June 18, 1968 P. P. STECKLER 3,389,039

TAPING MACHINE

Filed July 13, 1964 2 Sheets-Sheet 1

Fig. 6.

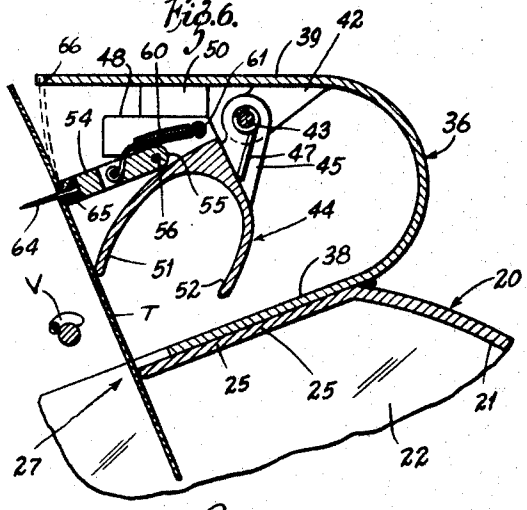


Fig. 7.

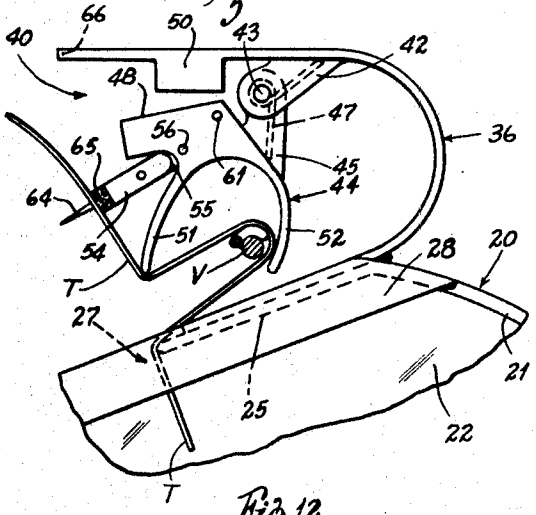


Fig. 8.

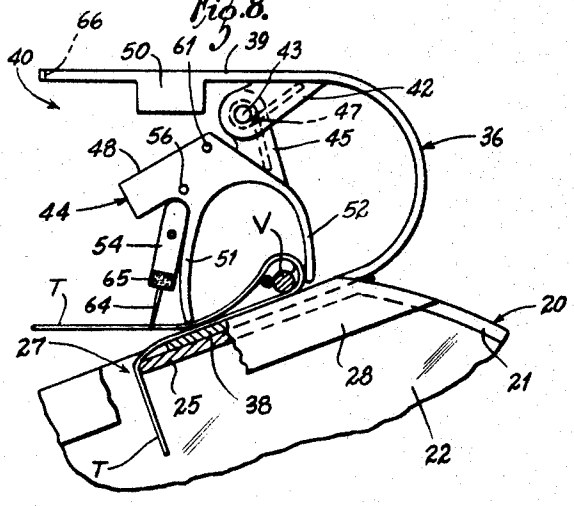


Fig. 12.

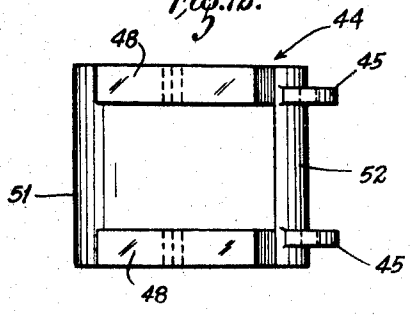


Fig. 13.

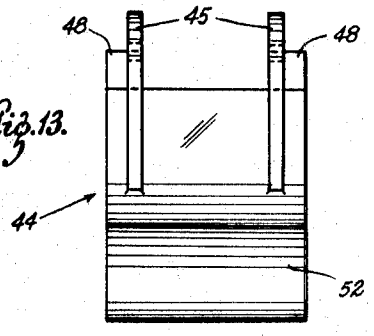
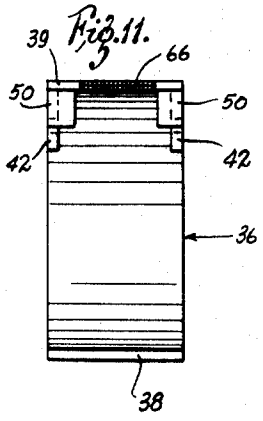


Fig. 11.



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June 18, 1968 P. P. STECKLER 3,389,039

TAPING MACHINE

Filed July 13, 1964 2 Sheets-Sheet 2

Fig. 9.

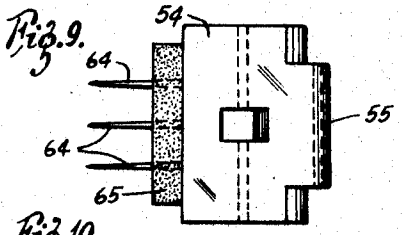


Fig. 10.

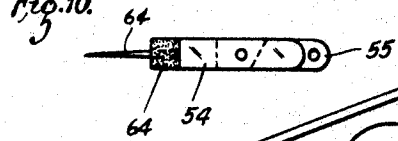


Fig. 1.

Fig. 2.

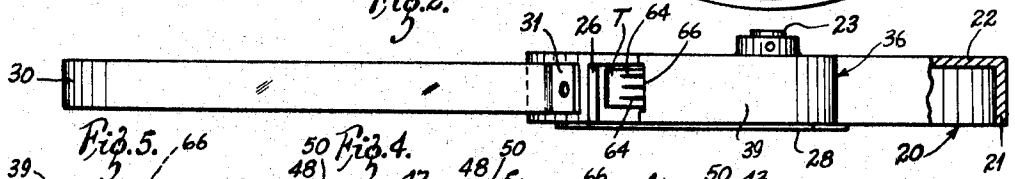


Fig. 5.

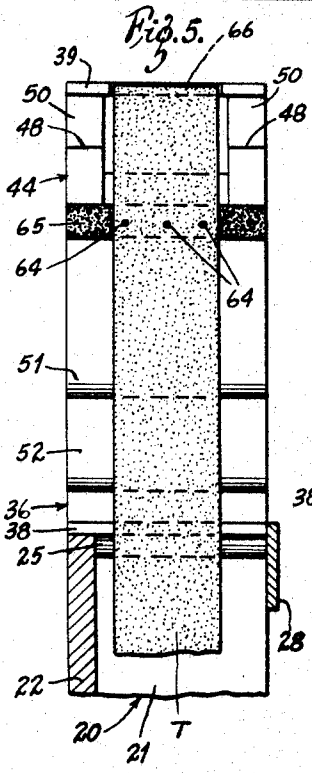


Fig. 4.

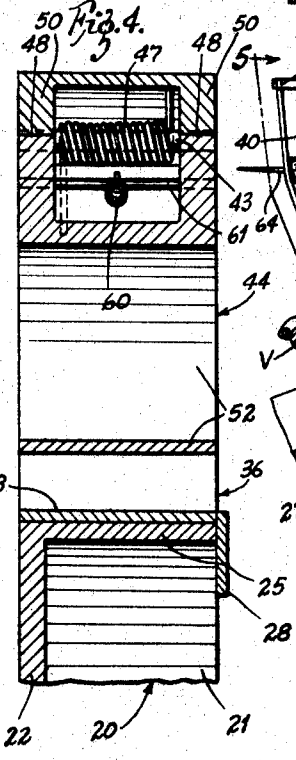
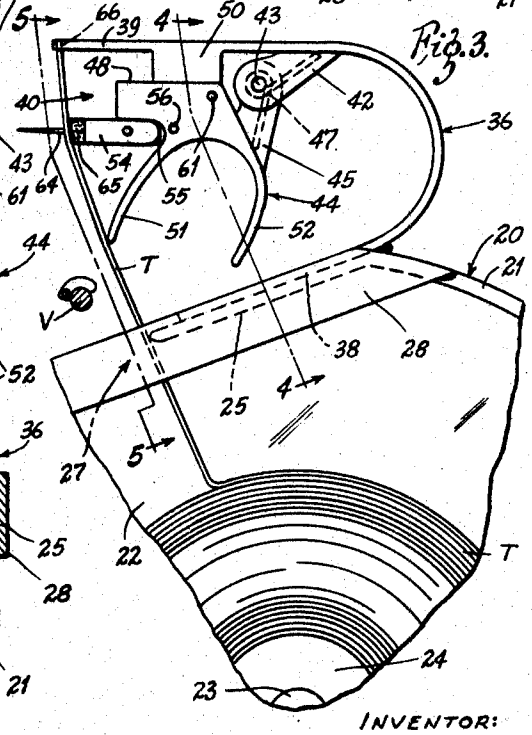


Fig. 3.



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TAPING MACHINE

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9 Claims. (Cl. 156—468)

ABSTRACT OF THE DISCLOSURE

A taping machine wherein a tape supporting frame has a forked presser member pivoted thereon, that opens toward an anvil portion of the frame. Tape is drawn from the frame across to a tape retainer pivoted onto the presser member, and beyond that to a blade on the frame. A stick pushed against the span of the tape presses it into the recess of the fork, looping the tape behind it. When the stick is forced against the far leg of the fork, it rocks the fork, bringing the near leg to the anvil to clamp the lapped tape and force its adhesive-coated faces together. This pulls the free end of the tape from the retainer. The taped stick is withdrawn, the forked member is restored to initial position, and the stick is displaced to draw the tape against the cutter to cut it off and leave the device ready for the next use.

The present invention relates to a taping machine or tool. More particularly, it relates to a machine for fastening grape vines onto wires or like supporting structure. Obviously, the machine is capable of other uses, but the specific use in connection with grape vines will be hereinafter employed for the description of the construction and operation of this machine.

In general the purpose of the machine or tool is to provide for the attaching of grape vines to the supporting wires with a minimum of effort and especially to provide a machine operation requiring only one hand.

Heretofore the most usual means for attaching grape vines in vineyards to the supporting wires have been either ordinary string, or wire ties, that are twisted into place. Each of these requires a two-handed operation, and, since it is usually performed in the winter time, it is difficult and unpleasant.

The present invention consists of a tool having a handle extending out from a central circular support or base for a coil of pressure sensitive tape. The base also has a throat member to receive the vine stem and supporting wire, that is formed by a metal strip bent into a U-shape, with one leg mounted on the periphery of the tool. The throat member is so arranged that the pressure-sensitive tape can be drawn radially out from the roll across the mouth of the throat portion, with its adhesive side facing away from the throat and toward the operator. The end of the tape can initially be pressed onto a cutting edge on the free end of the U-shaped throat member. The U-shaped bracket that forms the throat also supports a swivelled forked member within the throat, and initially spring-urged to a position wherein its fork is open toward the mouth of the U-shaped throat member.

When the supporting wire and vine are caused to move against the tape toward the throat, the tape is bent into the throat. The wire and vine pass into the fork of the forked member, pivoting it so that its leg engages against the bent tape, looping the tape over the vine and wire. The looping brings two adhesive surfaces of the tape together. This loop may then be grasped, drawn out and pulled against the cutting edge to sever it from the roll.

There are other features and parts of the invention as will appear from the description to follow. Further objects of the invention include the provision of means to make the tape always accessible, the provision of means

to cut the tape off after it has been looped over the vine and wire, as well as means to withdraw the tape from the cutting edge after it has been severed and yet to hold the free end available. Other objects include the provision of spring-return means in the foregoing operations that eliminate the necessity of hand operation for the final action and resettting processes of the machine.

In the drawing:

FIGURE 1 is a side elevation of the device or tool;

FIGURE 2 is a top view;

FIGURE 3 is an enlarged fragmentary view of the principal operating parts of the tool;

FIGURE 4 is an enlarged vertical section on line 4—4 of FIGURE 3;

FIGURE 5 is an enlarged vertical section on the line 5—5 of FIGURE 3;

FIGURE 6 is a sectional view, generally similar to FIGURE 3, medially of the device;

FIGURE 7 is a view similar to FIGURE 3, the taping parts being partially moved toward closing position;

FIGURE 8 is a view similar to FIGURE 7, the taping parts being in closing position;

FIGURES 9 and 10 are top and edge views, respectively, of the retainer;

FIGURE 11 is a front view of the throat member; and

FIGURES 12 and 13 are enlarged top and end views, respectively, of the forked press member.

There is a frame **20** that, in a preferred embodiment, has a cylindrical edge wall **21** and an end wall or plate **22** closing one side, the other being open. A pivot pin **23** supports a tape-holding core **24** at the center of the plate **22**. One end **25** of the edge wall **21** is flattened as shown, and terminates short of the other end **26** of this edge wall, leaving a tape passage **27**. A narrow brace **28** extends across the open side of the frame beside the flattened portion.

A handle **30** is formed by a metal strip having its ends **31** and **32** attached to the outer periphery wall **21** of the frame **20**. The handle has a grip portion **33** so that the tool may be easily held in one hand.

The frame may have a width of about an inch or so in all if it is designed to be used with half-inch tape.

The frame **20** also supports a throat member, generally designated **36**, in which the looping operation is performed. This throat member is formed by a U-shaped metal strap. One leg **38** of this strap is secured onto the flat portion **25** of the frame. The other leg **39** is spaced away from the frame. The open end of the U-shaped member **36** provides a mouth generally indicated by the reference number **40**. The outer leg portion of the U-shaped bracket **36** has two depending ears **42** supporting a pivot **43** for a forked press member **44**. The press member **44** can include a pair of projections **45** that fit between the ears **42** so that it can be pivotally attached to the pivot **43** and can swing in the manner shown in FIGURES 7 and 8.

A coil spring **47** surrounds the pivot **43** and yieldably urges the press member **44** clockwise as shown in the drawings until it reaches its upper position as particularly shown in FIGURE 6. The forked member **44** has two flat-topped shoulders **48** that can engage against abutments **50** depending from the upper leg **39** of the throat member **36**. Below the shoulders the member **44** has two projecting legs **51** and **52**.

A pivoted retainer **54** has a reduced inner end **55** that is designed to slip between the shoulders **48** of the press member **44**, and be rockably mounted on a pivot pin **56**. The shoulders **48** are shaped so that the retainer **54** can swing from a maximum upper position illustrated in FIGURES 1, 3 and 6, downwardly therefrom until it strikes the upper surface of the leg **51** of the press mem-

ber 44 as shown in FIGURE 8. There is a return tension spring 60 stretched between the retainer 54 and a pin 61 that is mounted on and spans between the shoulders 48, yieldably urging the retainer 54 upward to the position illustrated in FIGURE 6. The retainer 54 has several well-pointed pins 64 projecting from the forward edge. At the base of the pins 64 there is a strip or pad 65 of sponge rubber.

The forward edge of the upper leg 39 of the throat member 36 is formed into a tape cutting edge 66. The cutting edge 66 is recessed somewhat as shown in FIGURES 2 and 6, as a safety feature.

Operation

To prepare the tool for use, a roll of pressure-sensitive tape T is placed over the core 24 and appropriately secured in place. The end of the tape T, with its adhesive face to the left or outwardly of the throat, is drawn up through the opening 27 as in FIGURE 1 until it reaches the cutting edge 66, and is drawn back against this cutting edge. In this process it will be drawn over and become impaled upon the pins 64 that project forwardly from the end of the retainer 54. At this time the retainer 54 is held in its upper position by the spring 60. Pressing the tape against the end of the retainer 54 may compress the elastic pad 65, so that when the end of the tape is released at the cutting edge, the pad relaxes, drawing the tape away from the cutting edge, and loosening it on the pins. It does not at this time leave the pins. At this time, the spring 47 causes the forked presser member 44 to be in its forward or most clockwise position illustrated in FIGURES 1, 3 and 6.

When the tool is used to tape a vine to a wire, it is grasped by the handle 30 and it may be moved until the vine and wire V are in the position shown in FIGURE 3, ahead of the tape T at the lower part of the mouth 40, below the leg 51 of the press member 44, facing the adhesive face of the tape. Thereupon the tool is drawn forward. The forwardly facing adhesive side of the tape T is brought across the vine V, the vine forcing the tape back into the throat, below the leg 51 and toward the leg 52. This causes the end of the tape to be drawn downwardly, but it is at least initially retained on the pins 64 of the retainer 54 which pivots down to accommodate movement of the tape. As the tool is drawn further forward, the vine engages the back leg 52 of the press member 44, displacing the press member to its downward position illustrated in FIGURE 7 and 8 against the effect of the return spring 47. During this movement, the tape is usually drawn off the pins 64 of the retainer 54, which thereupon swings back to its starting position under influence of the spring 60.

In the final or sticking position in FIGURE 8, the leg 51 of the presser member 44 presses the two overlapping facing gummed faces of the tape against the outer surface of the leg 38 that acts as a base or an anvil for the leg 51 of the press. This action firmly joins the two tape faces. The other leg 52 of the presser member does not engage the bottom leg 38 of the U-shaped bracket, so that the pressing action of the leg 51 on the tape is unimpeded.

After the foregoing is completed, the operator moves the tool backwardly away from himself and away from the wire and the vine. The spring 47 causes the presser member to move forward. This action pushes the loop around the now-taped vine and wire, out of the mouth, and makes the newly-made loop, and the free end of the tape, above the pins 64 on the retainer 34, accessible to be grasped. By one or the other, the tape is pulled without separating the joined portions forming the loop, drawing more tape off the roll, so that it can be forced against the cutting edge 66 and the loop torn off, restoring the tool to its starting condition.

Various changes and modifications may be made within the process of this invention as will be readily apparent to those skilled in the art. Such changes and modifications are within the scope and teaching of this invention as defined by the claims appended hereto.

What is claimed is:

1. In a tool for applying adhesive tape, in loops around small objects: a frame, spaced means on the frame to hold the ends of a piece of adhesive tape, the spaced means providing a throat into which the tape may be displaced; a fixed base on the frame in the throat between the spaced means; a recessed member having a leg on one side of the recess and an engageable surface on the opposite side, the recessed member being pivoted to the frame to dispose it in the throat between the spaced means, with the leg adapted to pivot from an initial position away from the fixed base, to a second position adjacent thereto, and the engageable surface spaced backward into the throat from the leg; whereby when a piece of tape is spanned across the throat between the spaced means with an adhesive surface outward, and a small object is pressed against the tape, forcing it into the throat, the object can engage the engageable surface of the recessed member, drawing the tape around the object in a loop, and between the leg and the fixed base, and pressing the object against the engageable surface pivots the recessed member to cause the leg to move toward the fixed base and press the overlapping ends of the tape between the leg and the fixed base so that the adhesive faces of said overlapping ends are firmly joined together.

2. In the tool of claim 1: the frame comprising a holder for a roll of tape, which constitutes one of the spaced means for holding the tape; and the other spaced means is a bracket outstanding from the periphery of the frame.

3. In the tool of claim 1: the frame comprising a holder for a roll of tape, with a pivot means at its center to support the roll for rotation as tape is withdrawn, the holder being the first of the spaced means; the second of the spaced means being a bracket outstanding from the periphery of the frame, radially outwardly from the pivot means, so that tape may be drawn from the roll and stretched out to the second spaced means; and the fixed means being a wall at the periphery of the frame spaced inwardly toward the pivot means from the second spaced means.

4. In the tool of claim 1, a handle on the frame, by which the frame can be held to move the tool to bring the object to be taped into the throat.

5. In the tool of claim 1: the frame comprising a plate having a circular rim outstanding therefrom, a pivot at the center to receive a coil of tape, the pivot constituting the first spaced means to hold the tape; the rim extending around the periphery of the plate but having a gap therein through which the tape may be drawn; the second spaced means comprising a U-shaped bracket with one leg attached to the rim adjacent the gap, the bracket then extending back from the gap outwardly from the frame and forwardly again to dispose its second leg outward from the first, the forward edge of the second leg having tape-severing means thereon, against which the tape may be drawn.

6. In the tool of claim 1: the second spaced means for holding the tape comprising a tape retainer projecting outwardly from the throat, and movably attached to the frame, so that when the tape is moved into the throat, the retainer may retain hold of the tape but yield so that the end of the tape may move toward the throat.

7. In the tool of claim 6: the tape retainer having pin means projecting forwardly, onto which the tape may be impaled.

8. In a tool of the kind described: a frame having a plate with a rim attached to it; a tape roll pivot mounting at the center of the plate, the rim having a tape opening therethrough; a throat member projecting alongside and in spaced relation to the rim adjacent the opening, and providing a throat between itself and the rim; a press

member having two spaced legs, pivoted onto the throat member within the throat, about an axis transverse to the plate, the legs extending in the throat toward the rim; spring means normally urging the press member toward the opening of the throat wherein one leg is adjacent the opening and the other is spaced inwardly therefrom, means limiting the pivoting of the press member to such position, the press member being pivoted oppositely to bring the said one member adjacent to the rim for pressing tape; a retainer, pivoted onto the press member to swing about an axis transverse to the plate, pin means projecting from the retainer, the retainer being pivotable to a position where the pin means extend outwardly from the throat, outwardly from the said one leg of the press

member, and spring means normally urging the retainer to swing in a direction outwardly away from the said leg.

9. The tool of claim 8 wherein the throat member has a tape-severing means at its end.

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