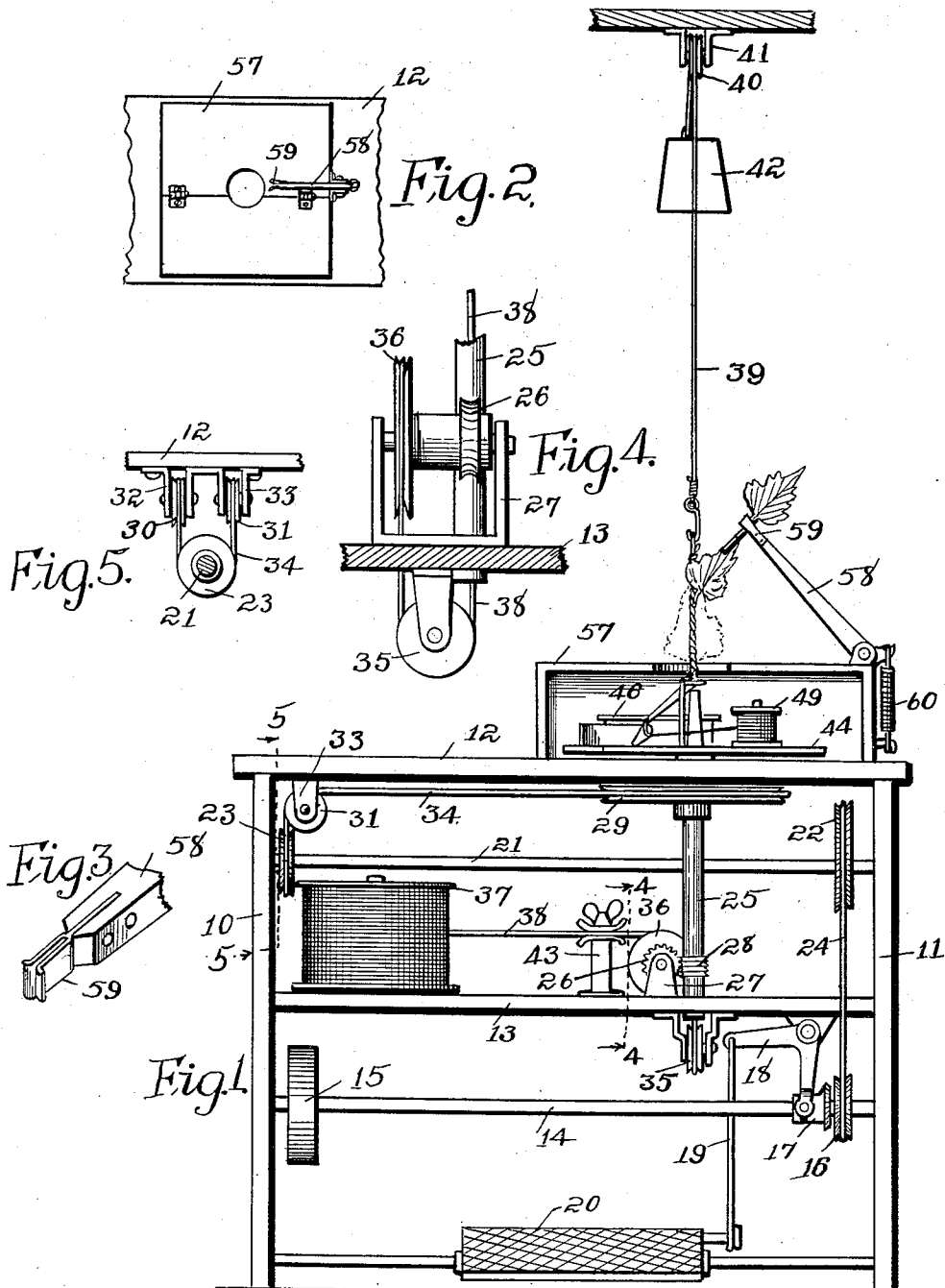


C. L. HULSIZER.  
 DEVICE FOR WINDING ARTIFICIAL VINES.  
 APPLICATION FILED FEB. 24, 1911.

1,017,626.

Patented Feb. 13, 1912.

2 SHEETS—SHEET 1.



Witnesses  
*A. S. Hague.*  
*W. A. Loftus.*

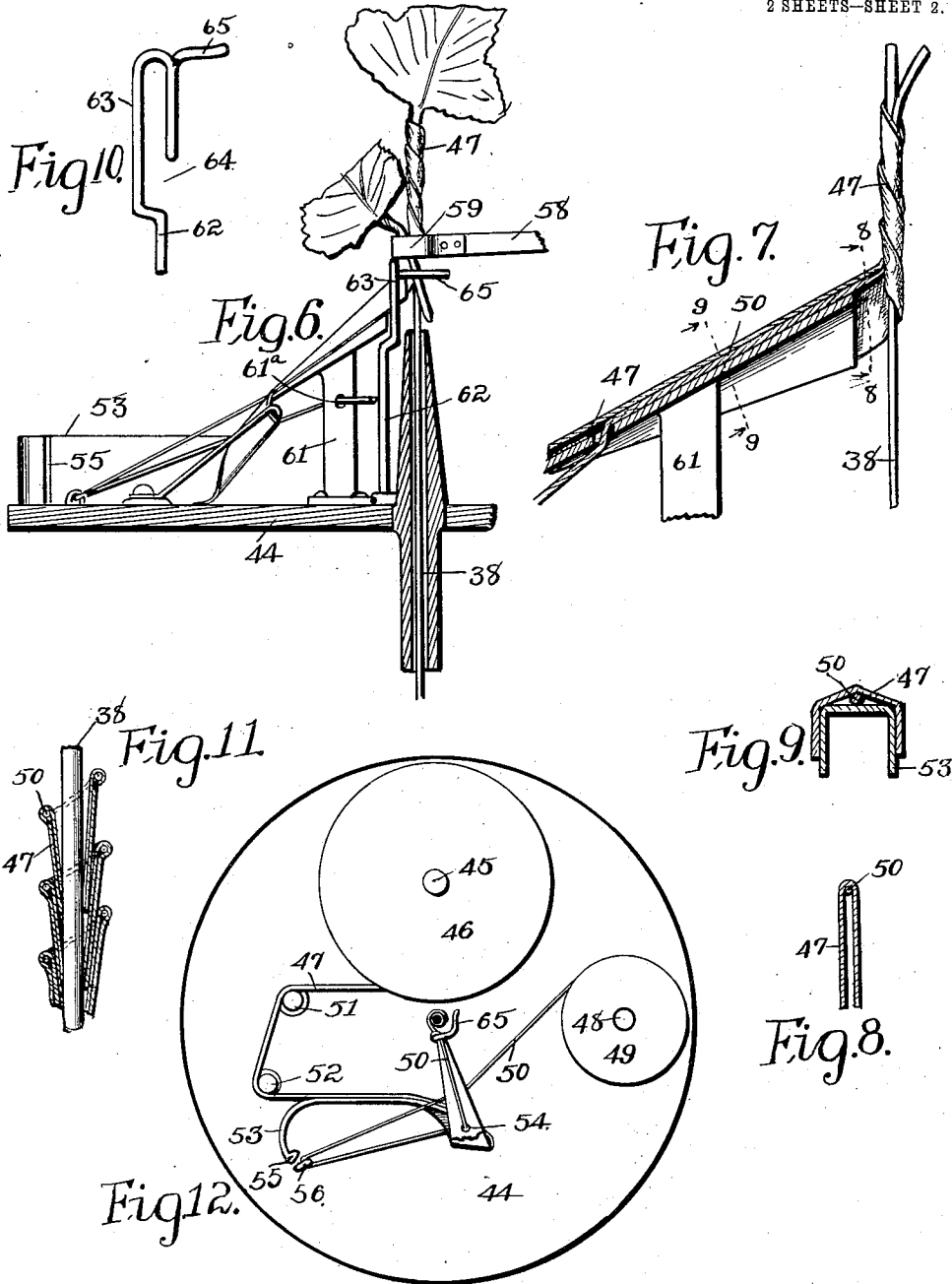
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 A. G. Hague  
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# UNITED STATES PATENT OFFICE.

CLYDE L. HULSIZER, OF DES MOINES, IOWA.

DEVICE FOR WINDING ARTIFICIAL VINES.

1,017,626.

Specification of Letters Patent.

Patented Feb. 13, 1912.

Application filed February 24, 1911. Serial No. 610,521.

*To all whom it may concern:*

Be it known that I, CLYDE L. HULSIZER, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented a certain new and useful Device for Winding Artificial Vines, of which the following is a specification.

The object of my invention is to provide efficient mechanism of durable and simple construction by which artificial flowers, leaves of holly, or the like, are wound on a wire or other strong central support under a binding of paper or other suitable material.

More particularly my object is to provide such a mechanism by which a strip of paper is wound about such a central support and by which the paper, as it is wound, is folded with the folded central portion on the outside and the single edges always underneath the succeeding layer or wind of the folded paper.

Another object is to provide such a mechanism by which a thread or other reinforcing means is wound within the fold of the paper adjacent to the folded edge thereof, to securely hold the paper to the wire, and to produce a finished article that will not easily become torn and unwound, and by which thread is fed with the paper as it is wound in such a way as to take the strain of winding off the paper, during the process.

A further object is to provide such a mechanism provided with a spool or reel for holding paper, and by which the paper is taken from said spool or reel and wrapped in a continuous length upon a central support.

A further object is to provide means by which artificial leaves, flowers, or the like may be placed in the exact position desired adjacent to the wire or other support on which they are to be wrapped and by which the intervals at which they are placed on said support may be exactly gaged.

My invention consists in certain details, in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of a machine embodying my device. Fig. 2 shows a top or plan view of the arm for placing leaves or the like. Fig. 3 shows a detail view

of the said arm. Fig. 4 shows a detail sectional view on the line 4—4 of Fig. 1. Fig. 5 shows a detail sectional view of a part of the mechanism taken on the line 5—5 of Fig. 1. Fig. 6 shows a detail view of the mechanism for feeding and winding the paper and thread. Fig. 7 shows another detail view of the feed device, partly in section. Fig. 8 shows a sectional view on the line 8—8 of Fig. 7. Fig. 9 shows a sectional view on the line 9—9 of Fig. 7. Fig. 10 shows a detail view of part of the feed device. Fig. 11 shows a longitudinal sectional view of the wrapping material on the wire. Fig. 12 shows a top or plan view of the folding and feeding mechanism.

In the accompanying drawings, I have used the numerals 10 and 11 to indicate the side members, and 12 to indicate the top member of the supporting frame of my improved device for winding artificial vines.

13 indicates a cross member extending from the member 10 to the member 11 and designed for supporting parts of the machine. Rotatably mounted in the frame is a power shaft 14 which may be operated by any suitable means.

In the drawing (Fig. 1) is shown a belt wheel 15 mounted on the shaft 14. A belt pulley 16 is loosely mounted on the shaft 14. Any means of imparting motion to the mechanism from the shaft 14 may be used. In the drawings as shown, a clutch 17 is designed to engage a clutch member on the belt pulley 16. The clutch 17 is shown as operated by the bell crank lever 18, a rod 19 and a pedal 20. Rotatably mounted in the frame of the machine is a shaft 21 on which is mounted a belt pulley 22 in line with the belt pulley 16. The belt pulley 23 is mounted on the shaft 21.

24 indicates a belt which travels on the belt pulleys 16 and 22.

25 indicates a hollow, vertical shaft rotatably mounted in the frame members 13 and 12 extending to a point above the frame member 12. The gear wheel 26 is rotatably mounted in a suitable bracket 27 adjacent to the shaft 25 in mesh with a worm gear 28 formed on said shaft. A belt pulley 29 is mounted on the shaft 25 between the frame members 12 and 13. Belt pulleys 30 and 31 (see Fig. 5) are rotatably mounted side by side but are spaced apart from each other, in suitable brackets 32 and 33 extend-

ing downwardly from the frame member 12. Motion is imparted from the shaft 21 to the belt pulley 29 and the shaft 25 by means of a belt 34 which travels on the belt pulleys 23 and 29, 30 and 31. A belt pulley 35 is rotatably mounted in a suitable bracket, extending downwardly from the frame member 13 below the lower end of the shaft 25. Rotatably mounted in the bracket 27 is a belt pulley 36. (See Fig. 4.)

A spool for wire, 37, is rotatably mounted on the frame member 13, and the wire 38 from said spool is wound a full turn around the belt pulley 36 and then around the belt pulley 35 and through the hollow shaft 25. The wire 38 from the spool 37 is drawn from the upper end of the shaft 25 by a second wire or cord 39, which travels over a belt pulley 40, rotatably mounted in a suitable bracket 41 secured to the ceiling of a room or to any suitable support above the machine. At the other end of the wire 39 is a weight 42.

43 indicates a tension device which may be of any desired construction by which the tension on the wire 38 may be regulated, and which is shown on the drawing as located between the spool and the belt wheel 36. Mounted on the shaft 25 above the frame member 12 and spaced slightly apart therefrom is a disk platform 44. Extending upwardly from said disk platform is a lug or post 45 on which is rotatably mounted a spool 46. On the spool 46 is wound a continuous length of paper 47. Extending upwardly from the disk 44 is a post 48 on which is rotatably mounted a spool 49 holding wire or thread 50. Extending upwardly from the disk platform 44 are posts 51 and 52 over which the paper 47 passes as it is fed for winding.

53 indicates a metal guide strip of rectangular shape. At one end said guide strip is secured to the post 55 on the disk platform 44 in a plane at right angles to the disk platform (see Fig. 6) and it extends from said post 55 in the general direction toward the shaft 25. The guide strip may be soldered to the disk platform if desired. The post 55 is adjacent to the post 52 and near it on the platform is an eyelet 56. The other end of said guide strip 53 is bent away from the spool 46, then upwardly, then toward the shaft 25. The sides of that portion of the guide strip 53 which is adjacent to the shaft 25 are bent downwardly, the lines of the folds thereof converging toward said shaft as shown in Figs. 6, 9, and 12. The guide strip 53 is provided with a central perforation 54 at a point near where the sides begin to bend downward, said perforation being designed to receive the reinforcing wire or thread 50.

A box casing 57 of any suitable material and form is provided to cover the disk plat-

form 24 in order to protect the same and to protect the operator. Pivotaly mounted on a suitable support upon the casing 57 or adjacent thereto is an arm 58 designed to swing from a position where its free end is adjacent to the wire 38, upwardly and away from said wire. The free end of said arm 58 is provided with a clamp 59 designed to receive artificial leaves, flowers or the like. I preferably provide a coil spring 60 for yieldingly holding the arm 58 at the upward limit of its movement. I also preferably provide a brace or support 61 secured to the disk platform 44 and to the lower side of the guide strip adjacent to the upper end of the shaft 25. The brace or support 61 is provided with a perforation 61<sup>a</sup> for a purpose hereinafter explained.

Mounted on the disk platform 44 adjacent to the shaft 25, I provide a feeding and guide device, the construction of which is clearly shown in Fig. 10. This feeding and guide device comprises a standard or upright post 62 at the upper end of which is formed a loop 63, the lower part of one side of the said loop being open at 64. An arm 65 extends from said loop past the wire 38 above the upper end of the shaft 25. The purpose of said loop and the arm 65 will be hereinafter more fully explained in my description of the operation of my machine.

In using my machine, I preferably set up a gage suitably marked adjacent to the wire 38 above the casing 57 for use in fixing the intervals at which the leaves or flowers are placed on the wire.

In the practical operation of my device, the spool 37 upon which is wound the wire 38, is placed in position on the frame member 13. The wire 38 is then threaded through the tension device 43, wound a full turn around the pulley wheel 36 and extended downwardly and over the pulley wheel 35, then upwardly through the hollow shaft 25. Above the upper end of said shaft 25, the wire 38 is fastened to the wire 39. The spool 49 on which is wound the wire or thread 50 is then placed on the post 48 and the thread is threaded through the perforation 61<sup>a</sup> of the upright 61, and through the eyelet 56 on the platform 44, 55 and then upwardly through the perforation 54 from whence it is extended along the guide strip 53 to the shaft 25 where it is in proper position to be received within the fold of paper when the latter is placed on the guide strip 53. The spool 46 on which is wound the paper 47 is then placed in position on the post 45. The paper 47 from the spool 46 is extended around the posts 51 and 52 and is then drawn over the guide strip 53 so that it is on the upper side of the same at the point thereof adjacent to the shaft 25. At that point the paper is folded and the wind on the wire 38 is started by hand. The

folded paper is inserted through the opening 64 into the loop of the guide device shown in Fig. 12 which assists in the proper feeding of the paper for winding on the wire 38. As the folded paper is wrapped the thread 50 will be fed within the fold. The paper is wound on the wire 38 with the single edges downward, and they are thus always kept underneath the next succeeding layer of folded paper.

The machine now being suitably prepared for beginning operation, motion is imparted to the machinery from the power shaft 14 by means of the mechanism heretofore described. As the disk platform 44 mounted on the shaft 25 is rotated the reinforced folded paper is wound on the wire 38. The wire 38 is fed steadily through the hollow shaft 25 by means of the belt pulley 36, the gear wheel 26 and the worm gear 28. The weight 42 is sufficient to hold it taut. The stems of leaves or flowers are placed in the clamp 59 at the free end of the arm 58 directed downwardly. The arm 58 is then depressed and is so located as to bring the said stem parallel to and adjacent to the wire 38. The first revolution of the disk platform thereafter winds one wrapping of the paper about the stem. The clamp may then be removed and another leaf or flower placed in position. The arm 65 on the guide device shown in Fig. 12 assists in placing the stems in position and holding them there. When a suitable length of the vine has been completed, it may be cut and a new length begun.

It is readily seen that a great number of variations in details of construction of my device may be made without changing its essential features.

The form and arrangement of the parts may be varied in many respects, the essential purpose of the device being to provide means for folding the paper with the reinforcing thread or the like within the fold, and means whereby the paper thus reinforced may be snugly wound on the flower stem or other central support.

The form of the guide strip 53 may be varied, the essential feature of the guide strip being to furnish means for folding the paper and for delivering it to the wire in such folded condition. Any suitable means for imparting greater tension to the thread than to the paper may be used.

Heretofore leaves or flowers have been secured to a wire or other central support by winding with thread or the like. Paper has been used for winding but the feeding has been done by hand. My machine is the first to wind by continuous length of paper mechanically fed in the construction of artificial vines. The advantages of the use of paper over thread or wire in such wrapping is obvious. Paper is much more effective in

carrying out the vine effect and makes a better appearing finished product, than does wire or thread. Paper is much less expensive and when the wrapping is done by machinery the saving of time and labor is very great when paper is used instead of wire or thread. For carrying out the purpose of such a binding, and producing artificial vines of the best appearance, a thin paper gives a smoother and better result. A single thickness of such paper is unsatisfactory in actual use for the reason that it tears readily and leaves exposed an edge of a single thickness which is not sufficiently strong. My machine has the advantage of folding the paper as it is wound and of leaving exposed only the folded edge, thus giving the wrapping double strength.

Any paper wrapping is subject to the disadvantage that if it is once torn in two at any point, it is likely to unwrap for a considerable distance. My device reinforces and strengthens the paper by feeding within the fold thereof a wire or preferably a thread. When reinforced by thread a tear in the paper will not result in unwrapping the binding except at the point of the tear.

In feeding the paper alone it is found that any sudden strain thereon, as when the stems of flowers are placed adjacent to the wire and the paper wound thereon, will result in tearing the paper. This happens so frequently as to seriously retard the work of winding the paper. The thread entering the feed beneath the paper at the point 54, draws the paper with it up the feed as it approaches the wire and thereby removes all sudden strains of tension from the paper, which being very fragile would otherwise tear under the tension of any sudden strain in the feeding. A great deal of time is saved in placing the leaves or flowers in the proper position by means of the arm 58. By means of the gage heretofore referred to, the intervals to which the leaves or flowers are placed may be accurately regulated.

For the purpose of removing the tension from the paper as it is wound on the wire, it is immaterial whether the thread is within the fold or adjacent thereto. In practical operation, I impose no tension whatever on the paper as it is drawn from the spool and fed except that incident to the feeding. The thread is threaded through the eyelet 56 simply to give it tension, the strain of feeding being almost entirely on the thread and not on the paper.

In the following claims, by the use of the term wire when referring to the central support for artificial vines, I mean to include metal wire or any equivalent therefor such as ratan, cord or the like. By the use of the term paper, I mean to include cloth or any other suitable wrapping material and by the term thread when used of the reinforcing

means I intend to claim metal wire, thread or any suitable means for reinforcing the paper and relieving the tension thereon during the process of feeding.

5 I claim as my invention:

1. In a device of the class described, the combination of means for folding a strip of paper longitudinally with means for winding said folded paper spirally about a wire, and means for imparting tension to said paper as it is wound about the wire.

2. In a device of the class described, the combination of means for folding a strip of paper longitudinally with means for winding said folded paper spirally about a wire, means for winding thread about a wire with said paper, means for imparting tension to said paper as it is wound, and means for imparting tension to said thread as it is wound.

3. In a device of the class described, the combination of means for folding a strip of paper longitudinally, means for winding said folded paper spirally about a wire, and means for winding a thread about said wire within the fold of said paper.

4. In a device of the class described, the combination of means for folding a strip of paper longitudinally, means for winding said folded strip thus made, spirally about a wire, means for winding thread about said wire with said paper, and means for imparting tension to said thread.

5. In a device of the class described, the combination of means for folding a strip of paper longitudinally, means for winding said folded strip thus made, spirally about a wire, means for winding thread about said wire with said paper, means for imparting slight tension to said paper, and means for imparting greater tension to said thread.

6. In a device of the class described, the combination of means for wrapping a strip of paper from a spool upon a wire, with means for folding said paper, comprising a guide strip located with one end adjacent to said spool and extending therefrom toward the said wire, said strip having a flat portion designed to receive the paper and to keep it flat, a curved portion, a portion adjacent to the wire, the sides of which are folded to form a substantially V shaped groove over which the paper is fed and whereby it is folded.

7. In a device of the class described, the combination of means for wrapping a strip of paper from a spool upon a wire, with means for folding said paper, comprising a guide strip located with one end adjacent to said spool and extending therefrom toward the said wire, said strip having a flat portion designed to receive the paper and to keep it flat, a curved portion, a portion adjacent to the wire, the sides of which are folded to form a substantially V shaped groove over which the paper is fed and

whereby it is folded, said guide strip being constructed with a perforation near said V shaped groove designed to receive a thread.

8. In a device of the class described, the combination of means for wrapping a strip of paper from a spool upon a wire, with means for folding said paper, comprising a guide strip located with one end adjacent to said spool and extending therefrom toward the said wire, said strip having a flat portion designed to receive the paper and to keep it flat, a curved portion, a portion adjacent to the wire, the sides of which are folded to form a substantially V shaped groove over which the paper is fed and whereby it is folded, means for feeding a thread with said paper as the latter is wound on the wire.

9. In a device of the class described, the combination of means for wrapping a strip of paper from a spool upon a wire, with means for holding said paper, comprising a guide strip located with one end adjacent to said spool and extending therefrom toward the said wire, said strip having a flat portion designed to receive the paper and to keep it flat, a curved portion, a portion adjacent to the wire, the sides of which are folded to form a substantially V shaped groove over which the paper is fed and whereby it is folded, means for inserting a thread within the fold of the paper and winding said thread with said paper.

10. In a device of the class described, a frame, a platform rotatably mounted thereon, constructed with a central opening designed to receive a wire upon which artificial vines may be wound, a spool for holding paper mounted on said platform, a guide strip located with one end adjacent to said spool and extending therefrom toward the said wire, said strip having a flat portion designed to receive the paper and to keep it flat, a curved portion, a portion adjacent to the wire, the sides of which are folded to form a substantially V shaped groove over which the paper is fed and whereby it is folded.

11. In a device of the class described, a frame, a platform rotatably mounted thereon, constructed with a central opening designed to receive a wire on which artificial vines may be wound, a spool for holding paper mounted on said platform, and means for folding said paper as it is wound from said spool upon said wire.

12. In a device of the class described, a frame, a platform rotatably mounted thereon, constructed with a central opening designed to receive a wire on which artificial vines may be wound, a spool for holding paper mounted on said platform, means for holding said paper as it is wound from said spool upon said wire, and means for winding thread upon said wire with said paper.

13. In a device of the class described, a frame, a platform rotatably mounted thereon, constructed with a central opening designed to receive a wire on which artificial vines may be wound, a spool for holding paper mounted on said platform, means for folding said paper as it is wound from said spool upon said wire, and means for inserting a thread within the fold of said paper as it is wound upon said wire.

14. In a device of the class described, a frame, a platform rotatably mounted thereon, constructed with a central opening designed to receive a wire on which artificial vines may be wound, a spool for holding paper mounted on said platform, means for folding said paper as it is wound from said spool upon said wire, and means for rotating said platform.

15. In a device of the class described, a frame, a platform rotatably mounted thereon, constructed with a central opening designed to receive a wire on which artificial vines may be wound, a spool for holding paper mounted on said platform, means for folding said paper as it is wound from said spool upon said wire, means for inserting a thread within the fold of said paper as it is wound upon said wire, and means for rotating said platform.

16. In a device of the class described, a frame, a platform rotatably mounted thereon, constructed with a central opening designed to receive a wire on which artificial vines may be wound, a spool for holding paper mounted on said platform, means for folding said paper as it is wound from said spool upon said wire, means for rotating said platform, and means for drawing said wire through the opening in said platform.

17. In a device of the class described, the combination with means for wrapping leaves upon a wire with thread, of an arm capable of movement toward and from said wire, and a clamp device upon said arm designed to grasp a leaf and move it to position adjacent to said wire.

18. In a device of the class described, the combination with means for wrapping leaves upon a wire with thread, of an arm capable of movement toward and from said wire, and a clamp device upon said arm designed to grasp a leaf and move it to position adjacent to said wire, and means for yieldingly holding said arm in position away from said wire.

19. In a device of the class described, a frame, a platform rotatably mounted thereon constructed with a central opening designed to receive a wire on which artificial vines may be wound, a spool mounted on said platform, posts on said platform designed to serve as guides for the paper fed from said spool, a guide strip mounted on said platform in a plane at right angles to

the platform, one end of said guide strip being bent away from said spool, then upwardly and then toward said central opening, the sides of said guide strip adjacent to said opening being bent downwardly, with the lines of the folds made by said sides converging toward said central opening, a support mounted on said disk platform extending upwardly therefrom to the lower side of the said guide strip between the downwardly bent sides thereof, a guide device adjacent to said central opening comprising a post, an elliptical loop formed at the upper end of said post adjacent to the end of said guide strip, the lower part of one of the sides of said loop being open, means for drawing a wire through said central opening, and means for imparting rotary motion to said platform.

20. In a device of the class described, a frame, a platform rotatably mounted thereon, constructed with a central opening designed to receive a wire upon which artificial vines may be wound, a spool for holding paper mounted on said platform, a spool for holding thread mounted on said platform, posts extending upwardly from said platform and designed to serve as guides for the paper fed from said first named spool, means for imparting tension to thread fed from said second named spool, a guide strip mounted on said platform, in a plane at right angles to the said platform, one end of said guide strip being bent away from said spool for holding paper, then upwardly, then toward said central opening, the sides of said guide strip adjacent to said central opening being bent downwardly with the folds made by said sides converging toward said opening, said guide strip being constructed with a central perforation at a point where the sides are bent downwardly, designed to receive a reinforcing thread.

21. In a device of the class described, the combination of a frame, a platform rotatably mounted thereon, constructed with a central opening designed to receive a wire or other support upon which artificial vines may be wound, a spool for holding paper mounted on said platform, a spool for holding thread mounted on said platform, means for imparting tension to thread fed from the spool for holding thread, a guide strip mounted on said platform in a plane at right angles to the disk platform, one end of said guide strip being bent away from said spool for holding paper, then upwardly, then toward said central opening, the sides of said guide strip adjacent to said central opening being bent downwardly to form a substantially V shaped groove over which the paper travels and is folded as it is wound on said wire, said guide strip being constructed with a central perforation at a point where the sides are bent downwardly,

designed to receive a reinforcing thread, a guide device adjacent to said central opening, comprising a post, an elliptical loop formed at the upper end of said post adjacent to the end of said guide strip, the lower part of one of the sides of said loop being open.

22. In a device of the class described, the combination of a frame, a platform rotatably mounted thereon, constructed with a central opening designed to receive a wire upon which artificial vines may be wound, a spool for holding paper mounted on said platform, a spool for holding thread mounted on said platform, posts extending upwardly from said disk platform and designed to serve as guides for the paper fed from said spool, means for imparting tension to thread fed from the spool for holding thread, a guide strip mounted on said platform, in a plane at right angles to the plane of said platform, one end of said guide strip being bent away from said spool for holding paper, then upwardly, then toward said central opening, the sides of said guide strip adjacent to said central opening being bent downwardly to form a substantially V shaped groove over which

the paper travels as it is fed and which is designed to fold said paper, said guide strip being constructed with a central perforation at a point where the sides are bent downwardly, designed to receive a reinforcing thread, means for drawing a wire through said central opening, and means for imparting rotary motion to said platform.

23. In a device of the class described, a frame, a hollow shaft rotatably mounted therein, having a worm gear formed thereon, a spool for holding a wire rotatably mounted thereon, a bracket, a gear wheel rotatably mounted in said bracket in mesh with said worm gear, a pulley wheel rotatably mounted adjacent to one end of said hollow shaft, said pulley wheels being designed to feed said wire into the end of said hollow shaft, means for drawing a wire away from the other end of said hollow shaft, and means for wrapping paper upon a wire as it is drawn from said hollow shaft.

Des Moines, Iowa, February 20, 1911.

CLYDE L. HULSIZER.

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