

954,927.

Patented Apr. 12, 1910.

Fig. 1.

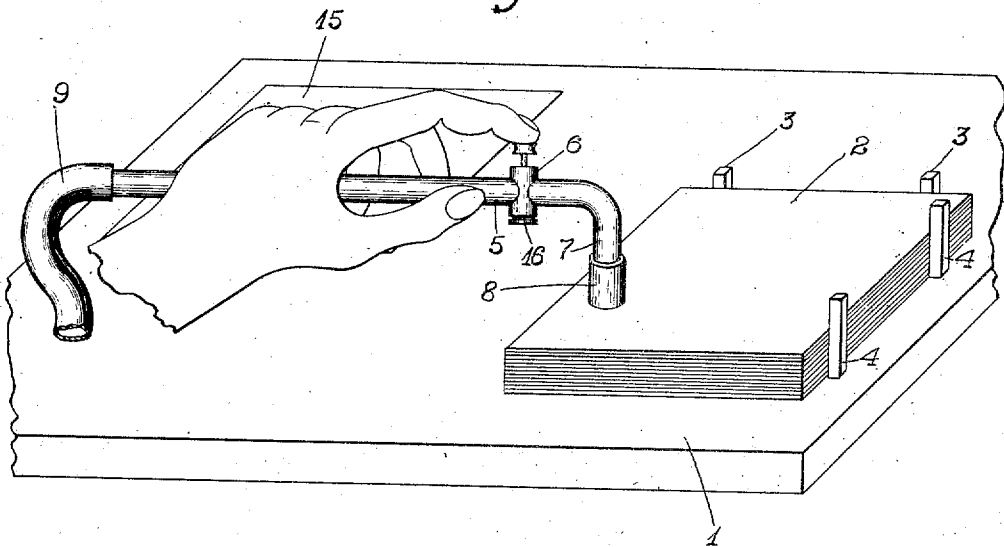
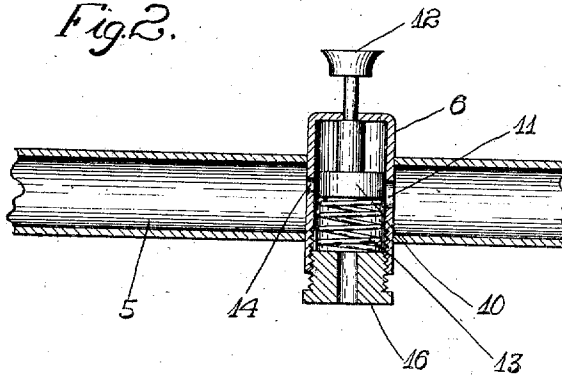


Fig. 2.



Witnesses

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CHARLES L. BURDICK, OF LONDON, ENGLAND.

SHEET OR CARD LIFTER.

954,927.

Specification of Letters Patent.

Patented Apr. 12, 1910.

Application filed March 10, 1909. Serial No. 482,505.

To all whom it may concern:

Be it known that I, CHARLES L. BURDICK, a citizen of the United States, residing at London, in the county of Middlesex, England, have invented a certain new and useful Improvement in Sheet or Card Lifters, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to an improved device for removing sheets or cards one at a time from a pile of such cards. It is particularly adapted for use in connection with processes requiring work on sheets or cards while they are in a pile, without disturbing the arrangement of the pile.

My invention is particularly adapted for use in connection with the imprinting upon sheets or cards of colored designs by means of stenciling, in which process the sheets or cards are arranged in a pile; the design is applied by means of coloring matter through a stencil, the stencil is then removed and the top sheet or card is taken from the pile. In connection with such processes it is necessary that the remaining sheets or cards be left undisturbed; and in order to accomplish this and at the same time remove the printed sheet or card expeditiously and positively, I make use of the mechanism consisting essentially of a handle adapted to be held in the hand of the operator, such handle being provided with connection to a suitable source of suction and provided also with a regulating valve conveniently placed to be operated by one of the fingers of the hand holding the tool. The tool has associated with it a soft, flexible member, adapted to engage the sheet or card removed, in order that the sheet or card may be retained by suction by such flexible member.

It is to be noticed that the processes in which the sheets or cards are decorated by the use of stencils are radically different from the process employed in printing or decorating sheets or cards in a press. In the former case the operation of the process is necessarily interrupted during the removal of the decorative sheet or card from the pile, while in the latter process the operator can pick up a blank sheet or card from the pile during the printing or decorating of the previous card by the operation of the press. It is therefore essential in connection with stenciling apparatus for decorat-

ing sheets or cards to reduce the time element concerned in the removal of the decorated sheet or card from the pile to a minimum and at the same time to provide against displacement of the remaining sheets or cards. This I accomplish by the use of the device referred to above, which is more particularly described below in connection with the drawings.

The several drawings illustrating my invention are as follows:

Figure 1 is a perspective view showing a table top and a pile of sheets or cards upon which work is to be done, together with the device in position to remove the top one of the sheets or cards. Fig. 2 is a longitudinal vertical sectional view through the device, showing particularly the valve mechanism employed to secure the operation of the same.

Similar numerals refer to similar parts throughout the several figures.

As shown in the drawings, a table top 1 is provided to support a pile of sheets or cards 2 in position to be operated upon in any desired manner, as by means of stencil decorating apparatus, etc. The cards are retained in proper alignment by stops 3 and 4, as indicated.

The device used for engaging and removing the top sheet or card consists essentially in a hollow handle 5, in which a valve chamber is formed. The handle 5 is extended beyond the valve chamber 6 and downwardly, as shown at 7, and has secured on its downwardly projecting end a short piece of soft rubber tubing 8. Similar material may be used that will effect a yielding engagement with the sheet or card 2, in order to prevent the ready passage of air to the inside of the portion 7, but I find that india rubber answers the purpose very satisfactorily. The other end of the handle 5 has connected thereto a tube 9 leading to any suitable source of suction, as an air pump, exhaust fan or similar mechanism, not shown.

The valve chamber 6, as more clearly shown in Fig. 2, has arranged therein a plunger 10 adapted when in its normal position to establish communication through the port 11 from the open lower end of the chamber 6 to the inside of the portion 7 of the device. When the plunger 10 is depressed by moving the button 12 downward against the action of the spring 13 this com-

munication is cut off and communication is established between the inside of the hollow handle 5 and the inside of the portion 7 of the device through the ports 11 and 14.

5 In operating the device it is held in the hand of the operator in such a position that one of the fingers rests naturally upon the button 11 and permits the operator to use the other hand in connection with other
10 parts of the process employed in decorating or treating the sheets or cards. When it is desired to remove the top card the device is placed upon the card near one edge thereof, so that the flexible tubing 8 firmly engages
15 the surface of the sheet or card, and at the same time the button 12 is depressed to establish communication between the source of suction and the inside of the portion 7 and therefore with the inside of tube 8. As
20 a result of this operation the top sheet or card adheres tightly to the lower end of the tube 8, and in order to prevent displacement of the pile of sheets or cards a slight movement is imparted to the removing tool in a
25 direction toward the stops 3 and 4 and at the same time the device is moved in such a manner as to lift the edge of the sheet or card to permit the ready entry of air under such sheet or card. After being thus re-
30 leased from the pile the sheet is moved to any other convenient position on the table, as indicated at 15, or to any desired receptacle. After the sheet or card is moved to the position desired, the finger is released
35 from the button 12 and the spring 13 moves the plunger 10 back to a position opening communication through the port 11 between the lower end of the valve chamber 6 and the inside of tube 8, as a result of which the en-
40 gagement between the sheet or card and the removing device is interrupted. The spring 13 is contained within the valve casing 6 between the plunger 10 and an adjustable screw plug 16 adapted to engage the lower
45 end of the casing 6. By means of the plug 16 the tension of the spring 13 may be adjusted to any desired amount. The plug 16 has a hole drilled through it, as indicated, to permit communication between the outside
50 atmosphere and the port 11 when the valve is released.

While I have shown my invention in the particular embodiment herein described, I do not, however, limit myself to this par-

ticular construction, but desire to claim any 55 equivalent that will suggest itself to those skilled in the art.

What I claim is:

1. A portable sheet or card lifter comprising a tubular handle having a downturned 60 end, a flexible soft tube extending from said end, means for connecting the other end of said handle with a suction device, a short tube closed at one end intersecting said tubular handle, said tube having alining 65 ports to complete the passageway through the handle, a plunger valve in said short tube for controlling said ports, a plug having an opening therethrough screwed in the lower end of said short tube, a spring in said 70 short tube for maintaining said plunger valve in position to close the port toward the suction device, the other port being partly open to connect the free end of said tubular handle with the atmosphere through said 75 plug, and a button connected with said plunger valve by a rod passing through the closed end of said short tube, depression of said button causing the opening of the port toward the suction device, exclusion of the 80 atmosphere, and effective connection between said two ports.

2. A portable sheet or card lifter, comprising a tubular handle arranged at one end for connection with a suction device and 85 at its other end for contact with sheets or cards, a short tube closed at one end intersecting said tubular handle, said short tube having alining ports which complete the passageway through the handle, a plunger 90 valve in said short tube for controlling said ports, and means for maintaining said plunger valve in position to close the port toward the suction device, the other port being partly open to connect the free end of 95 such tubular handle with the atmosphere through the open end of such tube, actuation of said plunger causing the opening of the port toward the suction device, exclusion of the atmosphere and effective connection be- 100 tween such two ports.

In witness whereof, I hereunto subscribe my name this 27th day of February, A. D. 1909.

CHARLES L. BURDICK.

Witnesses:

ALBERT C. BELL,
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