

June 17, 1952

J. SAKIRSKY

2,600,694

LIGHTING OUTFIT SUBASSEMBLY MACHINE

Filed Sept. 1, 1948

3 Sheets-Sheet 1

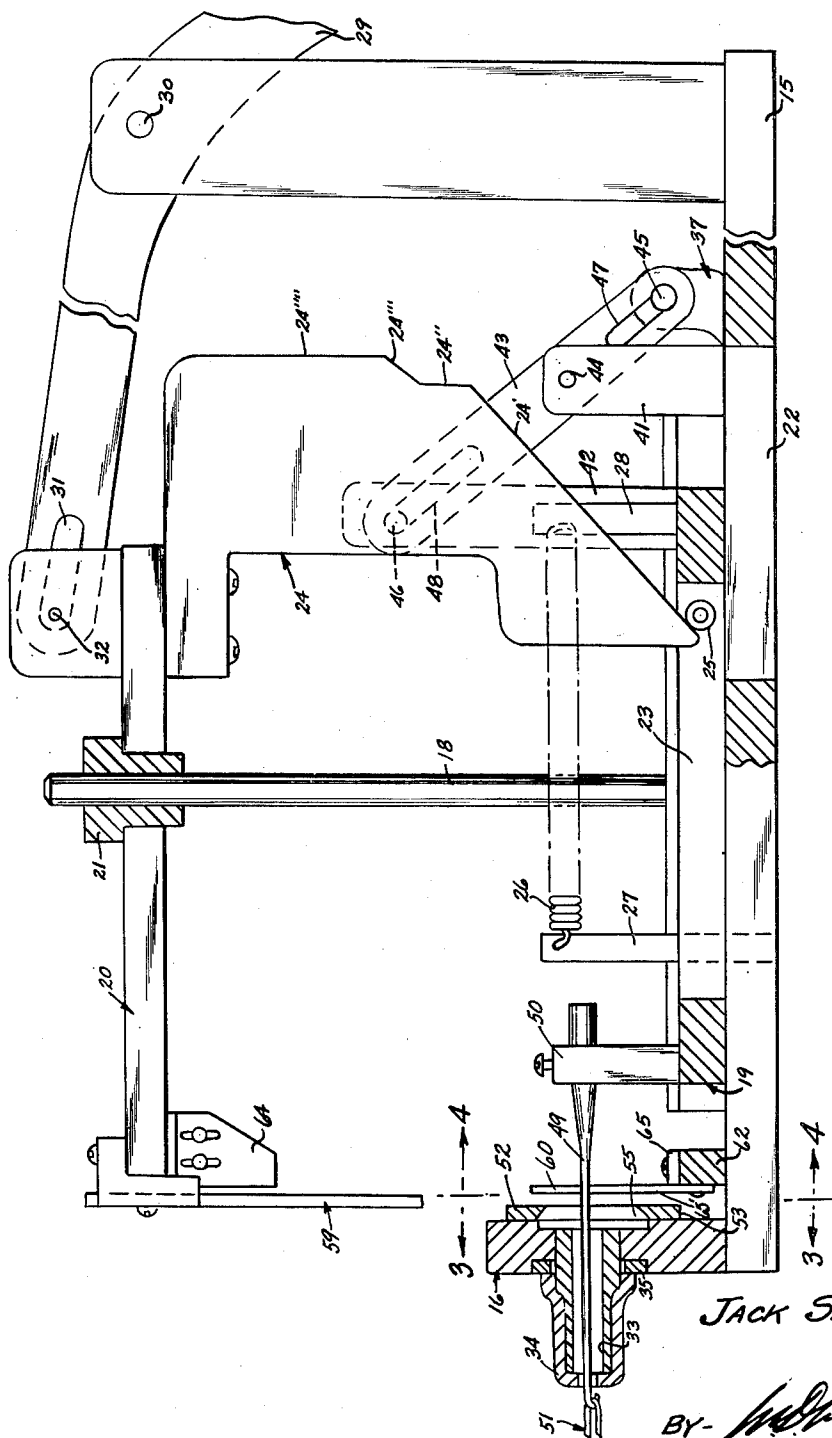


Fig. 1.

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Fig. 2.

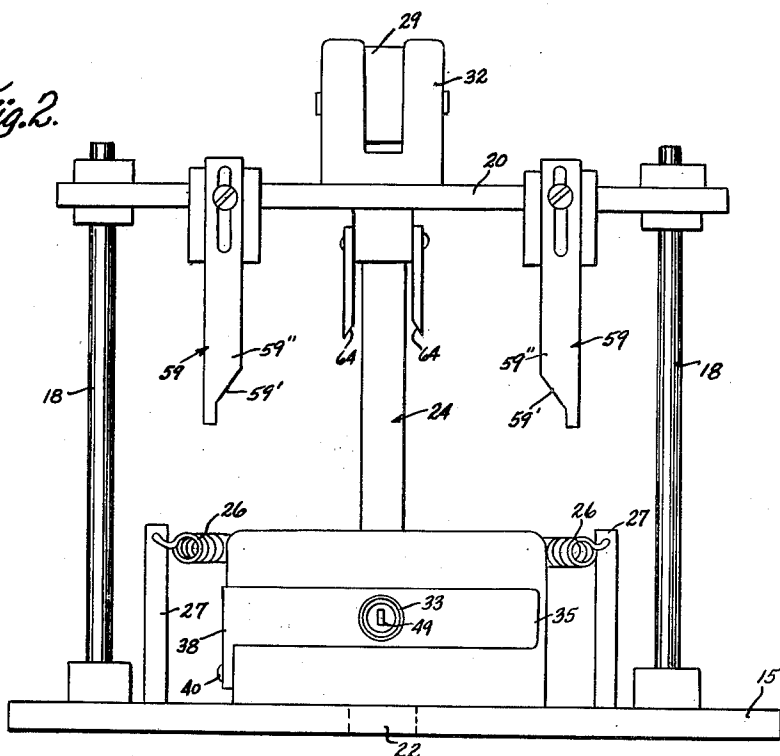
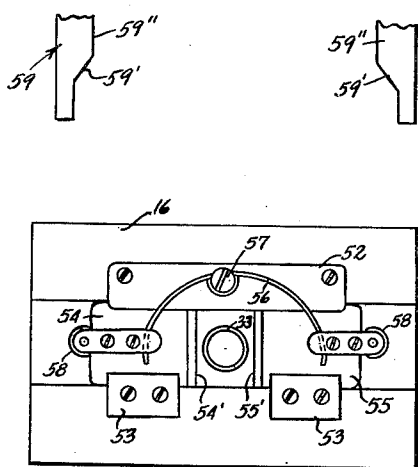
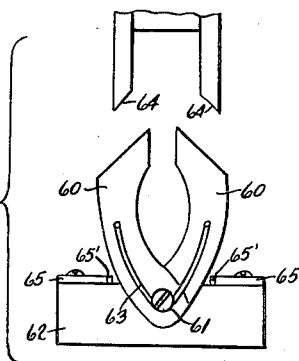


Fig. 3.

Fig. 4.



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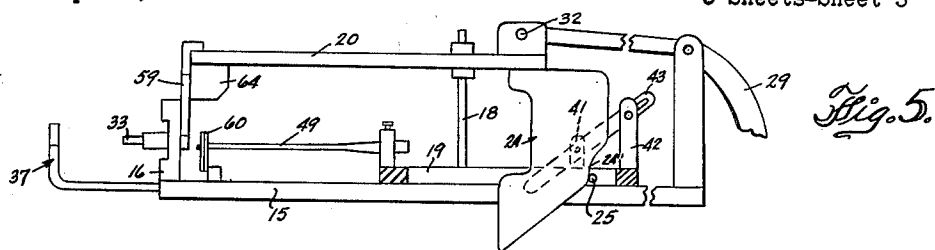


Fig. 5.

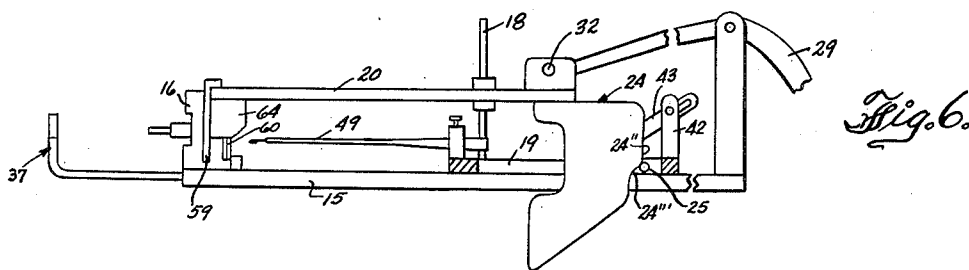


Fig. 6.

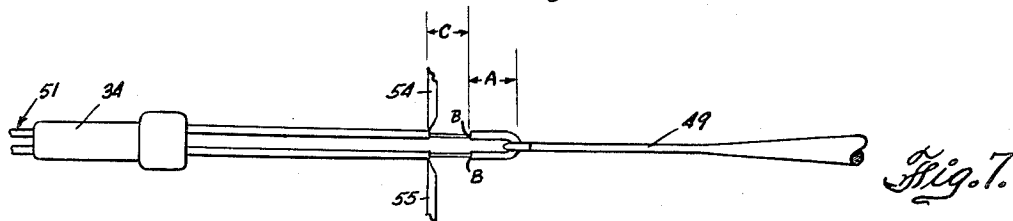


Fig. 7.

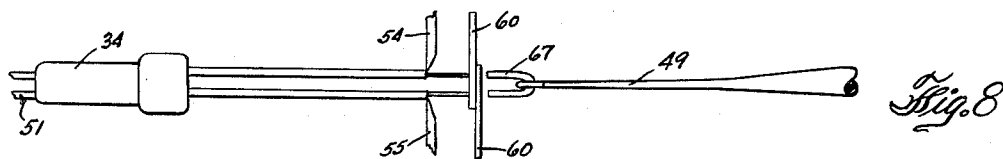


Fig. 8.

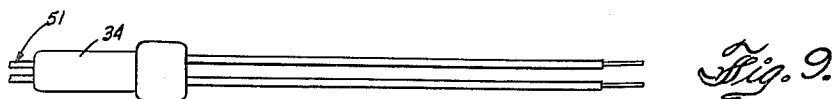


Fig. 9.

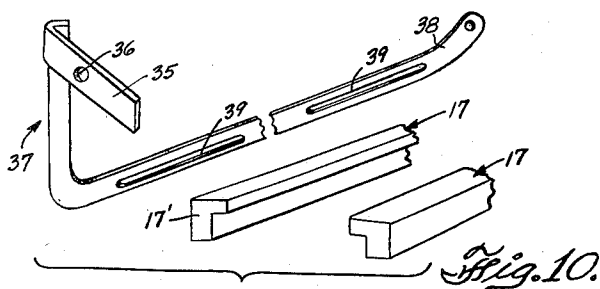


Fig. 10.

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UNITED STATES PATENT OFFICE

2,600,694

LIGHTING OUTFIT SUBASSEMBLY MACHINE

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Application September 1, 1948, Serial No. 47,248

5 Claims. (Cl. 29—33)

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The present invention relates to a machine or device for use in the manufacture of what are commonly known as electric lighting outfits for Christmas trees.

These outfits usually comprise a plurality of spaced lamp sockets electrically associated by lengths of insulated wire with a suitable plug in circuit for connection to a current supply outlet. Each socket includes an outer tubular shell or casing of an insulative material as a plastic or the like, in which contacts for the lamp's terminals are mounted. A pair of wires respectively connected to such contacts, extend out of the shell away from its mouth end.

In the process of manufacture, one of the sub-assemblies preferably attained, is to have the two wires with an end of each stripped of insulation, and positioned threaded through and extending with such ends out of the mouth of the socket casing, ready for soldering or by other suitable means or manner attached to terminals.

The principal object of this invention is to provide a machine of novel and improved construction having a new mode of operation, which by means of a single stroke of an operating member, the aforementioned sub-assembly is automatically accomplished.

Another object hereof is to provide a novel and improved device or mechanism of the character described, which is simple in construction, easy to operate and efficient in carrying out the purposes for which it is designed.

Other objects and advantages will become apparent as this disclosure proceeds.

To attain the objects of this invention, the device operates essentially by taking a wire bent in two or formed in a bight and positioning it through a socket casing whereby the bend in the wire is out of the mouth of the casing. Then portions of each half of the wire near the bend are cleared of insulation and the insulated bend in the wire is cut off.

In the accompanying drawings forming part of this specification, similar characters of reference indicate corresponding parts in all the views.

Fig. 1 is a partially sectional side view of a device embodying the teachings of this invention.

Fig. 2 is a front view thereof.

Fig. 3 is a section taken along lines 3—3 in Fig. 1. In particular, this view shows the rear of a vertical plate mounted fixed at the front end of the base of the device. Means used to clear the insulation off portions of the wire, are here shown mounted on said plate.

Fig. 4 is a section taken at lines 4—4 in Fig. 1.

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Particularly is shown the means used for cutting the bend off the wire after the mechanism illustrated in Fig. 3 has done its work.

Fig. 5 is a view similar to Fig. 1, and shows the relative position of the various parts of the device at operation of the mechanism illustrated in Fig. 3.

Fig. 6 is a similar view showing the relative position of the various parts of the device at operation of the mechanism illustrated in Fig. 4.

Fig. 7 is a diagrammatic view showing the work done by the mechanism illustrated in Fig. 3, and the relative positions of the socket shell mounted on the wire and the wire-pulling hook included in this device.

Fig. 8 is a similar view showing the work done by the mechanism illustrated in Fig. 4, and the relative positions of said socket shell and hook with respect to the wire.

Fig. 9 shows the resulting desired sub-assembly.

Fig. 10 is a fragmentary exploded view showing the member which pushes the socket shell along the wire, and the tracks along which a slide included in this embodiment, moves.

In the drawings, the numeral 15 designates a base having mounted thereon an upright front plate member 16, the rearwardly extending pair of spaced track members 17, and the upwardly extending pair of spaced rod or track members 18. A first slide member indicated generally by the numeral 19, is fitted to slide on the base between the track members 17 in a direction to and from the front plate member 16. A second slide member indicated generally by the numeral 20, fitted with suitable bushings 21, is mounted to slide up and down along the rod track members 18. The base 15 is provided with a slot 22, and the slide 19 with a slot 23; both said slots being aligned, extending in the direction from front to rear of the base, and intended for admission therethrough of a cam plate member denoted generally by the numeral 24, which is mounted extending downwardly from the slide 20. The numeral 25 indicates a roller rotatably mounted on the slide 19, on an axis positioned within the slot 23, for contact with the cam 24. Coil springs 26 connecting posts 27 fixed in the base 15, and posts 28 at the rear of slide 19, act to pull said slide 19 towards the front end of the machine and maintain the contact of said roller 25 with the cam 24.

It is evident that movement of slide 20, will control the movement of slide 19, in a manner of course, determined by the cam 24. Movement of slide 20 along its tracks 18, may be accom-

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plished by any suitable means, electrically by solenoid (not shown) or mechanically for instance by use of a foot lever 29 as in a foot press, where 30 indicates the pivotal support for said lever, and the numerals 31 and 32, the slot and pin connection thereof to the slide 20.

Mounted in a bore through the front frame wall 16, and extending longitudinally forward thereof, is a tubular member 33, adapted to receive thereon a tubular socket casing shell 34, whereby the mouth of said shell is against a pusher arm 35. Hole 36 in said pusher arm is just for clearance of the socket shell supporting member 33. The pusher arm 35 is a portion of the member indicated generally by the numeral 37, whose arm 38 has slots 39 therealong. Screws 40 positioned through said slots and secured in vertical wall 17' of one of the track members 17, serve to mount member 37 for slidable movement along said track member. The numeral 41 indicates a post extending upwardly from the base 15. The numeral 42 designates a post extending upwardly from the slide member 19. A link 43, pivotally mounted intermediate its ends at 44 on the post 41, is pivotally and slidably associated at 45 to the pusher arm structure member 37, and similarly at 46 to the post 42. The numerals 47 and 48 indicate slots at such pivotal connections. It is evident that upon travel of the slide member 19 to the rear, the pusher arm 35 will be moved forward of the frame plate 16, and thus push socket shell 34, forward and off its supporting tube 33.

The slide member 19 carries a forwardly longitudinally extending wire-pulling hook 49 on a post 50. When said slide member 19 is at forward position as shown in Fig. 1, said hook is positioned through the tubular member 33, with its hook end forwardly out of the socket shell 34, so that a bend in a wire indicated generally by the numeral 51, may be placed on said hook. Upon rearward movement of said slide member 19, such engaged wire will be pulled rearwardly through the tubular member 33, and socket shell 34 will be pushed by pusher arm 35, forwardly off said member 33, and onto the wire 51.

Retained in a horizontal channel across the rear surface of the front frame member 16, by the fixed strip members 52 and 53, are a pair of blades 54 and 55 which are slidable in said channel. A spring 56, stressed in torsion when said blades are moved so that sharpened edges 54' and 55' approach each other, is fixed at 57, and engages said blades to maintain them, one at each side of the hole in the tubular member 33. Each of the blades carries a cam follower, which may be a roller 58.

The slide member 20 carries, extending downwardly therefrom, a pair of spaced positioned cam members 59, each of which upon movement of said slide member 20, is adapted to control movement of said blades 54 and 55 respectively. These blades may be called the insulation-slitting blades, because that is one of their functions.

A pair of wire-cutting blades 60, pivoted at 61 on frame block 62, are positioned in a plane parallel to and a little behind the slitting blades 54 and 55. The numerals 60' designate the cutting edges of blades 60, which are maintained apart by a spring 63 stressable in torsion, when said blades are swung so that said blades 60 overlap each other when cams 64, extending from the underside of the slide member 20, are brought downward upon downward movement of said slide member. The elements 65 act as stops to

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limit outward blade movement. The numeral 65' indicates a forwardly extending finger in the path of said blades.

The condition of the machine at rest is shown in Fig. 1, with the insulation-slitting mechanism in the position shown in Fig. 3, and the wire-cutting blades in position as illustrated in Fig. 4.

In operation, by hand, a socket casing shell 34 is set on the tubular member 33, and then the bend in a wire 51, is engaged onto the hook end of 49. The pedal (not shown) positioned at the lower end of the lever 29, beneath the table supporting the machine, is shifted rearwardly by foot of the operator, whereby the cam-carrying slide 20, is moved downwardly. Of course, such table shall have a slot or opening in its top, to admit passage of cam 24 therethrough.

Cam surface 24' slants upwardly and is of such length that upon downward movement of slide member 20, the slide member 19 is slid thereby rearwardly a distance such that portion A of the wire 51 shall be behind the slitting blades 54 and 55. Cam surface portion 24'' is vertical. During contact of the cam roller 25 with said cam surface portion 24'', while the slide member 20 is moving downward, the slide member 19 is at rest. During such rest period of the slide member 19, the upwardly inclined surface cam portion 59' of the respective cams 59, will bring the insulation slitting blades 54 and 55 towards each other so close only to slit the insulation on the wires 51', but not to cut into said wires. It is preferred that this insulation be of material that is compressibly yieldable so that it could be pushed back on the wires 51' so as to clear said wires to the extent such insulation is pushed back.

When cam surface portion 24'' has reached the cam follower 25, the condition of the machine is shown diagrammatically in the Fig. 5, and the wire 51 has been slitted at points B.

When the cam surface portion 24''' reaches the cam follower 25, said insulation slitting is completed, and cam followers 58 on the slitting blades now contact the vertically straight edges 59'', which for continued downward movement of the slide member 20, will hold the sharpened edges 54' and 55' of said slitting blades at the metallic wires 51'.

With cam follower 25 now at cam surface portion 24''', and upon further downward movement of the cam-carrying slide 20, the slide 19 will move rearwardly the distance C, and hence the wires 51' will thus be cleared of insulation which the slitting blades 54 and 55 have pushed back such distance C. The machine is now in condition as shown in Fig. 6.

With the cam follower 25 now at cam surface portion 24''', further downward movement of the slide member 20, will cause no further movement of the slide member 19, because surface 24'''' is vertical. However, cams 64 will cause blades 60 to swing towards each other and overlap, hence cutting through the wires 51' at points B as shown in Fig. 8, whereupon discardable piece 67 will fall off the hook 49, and the required sub-assembly illustrated in Fig. 9, is accomplished.

It is to be noted that with each rearward movement of the slide member 19, the pusher arm 35 is moved forward, whereby the socket casing shell 34 is shifted off the tubular member 33, and forwardly up along the wire 51.

The downward movement of the slide member 20 now being completed, the pedal of lever 29 is brought forward, whereupon the stressed springs

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26, 56 and 63 will restore the machine to original rest condition as in Figs. 1 through 4, and the operation repeated with another, shell 34 and wire 51.

This invention is capable of numerous forms and various applications without departing from the essential features herein disclosed. It is therefore intended and desired that the embodiment shown herein be deemed illustrative and not restrictive and that the patent shall cover all patentable novelty herein set forth; reference being had to the following claims rather than to the specific description herein to indicate the scope of this invention.

I claim:

1. In a machine of the character described, the combination with a frame, of a hook adapted to engage the bight of a bent wire covered by yieldable insulation, a hook holder movably mounted on the frame, carrying said hook extendingly therefrom, an insulation-slitting means mounted on the frame, including a pair of relatively movable blades, a wire-cutting means mounted on the frame, including a pair of relatively movable shearing members; said hook at normal rest position lying between the shearing members of the wire-cutting means, between the blades of the insulation-slitting means and with its hook end extending beyond said blades, and operating-means holding member movably mounted on the frame, means for moving said member to and from a normal rest position on the frame, a first cam means carried on said member, adapted upon movement of said member away from normal rest position, to engage cam follower means on the blades of the insulation-slitting means and bring said blades towards each other, a second cam means carried on said member, adapted upon movement of said member in the direction away from normal rest position, to engage cam follower means on the shearing members of the wire-cutting means and bring said shearing members towards each other, a third cam means comprising four successive cam sections carried on the said member, adapted upon the movement of said member in the direction away from normal rest position, to engage cam follower means on the hook-carrying holder and move said holder during engagement of the first cam section by the last mentioned cam follower means, whereby the hook-end of the hook travels first between the blades of the insulation-slitting means towards the wire-cutting means, then between and beyond the shearing members of the wire-cutting means, then during engagement of the second cam section by said last mentioned cam follower means, halts said hook-carrying holder for a predetermined interval while said first cam means brings the blades of the insulation-slitting means together, then during engage-

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ment of the third cam section by said last mentioned cam follower means, further carries said hook-carrying holder a predetermined distance and finally during engagement of the fourth cam section by said last mentioned cam follower means, again halts said hook-carrying holder while the said second cam means brings the shearing members of the wire-cutting means together, and spring means to urge the blades of the insulation-slitting means and the shearing members of the wire-cutting means yieldingly apart and for restoring the hook holder to normal rest position.

2. A machine as defined in claim 1, including a tubular member carried by the frame and extending therefrom; the hook at normal rest position, being positioned through said tubular member with hook-end thereof exterior said tubular member.

3. A machine as defined in claim 1, wherein the hook holder and the operating means carrying member are slidably mounted; the direction of movement of one being along a line transverse the line of movement of the other.

4. A machine as defined in claim 1, wherein the hook holder and the operating means carrying member are slidably mounted; the direction of movement of one being perpendicular to the direction of movement of the other.

5. A machine of the character as defined in claim 1, including a tubular member carried on the frame and extending therefrom, adapted to receive thereon a tubular socket casing; the hook at normal rest position, lying through said tubular member with hook-end exterior said tubular member, a shifter member moveably mounted on the frame, positioned for movement along said tubular member; the normal rest position of said shifter member being adjacent said tubular member out of which the hook extends and means carried on the frame and connecting said shifter member and one of the holding members, adapted to move the shifter member in a direction opposite the direction of movement of the hook holding member, upon movement of said hook-holding member.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,753,561	Emmert	Apr. 8, 1930
1,787,658	Andren et al.	Jan. 6, 1931
1,998,391	Shaw	Apr. 16, 1935
2,338,508	Hackbarth	Jan. 4, 1944