July 14, 1942. H. C. WELTER ET AL 2,289,471

FOLDING DESK LAMP

Filed Aug. 12, 1939 3 Sheets-Sheet 1

Fig. 1

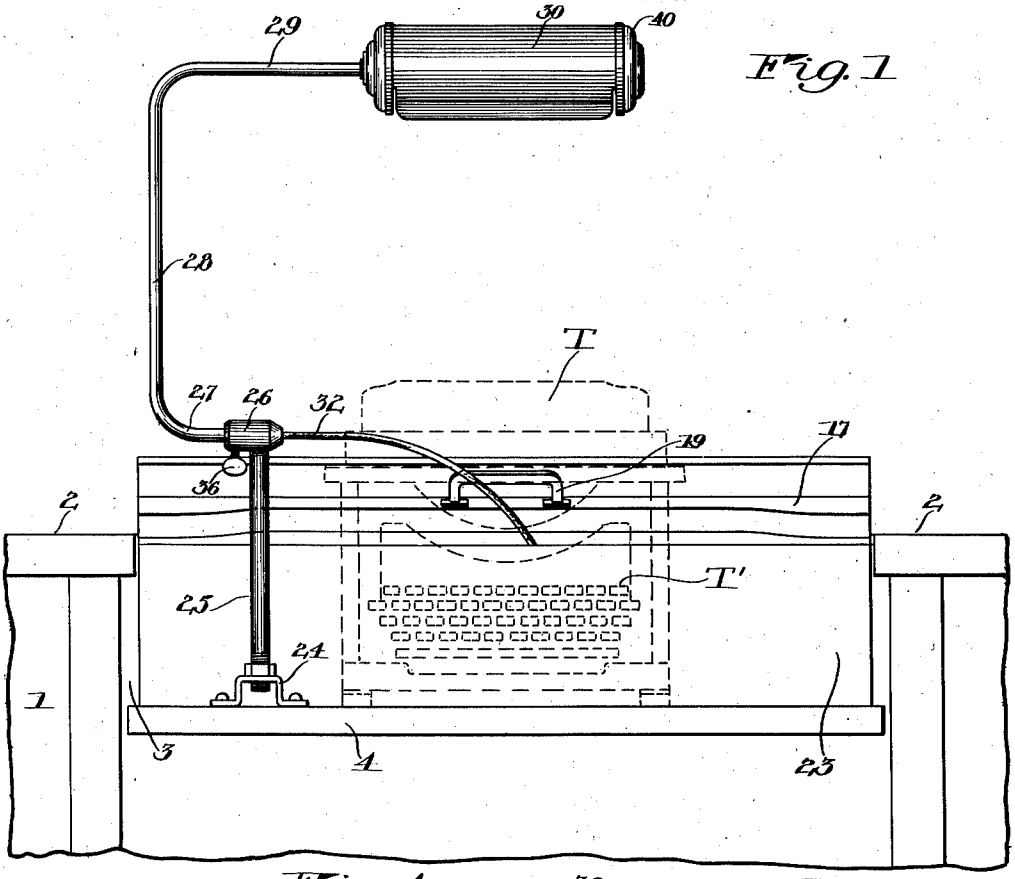


Fig. 4

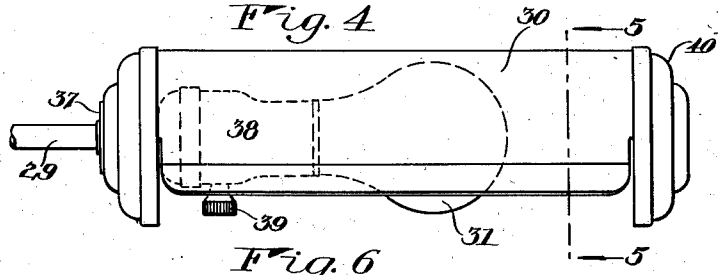


Fig. 5

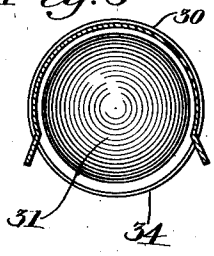
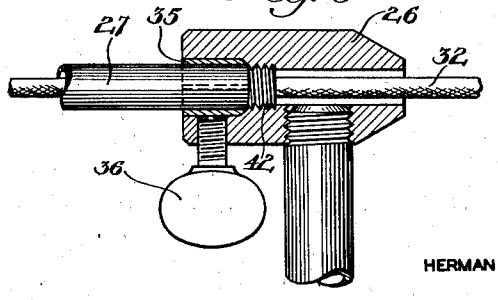


Fig. 6



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BY

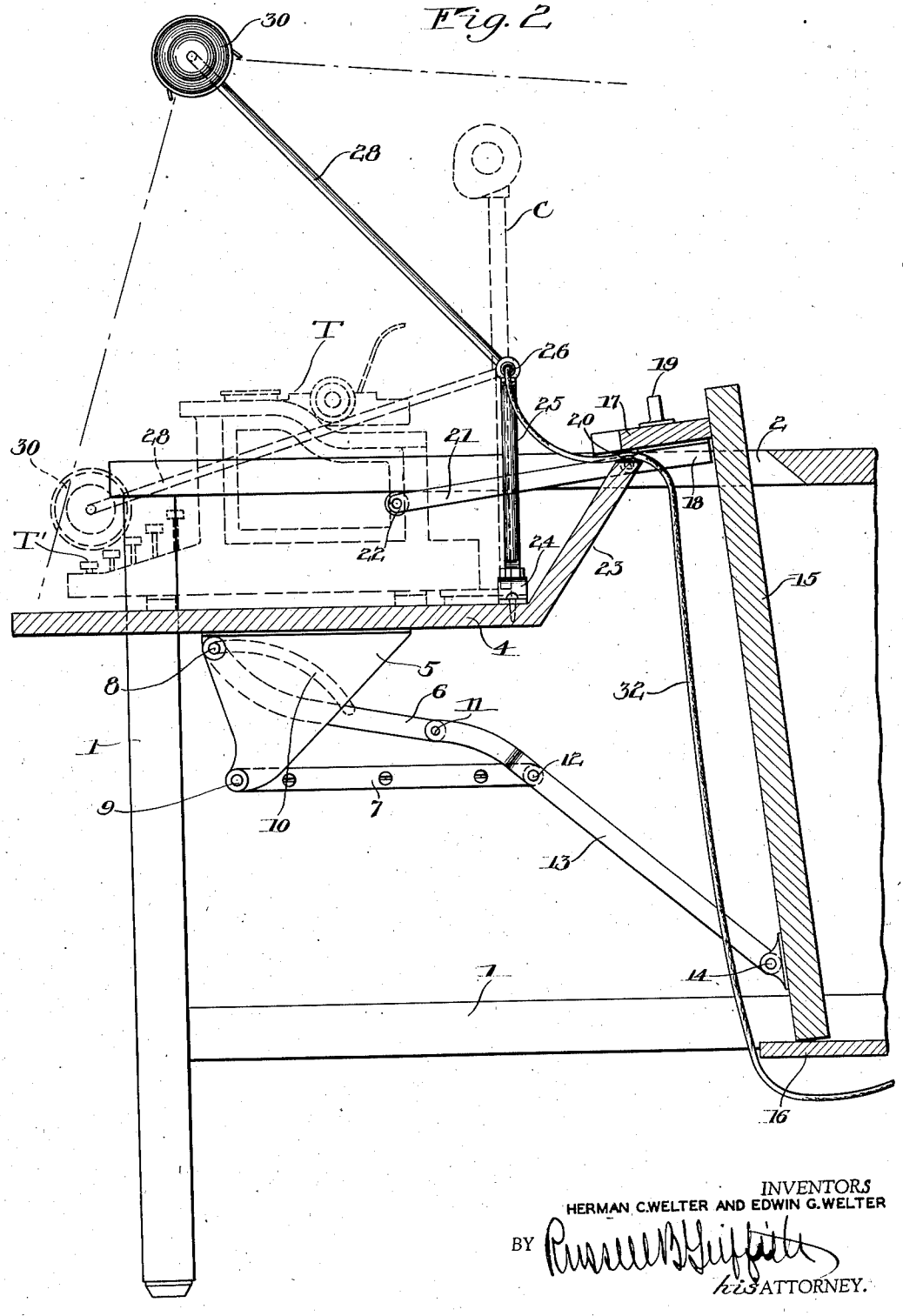
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July 14, 1942. H. C. WELTER ET AL 2,289,471

FOLDING DESK LAMP

Filed Aug. 12, 1939 3 Sheets-Sheet 2

Fig. 2



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July 14, 1942. H. C. WELTER ET AL 2,289,471

FOLDING DESK LAMP

Filed Aug. 12, 1939 3 Sheets-Sheet 3

Fig. 3

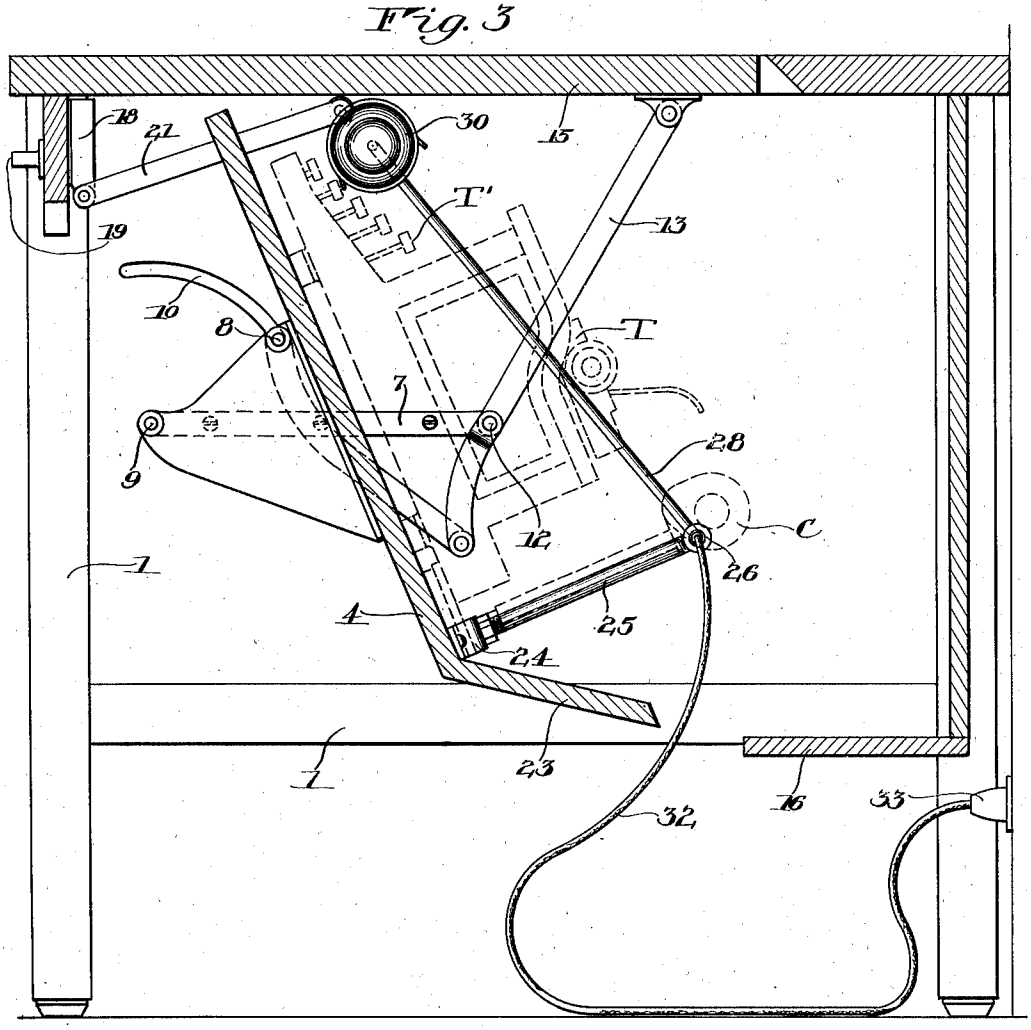
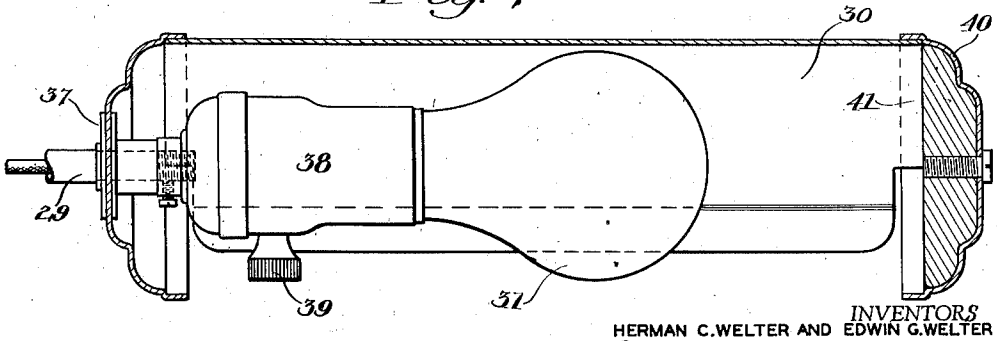


Fig. 7



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UNITED STATES PATENT OFFICE

2,289,471

FOLDING DESK LAMP

Herman C. Welter and Edwin G. Welter, Rochester, N. Y., assignors to The Dawn Mfg. Corp., Rochester, N. Y., a corporation of New York

Application August 12, 1939, Serial No. 289,884

2 Claims. (Cl. 240—4)

Our present invention relates generally to illumination and more particularly to the provision of a special lamp adapted to be used in connection with business machines and office appliances and desks or other supports therefor, said lamp being of a nature such that it will radiate directly upon the work and upon the machine but will shield the eyes of the operator of the machine and the invention has for its general object to provide a simple, inexpensive and efficient lamp of this character having supporting, adjusting and folding features particularly adapting it for use upon folding desks so that the lamp fixture may be permanently attached to the latter, yet not interfere with the folding of the desk when the desk is not in use.

To these and other ends, the invention resides in certain improvements and combination of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of this specification.

In the drawings:

Figure 1 is a front elevation of a fragment of a folding desk with a business machine indicated thereon and showing a front elevation in operative position of a lamp fixture constructed in accordance with and illustrating one embodiment of our invention;

Figure 2 is a more extensive vertical section of the desk taken on a plane from front to rear and showing the lamp fixture in side elevation:

Figure 3 is a view similar to Figure 2 but showing all parts in folded position;

Figure 4 is an enlarged front elevation of the lamp proper and shade;

Figure 5 is a transverse section thereto on the line 5—5 of Figure 4;

Figure 6 is a fragmentary vertical section through the bearing of the lamp arm on its standard, and

Figure 7 is a longitudinal section through the lamp shade.

Similar reference numerals throughout the several views indicate the same parts.

In the present embodiment of the invention we have shown our lamp fixture in connection with a type of folding desk in which the typewriter is secured to the base that occupies a well in the center when in operative position. When it is desired to retire the machine and protect it or use the desk as a flat top desk, the disappearing cover is brought up from a substantially vertical position at the rear and swung forwardly to the plane of the side tables of the desk. In so doing the cover automatically lowers the base and typewriter which latter disappears within the desk frame. Our improved lamp illuminates the work and the keyboard of the machine when in operative position, but folds with the machine as outlined in a manner that will now appear.

Referring more to the drawings and particularly to Figures 1, 2 and 3 thereof, we will first describe the desk and the manner in which it is manipulated. The frame of the desk is generally indicated at 1 with fixed top working surfaces 2 at either side of a central well 3, the bottom of which is provided by a horizontal base 4. This base has brackets 5 on its underside at each end (only one of which with its connected mechanism appears in the drawings). Links 6 and 7, the latter of which is fixed, are connected to this bracket by pivots 8 and 9 respectively, pivot 8 being extended to also travel in an arcuate slot 10 in a vertical wall of the desk frame. Link 6 is also connected at 11 and link 7 at 12 to a link 13 pivoted at 14 to the rear of a well cover 15. In the operative position of the desk, that is the open position in which the typewriter, indicated at T, secured to base 4 is ready for use, the well cover 15 rests on a shelf 16 on the bottom of the frame. It has a fixed front wall 17 provided with a drawpull 19 for partially closing the front of the well when the desk is closed, on which front wall 17 is a bracket 18 to which is pivoted at 20 a link 21 turning at its other end and on a fixed pivot 22 on the frame. The base 4 has an upwardly inclined rear wall 23 that provides a back wall, in general, for the well 3.

In the operative condition of Figure 2, the base 4 is thus supported on pivot 8 in a horizontal position from which it cannot tilt because of the nature of the connecting links described. When, however, it is desired to close the desk, the top cover 15, by means of the handle 19, is pulled upwardly and forwardly to the position of Figure 3, whereby link 13 is actuated through its connection with links 6 and 7 to drop the base 4 to the position of that figure so that the base and typewriter are now supported still by the link 8, but at the opposite lower and rear end of the arcuate slot 10. As the cover 15 moves forwardly and the typewriter drops rearwardly the cover rides over the latter and clears it because of link 21. A reverse motion of the cover, of course, restores the operative position first described.

We have also indicated in dotted lines at C the position of a familiar type of copyholder

which is placed in rear of the typewriter on base 4 to operatively project above it but which is collapsible to fold down to approximately the height of the typewriter itself.

In the practice of our invention we secure to the base 4 at the left and rear of the typewriter T and by means of a suitable pedestal 24, a standard 25 preferably about in the plane of the copyholder C and this standard is not greater in height than the latter or that of the typewriter. At its top is a fixed transverse tubular bearing or hub 26. An inwardly bent end 27 of a tubular arm 28 turns on a horizontal axis in this bearing member so that it may be moved forwardly and downwardly or upwardly and rearwardly to different positions of adjustment. Its outer end 29 is also extended inwardly, horizontally in parallelism to arm 28, and supports an elongated shade fixture 30 containing a lamp bulb 31. The lamp is supplied with current by a lead wire 32 that runs from an outlet 33 exteriorly of the desk frame and passes between elements 23 and 17 of the deck. In either position of the latter it enters the bearing hub 26 through the opposite end and runs through tubular arm 28.

The light opening 34 in the shade 30 may be rotatively adjusted as will hereinafter appear, but in the operative position of Figures 1 and 2 it preferably gives a light dispersment, indicated by the dotted lines, to cover about a 45° angle taking in the copyholder C, the work in the typewriter T, and the keyboard T' of the latter, but this may be varied at will to intensify the light on different areas as preferred. Of course, the operator is, relatively, behind the light and receives none of its beams.

When it is desired to fold the desk, as heretofore described, all that is necessary is to swing the arm 28 downwardly until the shade 30 and its contained lamp rests upon the keyboard T' or adjacent thereto, whereupon it is undisturbed by the folding, and remains in this position as shown in solid lines in Figure 3, and dotted lines in Figure 2. The offset arm 28 is preferably arranged to just clear the side walls of the well 3 when so brought down to give maximum freedom in the use of the operator's arms and hands in manipulating the typewriter, the copyholder, and the work, as well as to clear the reciprocating carriage of the typewriter, if the arm adjustment is such as to come opposite the same. At the same time the shade 30 (which is also a reflector) and its lamp is brought directly in front of these elements.

Returning to the mounting of the arm 28 in the bearing hub 26, and referring more particularly as to such details to Figure 6, the extension or elbow 27 of the said arm 28 turns in a split bushing 35. A winged set screw threaded into the hub clamps and contracts this bushing so that a desired frictional resistance may be imposed upon the arm in turning therein. In other words, the set screw does not necessarily (although it can practically) lock the arm in a given position but it can exert such pressure that with an adjustment thereof the arm can be forcibly turned by hand but still hold its position against its own weight and other interferences of working conditions.

In addition, the inner end of the extension 27 of the arm beyond the bushing bearing is threaded into the hub or bearing member 26 with the use of just a few threads 42. This is a convenient way of attaching the arm in general to the standard against endwise movement of the portion 27 that would withdraw it from its bearing and yet this threaded engagement does not interfere with the rotational relationship.

With respect to the shade 30 which, as aforesaid, also acts as a reflector for the contained lamp bulb 31, this, as shown more particularly in Figures 4 and 7, is rotationally mounted at 37 on the arm extension 29. This is also a frictional engagement to such extent that, by hand adjustment, the shade and reflector 30 may be rotated so as to change the dispersion through the previously described opening 34 at will. The socket 38 of said lamp is fitted to the arm extension 29 within the shade and reflector in an appropriate manner, and is fitted with a switch knob 39.

A further improvement resides in the fact that the outer free projecting end 40 of the reflecting shade 30 is provided with a weight 41 conforming to its contour so that it is not discernible. The rest of the shell constituting the element 30 may be made of sheet metal and as light as possible, but the said weight 41 performs the following function:

In the use of a business machine mounted upon a drum like base such as 4 and with a long arm like the arm 28 supporting the lamp therefor, vibrations resulting from the operating of a typewriter in particular are multiplied at the light source however rigid may be the standard 25 and the connections therewith. This tends to induce some slight weaving of the lamp or light source at times, but with the construction described the inertia of the said weight 41 counteracts these vibrations and neutralizes one vibrational impulse against another.

The useful application of our invention is based in general upon the fact that in a great many offices typewriter operatives are of a necessity located in positions remote from the natural light of windows. High kilowatt lamp installations are in such instances generally mounted high near the ceiling of the room, but in view of the fact that the intensity of such light is inversely proportional to the square of the distance from the light source to the operator and her machine an expensive lighting outlay of this kind still results in very feeble illumination at the machine. With the lamp and the arrangement thereof herein disclosed a relatively low power bulb near each machine close to the work gives illumination where it is most needed. In other words, the overhead lighting expense is greatly reduced and the operator at the machine is provided with greatly increased illumination.

We claim as our invention:

1. The combination with a frame, a base and a cover top, the base being adapted to support a device requiring illumination, and mechanical connections between the base, frame and cover top enabling the folding of the base and the device together from an operative position of the latter to a folded position within the frame in which it is protected by the cover top, of a lamp fixture on the base adapted to illuminate said device when the latter is in operative position and to fold therewith within the frame to an inoperative position, whereby it is also protected by the cover top, said lamp fixture embodying a standard secured in rigid fixed relationship to the base at the rear of the device and an independently movable and manually adjustable arm pivoted to the standard at its inner end on a horizontal axis and carrying the lamp at its outer end so that the latter may be ad-

justed to an elevated operative position above the base and device or to a lowered folding position close to and forwardly of the latter and below the pivot of the arm, the arm being arranged to clear the device laterally and having such inner end inwardly turned to bear swingingly in the standard and the lamp consisting of an elongated bulb and reflector therefor projecting inwardly from such outer end parallel with the axis of the swinging movement of the arm.

2. The combination with a frame, a normally horizontal base and a cover top, the base being adapted to support a typewriting machine having a raised body and a relatively depressed keyboard, and mechanical connections between the base, frame and cover top enabling the folding of the base and the typewriter together from an operative position of the latter to a folded position within the frame in which it is protected by the cover top, of a lamp fixture on the base adapted to illuminate the typewriter when the latter is in operative position and to fold therewith within the frame to an inoperative position whereby it is also protected by the top, said lamp fixture embodying a standard secured to the base in rear of the typewriter, an arm pivoted to the standard at its inner end and carrying the lamp at its outer end so the latter may be adjusted to an elevated operative position above the base and typewriter or to a lower folding position, the arm being arranged to clear the typewriter laterally and having such inner end inwardly turned to bear in the standard, and the lamp consisting of an elongated bulb and reflector therefor projecting inwardly from such outer end to rest upon the keyboard of the typewriter machine when in lower folding position.

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