J. BUCHEK.

VENDING DEVICE.

APPLICATION FILED OCT. 31, 1917.

1,309,998.

Patented July 15, 1919.

4 SHEETS—SHEET 1.

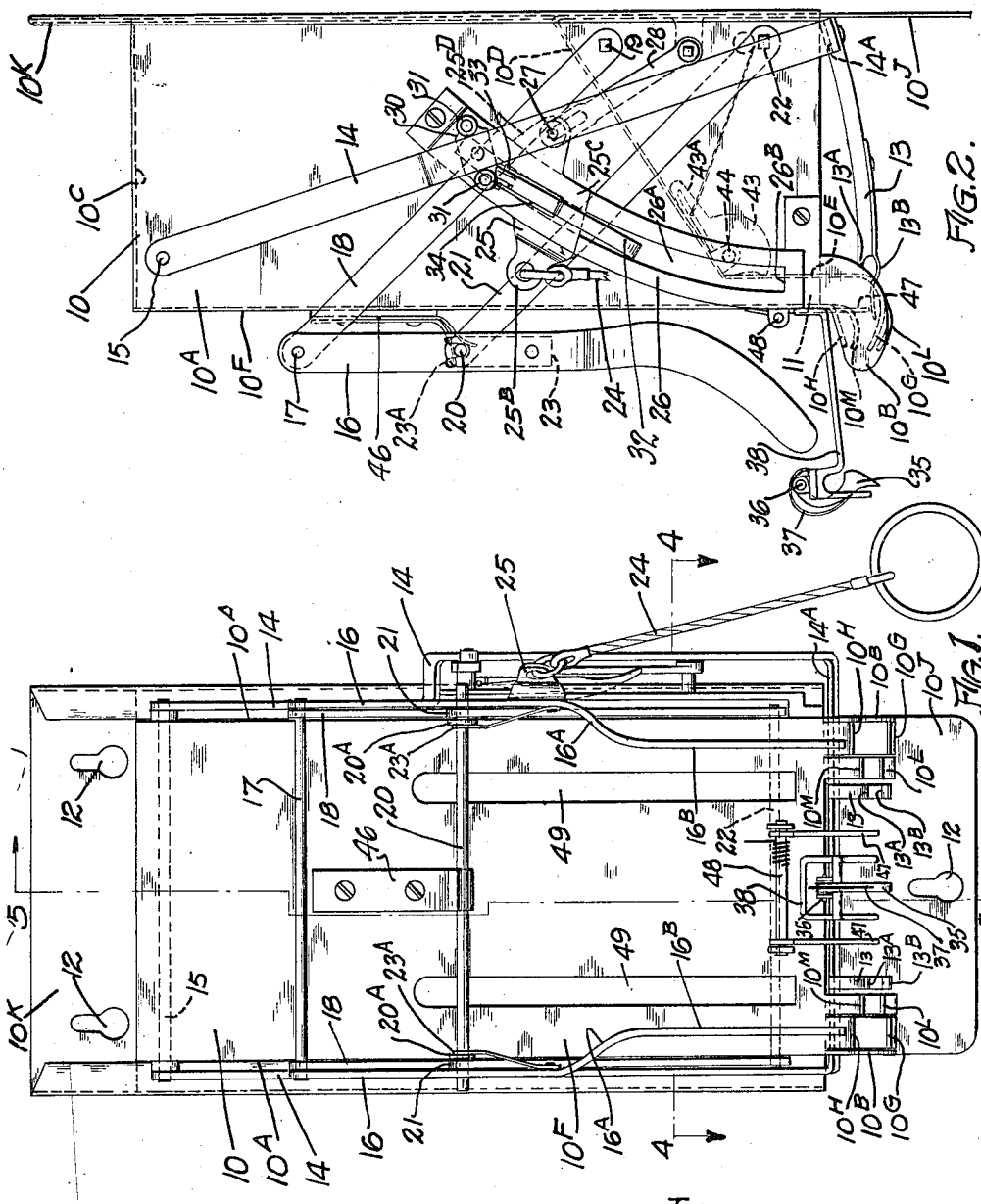


FIG. 2.

FIG. 1.

INVENTOR.
Joseph Buchek
By
Frank J. Schraeder Jr
Attorney.

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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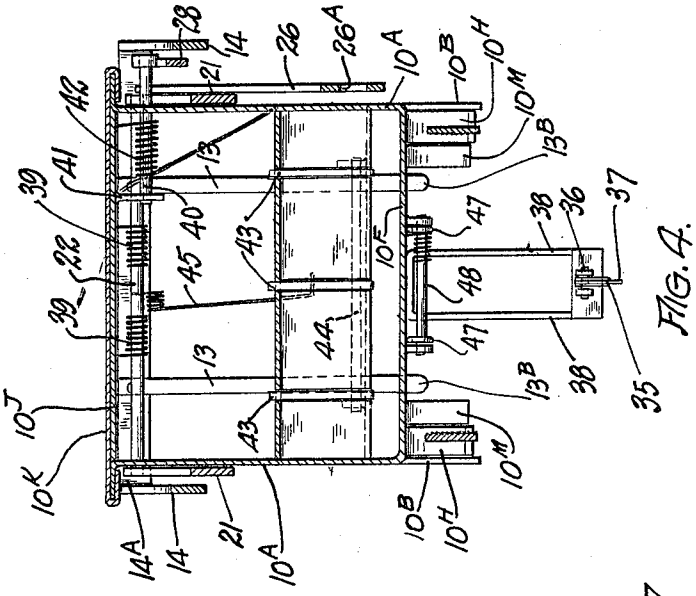


FIG. 4.

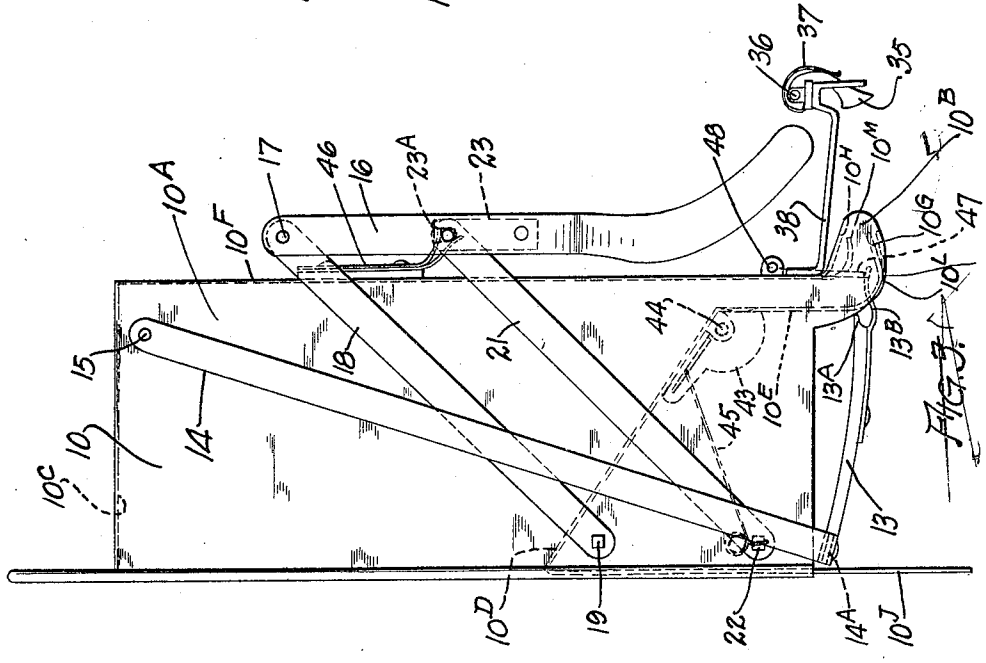


FIG. 3.

INVENTOR.
Joseph Buchek
By
Frank J. Schroeder Jr
Attorney.

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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4 SHEETS—SHEET 3.

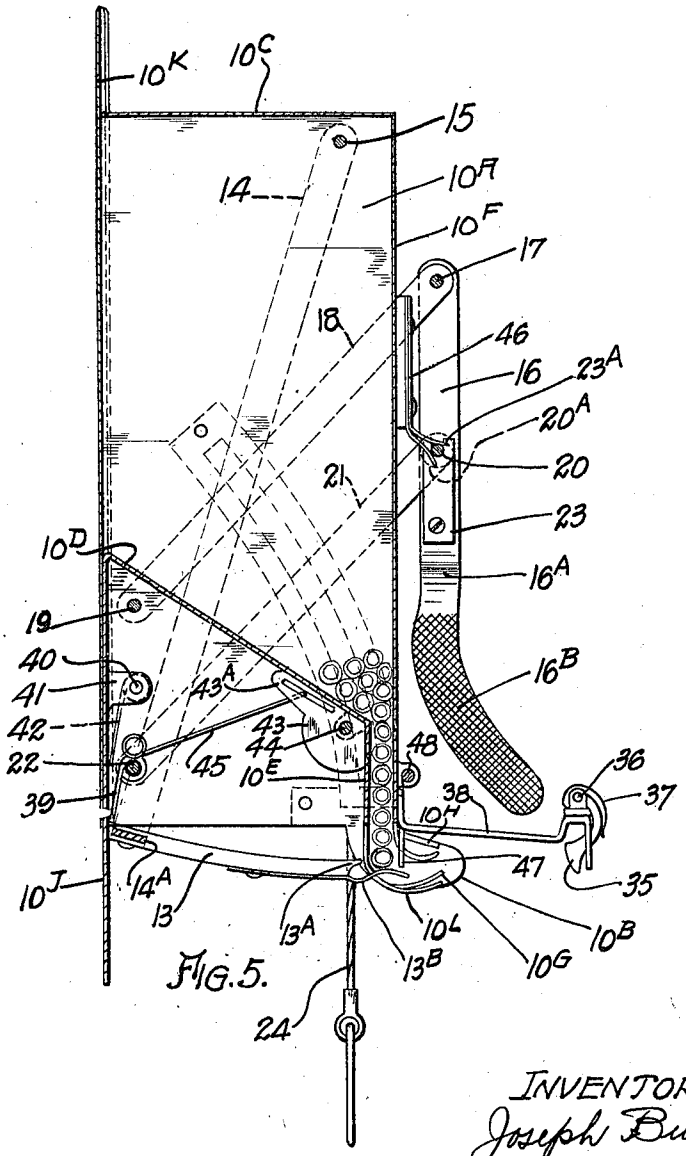


FIG. 5.

INVENTOR
Joseph Buchek
By
Frank J. Schraeder Jr.
Attorney.

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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4 SHEETS—SHEET 4.

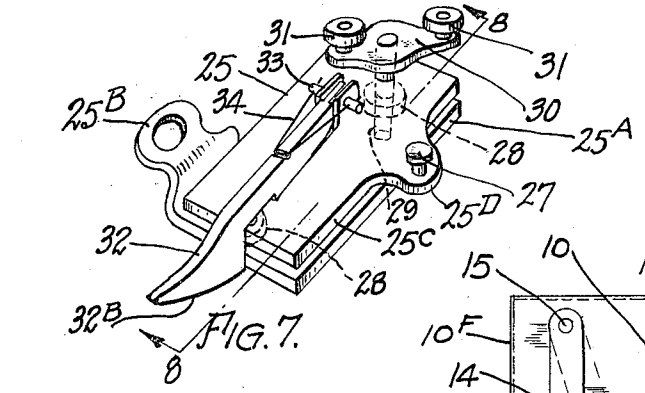


FIG. 7.

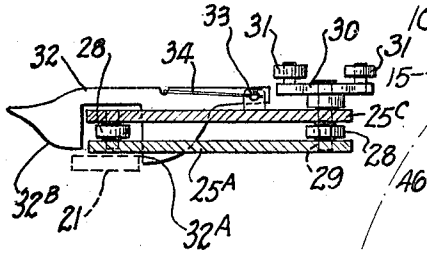


FIG. 8.

FIG. 6.

INVENTOR

Joseph Buchek

By

Frank J. Schraeder Jr

Attorney.

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOSEPH BUCHEK, OF OAK PARK, ILLINOIS.

VENDING DEVICE.

1,309,998. Specification of Letters Patent. Patented July 15, 1919.

Application filed October 31, 1917. Serial No. 199,559.

To all whom it may concern:

Be it known that I, JOSEPH BUCHEK, a subject of the Emperor of Austria, residing in Oak Park, in the county of Cook and State of Illinois, have invented new and useful Improvements in Vending Devices, of which the following is a specification.

This invention relates generally to vending devices and has particularly among its objects the production of a match vending machine.

It is also an object of this invention to provide a match vending machine which will automatically ignite each individual match delivered.

Another object resides in the simplicity of construction and operation of such machine and in the safety and economy afforded.

With these and other objects in view my invention consists in the novel construction, combination, and relative position of the parts and members shown in the accompanying drawings, hereinafter described, and particularly pointed out in the appended claims.

Referring to the drawing in which like reference characters indicate like or corresponding parts:

Figures 1 and 2 are respectively front and side elevations of a single delivery vending machine embodying my invention. Fig. 3 is also a side elevation, and Fig. 4 illustrates a cross section taken on line 4—4 of Fig. 1. Fig. 5 is a vertical section taken on line 5—5 of Fig. 1. Fig. 6, shows a view similar to Fig. 2 but with the various members in an operative position just preceding the igniting movement.

Fig. 7 is a view in perspective, showing the slidable operating member, and Fig. 8 is a longitudinal cross section through same taken on line 8—8.

In the illustrations which show one embodiment of my invention, I provide a suitable metal receptacle or box 10 which comprises a pair of side walls 10^A, a top 10^C, an inclined floor 10^D which includes a vertical portion 10^E spaced from the front wall 10^F sufficiently to form a discharge passage 11 to retain a single row of matches. The vertical portion 10^E has a pair of substantially horizontally bent curved strip portions 10^G adjacent the curved side extensions 10^B, and in conjunction with curved depending strip extensions 10^H of the front wall 10^F, form a bottom and curved discharge mouth for the passage 11. The floor 10^D is also formed with an integral vertical back 10^J provided with a suitably slotted hole 12. The side walls 10^A are slightly flanged at the rear edges for insertion between the bent side edges of the cover plate 10^K which also is provided with the slotted holes 12.

In order to slightly resist the discharge of the matches to enable the two coacting conveying fingers 13 to properly grasp the single match between the finger 13^A and the curved spring 13^B, I provide a pair of resisting fingers forming a converging passage between the extended curved bottom strip 10^L and the curved strip extension 10^M also of the front wall 10^F.

Both of the conveying fingers 13 are rigidly riveted to the horizontal portion 14^A of the U-shaped bail 14 which is rigidly mounted to ends of shaft 15.

The two parallel coacting igniting bars 16 are loosely suspended from the shaft 17 rigidly mounted in the upper ends of the parallel side arms 18, the lower ends of which are rigidly mounted on shaft 19. A second or guide shaft 20 extends freely through and beyond the face of the ignition bars 16. A pair of fixed collars 20^A prevent lateral movement of the shaft 20 within the second set of supporting parallel arms 21 which are likewise rigidly mounted to shaft 22. A pair of flat springs 23 having forked or slotted ends 23^A, embrace the shaft 20 and inner sides of collars 20^A and afford a spring-influenced return action to the bars 16 after being spread apart sufficiently to embrace the ends of a match, which spreading action is developed as the bars 16 suddenly move upwardly from the released lower position shown in Fig. 6, whereby the end and the head of the match come into engagement with the inclined surfaces 16^A to slightly wedge the match between the moving abrasive faces 16^B and thus ignite the head.

The construction shown provides for manual operation by means of the cable or flexible member 24 which is connected to the slidable operating member 25 mounted on the arcuate slotted guide 26. The operating member 25 consists of the bottom plate 25^A having the upwardly and outwardly bent cable connection 25^B, a top plate 25^C having an extension 25^D for the pin 27 the

separating rollers 28 which engage the sides of the slot 26^A. The pin 29, for one of the rollers 28, is extended upwardly to act as a pivotal support for the loosely mounted engagement 30 which carries the two small rollers 31 between which is constantly held, one of the arms of bail 14 for the purpose of imparting a forward motion to the conveying fingers 13 during the downward movement of the sliding operating member 25.

In addition, to imparting motion to the conveying fingers 13, the operating member 25 is also provided with a latch 32 which operates to engage one of the side arms 21 with the depending jaw 32^A whereby the parallel igniting bars 16 will be moved downwardly with the operating member 25 and simultaneously with the forward movement of the fingers 13 until the beveled end 32^B comes into engagement with end 26^B of the guide 26 so that the latch 32 will be raised about its pivot pin 33 against the pressure of the spring 34 which spring bears upon the latch and has fixed ends within the pin 33. It is obvious, that such lifting of latch will release the arm 21 from under the jaw 32^A which will cause a sudden upward movement of the igniting bars 16 to ignite the match which is held in positive stationary position within the conveying fingers 13 and within the retaining finger 35 which is mounted on the pivotal support 36. A spring 37 exerts pressure against the back of the finger 35 to retain the ignited match between the finger 35 and the suitably bent wire support 38.

It will now be noted, that although the igniting bars 16 have been released and returned to normal raised position by means of the two coil springs 39 each of which has one end secured to shaft 22 and the other end in abutment with back 10^J, the conveying fingers 13 will remain in the forward position shown in Fig. 6 until the operating cable 24 is released to permit the return of the operating member 25 through the upward pressure of the arm 28 having the slotted end embracing the pin 27 and the other end rigid with the short shaft 40 which is mounted within the side wall and bearing 41 and upon which is mounted a coil spring 42 having one end rigid with the shaft and the other pressing upon the face of back 10^J. Thus the spring 42 returns the member 25 and the coacting conveying fingers 13 to normal position ready for the second operation.

I have found from experience that if the matches at the lower end of the inclined floor 10^D can be slightly raised at each operation that this will overcome any crowding which would clog the passage 11 and thus interfere with the continuous gravity discharge. For this purpose, I provide several suitably spaced adjusting segments 43 which are rigidly mounted on shaft 44, and one of which is made with a slotted extension 43^A having operative engagement with the spring wire arm 45 flexibly mounted on shaft 22. It is obvious that with each operation of the device the shaft 22 will transmit through arm 45 and its connection within the slotted extension 43^A, motion whereby the segments 43 will pass into the passage 11 to slightly raise and level the mass of matches at the lower end of the receptacle floor.

Centrally mounted upon the front wall 10^F, I have provided an abutment spring 46 which comprises a pair of flat springs riveted to the wall and having flared or diverging ends forming a yieldable mouth arranged to absorb the shock in the sudden return of shaft 20.

An additional retainer may be provided for the discharge as indicated by the light arms 47 which are rigidly mounted to the spring influenced shaft 48.

Slots 49 may also be provided within the front wall 10^F through which can be observed the amount of matches within the receptacle.

In operation, upon the downward pull of cable 24 and the operating member 25, the conveying fingers 13 will be brought forward with their dividing fingers 13^A between the lowest two matches; thus to engage and convey the lowest one forwardly into the grip of the retaining finger 35. At this point the igniting bars 16, which have also been brought down, will be suddenly released to ignite the match as it is held in fingers 13 and the retaining finger 35. Upon release of cable 24, the conveying fingers 13 will be automatically brought back to normal position ready for the following operation.

It is thought that the foregoing description and illustrations clearly disclose the construction and operation of the invention, hence a more extended explanation is omitted.

I claim:

1. In a match vending machine, the combination of a receptacle, pivotally mounted single-delivery means, means for resisting the discharge of each match to afford the engagement thereof by said delivery means, means manually operable in one direction and upon release spring-actuated in reverse direction for automatically igniting each delivered match, and a retainer for the ignited match arranged to receive the ignited match from said delivery means.

2. A match vending machine comprising a gravity discharge receptacle having a restricted discharge passage for a single column of matches, conveying fingers arranged to convey the bottom match of said column, movable igniting means manually operable in one direction and upon release spring-actuated in reverse direction for igniting the

conveyed match, and retaining means arranged to receive the ignited match from said conveying fingers.

3. A match vending machine comprising a gravity discharge receptacle having a restricted discharge passage for a single column of matches, conveying fingers arranged to convey the bottom match of said column, movable igniting means, operating means for simultaneously moving said fingers and said igniting means, means for releasing said igniting means from said operating means to ignite the conveyed match, and retaining means arranged to receive the ignited match.

4. In a single discharge match vending machine having a gravity discharge passage, the combination of conveying fingers arranged to convey a single match from said passage, movable spring-influenced igniting means, means for simultaneously moving said fingers and said igniting means, and means for releasing said igniting means to ignite the conveyed match.

5. A match vending machine comprising a gravity discharge receptacle having a restricted discharge passage, pivotally mounted conveying fingers arranged to convey a single match from said passage, resisting means arranged to resist the passage of each match from said passage to afford an engagement thereof by said fingers, pivotally mounted spring-influenced igniting bars, operating means for simultaneously moving said fingers and said bars, means for releasing said bars to bring one of said bars in engagement with said match, and retaining means arranged to receive the ignited match.

6. A match vending machine comprising a gravity discharge receptacle having a restricted discharge passage; pivotally mounted conveying fingers arranged to convey a single match from said passage; means for resisting the discharge of each match to afford the engagement thereof by said fingers; a pair of pivotally mounted spring-influenced igniting bars, said bars having inner abrasive surfaces; a pair of pivoted arms supporting each of said bars; a guideway mounted on said receptacle; operating means movable in said guideway and comprising a spring-influenced base held normally in raised position, a spring-influenced latch pivotally mounted on said base, and normally engaging one of said arms, a pivotally mounted member mounted on said base and arranged to transmit motion to said fingers; means for moving said operating means to simultaneously move said fingers and said bars to thereby release said igniting bars from said latch whereby one of said abrasive surfaces will engage the head of the match to ignite same; and retaining means arranged to receive the ignited match.

In witness whereof, I have hereunto subscribed my name this 24th day of October, 1917.

JOSEPH BUCHEK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."