Sept. 27, 1949. H. E. ADAMS 2,482,823

FLOWER MAKING MACHINE

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Fig. 1.

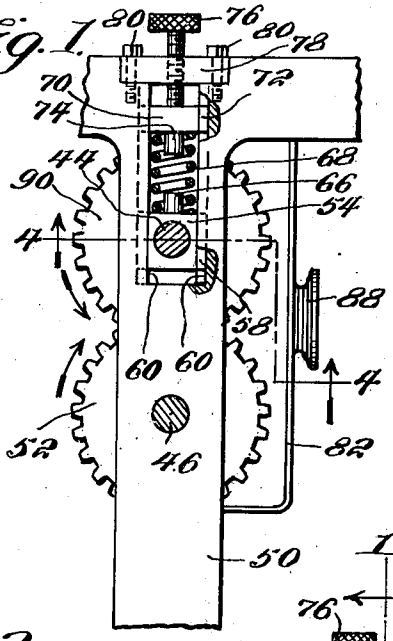



Fig. 3.

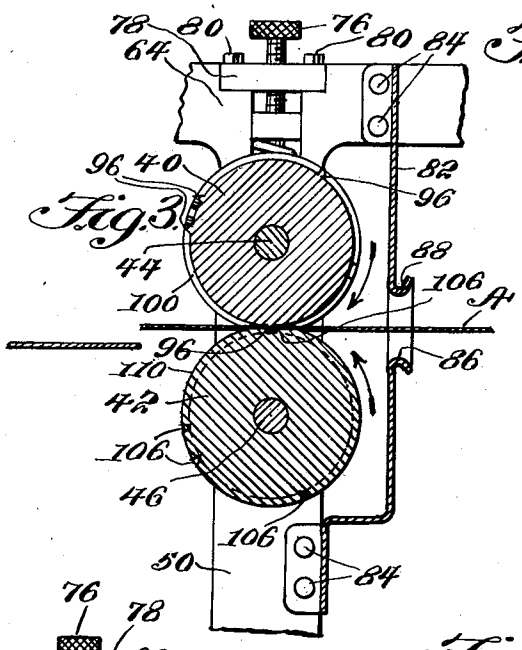



Fig. 2.

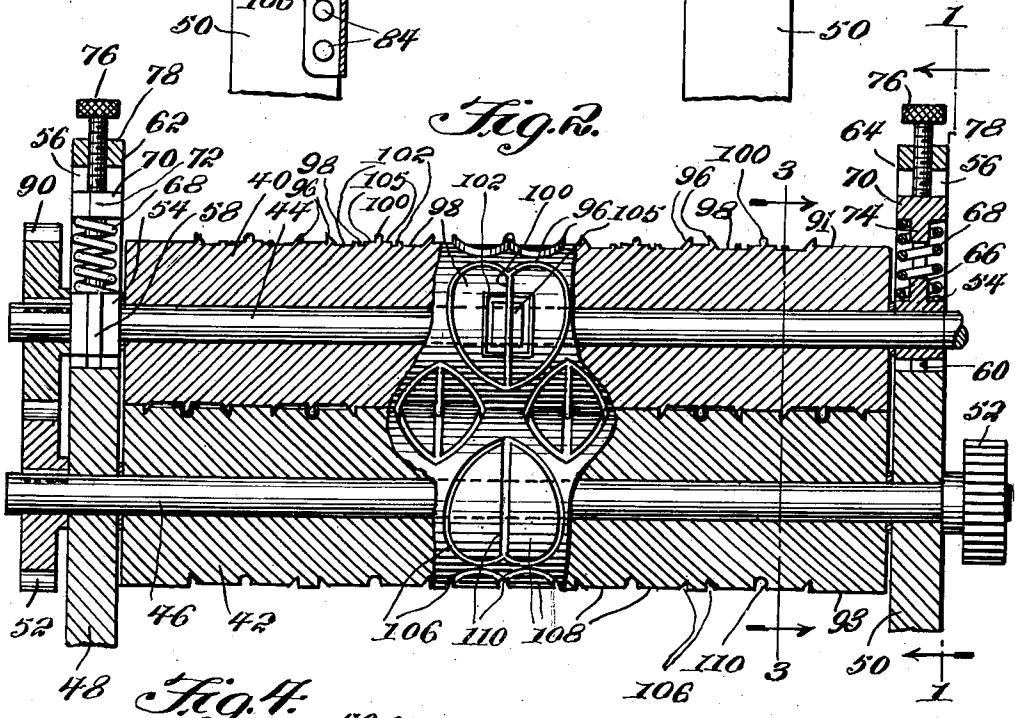
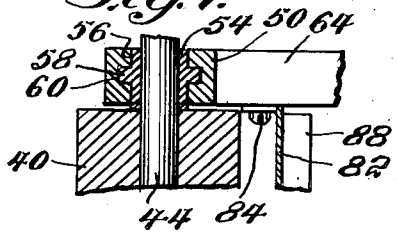



Fig. 4.




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FLOWER MAKING MACHINE

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Fig. 5.

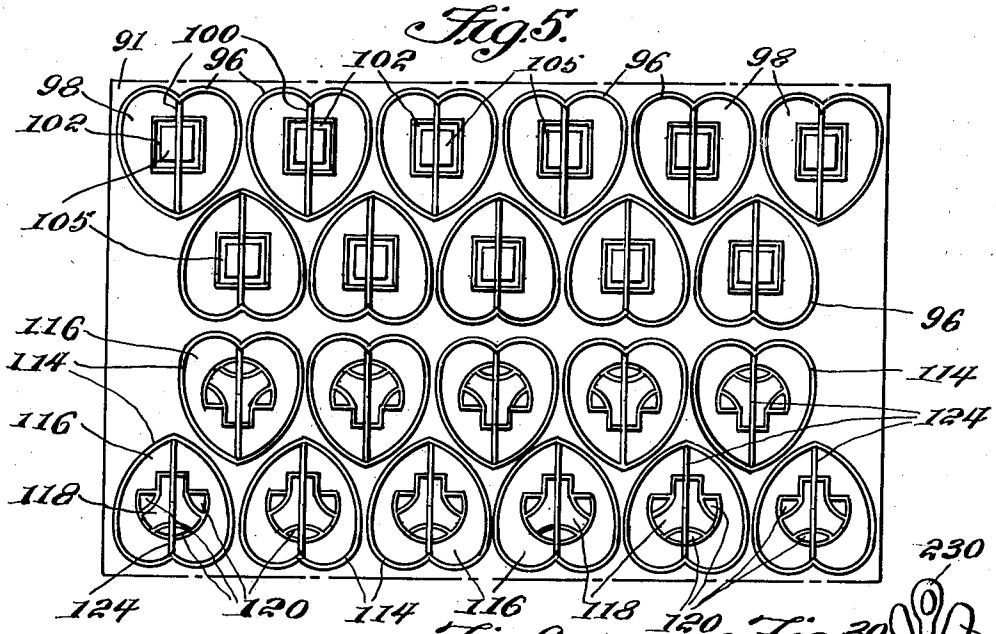



Fig. 6.

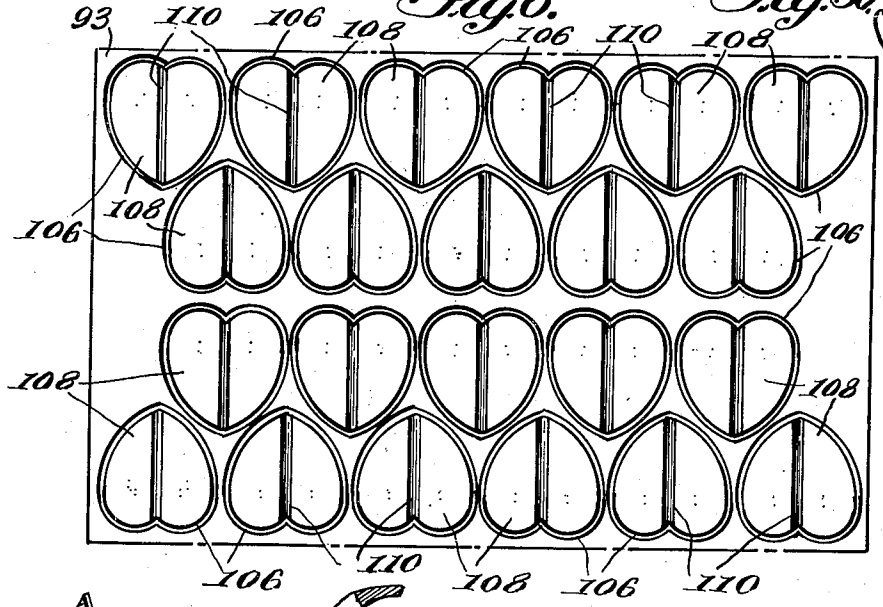
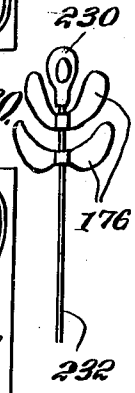



Fig. 30.



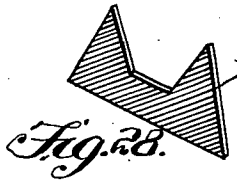




Fig. 28.




Fig. 29.

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FLOWER MAKING MACHINE

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Fig. 7.

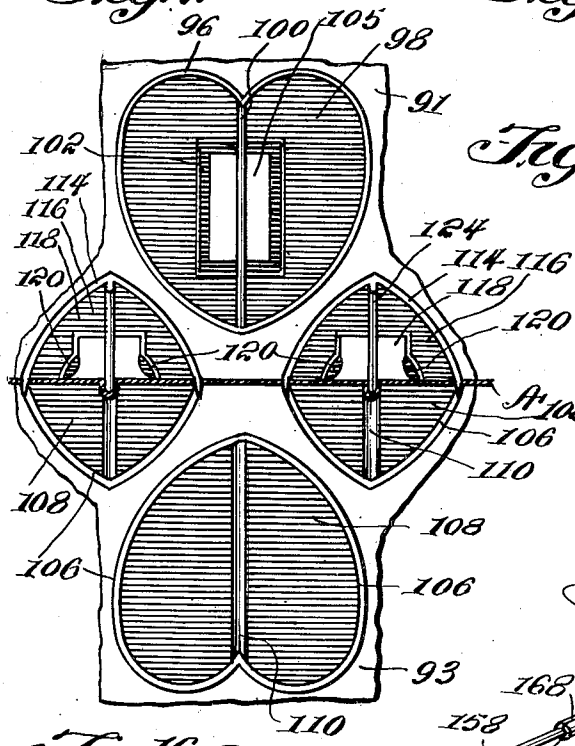



Fig. 8.

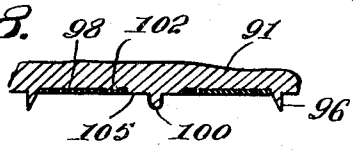



Fig. 9.

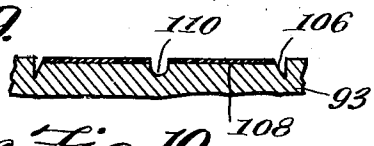



Fig. 10.

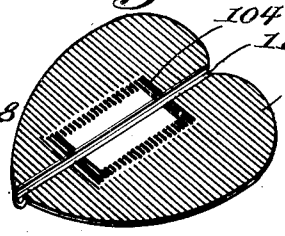



Fig. 11.

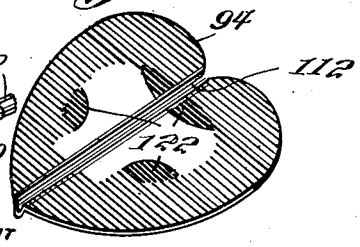



Fig. 16.

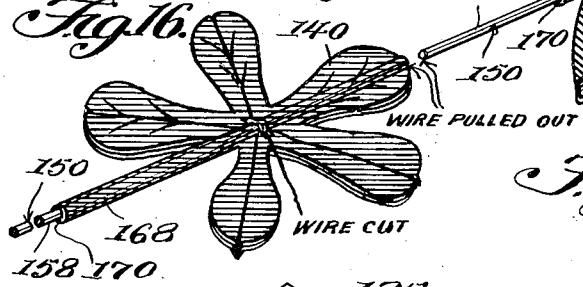



Fig. 13.

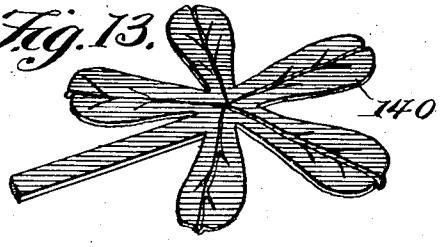
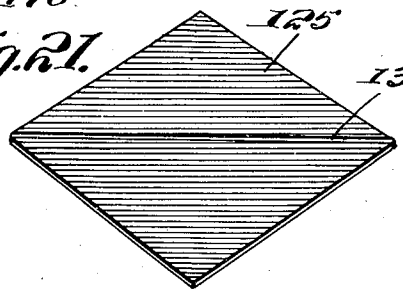



Fig. 21.




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FLOWER MAKING MACHINE

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Fig. 16.

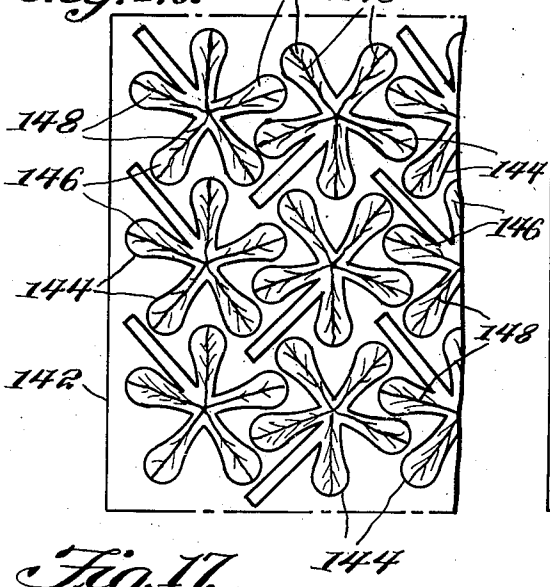



Fig. 14.

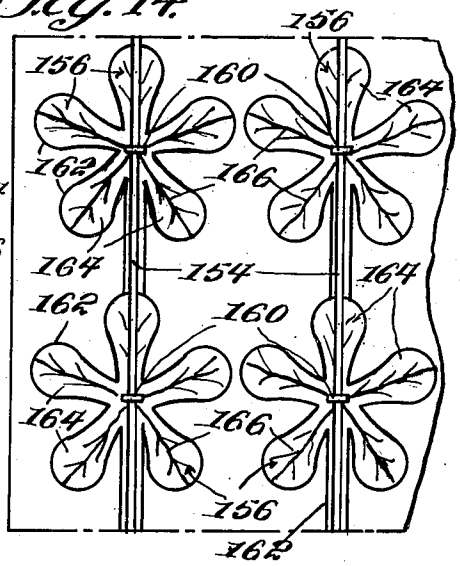



Fig. 17.

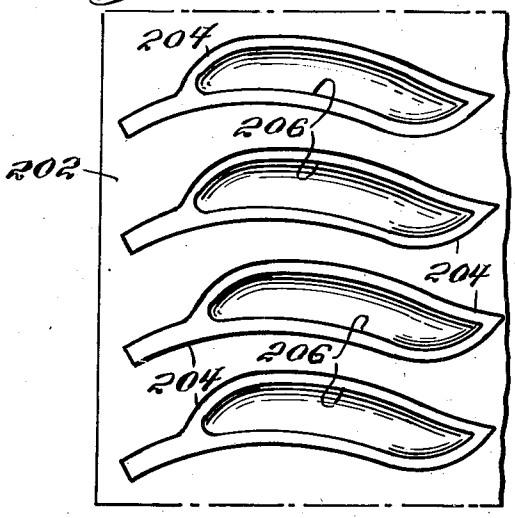



Fig. 18.

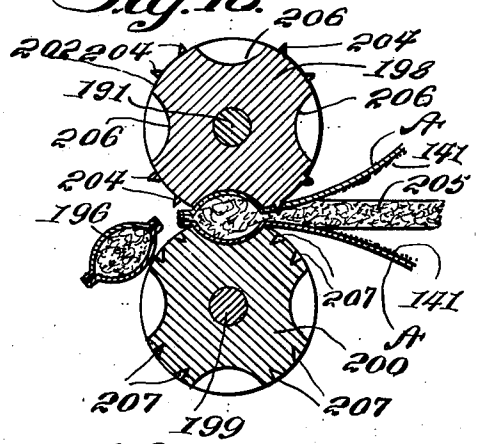



Fig. 19.

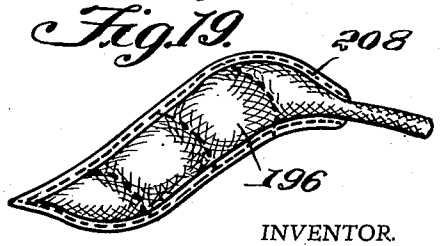
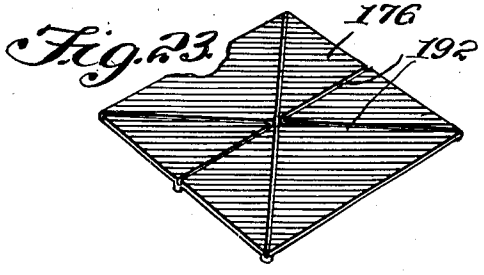



Fig. 23.




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FLOWER MAKING MACHINE

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Fig. 20.

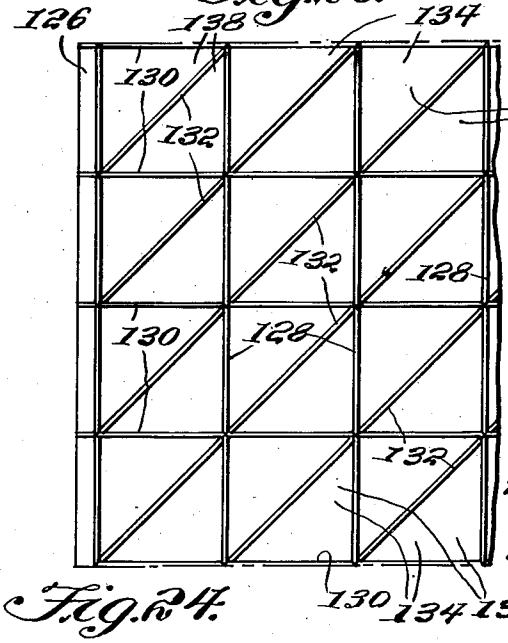



Fig. 24.

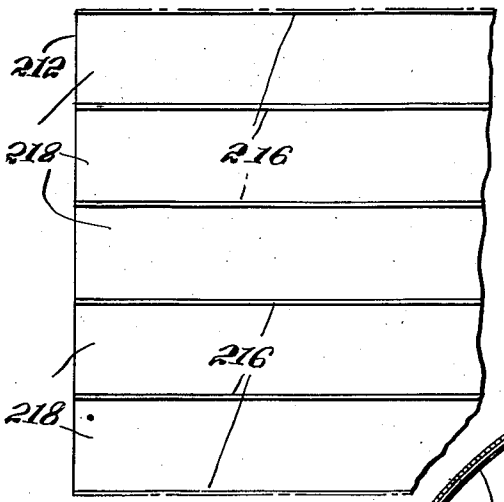



Fig. 27.




Fig. 22.

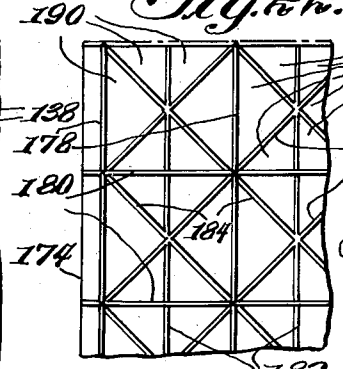



Fig. 25.

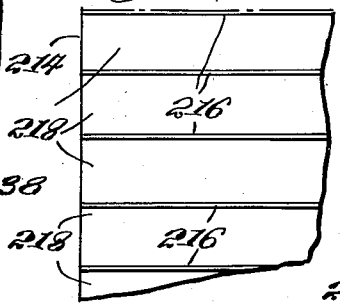



Fig. 26.

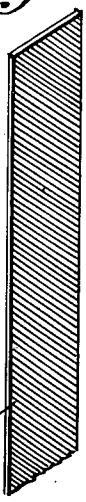
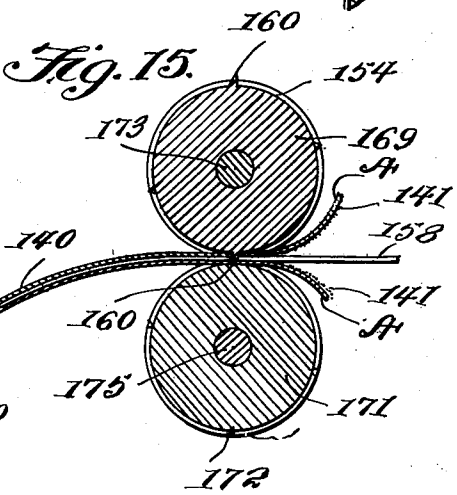



Fig. 15.




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Patented Sept. 27, 1949 2,482,823

# UNITED STATES PATENT OFFICE

2,482,823

## FLOWER MAKING MACHINE

Harriet E. Adams, San Antonio, Tex.

Application March 13, 1946, Serial No. 654,026

1 Claim. (Cl. 41—2)

1

The invention relates to an automatic electric motor powered machine for cutting, die stamping or painting the different parts of artificial bluebonnet flowers on paper and cloth or the like.

An object of the invention is to prepare the different parts necessary to make the complete flower economically, with greater precision and uniformity than if the flowers were made by hand.

In carrying out the invention, a mechanism is provided which will cut from a blank of suitable fabric the various parts necessary to complete the artificial flower and at the same time engrave and print on such parts coloring simulating the real flower.

With the above and other objects and advantages in view, the invention consists of the novel details of construction, arrangement and combination of parts more fully hereinafter described, claimed and illustrated in the accompanying drawings, in which—

Figure 1 is an end view of an embodiment of the invention on the line 1—1 of Figure 2 looking in the direction of the arrows;

Figure 2 is a sectional and partly broken view thereof;

Figure 3 is a sectional view on the line 3—3 of Figure 2;

Figure 4 is a sectional view on the line 4—4 of Figure 1;

Figure 5 is a view of the circumference of one of the rollers spread out;

Figure 6 is the same of the other roller;

Figure 7 is a detailed fragmentary view of the rollers;

Figure 8 is a detailed fragmentary sectional view of the upper roller;

Figure 9 is a detailed fragmentary sectional view of the lower roller;

Figure 10 is a view of the petal as cut, folded and engraved by co-action with the upper roller;

Figure 11 is the same for another design on the same roller;

Figure 12 is the design to be used on the roller for cutting and engraving the smaller leaves of the flower;

Figure 13 is the leaf cut thereby;

Figure 14 is the design to be used on the roller for cutting and engraving the larger leaves of the flower;

Figure 15 is a sectional view of the rollers used to affix the wire insert to the flower parts;

Figure 16 is a view of the leaf with the wire insert in position;

Figure 17 is a fragmentary view of the roller

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adapted to be used to cut the seed pods of the flower;

Figure 18 is a fragmentary sectional view of the seed pod cutting rollers in operation;

Figure 19 is a view of the completed seed pod;

Figure 20 is a fragmentary view of the hood square cutting roller;

Figure 21 is a view of the hood cut thereby;

Figure 22 is a fragmentary view of the bud square cutting roller;

Figure 23 is a view of the bud cut thereby;

Figure 24 is a fragmentary view of a strip cutting roller;

Figure 25 is the same for a different width;

Figure 26 is a view of the strip cut thereby;

Figure 27 is a view showing the strip having adhesive on one side and coloring on the other;

Figure 28 is a view of the calyx for the flower;

Figure 29 is a view of the stamen, and

Figure 30 is a view of the bud stem.

Referring more in detail to the drawings, the machine comprises superposed rollers 40 and 42 which are mounted on shafts 44 and 46 respectively. The shaft 46 is journaled in the standards 48 and 50 for rotary motion thereof and is provided on the ends thereof with gears 52.

The shaft 44 is journaled in bearings 54 which are slidably mounted in the vertical slots 56 formed in the upper ends of the standards 48 and 50. The bearings 54 are provided with diametrically opposed ribs 58 which are adapted to be received in the vertical slots 60 on the inner side of the forked ends 62 and 64 of the standards.

The upper faces of the bearings 54 are provided with upstanding lugs 66 which are adapted to be inserted in the lower end of the pressure springs 68.

Pressure plates 70 having ribs 72 in co-action with the slots 60 have depending lugs 74 for insertion in the upper ends of the springs 68 and set screws 76 mounted in plates 78 secured to the forked ends 62 and 64 of the standards by bolts 80 are adapted to engage plates 70 and thereby adjust the pressure between the engaging rollers 40 and 42.

A guard 82 is secured to the standards by bolts 84 and is provided with a slot 86 having an outwardly flared flange 88 through which the material A to be used is inserted.

As here illustrated the material for making the flowers is to be fed to the die manually but it is to be understood that a suitable automatic feed device may be attached to the machine if and when desired, or other changes made.

A die table should be arranged with the ma-

chine so that the operator will be able to perform his or her duties in perfect safety and without danger of injury while operating the machine without injury from the rotating cutters and the reciprocating die and if the machine is made entirely automatic it will require very little attention on the part of the operator.

Shaft 44 is provided on the ends thereof with gear 90 which is adapted to mesh with gear 52 whereby the rollers rotate in unison in opposite directions and power can be supplied to these rollers by any conventional type of gear arrangement connecting an electric motor.

The following is a description of the various patterns of blue bonnet flowers which are adapted to be cut and engraved by the above described machine:

In Figures 5, 6 and 7 the roller surfaces 91 and 93 are shown which will cut the petals 92 and 94 shown in Figures 10 and 11. In this instance, the upper roller 91 is provided with cutting knives 96 of the desired shape which surround the cavity 98 which is adapted to hold the coloring material for the petals and a vertical creasing rib 100 extends betwen the top and bottom of the knives 96 and a second rectangular shaped cavity 102 formed at the medial portion of the cavity 98 and bisected by the rib 100 is adapted to hold coloring for application to the petal as at 104 the center 105 of the cavity 102 is open and makes no mark on the material, but the centers may be painted in the petal pattern if and when desired.

The roller 93 is provided with groves 106 which co-act with knives 96 and are of the same shape and size. A cavity 108 formed within the outline of the grooves 106 also co-acts with cavity 98 to color the opposite side of the material being used.

All blue bonnet petals have a shallow crease extending through the center of the petal from end to end and in order to imitate the natural flower, the groove 110 bisects the grooves 106 and coacting with the rib 100 forms the crease 112 in the petals 92 and 94 as shown.

In attaching the petal to the hood 125 to be later described the back end or sharp end of the petal is held by the right hand and the front end of the petal with the left hand and fold the crease 112 through the center of the petal made by the machine by bringing the crease together and pressing it together lightly through the entire length of the petal to confirm the petal crease, now twist the sharp end or back end of the petal until the painted part has been twisted at the back of the petal and the unpainted part back of the petal center then by stopping here every flower is made the same size. Then take the hood in the left hand and the petal in the right hand and holding the petal about midway between the ends and exactly over the crease in the petal bring the crease together and hold on to it keeping the top side of the petal upward. Place the twisted end of the petal on the wire stem abutting the hood and with the center front of the hood exactly even with the crease or groove in the petal and wrap the petal to the hood. The flowers are now ready to be tinted or retouched and suspended around the rims of trays, bowls, etc for drying. After the flowers are dry, wrap each flower stem and make them into sprays by wrapping them onto the bud stem. The flowers are formed into a spray using four flowers in the top view, six in the second row and about seven flowers in the last row more or less.

The roller 91 is likewise provided with knives 114 which are similar in shape to knives 96 but in this instance the cavity 116 is provided at its medial portion with the opening 116, which is provided at its marginal edge with cavities 120 which holds coloring and is adjusted to form the markings 122 on the petal 94 as in the case of the knives 96, the rib 124 bisects the cavity 116 and opening 118 and co-acts with the groove 110 on the roller 93 to form the crease 112, thus the rollers co-acting with each other will cut and color two types of petals at the same operation.

The knives are formed with razor edges to cut clear neat designs and pressure between the rollers is obtained as previously described.

For cutting the hood or crown 125 shown in Figure 21, the design of roller surface 126 as shown in Figure 20 is used. In this instance, vertical and horizontal knives 128 and 130 are employed and ribs 132 bisect the squares 134 formed by the vertical and horizontal knives.

The roller co-acting with this roller is provided with similar configuration and the ribs 132 form the crease 136 in the hood 125 for folding purposes.

To attach the hood to the wire stem and stamen, the hood is folded on the bias on the crease 136. Hold the wire stem with the stamen attached in the left hand and the folded hood square in the right hand place the hood square evenly over the wire stem and stamen with corners even so that the center-back or middle corner of the hood square rests on the wire stem, bring the front edges of the hood square evenly together inclosing the stamen and wrap the hood square to the wire stem securely using suitable thread or fine wire and the like, and forming a hood or crown.

In this instance, the cavities 138 formed in the squares 134 hold coloring for the hood which corresponds to the colors for the petals.

When forming the leaf pattern 140 shown in Figure 13, the design of roller surface 142 shown in Figure 12 is used. Each leaf design is outlined with knives 144 and cavities 146 therein are provided with configurations or veins 148 to impart the proper color and life-like markings on the leaf pattern 140 as shown.

When the leaf patterns 140 are cut, the material used has adhesive 141 applied to the rear surface as shown in Figure 27, therefore, when the leaf patterns are cut, two pieces of material are fed simultaneously through the rollers and the sheets will adhere to each other forming the completed leaf pattern. A suitable adhesive which will not be tacky yet will properly adhere will be used.

To attach the stems 150 to the leaf patterns 140 the roller design 152 shown in Figure 14 is used.

Grooves 154 bisect the leaf designs 156 thereon and the wire 158 inserted in the grooves 154 is retained between the layers of stem forming material. Cutters 160 formed at the medial portion of the leaf designs 156 cut the wire 158 so that the wire can be withdrawn and form the stem as shown in Figure 16. The leaf designs 156 are outlined with knives 162 and the cavities 164 are provided with configurations or veins 166 to imitate the natural flower when the coloring retained in the cavities 164 is applied to the material. The stem portions 168 of the leaf designs 156 are so shaped that the material encircles the wire 158 as shown at 170 in Figure 16. The rollers 169 and 171 on shafts 173 and 175 co-act as shown in Figure 15 and the lower roller is provided with a groove 172 that co-acts with the cutter 160 to provide shearing action for the wire.

The design of the roller surface 174 shown in

Figure 22 is adapted to form the bud square 176 shown in Figure 23, vertical and parallel knives 178 and 180 are employed and vertical ribs 182 and angle bisecting ribs 184 and 186 are formed in the squares 188 formed by the vertical and parallel knives 178 and 180. Coloring is retained in the cavities 190 to color the material as desired.

To make the buds fold the square three times on the creases formed therein. After the squares have been folded take the square in the left hand and with the right hand bring all four corners of the raw edge of the square together and crush the raw edge together to form the bud and pinch or twist it so as to hold it together to represent buds and repeat until as many buds have been made as desired.

In attaching the buds to the bud stem 232 which consists of a piece of wire seven to eight inches long bent at one end to form a small loop which is inserted into one of the buds 230 as shown in Figure 30 so as to completely enclose the loop end of the wire and wrap the bud to the wire stem securely using as many buds as desired and wrapping the buds in rows around the stem with each row a little below the other as shown in Figure 30.

The roller co-acting with the roller 174 is provided with similar configurations and the ribs previously described form the creases 192 in the bud square for folding purposes.

Rollers having a design for cutting the calyx 194 as shown in Figure 28 can be formed similar to those previously described.

The calyx may or may not be used. If the calyx is used a little adhesive is applied thereto on each section and one section is placed on the hood of the flower at the back with the corners even and the front section under the side of the petal evenly with the sharp point of the calyx extending to and resting on the under side of the crease in the petal.

In making the seed pod 196 shown in Figure 19, the rollers 198 and 200 on shafts 197 and 199 are employed, the surfaces 202 of these rollers are shown in Figure 17 wherein knives 204 in the shape of the pod 196 are formed thereon and concave cavities 206 are formed within the confines of the knives 204. The grooves 207 formed in roller 200 co-act with the knives 204, as previously described and color is placed in the cavities 206 for coloring the material. The material being used is the same as shown in Figure 27, two sheets are used and cotton padding 205 between the sheets form the pads; after they have been cut stitching 208 may be applied as shown in Figure 19 to imitate the natural pod of the flower.

The beans may also be moulded by any conventional manner and using any suitable substance or the beans may or may not be used.

After the beans or seed pods have been formed as previously described, a small wire stem is attached to each pod and as many pads as desired may be used in making the flower spray or the sprays may consist entirely of beans and the beans may be attached as desired.

The stamens 210 shown in Figure 29 are made in any conventional manner the tiny stamen hood being made of any thin suitable fabric material preferably white and shaped in the form shown in Figure 29. The stamens are yellow and very small and should be made of any suitable substance as is generally used to make stamens and a few of these stamens should be inclosed within the little hood by placing the hood over and around the stamens and securing or wrapping the lower part of the hood to the stamens in any convenient manner so as to enclose the stamens or the stamens may be attached to the lower outside front or throat of the tiny hood. After the stamens are made the tip ends of the front of each of their hoods may be dipped or sprayed with a solution of black paint to imitate the stamens of the real flowers. Rose stamens may be used instead of blue bonnet stamens if desired. By taking one rose stamen and bending the stem in the middle so as to bring both hoods together then a piece of fine wire about one inch long is bent at one end around the stamen so as to fasten the wire and stamen together securely as shown in Figure 29, or the flowers made without stamens if desired.

The blue bonnet stamen may be used instead of the rose stamens. If the blue bonnet stamens are used one of the stamen is attached to a one inch stem of wire and one of the folded hood square and the hood square is wrapped on the wire stem inclosing the stamen and it is then attached to the flower.

The petals are always twisted at the sharp end or back end thereof until all the blue color or painted portion has been twisted and the back or plain part of the petal has been reached, this as stated makes each petal the exact size and assures the flower maker that all petals are of even and uniform length.

The roller surfaces 212 and 214 in Figures 24 and 25 have horizontal parallel knives 216 which are spaced in different widths to cut the strips 215 shown in Figure 26, cavities 218 formed between the knives color the material and the strips are used to wind the stems and bind the flowers together.

Flowers vary in colors and the colors used to color the material used will vary according to the colors of the real flowers.

The natural color of blue bonnet flowers are ultramarine blue with red and white centers and purplish black petal markings. Some are light, medium and dark blue, and some of them are of the very lightest shade of lavender. Thus the colors used must vary accordingly. Therefore four cutting knives and engravings must be provided and each one supplied with its own individual color or paint to correspond with the four colors mentioned above in order to achieve the desired result in getting the color of the blue bonnet flower petal and their hood squares to match; thus, there must be four petal knives and four hood knives to match. For variety the flowers and foliage may be made in any color desired.

The color of blue bonnet flower leaves is dark apple green for the largest sizes and light apple green for the small sizes. The beans, the calyx and the strips used for wrapping the flowers are also dark apple green. The color of the bud is light apple green.

The flowers when completed after being die-stamped and cut out by the machine described are useful for trimming ladies' hats, dress corsages, and boutonnieres and used with a buckram foundation can be used for cocardes, quills and the like, pot plants, bouquets, patriotic funeral designs and floral offerings and for decorating halls, booths, living rooms and automobiles. The designs may be used to decorate all kinds of textile fabric including dress goods, window curtain cloth, comfort cloth, bed spreads or woven counter panes in colors or all white and for all kinds of upholstering cloth, carpets, art squares, linoleum and oil cloth and all kinds of fabric

painting including handkerchiefs, pillow tops, art lamp shades and the like, shelf paper, wall paper, art calendars, post cards and fans, magazine covers and for decorating service trays, luncheon sets, plate favors for decorating china crockery and glass ware or for embroidery or used for any decorative purpose where any other decorations are used.

As previously described, the leaves are formed of two thicknesses of material and each leaf attached to a stem forming strand of wire in the process of being made, however, the same principle may be used for leaves using a single thickness of material or more than two assembled and united upon a stem element.

There has thus been provided a machine which will perform in a manner closely duplicating the operations which are now performed by hand a machine that is safe, and that requires no special skill or experience on the part of the operator.

While this invention has been illustrated to show the production of artificial blue bonnet flowers and foliage, it can be used to produce other types of flowers merely upon changing the design of the cutters involved and the flowers produced thereby may be used for many and varied decorative uses.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

In a plant forming machine for simultaneously cutting, embossing and coloring a suitable material and at the same time inserting a wire stem therein, the combination, which comprises, a pair of parallel coacting rolls having cutting male and



female dies in the surfaces thereof, configurations or veins within said cutting dies for embossing said material with lifelike markings therein, a supporting frame in which the rolls are mounted, resilient means urging one roll toward the other, means adjusting the resilient means, the cutting elements of said dies defining leaves, the said female die having a stem receiving groove therein, and said male die having a projection corresponding with the groove of the female die whereby superposed layers of material having a wire positioned therebetween is fed to the dies, the wire is stamped in the groove forming a stem, and a plurality of separated walled areas positioned within the dies in which coloring materials may be positioned to color the surfaces of the leaves formed by the dies.

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