Dec. 8, 1931. E. T. BLEECKER 1,835,004

MASKING MACHINE

Filed Oct. 22, 1928 2 Sheets-Sheet 1

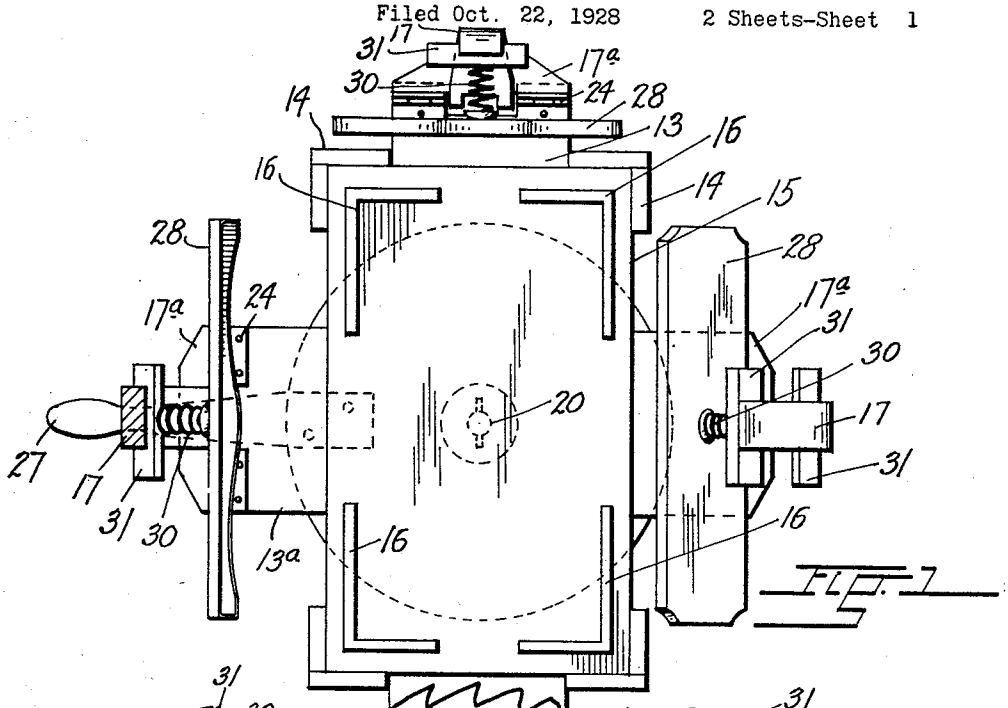


FIG. 1

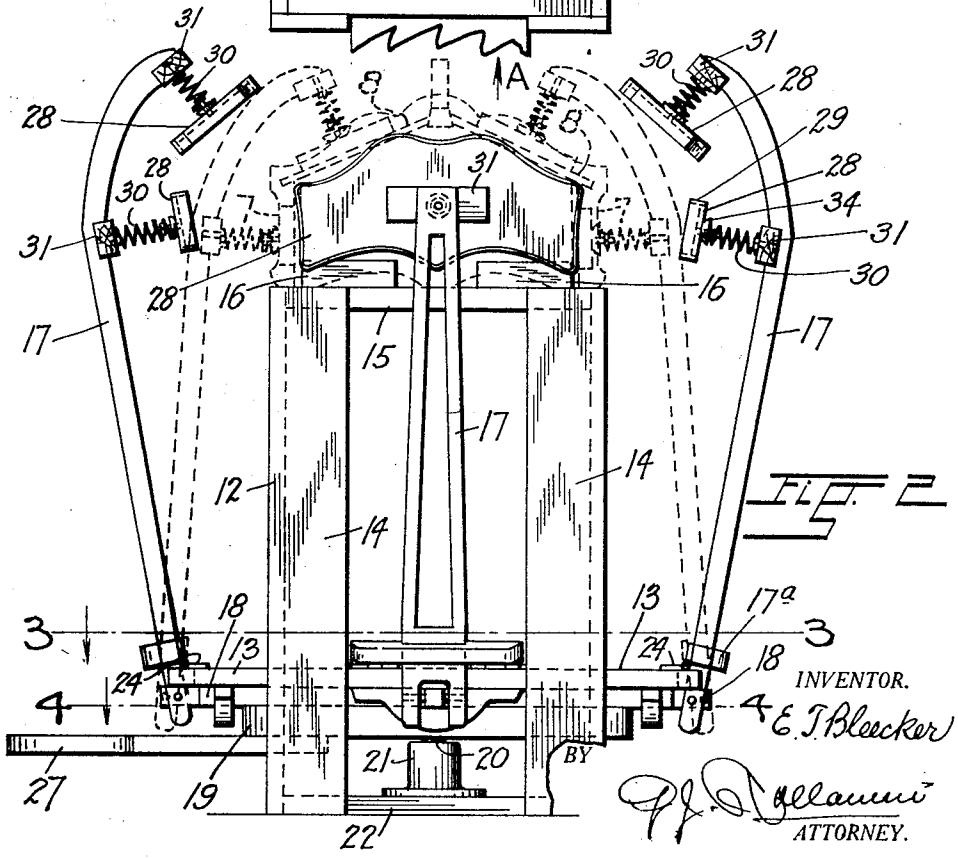


FIG. 2

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Filed Oct. 22, 1928 2 Sheets-Sheet 2

FIG. 3.

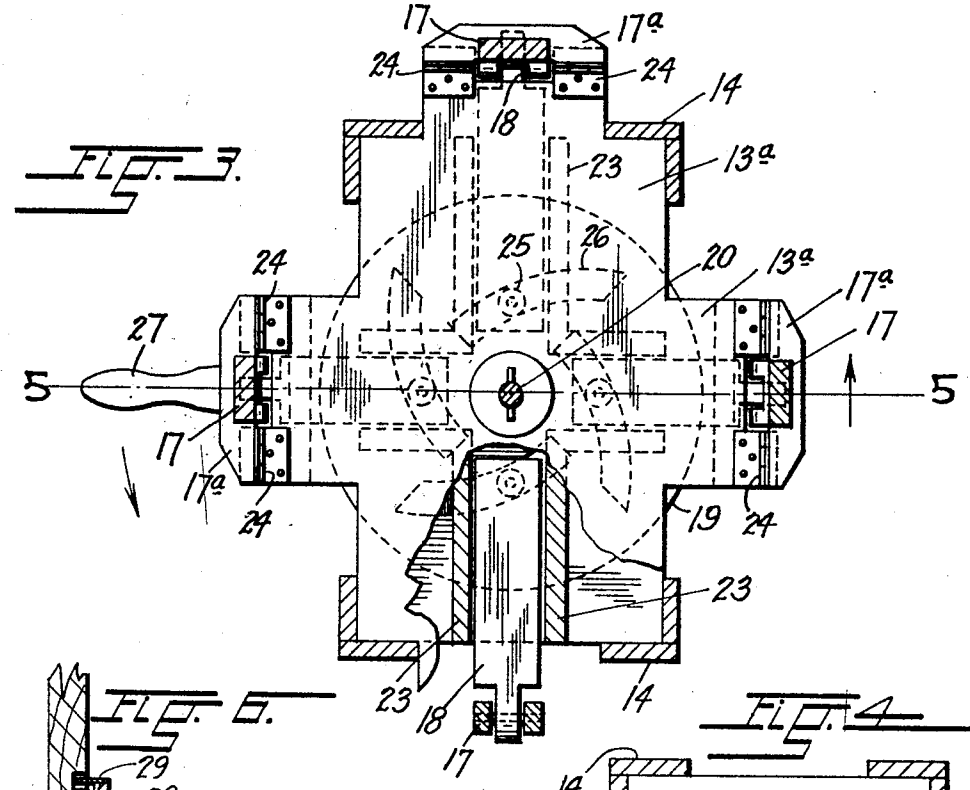


FIG. 6.

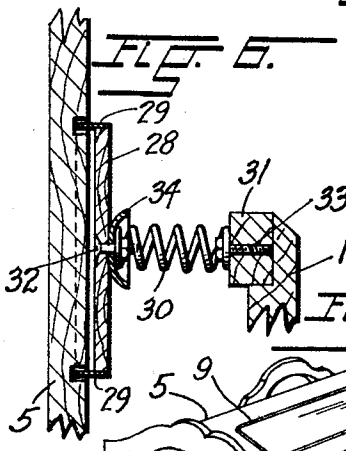


FIG. 7.

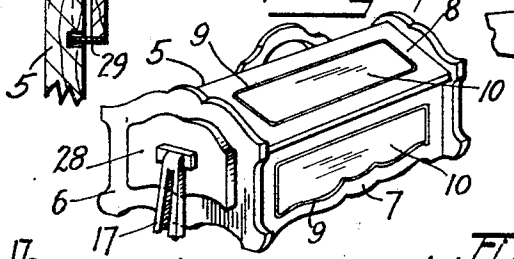


FIG. 4

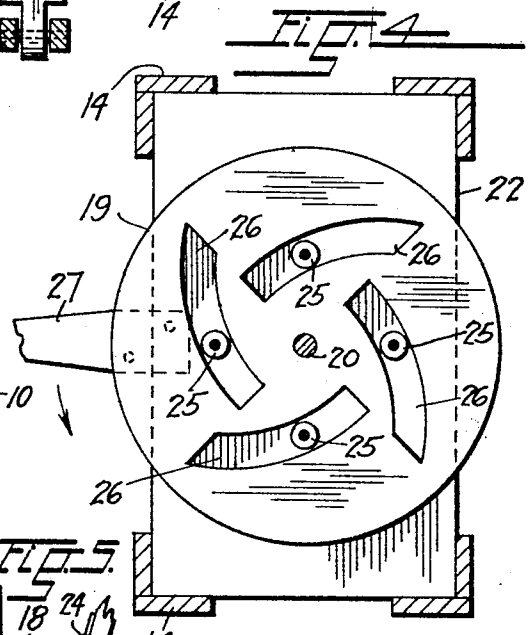
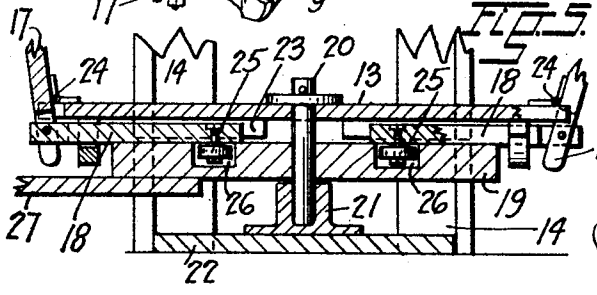


FIG. 5.



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UNITED STATES PATENT OFFICE

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MASKING MACHINE

Application filed October 22, 1928. Serial No. 314,300.

This invention relates to a masking machine for use in painting portions of a surface exclusive of other portions of the same.

It is an object of the invention to provide a simple mechanism to cover a definite portion of a surface by means of a mechanically applied shield.

Another object is to provide a machine in which a plurality of shields are mechanically applied in pre-arranged order and still further objects reside in the novel constructions, arrangements and combinations of parts hereinafter to be described with reference to the accompanying drawings.

In the drawings in the several views of which like parts have been similarly designated,

Figure 1 represents a partially sectional plan view of the masking machine;

Figure 2, a side elevation, looking in the direction of the arrow A in Figure 1;

Figure 3, a section taken on the line 3—3, Figure 2;

Figure 4, a section along the line 4—4, Figure 2;

Figure 5, a fragmentary section on the line 5—5, Figure 3;

Figure 6, a sectional view drawn to an enlarged scale of one of the masks or shields of the construction, with adjoining parts, showing its application to an article of manufacture, a surface of which is being masked for the application of a pigment, and

Figure 7, a perspective view drawn to a reduced scale, of the particular article for which the machine illustrated in the drawings is especially designed, showing the application of one of the masks of the machine to a surface of the article.

Referring to the drawings, the machine as shown is designed to mask simultaneously six surfaces of a box 5 of the design illustrated in Figure 1.

The box it will be noted, has four sides 6 and 7 in rectangular formation and two slanting lids 8 and the surfaces of all of these parts have been routed as at 9 to provide panels 10. It is the purpose of the present machine to mask the panels of the various surfaces so that a pigment may be applied to the marginal portions of the same, preferably by means of a spray-gun.

It is to be understood that the box as shown is merely illustrative of the uses of the machine and that the elements comprised in the latter, as hereinafter to be described, may be formed and arranged in any suitable manner according to the shape, nature and proportions of the article of manufacture to which the machine is adapted.

The machine as shown comprises a stand 12, see Fig. 2, having a bottom or base plate 13, four upright posts 14 of angle section and a top-plate or table 15. The top-plate has four corner-cleats 16 to hold the box to which the paints are to be applied, in the proper position for the application of the masks. The position of the box has been indicated in broken lines in Figure 2. The base plate has four wings 13*a* at quadrant points, at the ends of which are fulcrumed the mask-carrying levers 17. The levers are fulcrumed by means of hinges on cross-arms 17*a* and their lower, short arms are bifurcated for their pivotal connection with sliding bars 18 of the operating mechanism.

The mechanism consists of a cam-wheel 19, see Fig. 4, supported for rotary oscillation by a pin 20 that extends through a central opening of the base plate 13 and is supported in a step 21 on a floor 22 at the lower ends of the upright posts 14.

The bars 18 slide in ways formed by parallel strips 23 fastened to the underside of the base plate; they are pivotally connected with the levers by hinges 24, and they carry rollers 25 that travel in cam-grooves 26 of the wheel 19. The wheel has a radially projecting handle 27 for its manual rotation, but it is to be understood that the levers 17 may be operated by power-driven means within the spirit of the invention. The masks carried by the long arm of the levers, each consist of a shield 28 having a projecting rim 29, that is shaped in conformity with the route of the side or lid of the box, to which it applies.

Two of the levers 17 carry masks adapted to engage the end-surfaces of the box and the other levers each carry two masks one

above the other to respectively engage the slanting lid and the surface of the box at a side thereof. The masks are connected with the respective levers by coiled springs 30 as best shown in Figure 6. The springs are fastened at their ends to cross-pieces 31 on the levers, and at central points of the shields 28 by means of bolts 32 and 33, and their ends fastened to the shields extend in cup-shaped washers 34.

The connection thus made is flexible so as to permit of a universal self-adjustment of the shield on the lever. In the operation of the machine, the rims 29 of the masks enter in the routes of the box-surfaces, and their flexible connections enable the masks to adjust themselves in case of slight variations in the position of the routes.

A rotary motion imparted to the cam wheel by means of the handle, causes the push-bars to slide outwardly with the result that the long arms of the levers are simultaneously moved toward the box supported between the cleats on the top-plate or table of the stand.

The masks engaging with the respective surfaces of the box are pressed into close contact therewith by the springs 30. The rims of the masks enter into the routes of the surfaces, and the entire arrangement is such that no paint can reach the panels shielded by the masks when the box is subsequently colored by the application of a pigment through the medium of a spray-gun. The operating mechanism of the machine automatically holds the levers in any position to which they are moved by rotation of the cam wheel.

It has been stated before that the machine which has been shown as constructed for the application of the masks to a box of the particular form illustrated in Figure 7, may be varied in form and in the arrangement of its parts according to the size and shape of any article of manufacture that is to be painted, exclusive of portions of their surfaces shielded by the masks. The masks are of course formed in correspondence with the contours of these portions and in case the surfaces are not routed, the rims 29 may be omitted.

The operating mechanism of the machine may also be varied without departing from the scope of the invention.

Having thus described my invention what I claim and desire to secure by Letters Patent is:

1. In a masking machine, a plurality of shields adapted for application to surfaces of an article supported on the machine in a determinate position, and mechanical means to apply the shields simultaneously to the surfaces.

2. A masking-machine comprising a stand adapted to support an article of manufacture in a determinate position, a plurality of shields mounted on the stand to mask portions of surfaces of the article, mechanical means on the stand to move the shields to engagement with the surfaces, manually actuatable means to initiate operation of said mechanical means.

3. A masking-machine comprising a stand adapted to support an article of manufacture in a determinate position, a plurality of shields mounted on the stand to mask portions of surfaces of the article, mechanical means on the stand to move the shields simultaneously to engagement with the surfaces, manually actuatable means to initiate operation of said mechanical means.

4. A masking-machine comprising a stand adapted to support an article of manufacture in a determinate position, a lever, a shield carried by the lever to engage with a surface of the article, mechanical means for the operation of the lever to move the shield to engagement with said surface, manually actuatable means to initiate operation of said mechanical means.

5. A masking-machine comprising a base, a stand thereon adapted to support an article of manufacture in a determinate position, a lever on said base, a shield carried by the lever to engage with a surface of the article, and means for the operation of the lever to move the shield to engagement with said surface including a rotary cam-wheel supported by the base, in operative connection with the lever.

6. A masking-machine comprising a base, a stand thereon adapted to support an article of manufacture in a determinate position, a lever on said base, a shield carried by the lever to engage with a surface of the article, and means for the operation of the lever to move the shield to engagement with said surface including a rotary wheel supported by the base and having a cam-slot, a sliding bar connected with the lever, and a roller on the bar, in the cam-slot.

7. A masking-machine comprising a base, a stand thereon adapted to support an article of manufacture in a determinate position, a plurality of levers on said base, shields carried by the levers to engage with surfaces of the article, and a cam-means for the simultaneously operating the levers to move the shields to engagement with said surfaces.

In testimony whereof I have affixed my signature.

EDSELL T. BLEECKER.