

Feb. 19, 1963

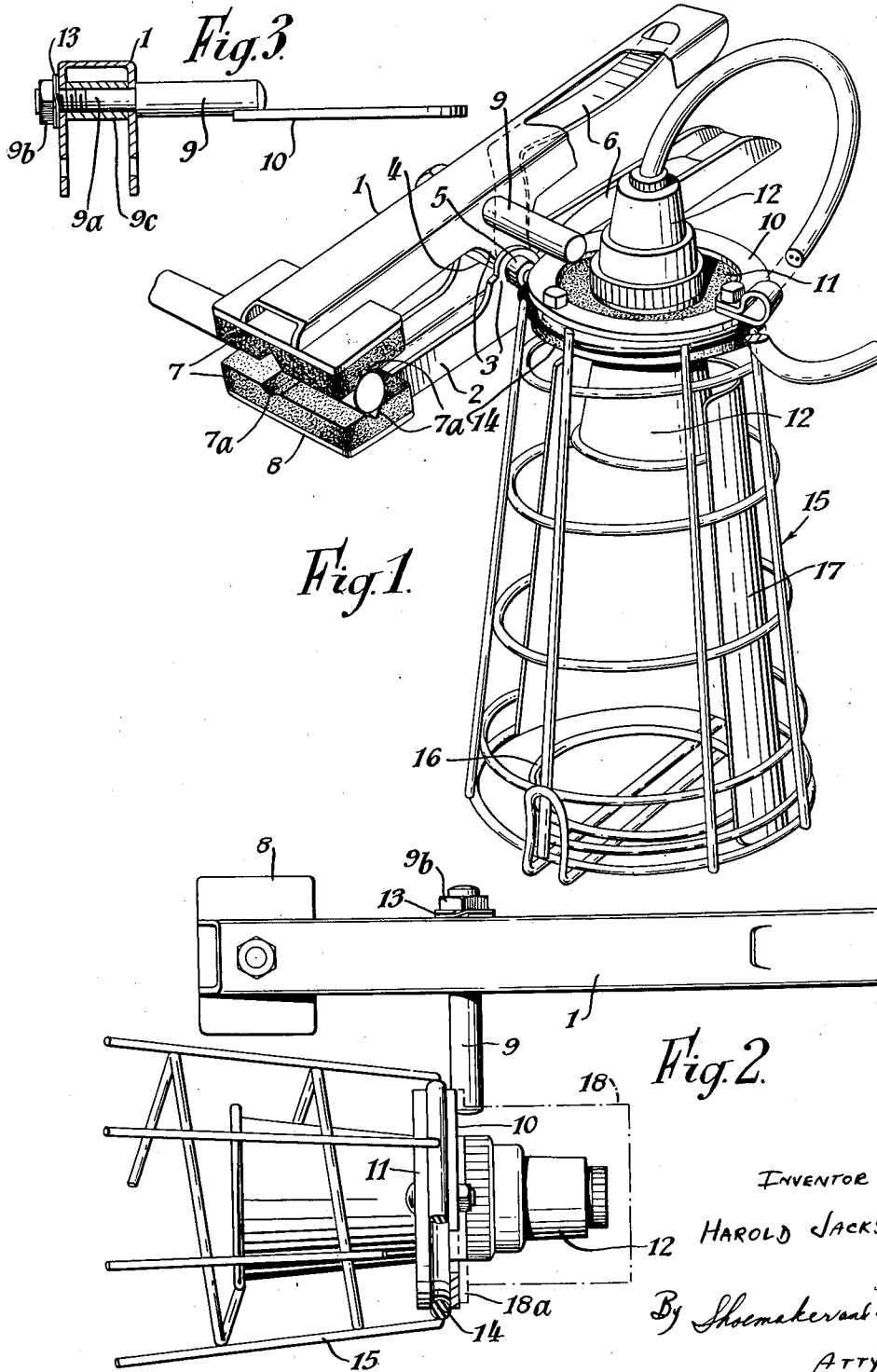
H. JACKSON

3,078,367

PORTABLE LAMP BRACKETS

Filed July 20, 1960

3 Sheets-Sheet 1



INVENTOR

HAROLD JACKSON

By Shoemaker and Martin

ATTYS.

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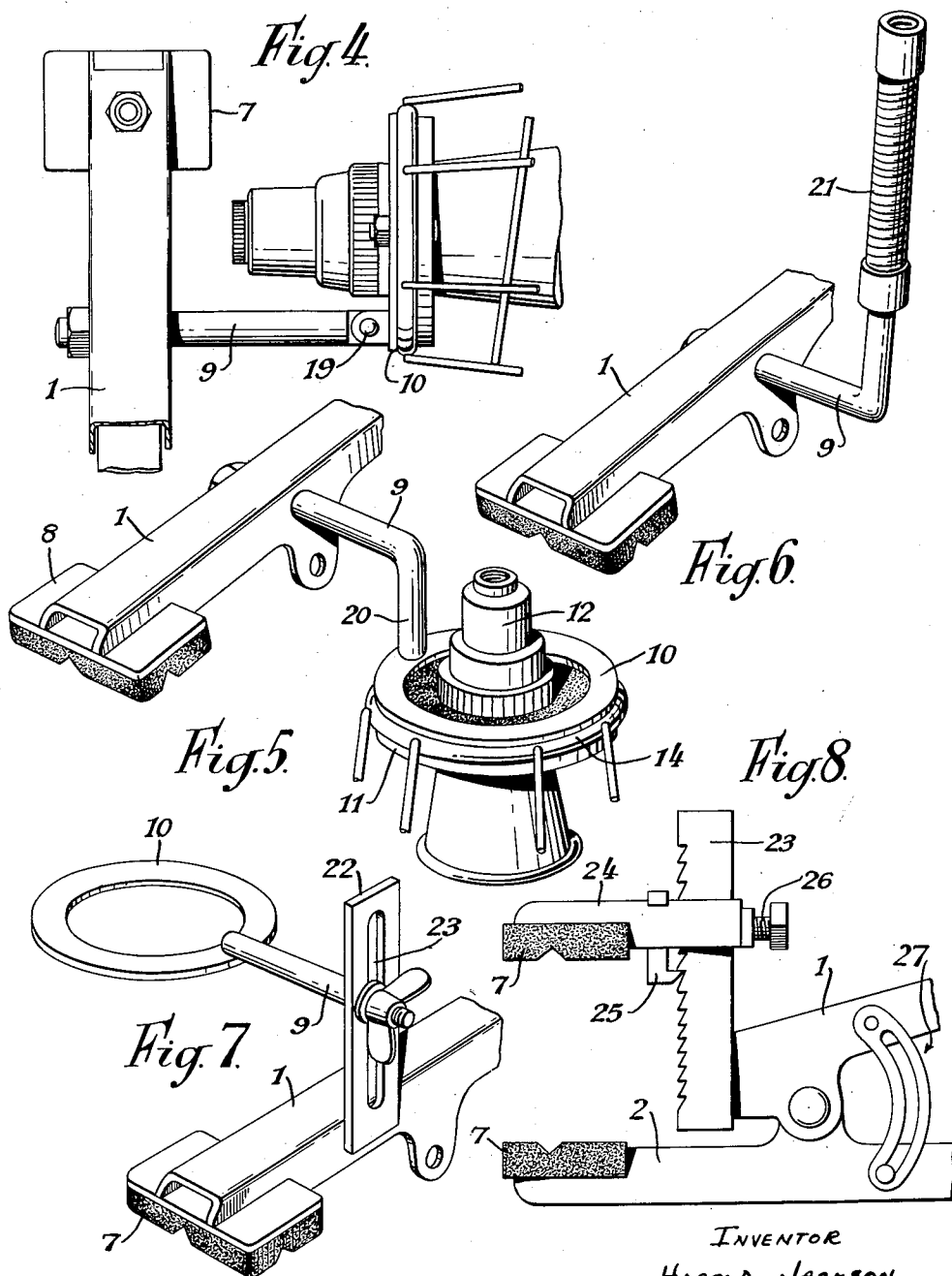
H. JACKSON

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3 Sheets-Sheet 2



INVENTOR
HAROLD JACKSON

By *Shoemaker and Mattare*
ATTYS.

Feb. 19, 1963

H. JACKSON
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3 Sheets-Sheet 3

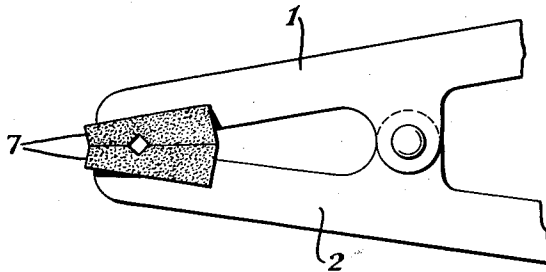


Fig. 9.

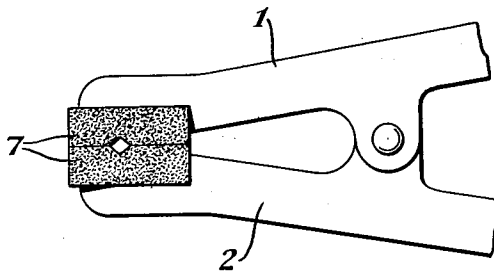


Fig. 10.

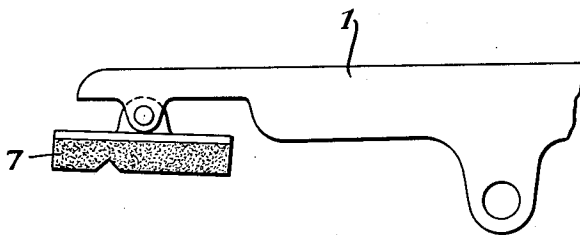


Fig. 11.

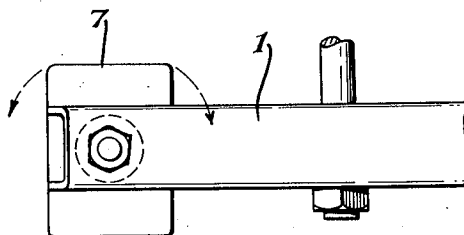


Fig. 12.

INVENTOR
HAROLD JACKSON
By *Shemak and Mattare*
ATTYS.

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3,078,367

PORTABLE LAMP BRACKETS

Harold Jackson, 123 College Road, Manchester, England
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3 Claims. (Cl. 240—52.1)

This invention relates to hand lamps and inspection lamps having grip-on supports which include spring-actuated gripping means so that they can be attached temporarily to any part adjacent the place of use.

It is therefore the object of this invention to provide forms of hand lamp and support of a small type which satisfy the above and other needs.

It is an object of the invention to provide an improved hand lamp or inspection lamp which includes a grip-on support comprising a pair of mutually-pivoted members having opposed gripping jaws at one end with opposed flat gripping faces and grooves therein, having handle parts adapted to be gripped in one hand at the other end and having spring means between said handle parts to urge those jaws towards each other.

It is another object of the invention to provide such a lamp with a lateral extension from one or both sides of the said mutually-pivoted members, with a ring formation at its outer end, and a lamp mounting on the or each ring formation, said ring and mounting being rotatable about an axis transverse to the said mutually-pivoted members against a friction load which, whilst causing it to remain in any set position in its path of rotation allows of its position being changed without adjustment of the load.

A further object of the invention is to attract the said jaws at the one end of the pivoted members fixedly or resiliently and/or pivotally so as, in the latter cases, always to provide a face contact with the article being gripped, independently of the degree of opening of the jaws. Alternatively the jaws may be detachable from the said members, for interchange with others.

The invention will be described in more detail with reference to the accompanying drawings, wherein:

FIG. 1 is a perspective view of one example of the improved lamp, shown as gripping a bar or rod;

FIG. 2 is a plan of the same but with the lamp-holder and cage turned through 90° as compared with FIG. 1;

FIG. 3 is a transverse section through one of the pivoted members of FIGS. 1 and 2;

FIG. 4 is a plan of a part of a slightly modified form of lamp shown in FIGS. 1-3;

FIGS. 5, 6 and 7 are fragmentary perspective views illustrating some alternative forms of the improved lamp, insofar as they concern the mounting of the lampholder and cage on the pivoted members;

FIGS. 8, 9 and 10 are fragmentary side elevations showing some alternative constructions of the gripping jaws; and

FIGS. 11 and 12 are fragmentary perspective views showing further modifications of the gripping jaws.

Referring first to FIGS. 1-3, there are two channel-sectioned lever members 1, 2 having lugs 3 on their side webs, the lugs 3 on one being embraced between the corresponding lugs on the other member and a pivot pin 4 passing through the several lugs. This pin is held in place by a nut or the like 5 at each end, though other securing means may be adopted. The said lugs 3 are somewhat nearer to one end of the lever members 1, 2 than to the other.

Between the longer ends of the lever members 1, 2 and fitting within the opposed channels is a substantially U-shaped flat-sectioned spring 6 which forces those ends of the levers apart. Any other form of spring means may

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be adopted, if of suitable strength, for biasing the levers in this way.

The other and shorter ends of the levers 1, 2 have their flanges partly cut away to receive transverse jaws or pads 7 of a hard rubber or synthetic rubber or like material having good gripping qualities. These pads are each reinforced or supported at the back by a rectangular metal plate 8, and are affixed to the levers 1, 2 by screws passing through the bridge portion of the channel-sectioned member, and by nuts thereon.

Any other kind of fixing means may be adopted of either a permanent or removable nature. With jaws fixedly mounted on the said members, the leading or entrance edges of the jaws may be bevelled at various angles, or may be rounded, so as to have a strip or ribbon contact rather than a mere line contact with articles whose thickness is within the lower range of capacity of the jaws.

The said jaws may, alternatively, be formed as or on wedge-shaped parts, so as to throw the two gripping faces further into alignment with each other when closed without gripping any object, and to allow the two jaws to have their gripping faces parallel more quickly.

The same result can be achieved without the wedge-shaped parts by having the two pivoted members slightly bent away from one another at the jaw ends.

Each pad 7, on its gripping face, is channelled at 7a on its longitudinal and transverse axis, to receive round-sectioned or other rod-like objects (see FIG. 1), and some or all the gripping faces are serrated or similarly broken to increase the frictional grip.

Rotatably mounted in one of the lever members, near the pivot is a short bar or rod 9 extending laterally from one side of that lever member, and carrying at its free end a flat metal ring 10, this ring lying in a plane at right angles to the general plane of the mutually-pivoted members 1, 2.

As will be seen more clearly from FIG. 3, the laterally-extending rod 9 has a reduced portion 9a passing through the lever member and secured at its extremity by a nut 9b, while a sleeve or bush 9c surrounds the portion 9a between the webs of the lever member. A spring washer 13 is provided so as to give a frictional fixity to the lamp in any adjusted position of the rod 9.

To one side of the said ring 10 is clamped a ring 11 of insulating material carrying a bayonet-type lampholder 12.

The outer edge of the said ring 11 of insulating material is grooved or recessed (see FIG. 2) to receive rotatably a ring 14 which constitutes the rear or smaller end of a tapering wire guard or cage 15 adapted to enclose a lamp carried in the lampholder. The outer end wall 16 of the cage 15 is hinged so as to be movable for insertion and removal of the lamp. The cage is provided with a curved reflector or shield 17 in a known manner.

The top part of the lampholder projects through the said metal ring 10 and is shielded by an open-ended cylindrical wall 18 carried on the ring 10 by its flange 18a. This allows of easy access to the lampholder for wiring up purposes but protects the lampholder against breakage. When the lamp is to be used only with low voltage currents, the shield 18 could be omitted.

Instead of the lateral extension 9 being rotatable in the lever, in a modification it may be a fixture therein, in which case the flat metal ring 10 carrying the lampholder will be rotatably mounted on or about the axis of said extension. In this case also, friction means such as a spring washer will be interposed as a braking means to prevent a too-free rotary movement of the lamp-carrying parts.

As will be seen, the lamp mounting is rotatable about an axis transverse to the lever members 1, 2, and will

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remain in any set angular position. In use, the longer ends of the levers 1, 2 are grasped in the hand and squeezed together so as to open the jaws 7. After passing the open jaws over the article to be gripped, the handles are released, thus allowing the jaws to close on the object, and then the lamp is rotated about the said extension 9 into the required position.

Referring now to FIG. 4, the said flat metal ring 10 is pivotally mounted on the lateral extension at 19, with frictional restraining means, so that an additional adjustment movement may be given to the lamp in a plane which contains said transverse axis.

Although channel-sectioned levers have been described for the parts 1, 2, levers of any other cross-section may be used, and in any case the said rotatable extension 9 may include a radially-displaced part so as to increase the diameter of circle through which the lamp may sweep. Such an arrangement is shown in FIG. 5, where the extension 9 is bent to include a limb 20.

Referring now to FIG. 6, the rigid lateral extension 9, bent as in FIG. 5, carries a stiff flexible conduit 21 on the free end of which the ring lamp holder and cage would be mounted. In such a case, the cable for the electric current could be passed through the flexible conduit and the rigid extension itself could be made hollow for the same purpose.

In the embodiment shown in FIG. 7, a slotted member 22 (which can be of any length) is secured to one side of one of the lever members 1, 2 so as to extend above or outwardly from the pivot. In the slot 23 of this member, any form of lateral extension as previously referred to can be made to slide up and down and be adjusted to desired points, so giving a variable position to the axis of rotation of the lamp mounting with reference to the handles 1, 2. In the precise arrangement illustrated, a rigid straight arm 9 with ring 10 is held in the slot by screw and nut means. The member 22 could, if desired, be placed at other points along the lever member.

The invention may include the feature that one or both said mutually-pivoted members has means for setting its jaw in any one of a number of selected positions, according to the size of the article that is to be gripped. For this purpose, each such member may have an outstanding extension with means for locating a jaw in any one of a series of locating formations on said extension, the arrangement being such that the eventual gripping pressure tends to increase the security of said jaw in the selecting locating formation.

Such arrangement is illustrated in FIG. 8, where the jaw-holding end of the lever 1 is made to extend out at right angles to the main length of the handle, as shown at 23, and the outwardly-turned face is serrated. The jaw 7 is carried by a separate unit 24 which is shaped to encircle the aforesaid outwardly-turned part 23 and carries a pawl 25 to engage the serrations. The unit 24 and its jaw are held in the selected position by means of a screw 26.

This construction allows of a variable jaw gap, which is first set roughly to the size of the object to be gripped, the approach of the jaws towards each other being limited by the pin and slot connection 27. When the handles are squeezed, to open the jaws in relation to each other, they may then enclose the object to be gripped.

FIGS. 9-12 show various forms of jaw mounting. In FIG. 9, the jaws 7 are of wedge shape so as to have their gripping faces parallel when closed, and in FIG. 10, for a similar purpose, the levers 1 and 2 are formed so as to be parallel at the jaw ends when the jaws are closed, the jaws in this case being of block section.

FIG. 11 shows a form of floating jaw which will always lie flat on the object being gripped, whatever its thickness, and in FIG. 12 the jaw is shown adapted for rotation in its own plane so as to be presented to an object either widthwise or lengthwise.

The jaws may be fashioned of rubber neoprene, any

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form of plastic, asbestos, steel, wood or the like. The whole of the assembly, i.e. the pivoted members, the lateral extension, the cage and the ring 10 can be totally insulated by covering them with a plastic or similar insulating material. The cage could itself be a moulding, either in whole or in part.

In some cases, a miniature shade can replace the larger cage shown, and carry a small electric bulb, thus keeping the whole assembly as small and compact as possible, enabling the bulb to be pushed down into very confined spaces, whilst being rigidly held in place by the grip of the jaws some distance away.

What I claim is:

1. A portable lamp bracket for an electric lamp bulb comprising a pair of mutually-pivoted channel-sectioned members carrying opposed gripping jaws at one end, said jaws having opposed flat gripping faces with V grooves therein in two directions at right angles, said members also carrying spring means to urge said jaws towards each other with the grooves of one opposite the grooves of the other, a support member pivotally mounted in the webs of one such channel-sectioned member adjacent the pivot for said members and extending laterally from one of said webs, a ring formation on the outer end of the support member, a disc of insulating material mounted on said ring formation and having an external peripheral groove, a lamp holder carried by said disc within said ring formation and a wire cage rotatably mounted in said peripheral groove with a reflector of arcuate section in said cage concentric with the axis of said lamp holder.

2. A portable lamp bracket comprising a spring clamp of metal with transverse pivot axis, jaws of electrically non-conductive material on said clamp, a metal pivot member in said clamp rotatable on an axis parallel to and close to said transverse axis, a ring formation at one end of said pivot member and a disc of electrically non-conductive material secured to said ring formation concentrically therewith, said disc having a peripheral groove in an exposed outer edge, a lamp holder fixedly carried by said disc at the center of said ring formation, and a wire cage to enclose a lamp when in said lamp holder, said cage including a ring at one end lying rotationally in said peripheral groove and including also a reflector to rotate with it about the axis of said disc.

3. A portable lamp bracket comprising a spring clamp of metal with transverse pivot axis, jaws of electrically non-conductive material on said clamp, a metal pivot member in said clamp rotatable on an axis parallel to and close to said transverse axis, a ring formation at one end of said pivot member and a disc of electrically non-conductive material secured to said ring formation concentrically therewith, said disc having a peripheral groove in an exposed outer edge, a lamp holder fixedly carried by said disc at the center of said ring formation, and a cage of electrically conductive material to enclose a lamp when in said lamp holder, said cage including a ring at one end lying rotationally in said peripheral groove and including also a reflector to rotate with it about the axis of said disc.

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