Feb. 2, 1932. C. T. HOWSON 1,843,283

CHERRY PITTING MACHINE

Original Filed May 4, 1925 3 Sheets-Sheet 1

Fig. 2.

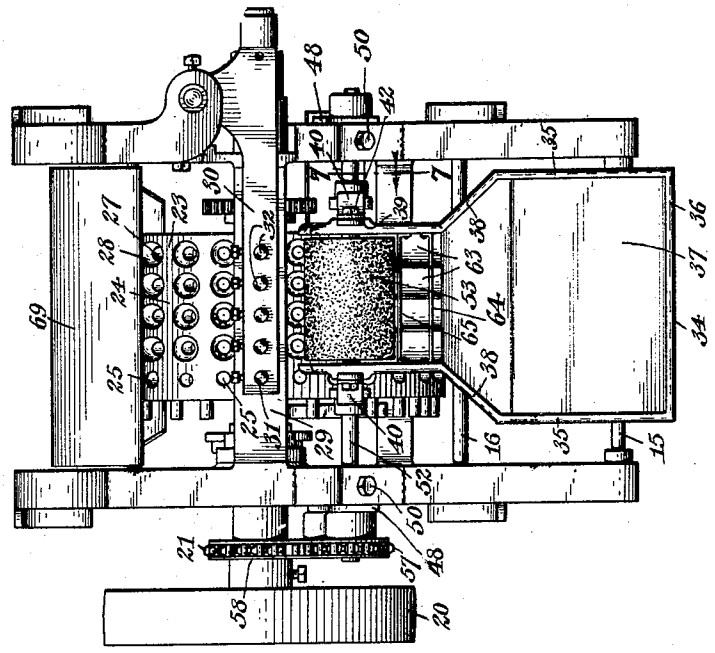
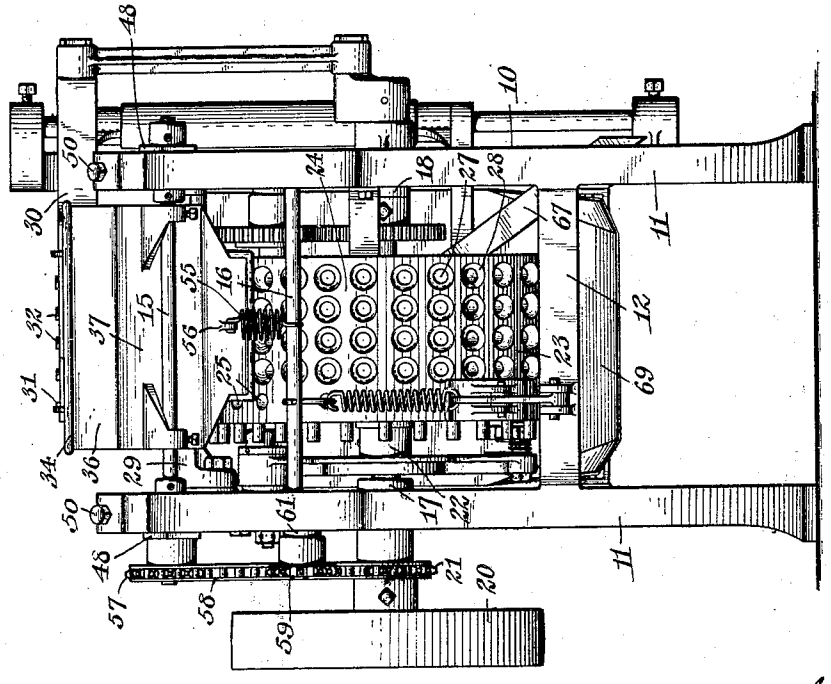


Fig. 1.



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Fig. 4.

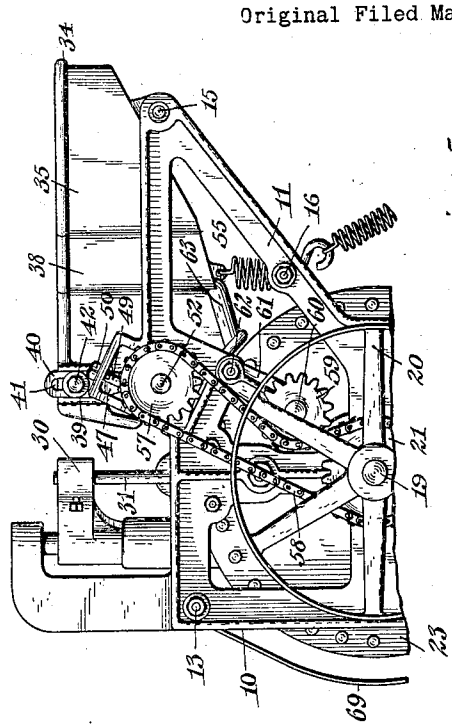


Fig. 5.

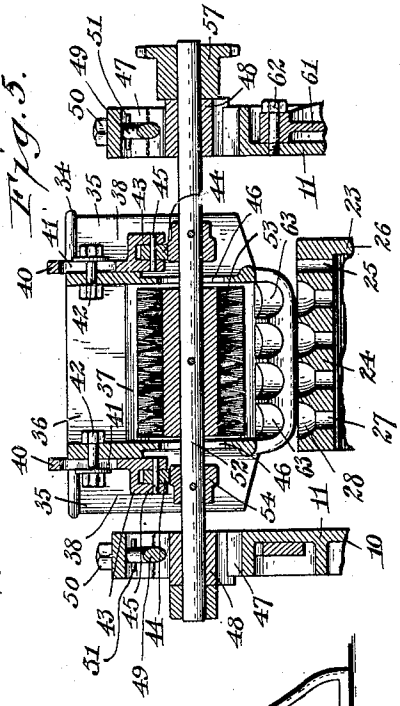
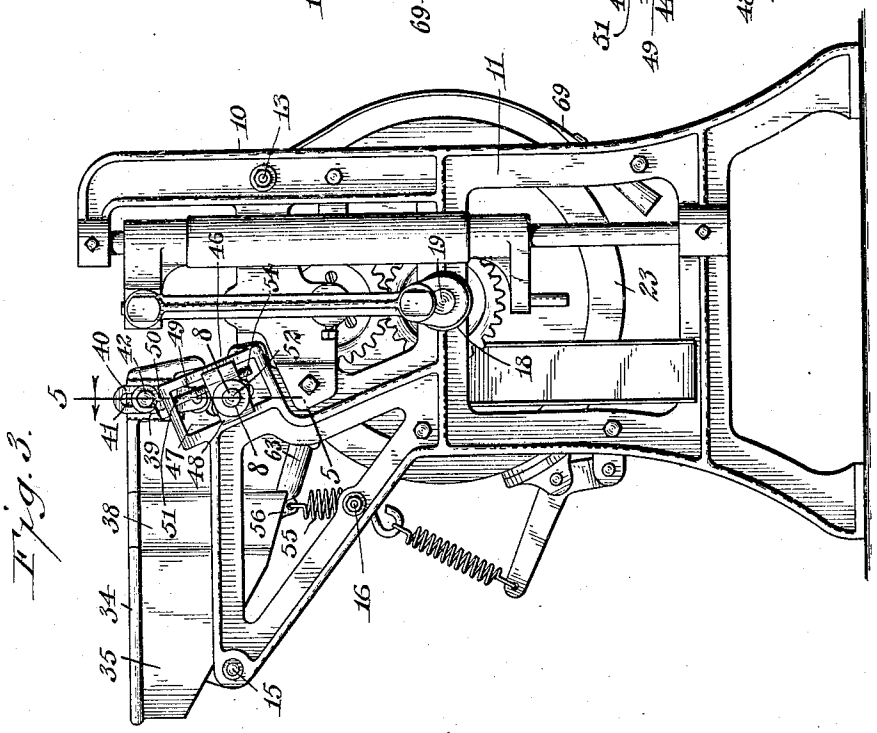


Fig. 3.



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CHERRY PITTING MACHINE

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Fig. 6.

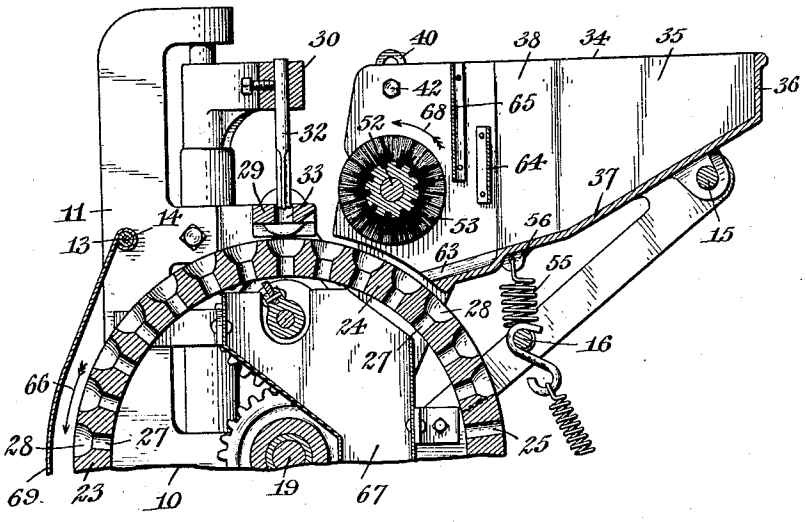


Fig. 7.

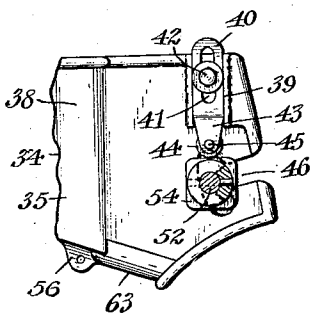
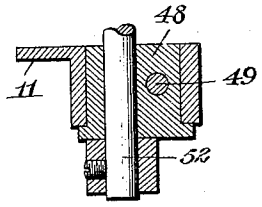


Fig. 8.



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Patented Feb. 2, 1932 1,843,283

UNITED STATES PATENT OFFICE

CHARLES T. HOWSON, OF SILVER CREEK, NEW YORK, ASSIGNOR TO HUNTLEY MANUFACTURING CO., OF BROCTON, NEW YORK, A CORPORATION OF NEW YORK

CHERRY PITTING MACHINE

Original application filed May 4, 1925, Serial No. 27,782. Divided and this application filed December 18, 1928. Serial No. 326,877.

My invention relates to improvements in cherry-pitting machines, and more particularly to certain features of my co-pending application for patent, Serial No. 27,782, allowed August 17, 1928, now matured into Patent No. 1,701,533 and of which this application is a division.

One of the objects of this invention is to provide improved cherry-feeding mechanism, including a feeding hopper, and to provide novel means for oscillating the feeding hopper.

With the above and other objects in view to appear hereinafter, the invention consists in the novel features of construction, and in the arrangement and combination of parts to be hereinafter described and more particularly pointed out in the subjoined claims.

In the drawings:—

Fig. 1 is a front elevation of the cherry-pitting machine.

Fig. 2 is a plan view of the same.

Fig. 3 is a side elevation of the machine, viewed from one side thereof.

Fig. 4 is a similar view of the upper portion of the machine, viewed from the other side thereof.

Fig. 5 is a vertical section taken on line 5—5, Fig. 3, looking in the direction of the arrow crossing said line.

Fig. 6 is a transverse vertical section through the upper portion of the machine.

Fig. 7 is a vertical section through a portion of the machine, taken on line 7—7, Fig. 2, looking in the direction of the arrow crossing said line.

Fig. 8 is an enlarged section of the hopper-brush shaft bearing, taken on line 8—8 Fig. 3.

The reference numeral 10 designates the frame of the machine, which comprises two side members 11, channeled connector members 12 connecting said side members together a distance from their lower ends, a connector tie bolt 13 near the upper end of the frame, around which a spacing sleeve 14 is placed, and tie rods 15, 16 at the upper region of the machine; said connector members, tie bolt and tie rods serving to connect said side members 11 together in a rigid manner.

The side members 11 of the frame are preferably of skeleton formation so as to reduce the weight of the same and they have alined bearings 17, 18 formed therein in which the main or drive shaft 19 of the machine is journaled, said shaft extending outwardly beyond both side members 11. A drive pulley 20 is secured to one end of the main or drive shaft and this drive pulley is spaced from the bearing 17 in one of the side members 11.

Secured to said main or drive shaft between said bearing 17 and said pulley 20 is a sprocket wheel 21. Secured to said main or drive shaft near the inner end of the bearing 17 is a cam 22, and loosely mounted on said drive shaft is a cherry-pitting cylinder or drum 23.

The cylinder or drum 23 is held against movement lengthwise on the shaft 19 and the circumferential wall 24 thereof is provided with a circular series of guide or pilot openings 25, which are arranged in close proximity to the end wall 26 of said cylinder or drum. Said circumferential wall is also provided with a plurality of circular series of pitting openings 27, which are in longitudinal alinement with the guide or pilot openings 25, and may, for convenience be said to be disposed in longitudinal rows. The pitting openings 27 are enlarged at their outer ends to form cavities or pockets 28 adapted to receive cherries to be pitted, the inner portions of the pitting openings being of a diameter somewhat smaller than the smallest cherry to be delivered into cavities or pockets so that there is no possibility of the cherries passing or being forced though the inner portions of said pitting openings.

Positioned directly above the crest or center of the pitting cylinder or drum, is a stripper device which includes a stripper bar 29 with which a cross-head 30 co-operates, said cross-head having a pilot pin 31 depending therefrom which extends through an opening in said stripper bar, and a longitudinal row of depending pitting pins 32 fastened in said cross-head. These pitting pins are alined with a corresponding row of openings 33 in said stripper bar and the

lower extremities of said pitting pins are retained in said openings, when said cross-head is in its elevated position.

The cross-head 30 is reciprocated vertically, in the manner described in my aforesaid co-pending application, or otherwise, and the movement thereof is timed with the intermittent rotation of the pitting cylinder, with the result that the longitudinal rows of pitting openings 27 in the cylinder or drum 23 are brought successively under the pitting pins 32 and the latter caused to be moved into the row of the pitting openings so positioned, as and in a manner well known in the art; the cylinder or drum being held in position by the pilot pin 31 which is longer than the pitting pins and enters the pilot opening 25 alined with said last-mentioned pitting openings before the pitting pins enter the pitting openings.

The rotation of the main or drive shaft 19 will cause the cam 22 to actuate parts interposed between it and the pitting cylinder or drum, as shown in my said co-pending application, for the purpose of intermittently rotating said cylinder or drum, and also cause reciprocation of the cross-head 30. Each intermittent movement equaling the distance, center to center, between adjacent longitudinal rows of pitting openings in the pitting cylinder or drum.

The cherries to be pitted are adapted to be fed to the longitudinal rows of cavities or pockets 28 formed in the pitting cylinder or drum 24, and for this purpose a feed hopper 34 is provided which has opposite side walls 35, an outer end wall 36, and an inclined bottom 37. The hopper is narrowed along its inner region and for this purpose the side walls 35 are provided with oblique portions 38 between their ends. Said hopper is pivotally supported near its outer end by the tie rod 15.

At the inner end of each of the side walls 35 a vertically-disposed guideway 39 is provided, see Figs. 3, 4, and 7, each of said guideways comprising spaced external ribs between which a roller support 40 is adjustably arranged. Each of said roller supports comprises a flat or bar-like member provided with a longitudinal slot 41 through which, and an opening in the side walls carrying said roller support, a securing bolt 42 is passed. The lower end of each roller support is outwardly offset and forked, as at 43, and in the forked portion thereof a roller 44 is rotatably arranged, said roller being rotatable on a pin 45 fastened in the spaced arms of said forked portion, as best shown in Fig. 5.

Each of the side walls 35 of the feed hopper is also provided with a substantially T-shaped opening 46, the stem of which opens through the inner edge of said wall. These openings are transversely alined and arranged beneath the roller supports 40. Each of these openings extends inwardly from the inner edge of one of the side walls and is arcuate, with the center thereof coaxial with the center of the main or drive shaft 19, and at the inner end of each of these arcuate openings, lateral enlargements are formed so that the substantially T-shaped opening 46 thus provided has its stem at a slight angle to the horizontal and its head portion at a slight angle to the vertical.

In the side members 11 of the frame, rectangular bearing-box openings 47 are formed which are also disposed at a slight angle to the vertical and are inclined with the head portions of said T-shaped openings 46 in the side walls of the hopper. In each of these bearing-box openings, bearing boxes or blocks 48 are adjustably arranged, and for the purpose of adjustment, each has an adjusting screw 49 threaded therethrough, said screws being rotatable in the upper walls of the bearing-box openings 47 and having heads 50 for conveniently rotating said screws, said heads preventing lengthwise movement of said screws in one direction while retainer pins 51 are passed through said screws and bear against the inner sides of the top walls of said bearing-box openings to prevent movement of said adjusting screws lengthwise in the opposite directions. Therefore, upon rotating said adjusting screws in one direction, the bearing boxes or blocks 48 are elevated within the bearing-box openings, while upon rotating said adjusting screws in the opposite direction, said bearing-boxes or blocks are lowered in said openings.

Rotatably mounted in said bearing-boxes or blocks is a transverse shaft 52 which also extends through the head portions of the T-shaped openings 46 in the side walls of the feed hopper, and mounted on said shaft within the narrowed inner portion of said feed hopper is a cylindrical brush 53 (Fig. 5) which is pinned or otherwise fastened to said shaft. It is to be noted that the side walls 35 of the feed hopper extend inwardly a greater distance than the inclined bottom of said hopper and that the lower edge of the inwardly-extending portions of said side walls are curved to conform to the curvature of the cylinder or drum 23, although slightly spaced therefrom, as clearly shown in Fig. 6.

Mounted on the shaft 52 directly beneath the rollers 44 on the roller supports are hopper-actuating cams 54; these cams being secured to said shaft by means of pins, or otherwise. The rollers 44 are held in contact with said cams by a retractile spring 55, one end of which is secured to a lug 56 depending from the inclined bottom of the feed hopper and the other end to the tie rod 17.

When the shaft 52 is rotated, the hopper-actuating cams 54 cause slight oscillating

movement of the hopper, and the spring 55 serves to keep the rollers 44 in contact at all times with said cams 54. Said cams also act as stops to limit the downward movement of the hopper, thereby serving to keep the inner end of the hopper in close proximity to the cylinder or drum 24; said hopper oscillating on the tie rod 15, which serves as its center.

Fastened to the shaft 52 at one side of the machine, is a sprocket wheel 57 around which, and the sprocket wheel 21 fastened to the main or drive shaft 19, a sprocket chain 58 passes, said chain having one of its side stretches traveling in meshing contact with an idler sprocket 59 rotatably mounted on a stud 60 secured into the outer end of a bracket 61 fastened by a bolt 62 to one of the side members of the frame, said bolt permitting swinging adjustment of said bracket for the purpose of tightening or loosening said sprocket chain.

That portion of the inclined bottom extending along the narrow region thereof is fluted or grooved longitudinally, as at 63, each groove being alined with one of the circumferential series of pitting openings 27 in the cylinder or drum; the purpose of such grooves being to assure cherries to be delivered into each pitting opening in the longitudinal row of openings positioned at the crest of highest point of the cylinder or drum, and to aid the grooves in this, the cylindrical brush 53, and parts to be presently described, also arranged in the feed hopper, co-act with said grooves.

In order to regulate the feeding of the cherries from the hopper into the cavities 28 of the cylinder or drum, said hopper is provided with a control plate 64 (Fig. 6) which has its lower edge spaced from the inclined bottom of the hopper a distance to allow one row or layer of cherries to pass underneath the same at a time, and between said control plate and the cylindrical hopper-brush 53 is a stop plate 65 having its lower edge at a higher elevation than the lower edge of said control plate, for a purpose to appear hereinafter.

Upon rotation of the main or drive shaft 19, the pitting cylinder or drum 23 is given intermittent rotary movement in the direction of the arrow 66 shown in Fig. 6, while the longitudinal rows of pitting openings in said cylinder or drum are successively brought into alinement with the pitting pins 32, these pins being reciprocated so as to pass through the pitting openings under the movement of the cross-head 30.

When the pitting pins 32 are passed downwardly through the cherries contained in the cavities of the pitting openings formed in the cylinder or drum and arranged in alinement with said pitting pins, the pits of the cherries are forced inwardly into the interior of the cylinder or drum by the pitting pins and are delivered into a chute 67 from which they are directed outwardly to the side of the machine.

It is to be noted that the cylindrical hopper-brush 53 is rotated in the direction of the arrow 68 shown in Fig. 6 of the drawings, and that therefore the cherries rolling down the inclined bottom wall are retarded in their discharge from the feed hopper, the brush acting against the cherries and causing them to be fed one at a time from the grooves 63 formed in the bottom of the hopper at the feeding end thereof. The stop plate 65 prevents any of the cherries being carried upwardly by the brush so as to be delivered over the top of the brush, while the control plate 64 has its lower edge spaced a distance from the inclined bottom of the hopper so that two layers of cherries cannot pass underneath the same at one time. Due to the fact that the cams 54 on the transverse hopper shaft 52 agitate the hopper and cause it to oscillate on the tie rod 15 as its center, there will be a single cherry arranged in each groove 63 ready to be delivered into the next longitudinal row of cavities brought in registration with said grooves, and after the third step by step movement of the cylinder or drum in the direction of the arrow 66, Fig. 6, the cherries will be brought directly beneath the pitting pins 32 so that the pits may be removed therefrom, while the pitted cherries will be retained in the cavities and carried along to be delivered into a chute 69, or otherwise disposed of.

Having thus described my invention, what I claim is:—

1. A pitting machine, comprising a frame, an element movable within said frame having pitting openings therein, a feed hopper for feeding cherries to said pitting openings, a rotatable brush at the feeding end of said hopper spaced from the bottom of said hopper to allow the passage thereunder of a single layer of cherries at a time, said brush serving to retard the feeding movement of the cherries, and a fixed element in said hopper adjacent said brush spaced from the bottom of said hopper a distance to allow a single layer of cherries only to pass underneath said fixed element at a time preparatory to moving to said brush.

2. A pitting machine, comprising a frame, an element movable within said frame having pitting openings therein, a feed hopper for feeding cherries to said pitting openings, a rotatable brush at the feeding end of said hopper tending to retard the feeding action of the cherries, a control plate having its lower edge spaced from the bottom of said feed hopper and allowing only a single layer of cherries to pass underneath said control plate, and a stop plate between said first-mentioned plate and said brush extending upwardly above the highest point of said brush and having its lower edge spaced a greater distance from the bottom of said

hopper than said first-mentioned plate, said stop plate preventing movement of the cherries upwardly onto said brush.

3. A pitting machine, comprising a frame having two spaced side members and a tie rod connecting said side members, a pitting cylinder rotatable between said side members, a feed hopper pivotally mounted on said tie rod and adapted to feed cherries to said feed hopper, means for vibrating said feed hopper, and a spring for normally keeping said feed hopper at the end of its vibrating movement in one direction.

4. A pitting machine, comprising a frame having two spaced side members, a pair of spaced tie rods connecting said side members, a pitting cylinder rotatably mounted between said side members, a feed hopper pivotally mounted on one of said tie rods and having its feeding end in close relation to said cylinder, a retractile spring connected at one end to said feed hopper and at its other end to the other of said tie rods, and means for vibrating said feed hopper.

5. In a pitting machine, a feed hopper pivotally mounted at one end and having slots in its side walls at its other end, a shaft extending through said slots, cams on said shaft at each side of said hopper, means carried by said hopper engaged by said cams to cause vibratory movement of said hopper, and means to resist the movement of said hopper on its pivot under the action of said cams.

6. In a pitting machine, a feed hopper having an outer end wall, an inclined bottom wall, and side walls directed toward each other between their inner ends to reduce the width of the hopper at its inner end, said side walls having slots at their inner ends, a shaft extending through said slots and having a brush thereon between the side walls of said hopper, cams on said shaft outside of said side walls, rollers carried by said side walls with which said cams coact, and a spring to keep said rollers in contact with said cams.

7. In a pitting machine, a feed hopper having vertically adjustable roller supports at opposite sides thereof, and rotatable cams co-acting with said rollers to cause movement of said feed hopper.

8. In a pitting machine, a feed hopper pivoted at one end and having cam mechanism at each side thereof for causing said hopper to vibrate on its pivot, and a spring connected to the bottom of said hopper to maintain the parts of said cam mechanisms in co-acting relation.

9. In a pitting machine, a hopper pivotally secured at one end to the frame of said machine and having T-shaped slots in its side walls opening with the stems of the T-formations of said slots at the inner edge of said side walls, a shaft extending through the head formations of said T-shaped slots and having a brush thereon between said side walls, cams on said shaft outside of said side walls, and roller supports adjustably mounted on said side walls above said cams and having the rollers thereof in spring-retained contact with said cams, said roller supports being adjustable on said side walls.

In testimony whereof, I affix my signature.

CHARLES T. HOWSON.