

Dec. 27, 1927.

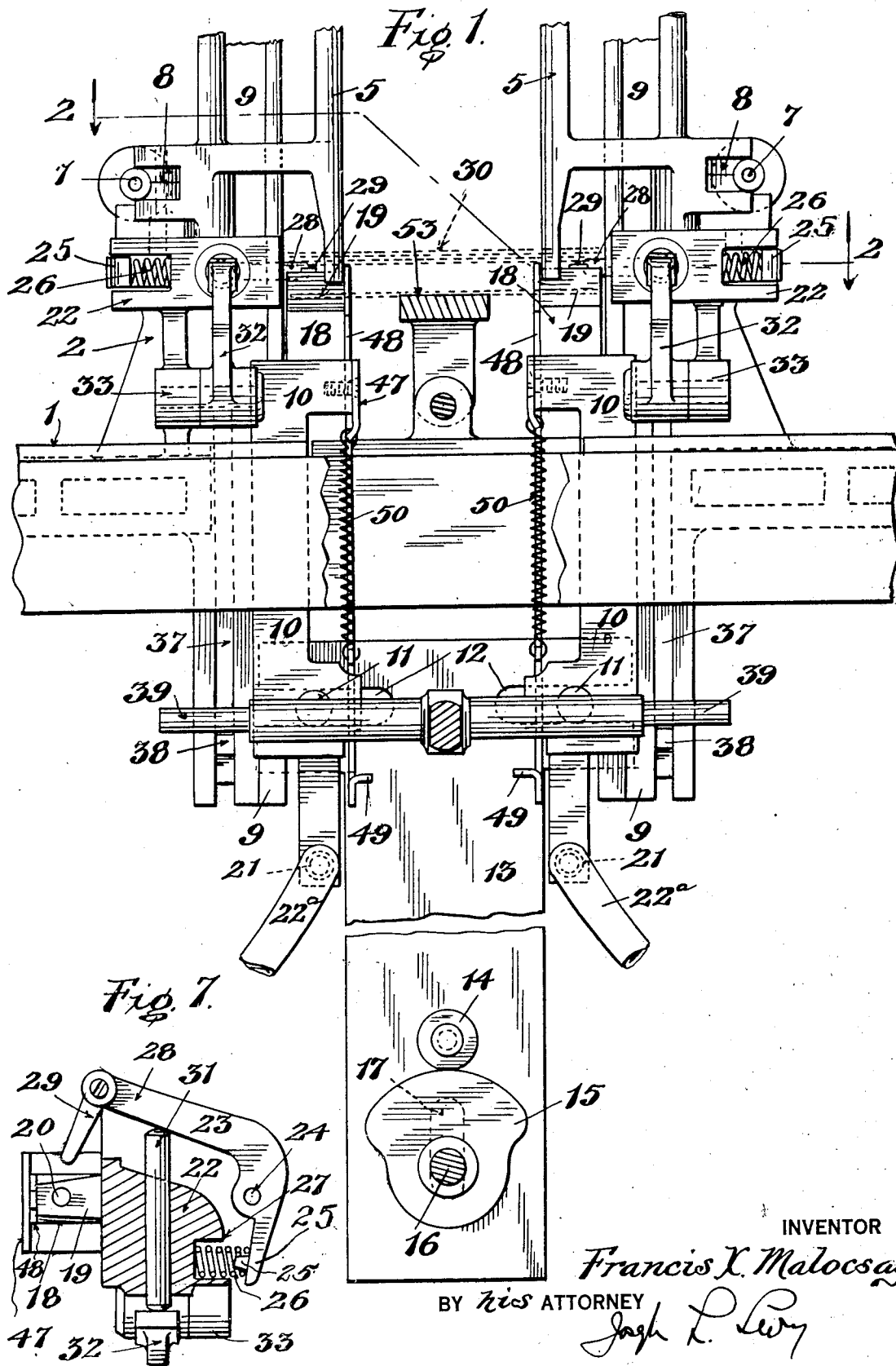
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F. X. MALOCSAY

CIGAR BAND FEEDING MECHANISM

Filed Dec. 22, 1920

2 Sheets-Sheet 1



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CIGAR BAND FEEDING MECHANISM

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Fig. 2.

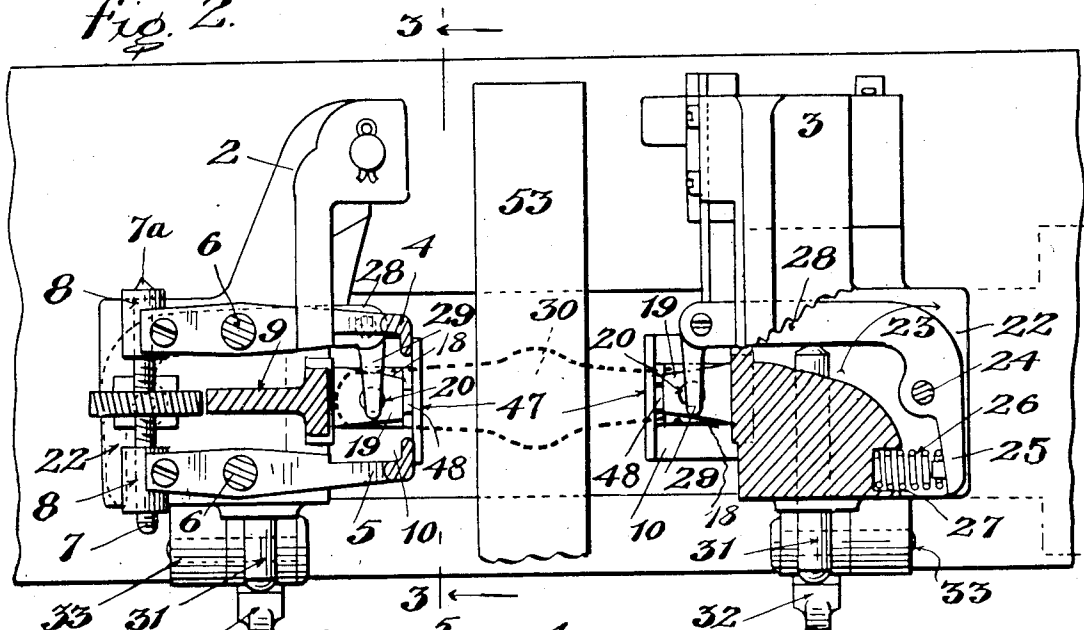


Fig. 4.

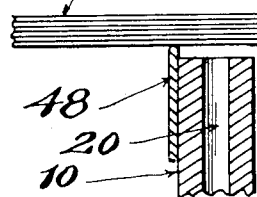


Fig. 5.

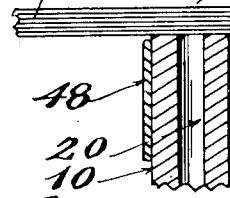
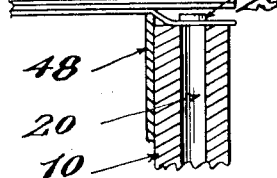


Fig. 6.



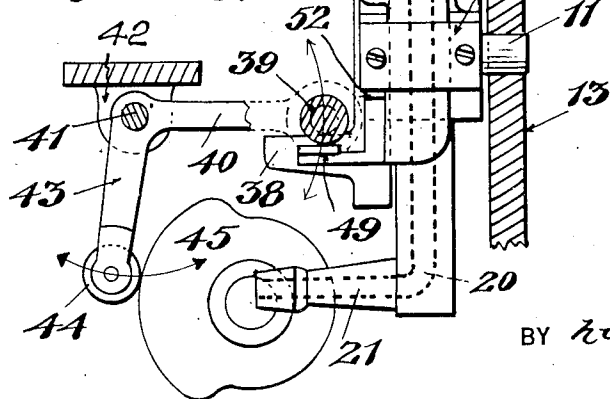
INVENTOR

Francis X. Malocsay

BY his ATTORNEY

Joseph L. Levy

Fig. 3.



Patented Dec. 27, 1927.

1,653,645

UNITED STATES PATENT OFFICE.

FRANCIS X. MALOCSAY, OF NEW YORK, N. Y., ASSIGNOR TO INTERNATIONAL BANDING MACHINE COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

CIGAR-BAND-FEEDING MECHANISM.

Application filed December 22, 1920. Serial No. 432,412.

The object of this invention is to provide a feeding device for cigar bands, which device is adapted to be attached to, or form a part of a machine for applying cigar bands to cigars.

A further object of this invention is to provide a feeding device for cigar bands which will rapidly and effectively remove successive bands from the bottom of a band stack, removing in each instance the lowermost band in the band stack.

With these objects and other objects which may hereinafter appear in view, I have devised the particular arrangement of parts hereinafter set forth and more particularly pointed out in the claims appended hereto.

Reference is to be had to the accompanying drawings forming a part hereof, in which

Figure 1 is a front elevation of a portion of a cigar banding machine showing my improved band feeding mechanism,

Figure 2 is a sectional view on the line 2—2 of Figure 1 looking in the direction of the arrows,

Figure 3 is a sectional view on the line 3—3 of Figure 2, looking in the direction of the arrows,

Figures 4, 5 and 6 are sectional views of one of the suction members showing the manner in which the same operates and

Figure 7 is a plan view of a portion of the machine showing one of the stack-supporting dogs showing the mechanism for operating one of the dogs.

Throughout the various views of the drawings, similar characters designate similar parts.

In the preferred embodiment of my invention as disclosed in the accompanying drawings, 1 indicates the table or support of a cigar banding machine.

At 2 and 3 are shown supporting brackets which extend upward from the table and on which is mounted the mechanism for supporting a stack of bands.

Pivotally mounted on each of the brackets 2 and 3 are spaced apart band guides 4 and 5 which are pivoted on rods 7 and are adjustable to and from one another so that they may be separated or brought together to accommodate bands of varying widths and that they likewise may hold the stack of bands in proper alignment. The adjustabil-

ity of each pair of guides 4 and 5 is obtained by means of an adjusting screw 7^a which threads into bearings 8 on the guides. Extending upwardly between the band guide members 4 and 5 is a T-shaped standard 9. There are two of these standards, one of each of the same extending between two of the band guides. These standards also extend down below the table 1 and act as guides for a pair of vertically reciprocating band-picking members 10.

These band picking members 10 are arranged to be vertically reciprocated in unison and are provided at their lower ends with pins 11 which extend into slots 12 in the upper end of a bar 13 on which is fixed a roller 14 which rides upon a cam 15 secured on a shaft 16. The shaft 16 is driven from any suitable source and thus rotates the cam 15 which elevates the bar 13 causing the band picking members 10 to be correspondingly elevated. Elevation of the bar 13 is permitted by reason of the fact that said bar is provided with a slot 17 in which the shaft 16 is movable. The band picking members 10 are provided with upwardly projecting extensions 18, the upper end of which are tapered as at 19.

The band picking members 10 are each provided with a continuous suction port 20 which terminates at the lower end of each of the band picking members 10 in a nipple 21 on which is attached a tube 22^a extending from a suction-producing device such as a pump or the like not shown.

The suction ports 20 extend through the band picking members 10 and it will be seen that a band will be held at its ends by the band picking members by reason of the suction exerted therethrough.

As 22 is shown a block which forms an extension of the T-shaped standard 9. Pivotally mounted in said block is a dog 23, said dog being pivoted at 24 and having a finger 25 against which a spring 26 bears. The spring is seated in a recess 27 in the block and normally tends to thrust the arm 28 of the dog inwardly to cause its finger 29 to rest over the upper end of the band picker 10.

There are two of these dogs, one for each side of the band stack and it will be seen that when these dogs are in their normal position they tend to hold their fingers 29

above the band picking members 10 and thus support the stack of bands 30 over the band picking members 10.

It will be seen that when these dogs are actuated by mechanism to be described, the fingers 29 are moved away from the top of the band picking members 10 causing the stack of bands to rest on top of said band picking members to enable the same to remove the lowermost band in the stack by the suction means heretofore described.

The means for shifting the dogs comprises a push rod 31 which is movable through the block 22 by means of a rocker arm 32 pivoted at 33 in the bracket 2 or 3. The rocker arms 32 are provided with an inwardly extending portion 34, the outer end of which is provided with a tooth 35 which enters into a recess 36 provided in a slide 37 to receive it.

The slide 37 extends through the table 1 and is provided adjacent its lower end, with a laterally extending lug 38. At 39 is shown a bar which is secured on one of the arms 40 of a bell crank lever pivoted at 41 on a portion of the machine indicated at 42 in Figure 3. The other arm 43 of the bell crank lever is provided with a roller 44 which rides upon a cam 45 driven in any suitable manner.

It will be seen that by rotation of the cam 45 the bell crank lever is actuated to cause the bar 39 to be oscillated. When the bar is oscillated downward it contacts with the lugs 38 on the slides 37 and the slides are thus moved downward causing the rocker arms 32 to move inwardly and force the pins 31 through the blocks 22 and thus rock the dogs 23 so that the same carry their fingers 29 from over the top of the band pickers 10.

When this occurs it will be seen that the band stack 30 is allowed to descend and rest upon the upper ends of the band picking members 10.

At 47 are plates secured to the inner faces of the band picking members 10 and slidable behind these plates is a pair of vertically movable plates 48. These plates lie co-extensive with the band picking members 10 and act to raise the pile of bands so that the fingers 29 on the dogs 23 can slide under the pile but leave the lowermost band resting upon the band picking members 10. Figures 4, 5 and 6 disclose the manner in which the plates 48 act. At their lower ends each of the plates 48 are provided with a lateral extension 49 which is adapted to be contacted with by the bar 39 on its oscillating movement.

The band-lifting plates 48 are normally held in their raised position so that their upper ends project slightly above the upper faces of the band picking members 10. (See Figure 4.) To hold the plates in this posi-

tion I provide a spring 50 which attaches to an ear 51 on the plate 48 and which is attached at its upper end to the guide plate 47. The plates 48 are restricted in their lifting movement by means of a shoulder 52 which abuts against the lower guide plate 47. (See Figure 3.)

From the foregoing the operation of my improved band feeding mechanism will be readily understood.

The stack of cigar bands 30 is supported between the guides 4 and 5 and rests upon the fingers 29 of the movable dogs 23. The bar 13 is then raised, bringing the band pickers up with it and causing them to move into contact with the lowermost band in the stack. As the band picking members 10 are brought to their uppermost position, the bar 39 is moved downwardly and contacts with the lugs 38 on the slides 37 and moves said slides downward causing them to withdraw the fingers 29 of the dogs 23 from under the band stack causing the stack to be supported on the band picking members 10. Figure 4 shows the manner in which the bands are supported at this juncture, and it will be seen that the band stack is supported on the upper ends of the plates 48. As the bar 39 continues its downward movement it is brought into contact with the lateral projections 49 on the plates 48 and moves said plates downward so that the band stack is permitted to come into contact with the upper ends of the band picking members 10. This position is disclosed in Figure 5. As the bar 39 starts its upward movement it releases its pressure on the projections 49 permitting the plates 48 to be drawn upwardly by the springs 50. This upward movement of the plates 48 lifts the band stack 30 as shown, yet permits the lowermost band to adhere to the band pickers 10, being held thereon by suction exerted through the ports 20.

As further upward movement of the bar 39 is continued, this bar releases its pressure on the lugs 38 of the slides 37, thus permitting the dogs to be swung into position with their fingers 29 under the band stack 30 but above the lowermost band which is adhering to the band pickers 10. (See Figure 6.)

A suction conveyor 53 is then slid under the lowermost band which is then supported on the band picking members 10, and the band is caused to adhere to said conveyor while the band picking members 10 then move downwardly, leaving the band resting upon the conveyor, which removes it to a suitable band applying mechanism.

It will be seen that successive bands may readily be removed in this manner.

Having described my invention, what I claim is:—

1. In a machine of the class described, 123

means for supporting a stack of bands, band receiving means adapted to engage and support said stack, and means for lifting the stack of bands from the band-receiving means and leaving the lowermost band thereon.

2. In a machine of the class described, means for holding a band stack, means for removing a band therefrom comprising a reciprocating suction conveyor and means for lifting the band stack from the conveyor and leaving the lowermost band in the stack on said conveyor.

3. In a machine of the class described, means for supporting a band stack, a movable conveyor adapted to reciprocate below the stack and be brought into contact with the lowermost band thereon and means on said conveyor for lifting the stack from the conveyor to permit the lowermost band in said stack to remain on said conveyor.

4. In a machine of the class described, means for holding a stack of bands, a reciprocating conveyor below the same, a slidable plate on said conveyor, means for causing the band stack to rest on said plate, means for actuating said plate to cause the bands to rest on the conveyor and means for actuating the plate to cause the same to raise the band stack from the conveyor without disturbing the lowermost band brought to rest on the conveyor.

5. In a machine of the class described, a band stack, a reciprocating band picker mounted beneath the same, means for moving said picker to contact with a band in said stack, a plate slidably mounted on the picker and adapted to contact with said stack, suction means on said picker for causing a band to adhere thereto and means for actuating the plate for causing the same to move the band stack away from the picker without disturbing the band held thereon by said suction means.

6. In a machine of the class described, a reciprocating band picker, slidable means mounted thereon and means for reciprocating said slidable means, and means for causing said picker and said slidable means to be brought into contact with a band stack.

7. In a machine of the class described, means for supporting a stack of bands, means for moving said band stack support, a band picker on which the stack of bands is brought to rest by movement of the stack support and movable means secured to said band picker for lifting the band stack.

8. In a machine of the class described, means for supporting a band stack, a pair of spaced-apart suction band pickers and means for operating the same in unison, a slidable plate secured to each of said band pickers and carried thereby, means for bringing a stack of bands into contact with said band pickers and means for actuating said

plates to lift the stack of bands from said pickers.

9. In a machine of the class described means for supporting a stack of bands, a pair of reciprocating band pickers, means for exerting suction therethrough and a pair of slidable plates fixed to said band pickers, means for lifting said plates independently of the band pickers and means for causing said plates to be brought into contact with the band stack and then moving said plates to cause the bands to rest on said pickers.

10. In a machine of the class described, band stack supporting means adapted to be moved alternatively into and out of band supporting position, picker means adapted to be moved into contact with an outer band of said stack and to firmly engage portions of the same, means for shifting said stack away from said picker means while said portions of said band remain engaged thereby and means for moving said supporting means into stack supporting position between said held portions of said band and the rest of the stack.

11. In a machine of the character described, band stack supporting means adapted to be alternatively moved into and out of stack supporting position, picker means engaging a single band of the stack, means whereby said picker means is caused to draw a portion of said band away from the rest of the stack, means for moving said stack supporting means into stack supporting position between said single band and the rest of the stack and means for moving said stack supporting means away from said band engaging means.

12. In a machine of the class described, band stack supporting means, means for removing a single outer band from the band stack, said means comprising a suction holder, means for moving said supporting means away from said holder, and means actuating said supporting means to interpose the same between said band and the rest of the band stack.

13. In a machine of the class described, band stack supports adapted to be moved into and out of band supporting position, pneumatic band engaging means adapted to be moved into contact with an outer band of the band stack and to adhesively hold a portion of the same to cause a separation of said portion from the balance of the stack when said stack is moved away from said engaging means, means to move the stack, and means actuating said supports to cause them to intervene between said stack and said band when said stack is moved.

14. In a machine of the class described, band stack supporting means adapted to be moved alternatively into and out of band supporting position, means whereby portions of an outer band of the band stack are

spaced from the rest of the stack, means for moving said supporting means between the stack and said band, and means for moving said supporting means away from said band moving means.

15. In a machine of the class described, band stack supporting means adapted to be moved alternatively into and out of band supporting position, picker means adapted to be moved into contact with portions of an outer band of said stack to cause said portions to adhere to said picker means, means for lifting the stack and the unadhering portion of said band clear of said picker means, and means for moving said stack supporting means into stack supporting position when said stack is so lifted.

16. In a machine of the class described, band stack supporting means adapted to be moved alternatively into and out of stack supporting position, picker means adapted to be moved into contact with portions of an outer band of said band stack to cause said portions to adhere to said picker means, re-

ciprocating members carried by said picker means for lifting said stack and the unadhering portions of said band clear of said picker means and means for moving said stack supporting means into stack supporting position when said stack is so lifted.

17. In a machine of the class described, band stack supporting means adapted to be moved alternatively into and out of stack supporting position, picker means adapted to be moved into contact with portions of the lowermost band of the band stack to cause said portions to adhere to said picker means, reciprocating members carried by said picker means adapted to be moved against the unadhering portion of said band and the band stack, to lift the same relative to said adhering portions, and means for moving said stack supporting means into stack supporting position while the same is so lifted.

Signed at the city, county and State of New York, this 13th day of December, 1920.

FRANCIS X. MALOCSAY.