July 19, 1927. 1,636,611

F. T. McGLYNN

PASTER CUTTING AND APPLYING MACHINE

Filed Sept. 15, 1926

Fig. 1.

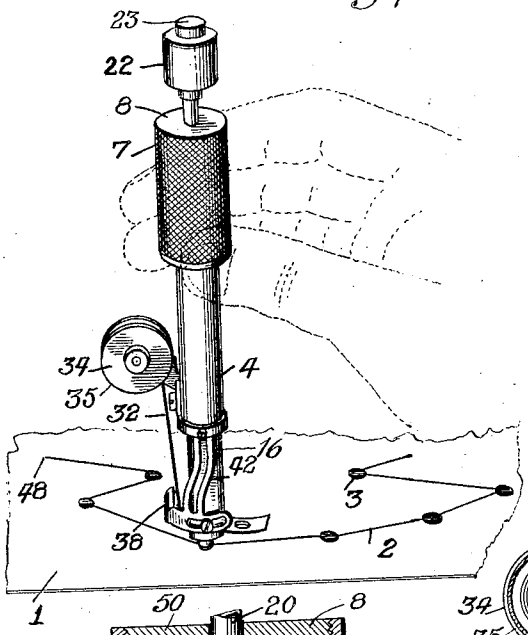


Fig. 3.

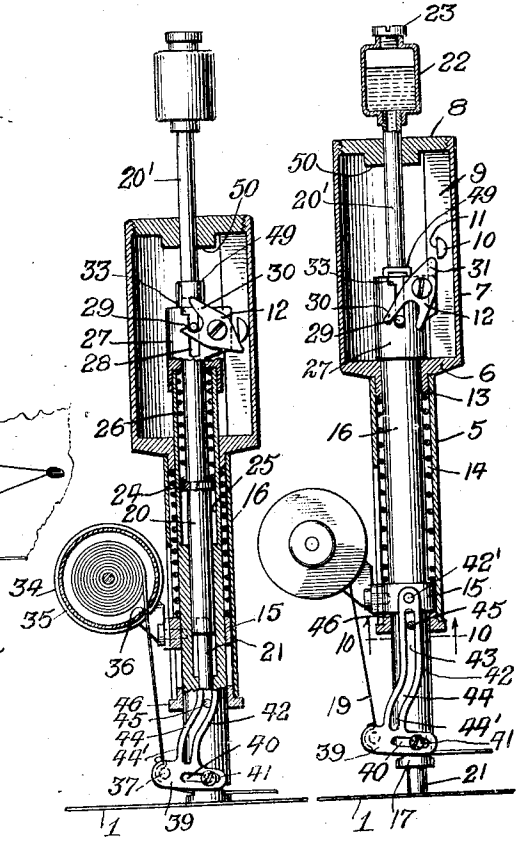


Fig. 2.

Fig. 4.

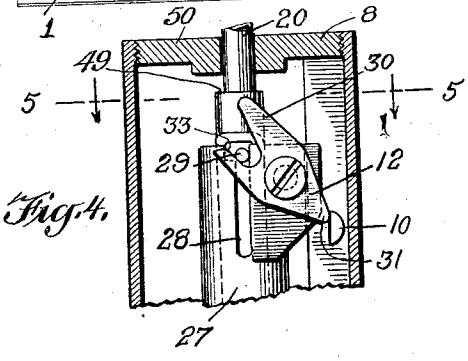


Fig. 6.

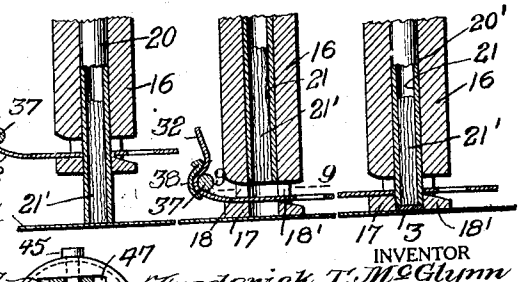


Fig. 7.

Fig. 8.

Fig. 5.

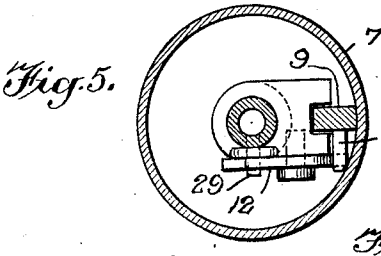
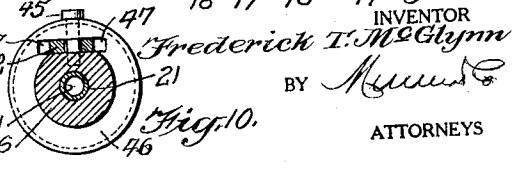


Fig. 9.



Fig. 10.



WITNESSES

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UNITED STATES PATENT OFFICE.

FREDERICK T. McGLYNN, OF JAMAICA, NEW YORK.

PASTER CUTTING AND APPLYING MACHINE.

Application filed September 15, 1926. Serial No. 135,618.

This invention relates to paster cutting and applying machines and has for an object to provide an improved construction over my prior application, Serial No. 109,202.

Another object of the invention is to provide an improved machine wherein a tape is automatically fed through the machine as it is operated and water is applied as the machine is operated.

A further object of the invention is to provide a paster cutting and applying machine wherein the cutting and applying pin acts as a moisture supplying member and functions before and after the adhesive tape is moved to functioning position so that the pin may moisten the surface on which the paster is to be applied and then may cut a paster from the tape and press the same against the moistened surface.

A still further object of the invention is to provide a paster cutting and applying machine which automatically performs the operation of supplying a paster and moisture almost simultaneously and pressing the paster in position while in a moist condition.

In the accompanying drawing—

Figure 1 is a perspective view of a paster cutting and applying machine disclosing an embodiment of the invention, the same being shown in operative position.

Figure 2 is a longitudinal vertical sectional view through the structure shown in Figure 1, the same being on an enlarged scale.

Figure 3 is a view similar to Figure 2 but showing the parts in a different position.

Figure 4 is a view of the upper part of the structure shown in Figure 3 with the plunger and associated parts moved to almost their extreme upper position.

Figure 5 is a sectional view through Figure 4 on line 5—5.

Figure 6 is an enlarged sectional view showing the lower part of the structure illustrated in Figure 2.

Figure 7 is a view similar to Figure 6 but showing the device as having been operated sufficiently for feeding the adhesive tape forwardly one step.

Figure 8 is a view similar to Figure 7 but showing the parts moved to the complete finished position whereby the paster is cut and pressed against the surface designed to receive the same.

Figure 9 is a detail sectional view through Figure 7 on line 9—9.

Figure 10 is an enlarged detail sectional view through Figure 2 on line 10—10.

Referring to the accompanying drawing by numerals, 1 indicates a map having a road 2 drawn thereon. This road is shown as passing through different towns and each town is provided with a paster 3. The paster cutting and applying device 4 is shown in the act of applying a paster. The device may be used for any desired purpose in applying pasters but it is particularly desirable for maps used for automobile routes or maps used by railways in arranging their schedule charges for conveying different articles. Different railroads now have maps with certain indications thereon showing different freight rates from different sections of the country. Broken lines and other means have been provided for showing where the "rate break" occurs but a new map must be provided for different breaks and for indicating the change of rates for different commodities. By using the pasters 3, different colored pasters could be used for indicating the different rates for different commodities but the same map could be used continually.

In applicant's co-pending application above referred to, paster applying means have been presented but where considerable of this work is to be done an automatic moistening and a tape feeding device is necessary. In the present invention, means have been provided to provide these two desirable features while at the same time retaining the feature of positioning accurately the paster and quickly cutting and applying the same. As shown particularly in Figures 2 and 3, the device or machine is provided with a tubular body 5 which is rigidly connected with the plate 6, which plate is provided with a tubular structure 7 formed integral therewith or rigidly secured thereto. An end 8 is preferably screwed into the tubular member 7. A guiding web 9 is formed integral with the tubular member 7 or rigidly secured thereto in any desired manner, said guide having a post 10 provided with a flat surface 11, said post acting as an abutment for causing the swinging lever 12 to function as hereinafter fully described. The plate 6 is preferably provided with a depending portion 13 whereby a shoulder is presented within the body 5, said shoulder receiving one end of the spring 14, the opposite end of the spring resting on the sleeve or collar 15. Extending through the plate

6 and depending portion 13 is a tubular rod 16 to which the sleeve 15 is rigidly secured, said tubular rod having a hardened die 17 at its lower end, which if desired, may be integral with the rod 16 but is preferably made separate and secured thereto in any desired way, as for instance, by soldering or welding. The die 17 is provided with a pair of short upstanding posts 17′ which are connected with rod 16 whereby notches 18 and 18′ are presented through which the strip of paper tape 32 is adapted to pass. Slidingly mounted in the tubular rod 16 is a hollow punch rod 20 which is provided with a tubular punch die 21 carrying a suitable wick 21′. The punch die 21 is shown round and the opening in die 17 is also shown round. This will result in forming round pasters but if desired, the dies 17 and 21 could be made star-shaped or any other desired shape and function in the same manner. The punch rod 20 extends upwardly beyond the tubular rod 16 and through the head 27 a short distance. A small tube 20′ is arranged with one end in the upper end of the punch rod 20, which punch rod is hollow. The upper end of the tube 20′ extends through a suitable aperture in the cover 8 and carries on its extreme upper end a container 22 for providing an extra supply of water. This container is provided with a screw cap 23 whereby a new supply of water may be added from time to time. The tubular rod 20 is provided with an abutment 24 within the tubular rod 16, said tubular rod 16 being formed with an enlarged bore 25 for accommodating said abutment. The abutment 24 accommodates the spring 26 which rests against the abutment and presses against what may be termed a head 27. This head is rigidly secured to the rod 16 and is provided with a bore through which the rod 20 extends. Head 27 is provided with a slot 28 for accommodating the pin 29 which is secured to rod 20. This pin normally extends through the bifurcated end 30 of the lever 12. The opposite end is formed with a rounded cam 31 adapted to strike the abutment 10 as the parts move upwardly from the position shown in Figure 2 to that shown in Figure 3. As the tubular member 7 is forced downwardly manually, the abutment 10 will cause lever 12 to continue to swing as shown in Figure 4 and thereby move the pin 29 and rod 20 upwardly to their extreme upper position. A slightly greater movement than that shown in Figure 4 will cause the cam 31 of lever 12 to slip off of abutment 10 whereupon the enlargement 50 on cover 8 will strike the shoulder 49 and thereby cause rod 20 and associated parts to move downwardly quickly from substantially the position shown in Figure 7 to that shown in Figure 8. This downward movement will cause the punch die 21 to cut a paster 3 and press the same against the map 1. Head 27 is provided with a shoulder 33 for receiving pin 29 when it is desired to lock the punch die 21 in a retracted position. This is done when the paper tape 32 is being first fed into the device or moved to the position shown in Figure 6. This strip of paper is provided with adhesive on one face, the adhesive portion facing downwardly as the strip passes through the openings or notches 18 and 18′.

From Figures 3 and 6 it will be noted that this tape is wound on a suitable drum or spindle 34 carrying casing 35 and moves out of the casing through the slot 36. The parts are so arranged that the tape 32 will pass over a pin 37 and caused to move through the arc of a circle by reason of the guard or shield 38 whereby it will require an appreciable pull to cause the paper to move. This is caused by the back and forth movement of the guard 38 which is connected with the swinging guide 39, said guide having a slot 40 accommodating the pin 41 carried by the tubular rod 16. In order that the swinging guide 39 shall function for moving pin 37 and guard 38, said guide is provided with an arm 42 pivotally mounted at 42′ on the sleeve 15. The arm 42 is provided with a slot having a straight section 43 and an inclined or curved section 44. This slot accommodates the pin 45 which is carried by the sleeve 46 secured to the body 5 in any desired manner, as for instance, by friction. It will be noted that this sleeve is provided with a slot 47 slightly wider than the arm 42 whereby when the sleeve 46 and associated parts move downwardly the first movement will not affect the position of arm 42 and guide 39 but the latter part of the movement will cause pin 45 to press against the lever 41 and shift the same to the right as shown in Figure 7. The parts are so timed that the movement to the right as shown in Figure 7 occurs when the die 21 is in the position shown in Figure 7 so that an unpunched portion of the strip 32 is brought beneath the die. The guide 39 and associated parts remain in the position shown in Figure 7 until die 21 has performed its function and the device raised from the map or moved upwardly as shown in Figure 6. The last part of the movement of pin 45 downwardly in slot 44 does not move the guide 39 as this slot merges into a short straight section 44′ and as the pin moves in this short straight section cam 31 of lever 12 will slip off of the abutment 10 whereupon spring 26 will cause the die 21 and associated parts to quickly move down and cut a paster from the strip 32 and press the paster against the map as shown in Figure 8.

In operation, when it is desired to move the device from the position shown in Fig-

ure 1 to apply a paster to the point 48, the device will be manually raised and the die 21 placed on point 48, said die at this time projecting outwardly as shown in Figures 2 and 6. Preferably the device is held at an angle when placing the same at a given point in order to see the point and thereby correctly locate die 21 at the desired spot. After having placed the lower end of the die on the desired point thus moistening the same, the device is moved to a vertical position and then quickly pressed downwardly. This quick movement will cause the parts to function so that a paster will be cut from the strip 32 and pressed against point 48, said point 48 having been moistened by water from the wick 21′ in die 21. In this way the adhesive tape is kept dry until it actually is moved into contact with the paper or other surface on which the paster is to be applied and then only the paster itself is moistened by the wick 21′ on the upper side and by the moisture previously applied to the paper on which the paster is applied. As the parts are moved downwardly as above described, the first result will be the engagement of die 17 with the surface of the map. The next movement will be to withdraw the die 21 through the action of lever 12 and associated parts. The next movement will be the swinging of the arm 42 for moving the strip of paper 32 to the position shown in Figure 7. The final movement will be the release of die 21 and associated parts whereby the die will quickly move to the position shown in Figure 8. This operation is performed almost instantly and the parts move automatically upon a downward movement of the body 5 and associated parts produced by the operator's hand. After a paster has been applied as just described, the device may be immediately moved to another point and the operation repeated. This operation may be continued as long as there is any water or tape in the device. After the parts have been moved to the position shown in Figure 8, the device is raised from the paper and as it is raised the parts will assume the position shown in Figure 6. As the parts assume the position shown in Figure 6, the die 21 remains extending through the tape and, consequently, as the pin 37 and guard 38 move back to the position shown in Figure 6, the tape is held stationary by the die 21 and the pin 37 slides over the paper to a new position.

Normally the punch die 21 is projecting through die 17 and is in the position shown in Figure 2. This being a normal position the same may be used easily as a point finder and then the device operated as above described. As soon as an operation has been completed and the device raised off of the map, the parts will quickly and automatically assume the position shown in Figure 2 so that the die 21 will be in position to again act as a point finder. When the parts are moved downwardly manually, this downward pressure by the hand and the momentum of the parts will cause the various parts to quickly move down and will cause the shoulder 50 to strike the shoulder 49 and force the die 21 quickly through the paper so that the parts will assume the position shown in Figure 8. When the device is raised off of the paper, spring 26 will cause the die 21 to project beyond die 17 as shown in Figure 2. After the parts have been moved to the position shown in Figure 4, then a short distance further up so that lever 12 will move off of the abutment 10, the downward movement of the end 8 and associated parts, including the head 27, will cause pin 29 to swing the lever 12 to substantially the position shown in Figure 2. If the swinging movement is not sufficient to accomplish this result, the lever 12 will strike the abutment 10 and will be moved thereby so that when the device is raised from the map the parts will assume the position shown in Figure 2. If the arms forming the bifurcated end 30 were not provided, this result would not be accomplished nor would the lever 12 be swung over to engage the abutment 10. When the parts are in the position shown in Figure 2 and the tubular member 7 and associated parts are moved downwardly manually, the pin 29 will strike one of the arms formed by the bifurcated end 30 and will swing the lever 12 until it engages the abutment 10 as the abutment moves downwardly. It will thus be seen that the pin 29 whenever necessary, positively swings the lever 12 so that it may slide by the abutment 10 in one direction and may engage the abutment in the opposite direction for causing an actuation of pin 29 and associated parts.

What I claim is:

1. A paster cutting and applying apparatus comprising a body, a die connected with the body at the lower end, a reciprocating plunger co-acting with said die, said plunger acting as a co-acting die with the parts arranged to cut a small section from a piece of paper mounted in the die and force the same through the die to a point in contact with the support on which the die is placed, means for supplying moisture continually to the end of said plunger, and means co-acting with the plunger for feeding a new supply of paper into the die upon each actuation of the plunger.

2. A paster cutting and applying apparatus comprising a body, a die having an aperture therein, a plunger acting as a second die co-acting with the first mentioned die for cutting and applying pasters on a sheet of paper, means for guiding the plunger toward and from the die, means for supplying moisture to the end of the plunger, and means for

automatically supplying paper to the die after each operation of the plunger.

3. A paster cutting and applying apparatus comprising an apertured die adapted to fit against a surface which is to receive a paster, a body carrying said die, a reciprocating plunger carried by the body, said plunger at the lower end acting as a die and adapted to be forced through the first mentioned die, means for intermittently feeding paper beneath said plunger whereby when the plunger is caused to function it will cut part of said paper and force the same through the die against said surface, means for causing said plunger to be quickly actuated when the body is forced downwardly, and means for supplying moisture to the end of the plunger.

4. A paster cutting and applying apparatus comprising a body, means for supporting a roll of tape having adhesive on one side, an apertured die carried by the body, means for intermittently feeding said tape through said die, a rod acting as a plunger die co-acting with the first mentioned die for cutting sections from said tape and forcing the same through said die, and means for supplying water to the lower end of said plunger die.

5. A paster cutting and applying apparatus comprising a body, a reciprocating hollow rod mounted in the body, a die connected with said rod at the lower end having an opening extending therethrough, a reciprocating plunger mounted in said hollow rod, said plunger at the lower end acting as a punch die, means for supplying water through said plunger to the paper designed to receive a paster, means for supporting a strip of paper having adhesive on one face, a swinging member for intermittently feeding said paper through said die, and means actuated by said body as the same is manually moved downwardly for operating said swinging member for feeding said paper and for retracting said plunger, and means for forcing the plunger through said die after the plunger has been retracted a predetermined distance.

6. An apparatus for cutting and applying pasters to paper or other surface, said apparatus including a plunger acting as a moistening device and a cutting die, means acting as a die co-acting with the plunger, means for automatically feeding paper into said second mentioned die so that said plunger may cut a section therefrom and force it through said die, and means for causing said plunger to function immediately after the paper has been fed into said die.

7. In a paster cutting and applying apparatus a pair of dies, one acting as a pressing foot in addition to acting as a cutting die, means for feeding paper intermittently to said dies, said means including a support for a supply of paper, a guide for guiding said paper to the dies, and a swinging arm for moving said guide and paper immediately before said cutting die functions.

8. In a paster cutting and applying apparatus a body, a hollow rod slidingly mounted in said body, an apertured die carried at the lower end of said rod, the aperture in said die being in line with the opening in said rod, a spring acting against said rod and said body for normally holding said rod projecting from the body, a reciprocating plunger carried by said rod, said plunger at the lower end acting as a die and positioned to move through the first mentioned die when functioning, means for intermittently feeding paper to said die, a spring acting on said plunger for causing it to normally project through said die, and means actuated by said body as the same is forced downwardly for causing the second mentioned spring to be brought under tension and then released.

9. In a paster cutting and applying apparatus a body, a pair of dies, one of said dies being formed as a reciprocating plunger and adapted to normally extend through the other dies whereby the dies may be accurately positioned when applying a paster, means for supplying paper to said dies, a spring acting on said plunger for normally holding the same projecting through the other die, a swinging lever for moving said plunger against the action of said spring, and means for causing said lever to be released after the plunger has been raised to a given point whereby said spring will cause the plunger to immediately move downwardly through the paper carried by the dies and through the apertured die.

10. In a paster cutting and applying apparatus a body, a hollow rod carried by said body provided with an apertured die at the lower end, a reciprocating plunger rod carried by the first mentioned rod, said plunger rod at the lower end being formed as a die co-acting with the apertured die for cutting and forcing a piece of paper through the apertured die against an object, means acting as a water supply carried by the end of said plunger opposite that forming the cutting die, means actuated by the body as it is manually forced downwardly for withdrawing said plunger and releasing the same at a given point, and manually actuated means acting on said plunger for causing the same to quickly move through said apertured die.

11. In a paster cutting and applying apparatus a plunger rod being provided with a bore from one end to the other, means at one end acting as a cutting die, and means at the other end acting as a water reservoir.

12. In a paster cutting and applying apparatus an apertured die, a reciprocating die

adapted to move through the apertured die, said reciprocating die being connected with a plunger rod, a body for surrounding most of said plunger rod, a pivotally mounted lever acting on said plunger rod for moving the same away from said apertured die, an abutment carried by said body for actuating said lever to a certain extent and then releasing the same, and manually actuated means acting on said plunger for causing the same to function as soon as said lever has been released.

13. A paster cutting and applying apparatus comprising a hollow body having a large tubular portion at one end, a guiding web arranged in said tubular portion, an abutment extending from said web, a hollow rod carried by said body, an apertured die arranged at the lower end of said rod, a spring for normally holding said rod projecting from said body, a reciprocating hollow rod acting as a plunger carried by said hollow rod, said plunger at the lower end functioning as a cutting die, a spring tending to move said plunger downwardly and through said apertured die, means acting as a head carried by said hollow rod, said head having a slot therein and a groove, said web in said body fitting in said groove, a pin extending from said plunger through said slot, a lever pivotally mounted on said head positioned to engage said abutment and said pin as the body is moved downwardly whereby the plunger is moved upwardly in respect to said hollow rod, said body being adapted to move downwardly until said lever has been released and the plunger caused to quickly move downwardly, and means actuated by said body for intermittently feeding paper to said die.

14. A paster cutting and applying apparatus comprising a body, a die connected with the body at the lower end, a hollow reciprocating plunger with a die at its lower end co-acting with the first mentioned die, moistening means carried by the second die, said second die presenting means for promptly and accurately positioning the device and simultaneously supplying the necessary moisture only to the sections of paper to receive the paster, said second die being manually actuated by a single action for cutting and affixing the pasters with required force at the exact point indicated and having means co-acting with the plunger for feeding a new supply of paper into the die upon each actuation of the plunger.

15. In a paster cutting and applying apparatus a pair of dies, one of which is hollow and acts as a cutting and applying member, means for supplying moisture through said hollow die, said hollow die acting to instantly position the device and simultaneously supply moisture only to that section of paper which is to receive the paster, and means for supplying gummed paper to said dies, said hollow die acting to cut a paster from said gummed paper on each actuation.

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