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2,291,152

GUIDELINE LIGHT

Filed March 4, 1940

2 Sheets-Sheet 1

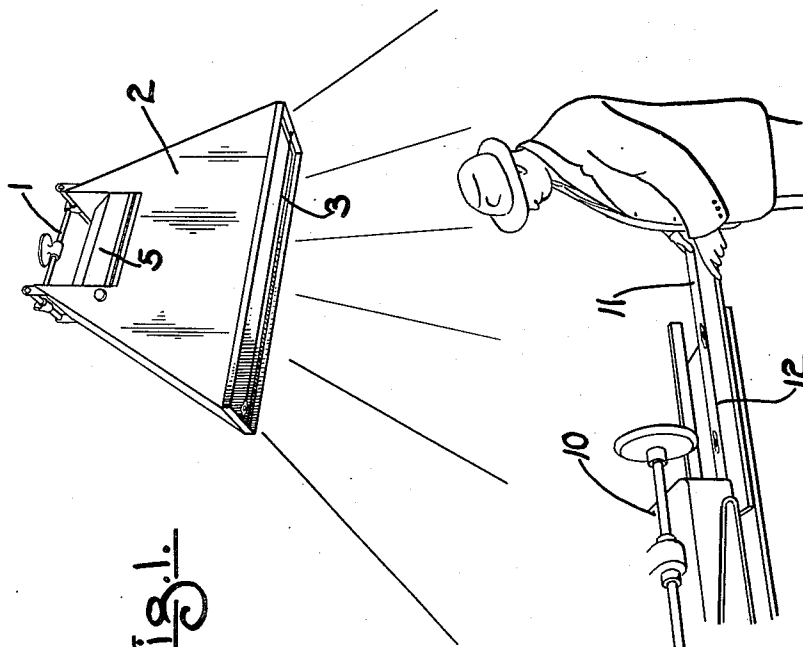


Fig. 1.

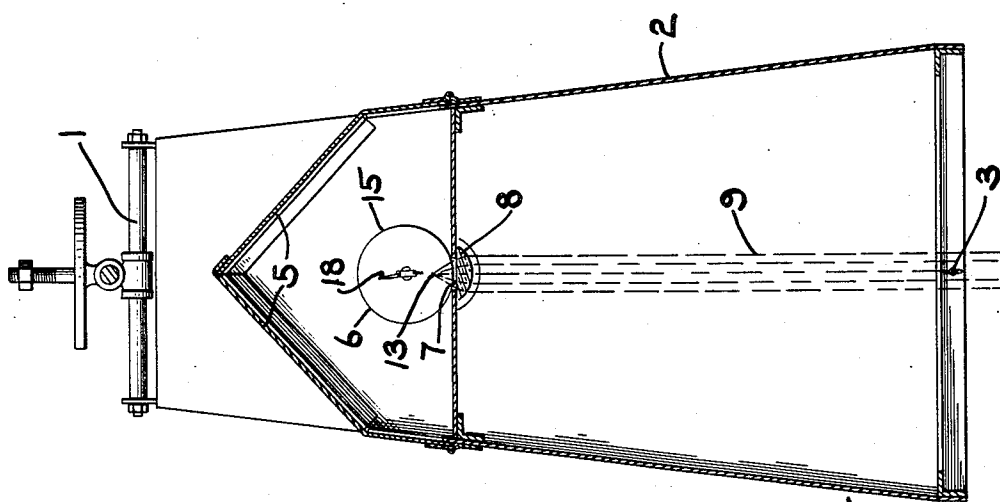


Fig. 2.

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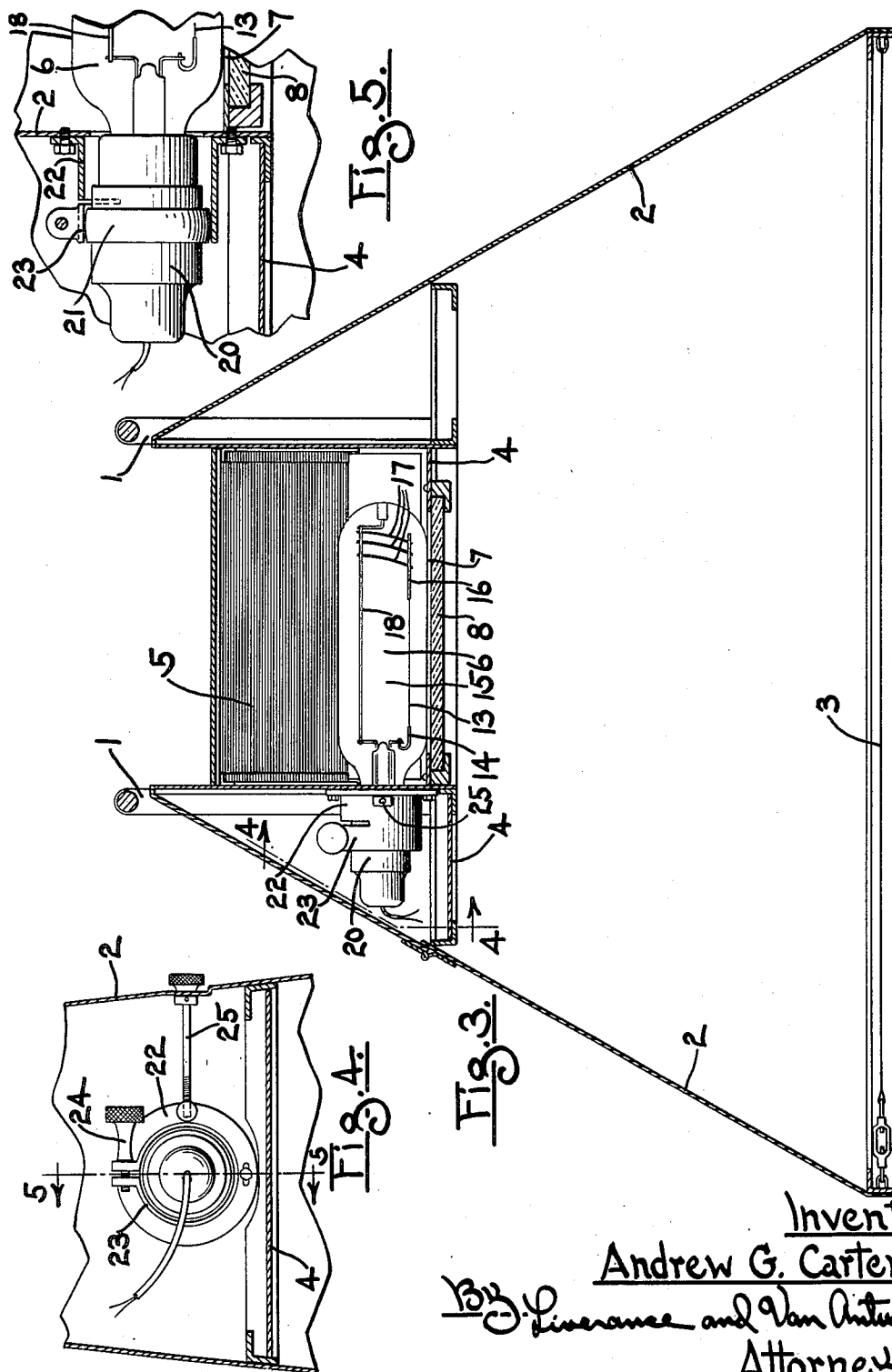
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GUIDELINE LIGHT

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7 Claims. (Cl. 88—24)

This invention relates to guide-line lights. A device of this kind is for the purpose of aiding a sawyer to guide his work into such a machine as a straight-line rip saw to avoid knots and other defects in the board.

Although the device may find other uses it is particularly intended to be used with ripsaws in trimming defects from boards and in doing this work it is desirable to saw as close to the defects as possible to prevent waste of lumber.

The guide-line light is supported above the feed table of the saw and casts a narrow elongated shadow on the table or the work upon which shadow is accurately in line with the saw and the shadow cast upon the work indicates accurately the path of the saw as the board passes through the machine.

The invention includes such improvements as an improved light bulb in which the elongated filament is under constant tension so that it will be maintained straight at all times. The filament is located close to one surface of the elongated light bulb so that it may be brought as closely as possible to the lens. A lens is provided so shaped that it will project the light rays passing through it in parallel paths increasing the intensity of the light and sharpness of the shadow. A wire or other elongated object is located in the paths of the light rays that have passed through the lens and casts its shadow upon the work.

The invention provides other novel features of construction and arrangement as hereinafter more fully described and particularly pointed out in the claims, reference being had to the accompanying drawings, in which:

Fig. 1 is a perspective view of a device embodying this invention shown in association with a part of a rip saw, a board and a sawyer at work.

Fig. 2 is a transverse sectional elevation of the device.

Fig. 3 is a longitudinal sectional elevation of the device.

Fig. 4 is an enlarged sectional elevation on the line 4—4 of Fig. 3, and

Fig. 5 is an enlarged sectional elevation on the line 5—5 of Fig. 4.

Like reference numbers refer to like parts in all the figures.

1 indicates suitable framework by which the device may be adjustably supported on any convenient object such as the ceiling of the building or upon framework built especially for that purpose. 2 is the housing mounted on the framework 1 and preferably of elongated tapered shape. The shadow casting wire 3 is

mounted at the lower open side of the housing 2 and is stretched tightly so that it will be straight. A partition 4 in the upper part of the housing provides a light bulb chamber 5 in which the light bulb 6 is located. A relatively narrow elongated opening 7 is provided in the lower part of the partition 4 and a lens 8 is located adjacent that opening and it is only those rays of light from the bulb passing through the opening 7 and the lens 8 which are used to cast a shadow, all other light from the bulb being lost within the chamber 5. The light rays indicated as 9 passing through the lens 8 are caused to travel in parallel paths in which the shadow casting wire is located thus concentrating the light and increasing its brilliancy on the work and also clearly defining the edges of the shadow. The sawing machine is indicated at 10 and 11 is a board to be sawed and 12 indicates the straight-line shadow cast upon the board.

In order to make the shadow clear and well defined the elongated filament 13 in the light bulb should be kept perfectly straight and in alinement with the shadow casting wire 3. This filament is kept straight by attaching one end to a fixed electrode 14 in the tube 15 and by connecting its other end with a spring tensioned electrode 16. This spring tensioned electrode is held under tension by flexible springs 17 connected with a second fixed electrode 18 within the tube 15. Therefore, expansion of the electrode when heated which would ordinarily cause it to droop between its connections is overcome by the flexible mounting which maintains it straight and under tension at all times.

For greatest efficiency it is desirable to bring the filament of the tube as close to the lens as possible and therefore it is mounted close to one side of the tube 15 which side is located adjacent the lens 8. It is also desirable to provide a universally adjustable socket for mounting the tube 15 so that the filament may be alined longitudinally with the shadow casting wire 3 and may be positioned accurately over the center of the lens 8 both by rotation and lateral movement. The tube socket comprises a socket 20 in which the tube is mounted in a conventional manner such as by a screw threaded base and it has the conventional circuit carrying contacts. This socket 20 has a band 21 surrounding its periphery, the surface of which is arc-shaped. A base 22 is provided which has a split clamping portion 23 with a clamping bolt 24 which clamping portion surrounds the band 21 and holds it in its proper adjusted position. This clamping means permits

the socket to be rotated and to be adjusted universally in its longitudinal dimension. An adjusting screw 25 is rotatably mounted in the housing 2 and is screw threaded into the socket base 22 and the socket base is mounted on the housing 2 for lateral adjustment which is accomplished by rotating the adjusting screw 25. By these adjustments the tube may be located so that its elongated filament 13 is directly over the center of the lens 8 and in longitudinal alinement with the shadow casting wire 3.

In operation after the tube 15 has been properly adjusted as above described, it is energized and the light rays from its filament 13 passing through the elongated opening 7 and through the lens 8 which diverts them into parallel paths which pass the shadow casting wire 3 and cast a pronounced straight-line shadow 12 upon the work 11 which is manipulated by the workman upon the table of the sawing machine 10. The device is so adjusted that this shadow is in accurate alinement with the path that the saw will follow when it passes through the machine and therefore the sawyer can shift the work to a position where the saw cut will remove defects from the board but will saw so closely to the defects that material will not be wasted.

By locating the filament 13 close to one side of the tube 6 it may be brought close to the lens 8 for greatest efficiency and the lens concentrates the light rays and intensifies the light and consequently the shadow cast upon the work so that the device may be used in a well lighted factory with thorough success. The lens also confines the light rays in straight parallel paths which clearly define the outline of the shadow.

The invention is defined in the appended claims and is to be considered comprehensive of all forms of structure coming within their scope.

I claim:

1. A device of the class described comprising an elongated straight-line shadow casting element, illuminating means for casting a shadow by said element associated therewith and spaced therefrom comprising, an electric light tube having an elongated lighting filament and a lens adjacent said tube shaped to direct light rays passing through it into parallel paths said parallel paths continuing past said shadow casting element and to the object onto which the shadow is to be cast.

2. A device of the class described comprising an elongated straight-line shadow casting ele-

ment, illuminating means for casting a shadow by said element associated therewith and spaced therefrom comprising an electric light tube, a lens adjacent said tube and an elongated lighting filament in said tube located close to the side thereof which is adjacent and parallel to said lens, said lens being shaped to direct light rays passing through it into parallel paths past said shadow casting element.

3. The elements in combination defined in claim 2 combined with means for maintaining said lighting element under constant longitudinal tension.

4. The elements defined in claim 2 combined with an adjustable mounting socket for said tube having means for rotatably adjusting said tube and means for angularly adjusting said tube with respect to the longitude of said filament.

5. A device of the class described comprising, an elongated straight-line shadow casting element, illuminating means for casting a shadow by said element associated therewith and spaced therefrom including, an electric light tube having an elongated lighting filament, means for constantly maintaining said filament under longitudinal tension, and a lens adjacent said tube shaped to direct light rays passing through it into parallel paths past said shadow casting element.

6. A device of the class described, comprising, an elongated straight-line shadow casting element, illuminating means for casting a shadow by said element associated therewith and spaced therefrom including, an elongated electric lighting element, an adjustable mounting socket for said lighting element having means for adjusting said element angularly with respect to its longitudinal dimension, and a lens adjacent said lighting element shaped to direct light rays passing through it into parallel paths past said shadow casting element.

7. In a device of the class described, a shadow casting element, a light bulb associated therewith, an enclosed chamber within which the light bulb is located, a slot in the bottom of said chamber, an elongated filament in said light bulb located parallel to said slot, said filament being located at a side of said bulb closest to said slot, and a lens adjacent said slot to receive light rays passing through it and convert them into parallel paths for casting a shadow from said element.

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