

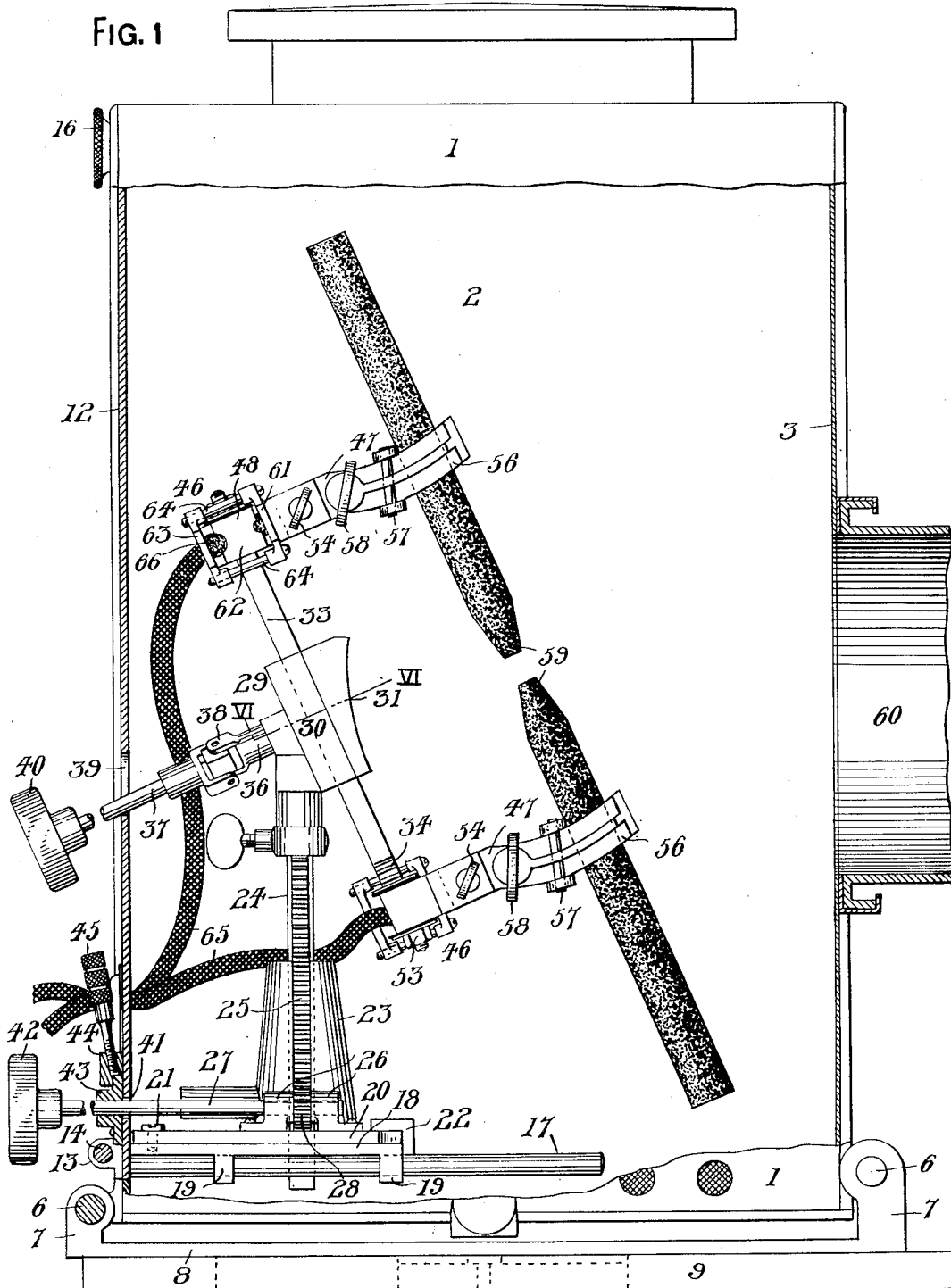
J. H. CROSIER.  
LAMP FOR MOTION PICTURE MACHINES.  
APPLICATION FILED JULY 20, 1910.

1,000,964.

Patented Aug. 15, 1911.

3 SHEETS—SHEET 1.

FIG. 1



WITNESSES

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FIG. 2

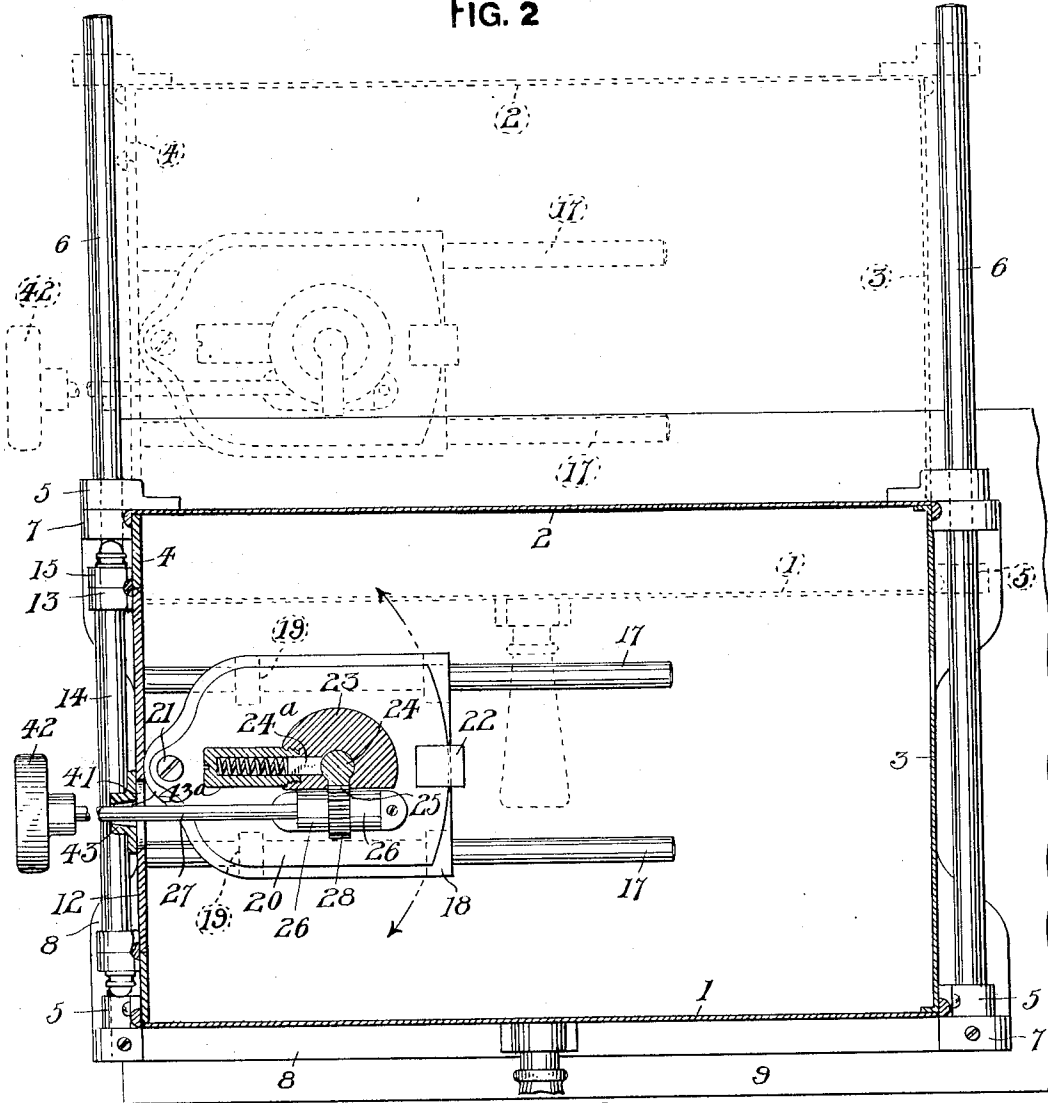
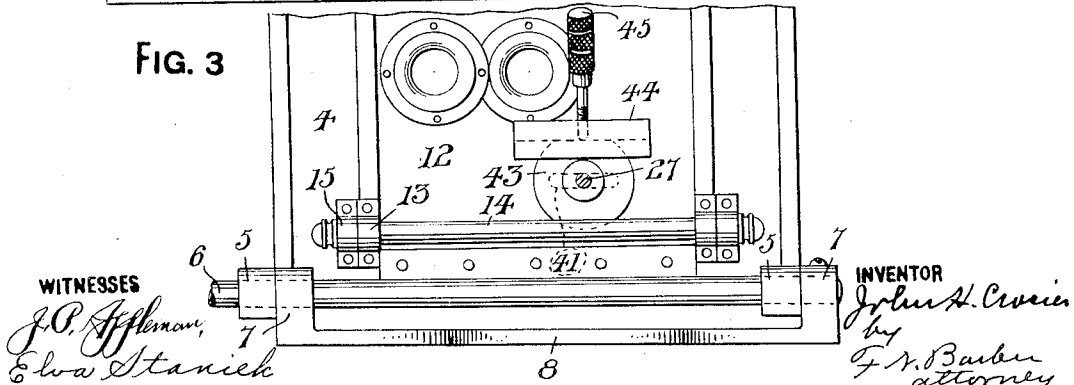


FIG. 3

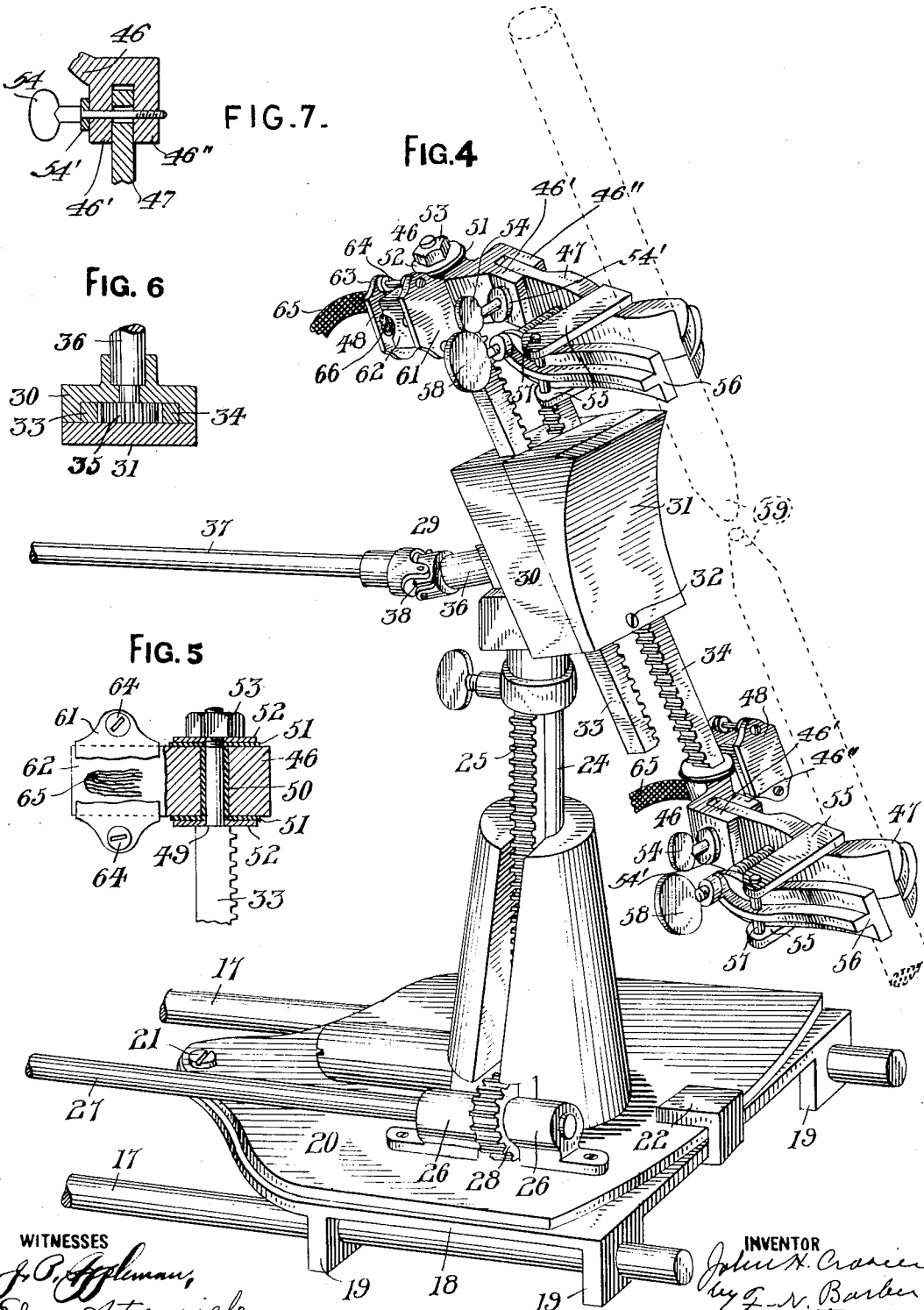


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3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

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TO GEORGE N. POWELL, OF PITTSBURG, PENNSYLVANIA.

## LAMP FOR MOTION-PICTURE MACHINES.

1,000,964.

Specification of Letters Patent. Patented Aug. 15, 1911.

Application filed July 20, 1910. Serial No. 572,861.

### *To all whom it may concern:*

Be it known that I, JOHN H. CROSIER, a citizen of the United States, residing in the city and county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Lamps for Motion-Picture Machines, of which the following is a specification.

My invention relates to lamps designed particularly for motion-picture machines, but it may be applied to various other purposes.

The objects of this invention are to provide a lamp that may be adjusted in various directions very quickly and with a minimum of parts; that may have the carbons readily adjusted both longitudinally and angularly; that may have its carbons securely clamped by a relatively cheap device having but few parts; and that may have the circuit terminals securely clamped and provided with a maximum of contact surface.

Minor objects will appear hereinafter.

Referring to the accompanying drawings, Figure 1 is a vertical section of a lamp casing, partly in elevation, the internal mechanism being shown in side elevation. Fig. 2 is a horizontal section. Fig. 3 is a rear elevation of the lower portion of my lamp, a part being in section. Fig. 4 is a perspective of the internal mechanism of my lamp. Fig. 5 is a detail partly in section and partly broken away, showing my improved terminal clamp or holder. Fig. 6 is a section through the head 29. Fig. 7 is a cross-section showing how the jaw 47 is clamped on the head 46.

On the drawings, 1 and 2 represent the sides of the lamp casing; and 3 and 4, the front and rear ends thereof. The lower portions of the ends 3 and 4 are provided with the perforated ears 5 to slide on the horizontal rods 6, which are supported in the vertical lugs or posts 7, on the horizontal plate 8. The plate 8 is secured to the base 9 by the bolt 10 and nut 11.

The rear end 4 of the lamp casing is provided with the door 12 provided with the ears 13, in which the horizontal rod or hinge-pin 14 rests, the ends of the hinge-pin being supported in the ears 15 on the end 4. 16 represents any form of door locking device.

17, 17 are two horizontal parallel guide rods secured to the lower inner portion of the door 12 and extending forwardly or toward

the front end 3 of the lamp casing. Slidably mounted on the rods is the horizontal carriage 18 having the ears 19, provided with perforations for the said rods. On the carriage 18 I pivotally mount the horizontal plate or carriage 20, having the pivot-screw 21 passing through the plate 20 and into the carriage 18 near the door 12. The front of the plate is made arc-shaped and is guided and held in place by the over-hanging guide 22 secured to the carriage 18.

On the top of the plate 20 and in fixed relation thereto is the pillar or stud 23 having therein a vertical opening for the post or stem or carriage 24, one side of the pillar being slotted vertically to receive the vertical rack 25 on the side of the same. The plate 20 has thereon the two bearings 26, in which is seated the rotary shaft 27, having thereon the pinion 28 in mesh with the rack 25. The rack 25 being in the slot in the pillar prevents rotation of the post 24. 24<sup>a</sup> is a spring-pressed friction brake to hold the post 24 in any desired adjustment.

On the top of the stem 24 is the carbon-adjusting head 29, composed of the fixed section 30 and the cover-section 31 removably secured thereto by the screw 32. Within the head 29 are the two parallel racks 33 and 34 with opposing teeth, the racks meshing with the pinion 35 mounted on the shaft 36 extending through the rear of the head 29. The racks are arranged to incline downwardly and forwardly as shown in Figs. 1 and 4, which causes the shaft 36 to extend downwardly and rearwardly. To the end of the shaft I connect the shaft 37 by means of the universal joint 38. The door 12 is provided with the slot 39 for the shaft 37, which has the operating knob 40 at the rear of the door.

The shaft 27 extends through the horizontal slot 41 in the door 12, the said shaft having at the rear of the door the operating knob 42. The plate or guard 43 having the horizontal slot 43<sup>a</sup>, the slot 43<sup>a</sup> permitting the shaft 27 to oscillate in the slot 41 is sleeved on the shaft 27 and rests against the outer face of the door 12 and covers the slot 41. The upper edge of the plate 43 moves in a recess between the door 12 and the strip 44 secured to the door. A set screw 45 in the strip is arranged to engage the top edge of the plate 43 and lock the shaft 27 in any desired adjustment thereof in the slot 41.

The racks 33 and 34 have each a carbon and a terminal clamp, constructed alike. Therefore, a description of these on one rack 33 will suffice for both racks.

5 The rack 33 has thereon the head 46 to support the fixed carbon clamping jaw 47 and the terminal clamp 48. One end of the rack 33 has its end reduced to form the shoulder 49. The head has therein the sleeve 50 and at each side the washer 51, the latter and the sleeve being composed of insulating material. At the outer side of each washer 51 is the washer 52. The sleeve and the four washers are all slid down on the reduced end of the rack 33 until the lower washer 52 rests on the shoulder 49. The nut 53 is screwed down on the outer end of the reduced portion of the rack 33 and engages the outer washer 52 so as to tightly bind the head 46 to the rack 33. The insulating sleeve 50 and the insulating washers 51 prevent the current in the head 46 from flowing into the rack 33.

The jaw 47 has one end mounted on the horizontal pivot 54 (Fig. 7) and between the forked members 46' and 46'' on the head 46. One end of the pivot is threaded in the member 46'' and passes loosely through the member 46' and the jaw 47. The head of the pivot bears on the washer 54' which surrounds the pivot and rests against the outer face of the member 46'. By turning the pivot 54 in one direction the members 46' and 46'' are drawn toward each other so as to clamp the jaw 47 tightly between them. By turning the pivot in the opposite direction the jaw 47 is released so that it may be moved up or down to obtain the required adjustment, when it is again clamped by again reversing the rotation of the pivot 54. The jaw 47 carries the ears 55 between which the movable member 56 of the carbon-clamping jaw is pivoted on the pin 57. The jaw 56 is provided at the rear end thereof with the clamping screw 58 which works through this jaw and engages the inner face of the jaw 47, so that the rotation of the screw 58 in the proper direction may clamp the carbon 59 tightly between the forward ends of the jaws 47 and 56. The heads 46 on the racks 33 and 34 are arranged so as to cause the carbons 59 to be substantially in line, the pivots 54 permitting slight adjustments to make the carbons properly oppose each other.

The front or cover section 31 of the head 29 is seated directly back of the arc-gap between the carbons and highly polished so as to reflect the arc light through the lamp aperture 60 and through the picture-films of the motion-picture machine seated in front of the lamp.

The head 46 carries the metal plate 61, the extension 62 of the head 46, and the

plate 63 all clamped together by the screws 64, the part 62 being between the plate 61 and the plate 63. The electric conductor 65 has its end passed through the head 62 and spread out thereon, as shown in Fig. 5, where it is engaged by the inner face of the plate 61.

On Fig. 2, I have shown in dotted lines the lamp moved to one side of its normal position, so that it will be out of line with the film in the exhibiting machine (not shown). With the lamp in the dotted position there is no danger of setting the film on fire.

By my invention, I can by opening the door 12 swing the entire mechanism of the lamp outside of the casing where it can be reached for repairs or other purposes. When the door is closed the knob 42 is accessible. By rotating it, the stem 24 can be raised or lowered so as to bring the arc and reflector to the desired level. By pushing or pulling the knob 42, the carriage 18 and consequently the arc and reflector are moved horizontally toward or away from the film so as to bring the arc into the desired position. By swinging the shaft 27 the plate 20 is caused to swing on the carriage 18, thereby causing the reflector on the head 29 and the arc to be moved angularly into the desired place. The universal joint 38 permits the head 29 to partake of the described three adjustments without disturbing the shaft 37, and also permits the shaft 36 to be turned at all times.

Although I have described the preferred form of my invention in considerable detail, I do not desire to be restricted to the precise elements and their combinations shown and described.

I claim—

1. In a lamp, a carriage movable rectilinearly in a horizontal direction, a second carriage mounted to oscillate in a horizontal direction on the first carriage, a third carriage having a vertical rack supported by the second carriage, a light-emitting device mounted on the third carriage, a rotary shaft mounted on the second carriage, and a pinion carried by the shaft and geared to the rack.

2. In a lamp, a casing having a horizontal slot therein, a carriage located in the casing and having oscillatory movement, a vertically movable light-emitting device supported by said carriage, a shaft connected to the carriage and extending out through and horizontally oscillatory in the said slot, and connections between the carriage and the light-emitting device for moving the latter vertically.

3. In a lamp, a casing having a horizontal slot therein, a carriage located in the casing and having oscillatory movement, a light-emitting device supported by said carriage,

a shaft connected to the carriage and extending out through the said slot, and means for locking the shaft in the slot.

5 4. In a lamp, a casing having a horizontal slot therein, a carriage located in the casing and having oscillatory movement, a light-emitting device supported by said carriage, a shaft connected to the carriage and extending out through the said slot, a guard

plate carried by the shaft, and a set-screw 10 to engage the guard-plate and lock the shaft in the slot.

Signed at Philadelphia, Pa., this 14th day of July, A. D. 1910.

JOHN H. CROSIER.

Witnesses:

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N. R. WOOD.