A. B. DICK.

APPARATUS FOR DRAWING ON STENCILS.

APPLICATION FILED JUNE 11, 1915.

1,163,647. Patented Dec. 14, 1915.

2 SHEETS—SHEET 1.

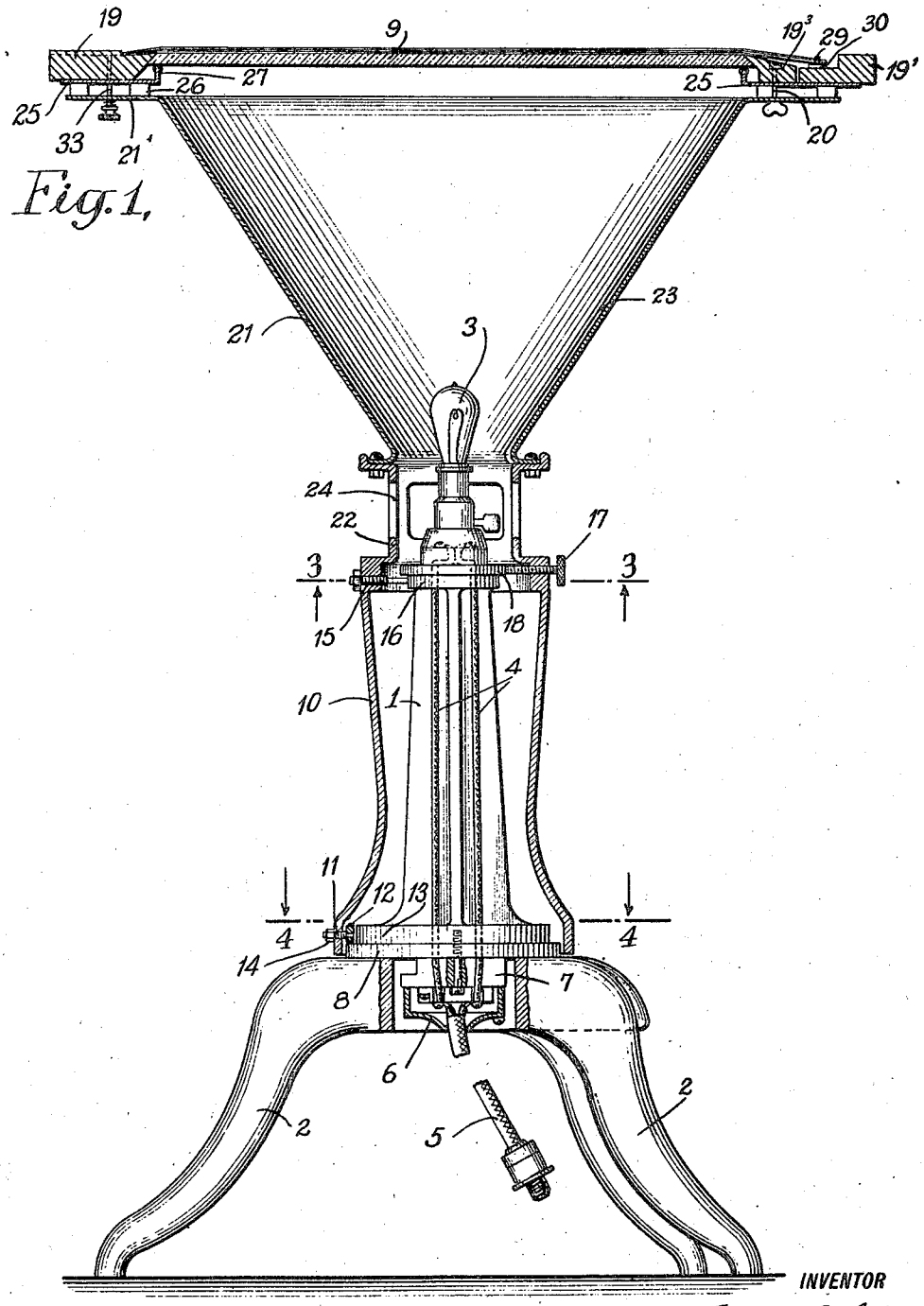


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

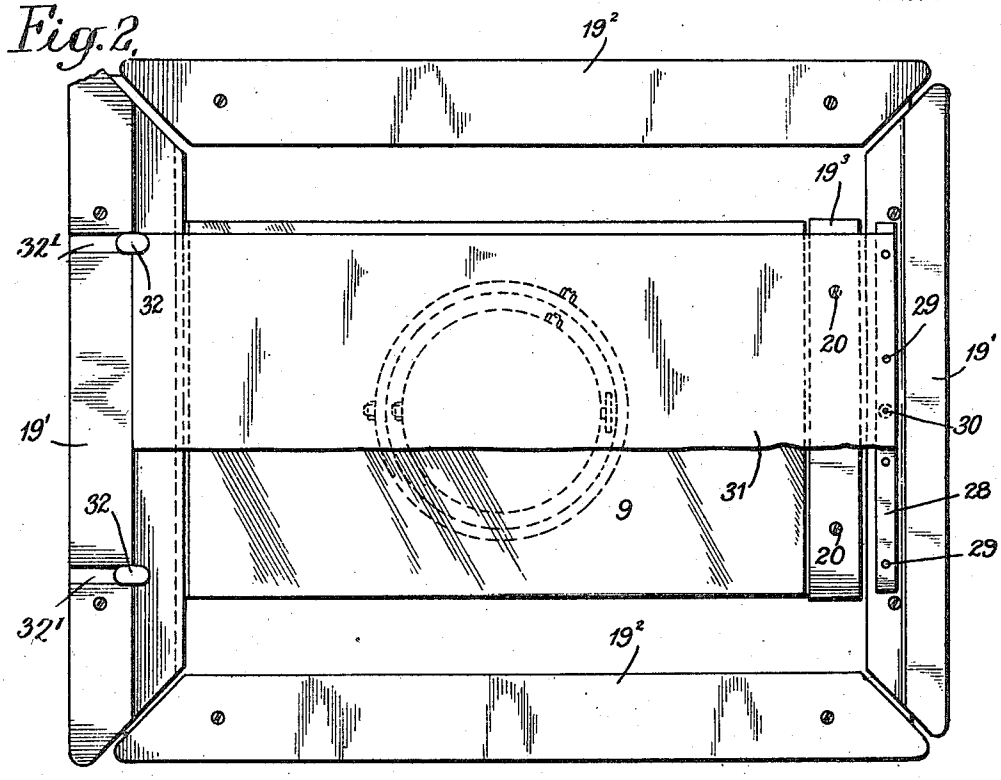


Fig. 3.

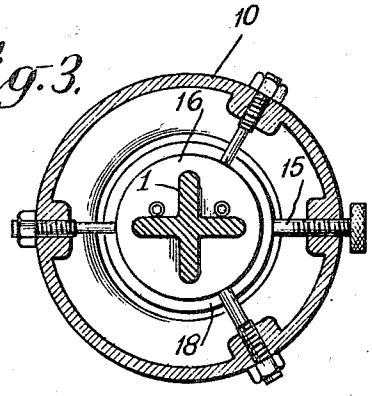


Fig. 4.

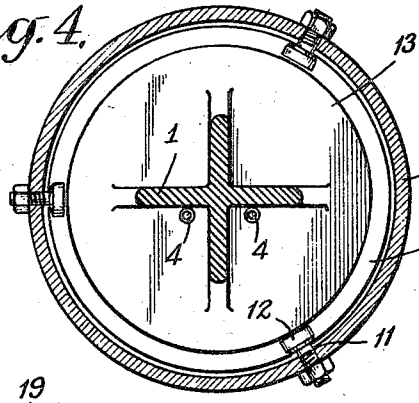
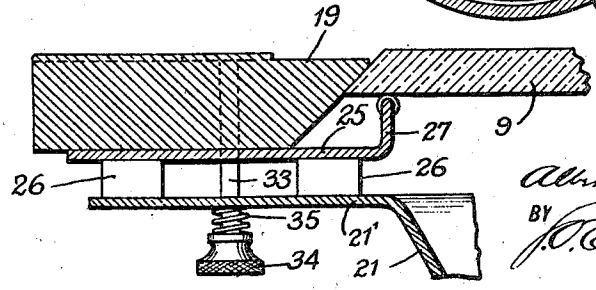


Fig. 5.



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ALBERT B. DICK, OF LAKE FOREST, ILLINOIS, ASSIGNOR TO A. B. DICK COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

APPARATUS FOR DRAWING ON STENCILS.

1,163,647. Specification of Letters Patent. Patented Dec. 14, 1915.

Application filed June 11, 1915. Serial No. 33,463.

To all whom it may concern:

Be it known that I, ALBERT B. DICK, a citizen of the United States, residing at Lake Forest, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Apparatus for Drawing on Stencils, of which the following is a specification.

My invention relates to an improved apparatus for making tracings, or copies of drawings, or forms, or other matter to be copied, particularly adapted for making such tracings or copies directly on a stencil-sheet which may thereafter be used for the multiple reproduction of the same in a duplicating machine.

My improved apparatus is particularly intended for use in carrying out a process such as that disclosed in application of Edward W. Hill, Process of making stencils, Serial No. 13934, filed March 12, 1915, in which a sheet of paper carrying the drawing or other matter to be copied is placed upon a transparent plate, and a stencil-sheet of such a character that direct light emanating from the opposite side of the glass plate may penetrate the same, is laid upon the drawing. An electric lamp or other suitable source of light is placed beneath the glass plate, and the light coming through the glass plate, drawing and stencil makes the matter to be copied appear distinctly through the stencil. The drawing to be copied is then traced on the stencil with a pointed stylus or other suitable instrument. By this process the stencil may readily be prepared by the movement of the stylus over the stencil in following the lines of the copy, and at any stage in the process the portion of the tracing already made shows distinctly after the passage of the stylus because of the light shining through the line or lines along which the fibers of the stencil have been denuded of the stencil composition by the pressure of the stylus. Because of this it is assured that no line or portion of the drawing or work copied has been omitted in making the tracing, whereas when a tracing is made on a stencil without the aid of the light underneath, it is practically impossible, with some types of stencil, to determine definitely whether or not certain lines have been traced without lifting the stencil off and holding it to the window or other light for proof.

My invention comprises an improved apparatus for practising the process referred to above and similar processes.

The objects of my invention consist in the improved construction of such devices, as will more fully appear hereinafter in the following specification and appended claims.

In my preferred construction, I employ an independent stand resting on the floor, the transparent table top being carried by a frame-work or support which is mounted to revolve about the axis of the standard, at the will of the operator. The electric lamp is mounted at the top of the stand, beneath the glass plate, and the wiring for the lamp extends down and out along side or through the stand. The glass top is mounted in a top frame or bed, the sides of which are adjusted to square them with the plate. Improved clamping means for the stencil and drawing to be copied thereon are provided, including a stencil button strap which is pivoted at one end of the frame so that the drawing and stencil-sheet may be placed in the desired position upon the glass plate, in which they may be held by spring-pressed clamps mounted on the other end of the top frame. Suitable means for mounting and adjusting the various parts are also included.

In order that a clearer understanding of my invention may be had, attention is hereby directed to the accompanying drawings forming part of this application and illustrating certain embodiments of my invention.

In the drawings, Figure 1 represents a central vertical section through my preferred apparatus, Fig. 2 is a top plan view thereof, Figs. 3 and 4 are horizontal sections taken respectively on lines 3—3 and 4—4 of Fig. 1, and Fig. 5 is an enlarged detail of construction in vertical section.

Referring to the drawings the stand 1 is provided with, or is fixedly secured to, a plurality, such as three, of legs 2, adapted to rest on the floor, stand 1 preferably being a spider construction, having the form of a cross in section, as shown in Figs. 3 and 4, with cylindrical portions at the ends, hereafter referred to. A suitable source of light is mounted at the top of stand 1. Preferably this comprises an electric lamp 3, the wiring for which, 4, extends downwardly from the lamp alongside flanges of the stand 1. The flexible conduit 5 for the

lamp connections extends out between the legs 2 of the stand. through the outlet 6, of china or other insulating material, which is secured to the plate 7 attached to the under side of the circular base plate 8 of stand 1, which rests immediately above legs 2.

The transparent top plate 9, preferably of ground glass, is carried by a support or frame-work 10, which is mounted to revolve in a horizontal plane about the axis of stand 1. Preferably support 10 is provided adjacent to its lower edge with a plurality of screws 11 extending inwardly and provided on their inner ends with rollers 12 mounted upon plate 8 adjacent the outer edge thereof, a disk 13 of less diameter than the circular base plate 8 extending upwardly from the latter to form a cylindrical abutment against which rollers 12 may engage. Screws 11 are provided with nuts 14 on the outer ends thereof, so that adjustable thrust-bearing screws and rollers are thereby provided. Frame 10 is provided adjacent its upper end with a plurality of adjustable-bearing screws 15 extending inwardly and adapted to contact with the periphery of a circular flange 16 on stand 1 below lamp 3, support 10 thus being properly centered and adjustably mounted for easy rotation. A binding-screw 17 may be provided, extending through the wall of support 10, to engage the cylindrical flange 18 on stand 1, above flange 16, to clamp support 10 and the table top carried thereby in any desired position.

The ground glass plate 9 is secured in top frame 19, this preferably being formed of wood with ends 19′, a clamping member 19^3 and sides 19^2, these latter being made adjustable as is indicated in the drawing, for the purpose of squaring the top frame, this adjustment being made before the device leaves the factory. The glass plate 9 may be secured in the top frame in any desired manner, as by providing the glass plate with beveled edges over which the beveled edges of the top frame members 19′ at one end, and 19^3 at the other end, engage, clamping screws 20 being provided, extending through member 19^3, provided with thumb-nuts for clamping the top frame against the glass. The top frame 19 is carried by the side member or members 21 which rotate with frame 10. Preferably, side members 21 are formed of sheet-metal secured at their lower ends to an upstanding flange 22 of the rotatable support 10, side members 21 preferably forming the surface of a frustum of an inverted cone. Side members 21 are, of course, light-excluding, and direct the light from the source 3 against the lower side of glass plate 9, the light being evenly distributed over the glass plate when the lamp 3 is centrally arranged as shown. Side members 21 may be provided with a reflector surface or surfaces 23 as shown. Side members 21 are provided at their upper ends with a horizontal outwardly extending flange 21′ upon which top frame 19 is supported. It is desirable that suitable ventilating spaces should be left in the construction to prevent the overheating of the glass plate by the lamp 3. Accordingly, ventilating spaces 24 are provided in the flange 22 below the lamp, and other ventilating spaces are provided between the flange 21′ of the side frame 21 and the top frame 19. In the form of my invention illustrated this is arranged for by providing metal plates 25 on which the members of top frame 19 rest, spacing members 26 being interposed between the flange 21′ and plates 25. Plates 25 are provided with upwardly directed flanges 27 at their inner edges having rubber pads at their upper edges for supporting the edges of the glass plate. The clamp screws 20 for clamping the glass plate in position extend through top frame member 19^3, the adjacent plate 25 and the flange 21′ of the side frame of the rotatable support.

In using the device the drawing to be copied is placed above the glass plate 9 with the stencil above that, and the drawing and stencil-sheet secured in position. The stencil preferably is provided with a backing-sheet which may be rubbed with oil to render the same more transparent, the stencil-sheet lying in its regular position on the backing-sheet which is placed above the drawing or other matter to be copied. A stencil button strap 28 provided with buttons 29 is mounted on one of the end members 19′ of the top frame, the button strap preferably being pivotally mounted on a vertical pin 30 which extends through the button strap intermediate the ends thereof, so that the button strap may be swung into different positions. The drawing being laid upon the glass plate 9, the stencil-sheet 31 with its backing-sheet is placed above the same and secured at one end by slipping the buttons 29 of the button strap through the button-holes formed in the usual manner at one end of the stencil backing-sheet. The stencil may then be adjusted into a desired position on the plate, the stencil button strap 28 swinging about pin 30 to accommodate this movement, after which the opposite end of the stencil and drawing are secured by means of clamps 32. These clamps preferably take the form of elongated heads which are carried at the upper ends of pins 33 extending through frame member 19 and flange 21′ of the side member 21, pins 33 having heads 34 at their lower ends and springs 35 interposed between heads 34 and flange 21′. Clamping heads 32, when in clamping position, lie in slots 32′ which are

formed across the left hand end frame member 19′, these slots being of a sufficient depth so that clamps 32 will press the end of the stencil and other papers against a surface in substantial alinement with the top of the glass plate 9. This construction provides a spring-pressed clamping means, the pins 33 being pressed upwardly by the user when it is desired to remove the drawing and stencil from under clamps 32, the latter clamping the sheet and drawing firmly when pressure is removed from heads 34. When the clamps 32 are not in use, they can be turned at right angles to the position shown, so as to lie across slots 32′. When a stencil is to be clamped, it is only necessary to turn the clamps 32 and let the same drop into slots 32′ upon the ends of the stencil, etc.

It should be understood that my invention is not strictly limited to the exact details of construction specifically described, but that reasonable equivalents therefor are included, as is indicated by the appended claims.

Having now described my invention, what I claim as new therein and desire to secure by Letters Patent is as follows:—

1. In an apparatus of the character described, the combination of a stand, an electric lamp supported at the upper end thereof, connections for said lamp secured to and extending alongside said stand, a support mounted upon said stand to rotate thereabout in a horizontal plane, and a top of transparent material carried by said support above said lamp, substantially as set forth.

2. In an apparatus of the character described, the combination of a stand, light producing means supported at the upper end thereof, a support mounted about and extending above said stand to rotate thereabout, and having upper and lower bearings thereon, and having light-excluding side walls extending about and above said light-producing means, and a top of transparent material carried by said side walls above said light-producing means, substantially as set forth.

3. In an apparatus of the character described, the combination of a support having side walls, a source of light therein, a top frame thereon, a glass plate in said frame, clamping means on said frame, adjacent one edge of said plate, for clamping sheets above said plate, and a stencil button strap on said frame, adjacent another edge of said plate, substantially as set forth.

4. In an apparatus of the character described, the combination of a support having side walls, a source of light therein, a top frame thereon, a glass plate in said frame, spring-pressed stencil-clamping means on said frame, adjacent one edge of said plate, and a stencil button strap pivotally mounted on said frame, adjacent the opposite edge of said plate, substantially as set forth.

5. In an apparatus of the character described, the combination of a stand, having upper and lower bearing rings thereon, a lamp mounted at the upper end thereof, a rotatable support surrounding said stand, rollers carried thereby, mounted on one of said bearing rings, adjustable bearing devices, carried by said stand, adapted to contact said other bearing ring, a frame surrounding said lamp, carried by said rotatable support, a top plate of transparent material carried by said frame, and clamping devices for securing sheets above said top plate, substantially as set forth.

This specification signed and witnessed this 8th day of June, 1915.

ALBERT B. DICK.

Witnesses:
W. G. Arnold,
Joseph Teal.