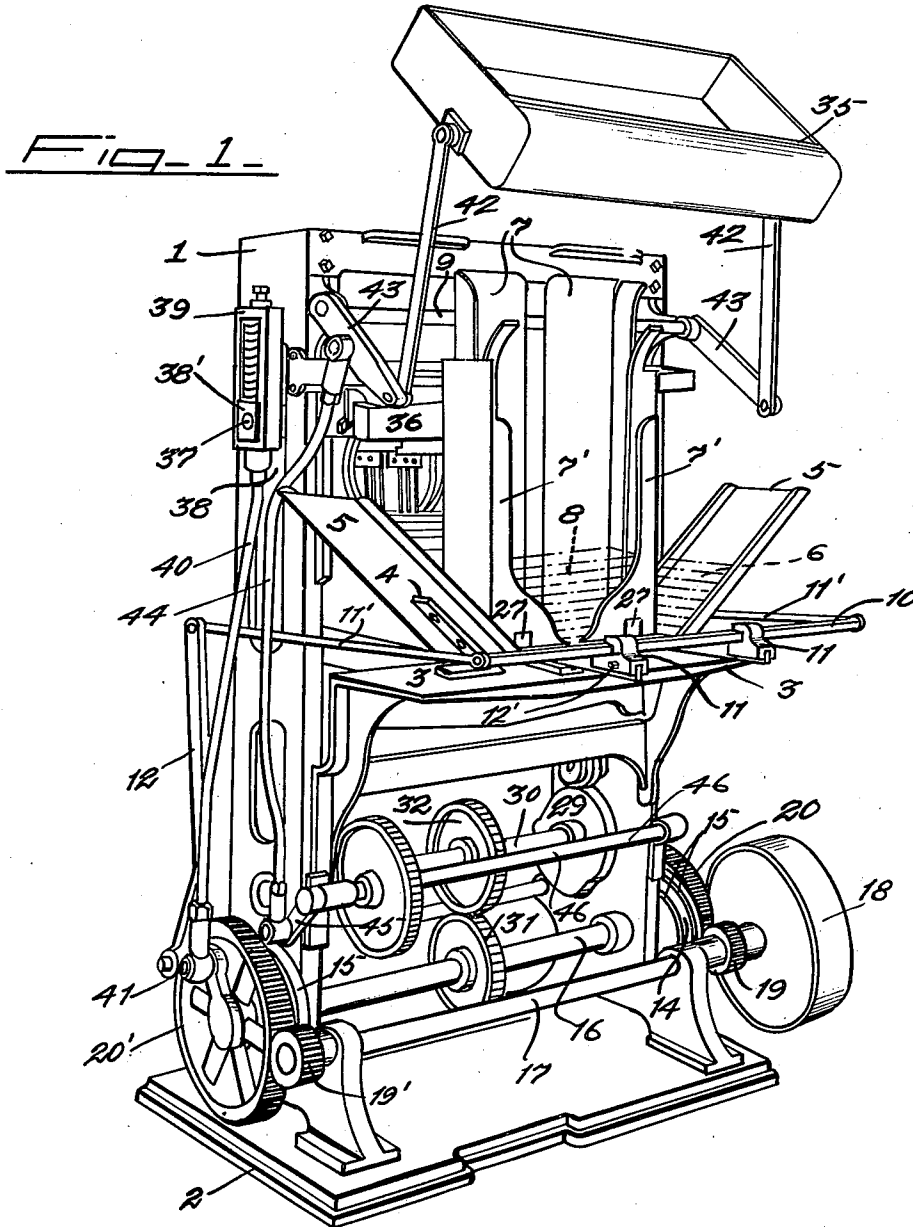


G. D. PARKER.
CRATE HEAD MAKING MACHINE.
APPLICATION FILED JULY 8, 1919.

1,407,295.

Patented Feb. 21, 1922.

4 SHEETS—SHEET 1.



WITNESS:

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INVENTOR.

BY *George S. Parker*

At Her & Tollen
ATTORNEYS.

1,407,295.

4 SHEETS—SHEET 2.



INVENTOR

Wm F Drew

Fig. 2.

BY *George J. Parker*

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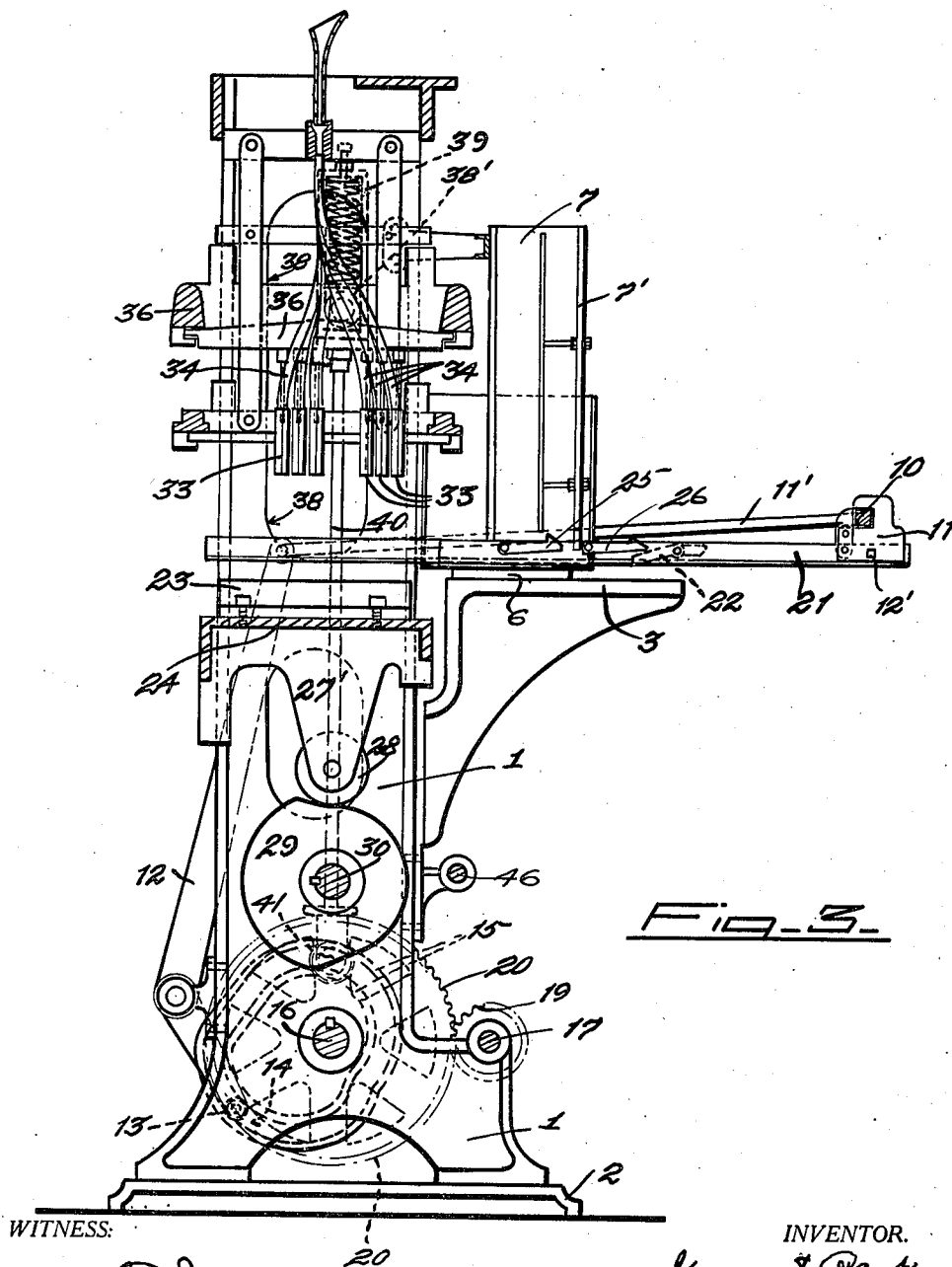


FIG. 3.

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4 SHEETS—SHEET 4.

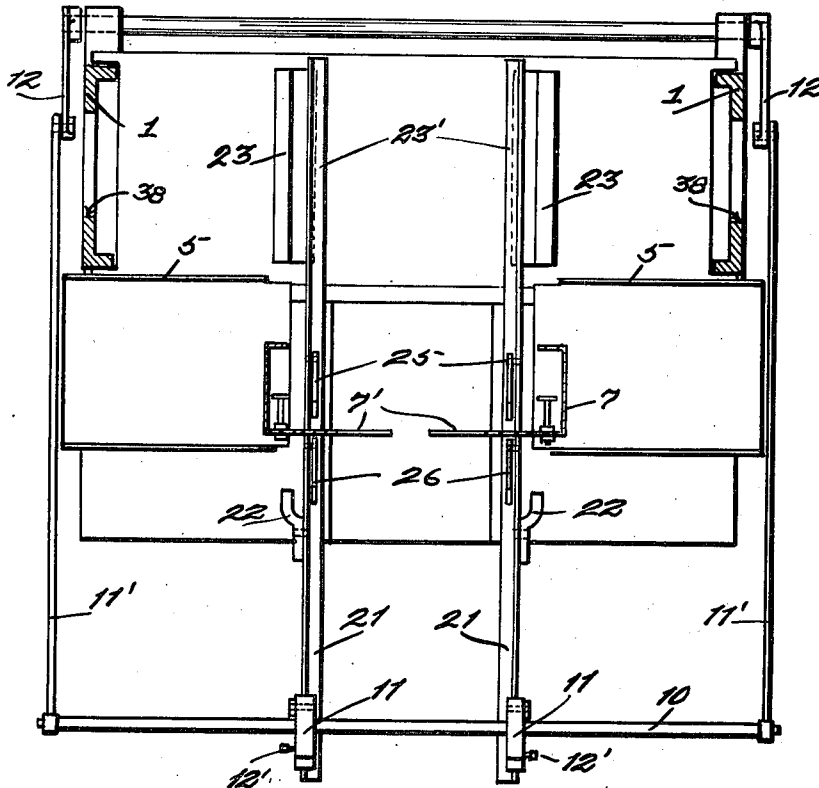


Fig 4.

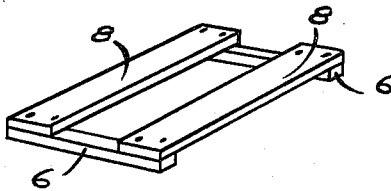


Fig. 5.

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UNITED STATES PATENT OFFICE.

GEORGE D. PARKER, OF RIVERSIDE, CALIFORNIA.

CRATE-HEAD-MAKING MACHINE.

1,407,295.

Specification of Letters Patent. Patented Feb. 21, 1922.

Application filed July 8, 1919. Serial No. 309,379

To all whom it may concern:

Be it known that I, GEORGE D. PARKER, a citizen of the United States, residing at Riverside, in the county of Riverside and State of California, have invented certain new and useful Improvements in Crate-Head-Making Machines, of which the following is a specification.

The hereinafter described invention relates to an apparatus for automatically receiving and conveying the end posts and end pieces for a crate head to nailing position and nailing the end pieces to the said end posts; the invention being more particularly designed for the construction of heads for crates employed in connection with the shipment of vegetables, fruits and other commodities, which crates, with the exception of the heads, are formed by hand, that is to say, the side pieces employed in the construction of the crate are nailed by hand to the formed crate heads.

The essential feature of the invention resides in the mechanism for automatically delivering the end posts and end pieces of the crate head to nailing position, and while in such position nailing the end pieces to the end posts and automatically removing or ejecting the finished or completed crate head from the machine; although, in the present case, the construction of the apparatus is such, that the incoming parts or the unassembled members of the crate head moving to nailing position removes or ejects from the machine a previously completed finished crate head.

To comprehend the invention, reference should be had to the accompanying sheets of drawing, which illustrate the preferred embodiment of my invention, and wherein,

Fig. 1 is a perspective rear elevation of the apparatus, illustrating more particularly the hoppers for the end post and the hopper for holding the end pieces for the crate head, the means for removing the crate head pieces from within the respective hoppers and simultaneously advancing the same to nailing position, and the mechanism for actuating the working parts of the apparatus.

Fig. 2 is a front elevation of the apparatus.

Fig. 3 is a vertical sectional view, taken on the line 3—3, Fig. 2 of the drawings, and viewed in the direction of the arrows, dis-

closing the relative position of the working parts of the apparatus and the mechanism for imparting movement thereto.

Fig. 4 is a cross-sectional top plan view, taken on the line 4—4, Fig. 2 of the drawings, viewed in the direction of the arrows.

Fig. 5 is a perspective view of a finished crate head.

Referring to the drawings, the numeral 1 is used to indicate any suitably constructed frame capable of sustaining the working parts of the apparatus; and which frame in the present case is upwardly extended from a suitable base plate 2. The frame 1 supports, approximately midway of its height an outwardly projecting shelf or table 3, and to the said shelf is adjustably supported by means of the angle brackets 4, the end post hoppers 5, which hoppers are arranged at an outward inclination, each hopper being adapted to contain a stack of end posts 6, which posts feed downwardly within the said hoppers for positioning the lowermost end post of the stacks onto the table 3 in advance of reciprocating means for removing or delivering the same to nailing position, as hereinafter more fully set forth. Intermediate the said end post hoppers 5, is situated a vertically disposed hopper 7 which hopper is adapted to contain a stack of end pieces or shooks 8. The said hopper at its lower end is supported or sustained by the table or bracket 3, and at its upper end the hopper members are adjustably connected for lateral adjustment to the transversely disposed bar 9. The hopper 7 is an open one, the shook or ends being sustained therein by an inwardly projecting flange at the bottom of each member 7'. Above the table or bracket 3 and held a slight distance thereabove is located a transversely disposed reciprocating feed bar 10; on said bar are mounted two slide heads 11, which work over the face of the table or bracket 3. The feed bar 10 is connected by links 11' to the upper end of the fulcrumed levers 12, the lower end of each fulcrumed lever carrying a following roll 13 adapted to work within a cam groove 14 formed in the face of the cams 15, which cams are mounted on the main shaft 16 of the apparatus. The said shaft 16 is driven from the drive shaft 17, to one end of which is mounted a belt pulley 18; the shaft 16 deriving its motion from the drive shaft 17 through the medium of the pinion 19 mesh-

ing with the gear 20 on the said main shaft 16.

To each head block 11 is adjustably connected a slide 21, each slide carrying approximately midway of its length a dog 22, which dogs are adapted on the inward movement of the slides 21 to engage the outer end of the end posts 6 delivered from the end post hoppers 5 onto the upper surface of the table or bracket 3, and transfer the said end posts 6 from such position and inwardly of the machine and deposit the same onto the upper surface of the longitudinally disposed spaced nailing bases 23, which bases are secured to and carried by the vertically movable platform 24. Each reciprocating slide 21, carries in addition to the dog 22, a plurality of shooks or end piece removing dogs 25 and 26, which dogs are pivoted to the slides 21 and move through cut-outs or slots 27 formed in the face wall of the hopper for the end pieces or shooks 8. As the forward pair of dogs 25 move within the cut-outs 27 and through the hopper 7, the lowermost shook or end-piece 8 is moved from beneath the stack of end pieces and from within the hopper 7, while the next lowermost end piece or shook 8 is removed by the dogs 26 as they advance through the hopper, carrying the end pieces or shooks in spaced relation to a position immediately above the nailing bases 23 so as to lie immediately above and transversely disposed relative to the end posts 6, which at such time rest on the said nailing bases. The action of the slides 21 is such, that on each inward reciprocating stroke thereof there is simultaneously advanced two end posts and two end pieces 8 to nailing position. When brought to this position, the nailing bases 23 are raised to cause the positioned end posts 6 to elevate or lift the positioned parallel end pieces or shooks 8 from off the dogs 25 and 26, which upward or vertical movement of the nailing bases 23 is produced by the upward lift of the platform 24 to which they are secured in any suitable manner. The platform 24 is provided with the downwardly extended portions 27', carrying cam follower rolls 28, which are acted on by the cams 29 secured to a transversely disposed shaft 30 driven from the main shaft 16, through the medium of the intermeshing gears 31 and 32 mounted respectively on the shafts 30 and 16.

When the nailing bases stand in their full elevated or uplifted position with the transversely disposed end pieces 8 for the crate head resting on the longitudinally disposed end posts 6 supported by the nailing bases, the said end pieces are nailed to the end posts by any suitable type of nailing means. These means in the present case comprise the nail chucks 33 which receive nails from the nail feed tubes 34, which tubes in turn receive the nails from any suitable nail feed-

ing mechanism (well known and common in the art), the nails being delivered from the tilting nail hopper 35. As in nailing machines generally, within each of the nail chucks 33, is located a punch for forcing the nails from within the nail chuck 33 and driving the same through the crate head members to be united, that is to say, the end pieces and end posts of the crate head, the said punches being operated through the medium of the nailing head 36, working in suitable guide-ways of the frame 1. The trunnions 37 of the nailing head project through the slotted section 38 of the frame 1 and extend within the trunnion blocks 38', spring-held within the yoke-heads 39, which yoke-heads 39 are secured to and carried at the upper extremity of the connecting rods 40 united at their lower ends by the wrist pins 41 to the driven gears 20 and 20' mounted on the ends of the main shaft 16 and which receive rotation from the drive shaft 17 through the meshing pinions 19 and 19'.

The nailing head and the means for actuating the same is of well known construction and calls for no detailed description as to construction and operation and equally so the oscillating or tilting movement of the nail hopper 35 for the agitation of the nails therein for delivery to the nail feed is well known, it being understood, in the present case, that the said hopper is supported by the connecting rods 42, which at their lower ends are secured to the levers 43 and said levers are actuated through the medium of the connecting rods 44, pivoted at their lower ends to the crank arms 45 secured to the transverse shaft 46, driven from the shaft 30 by a pinion thereon meshing with the gear 47 secured to the shaft 46.

The slides 21 are adjustable, as previously stated, within the slide blocks 11 and are held in adjusted position therein by means of the set screws 12', the purpose of this adjustment being that during certain working conditions of the machine it is desirable to change the position of the end pieces relative to the nailing chucks, so that the nails will come to a different position relative thereto and it is therefore apparent that if the adjustment of the slide rods 21 be varied relative to the slide blocks 11, there will be a change in the positioning of the end pieces carried by the dogs 25 and 26 of the slide 21 relative to the nailing chucks.

The hopper 7 is made in two sections, Fig. 2 of the drawings, each member of angular form and each member is adjustably connected to the transverse bar 9 by means of the screw bolts 9', which extend through said members composing the hopper 7 and pass through the slotted sections 9² of the cross bar 9. This permits of lateral adjustment of the hopper members, the purpose

of such transverse adjustment being that the width of the hopper may be varied in accordance with shooks or end pieces of different lengths to be fitted therein. Similarly, the end post hoppers 5 are adjustable relative to the shelf or support 3 by means of the adjustable bracket 4. These adjustments permit of the machine being utilized for the work on material of varying lengths, in order to provide completed heads or ends for crates of different sizes.

The invention primarily resides in the means for receiving and simultaneously advancing the members or parts constituting the crate head to nailing position, and in the means whereby the hoppers for the members to be assembled may be adjusted or varied to adapt themselves for varying lengths of pieces for the production of crate heads for use in connection with crates of different sizes.

While the invention has been illustrated and described in its preferred embodiment, it will be understood that it is not my wish to limit or confine the invention to the details of construction of the interconnected working parts herein shown and described, and I therefore wish to be understood as claiming the invention as broadly as the state of the art will warrant.

Having thus described my invention what I claim as new and desire to protect by Letters Patent is:

1. A machine of the character described comprising a supporting frame, a nailing base carried by the frame, spaced hoppers for containing end posts, a hopper arranged between the spaced hoppers for containing end pieces, slides arranged to reciprocate over the nailing base, head blocks longitudinally adjustable on the slides, means connected to the head blocks for reciprocating the slides, means on the slides for engaging and moving the end posts and end pieces into nailing position, and nailing mechanism for securing the end pieces to the end posts.

2. A machine of the character described comprising a supporting frame, a platform mounted in the frame, a depending arm formed on the platform, a roller carried by the depending arm, means engaging the roller for raising and lowering the platform, nailing bases secured to the platform, spaced hoppers for containing end posts, a hopper mounted between the spaced hoppers for

containing end pieces, means for feeding the end posts and end pieces from the hoppers onto the nailing bases, and nailing mechanism for securing the end pieces to the end posts.

3. A machine of the character described, comprising a supporting frame, a central hopper for receiving end pieces, inclined side hoppers for receiving end posts, said side hoppers being adjustable towards or away from the sides of the central hopper, nailing bases supported on the frame, means for feeding the end posts and end pieces from the hoppers to the nailing bases, and nailing mechanism for securing the end pieces to the end posts.

4. A machine of the character described, comprising a supporting frame having a transversely disposed bar provided with spaced elongated openings therein, a center hopper for receiving end pieces, said center hopper formed of two sections, means carried by each section and passing through an elongated opening in the transversely disposed bar for adjusting the sections towards or away from one another, inclined side hoppers for receiving end posts, said side hoppers being adjustable towards or away from the sides of the center hoppers, nailing bases supported on the frame, means for feeding the end posts and end pieces from the hoppers to the nailing bases, and nailing mechanism for securing the end pieces to the end posts.

5. A machine of the character described comprising a supporting frame, a platform mounted in the frame for vertical sliding movement, nailing bases secured to and carried by the platform, spaced hoppers for containing end posts, a hopper received between the spaced hoppers for containing end pieces, means for feeding the end posts and end pieces from the hoppers on to the nailing bases, means for vertically adjusting the platform with the end posts and end pieces thereon, and nailing mechanism for securing the end pieces to the end posts.

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

GEORGE D. PARKER.

Witnesses:

N. A. ACKER,
D. B. RICHARDS.