(No Model.)

C. T. HAM.

HEAD LIGHT.

No. 251,680. Patented Dec. 27, 1881.

Fig. 3.

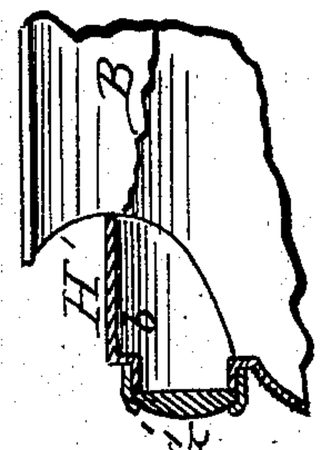


Fig. 4.

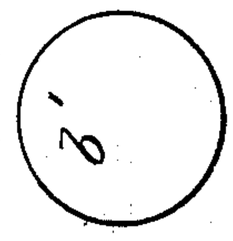


Fig. 2.

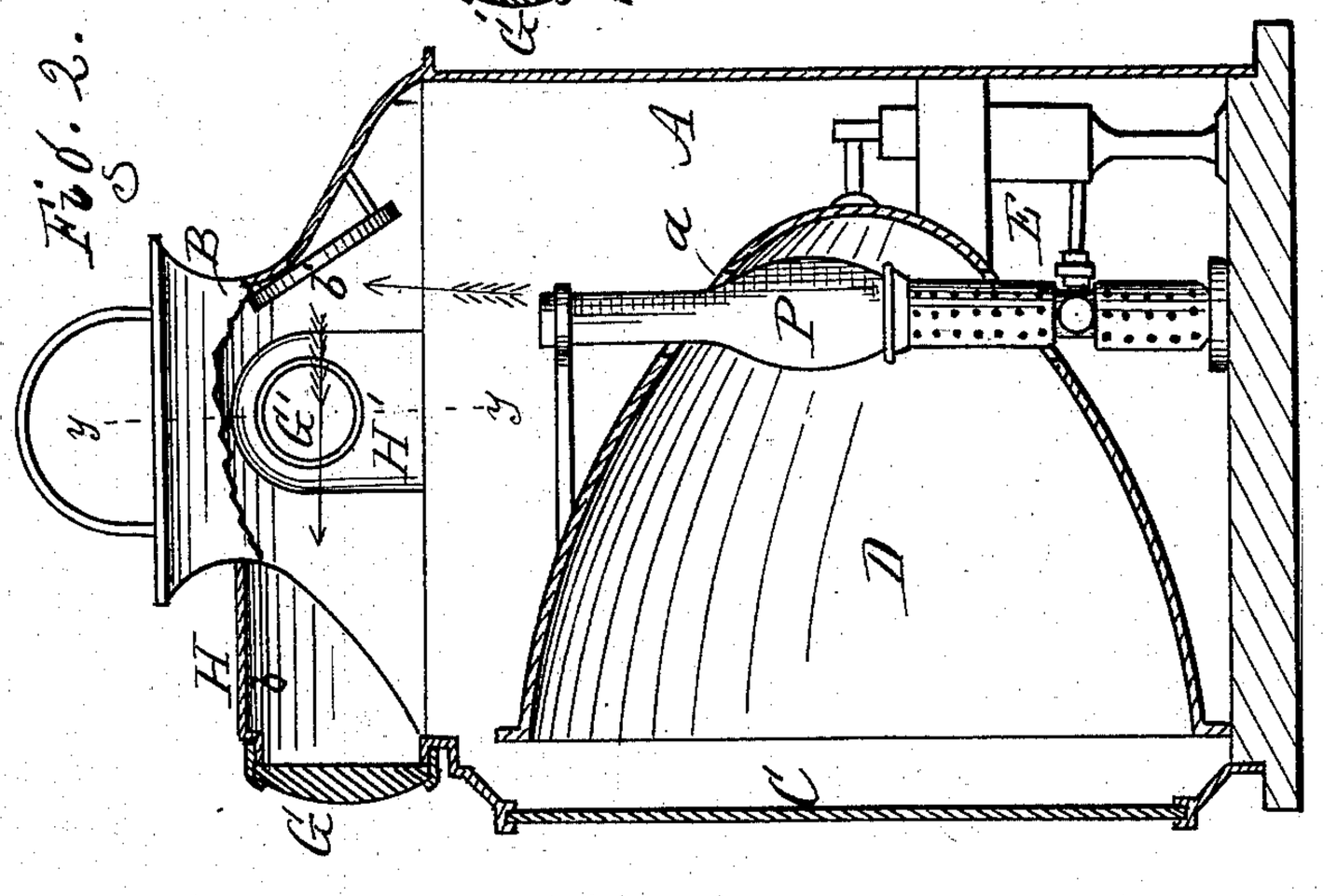
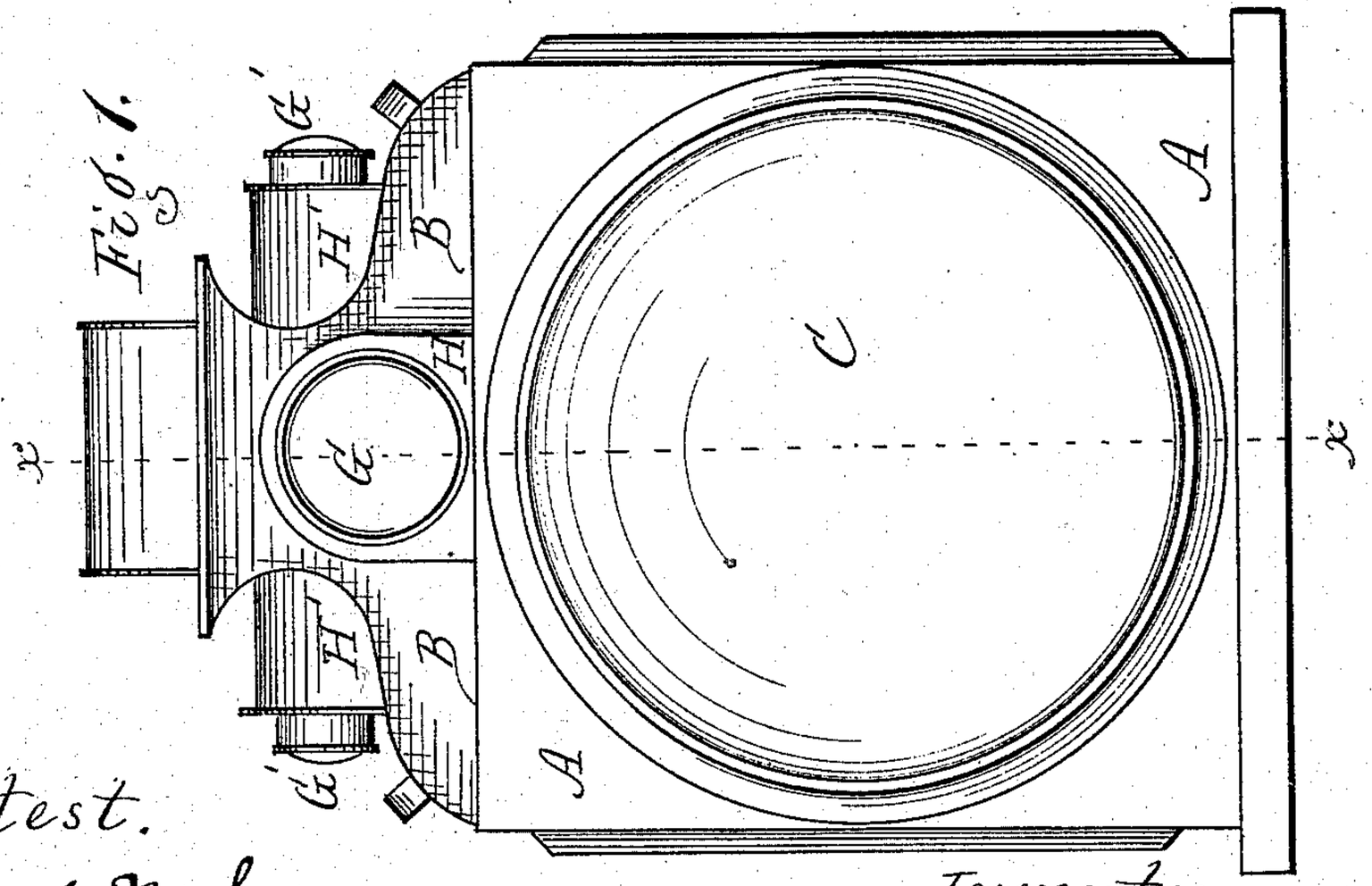


Fig. 1.



Attest.

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UNITED STATES PATENT OFFICE.

CHARLES T. HAM, OF ROCHESTER, NEW YORK, ASSIGNOR OF ONE-HALF TO F. DE WITT CLARKE, OF SAME PLACE.

HEAD-LIGHT.

SPECIFICATION forming part of Letters Patent No. 251,680, dated December 27, 1881.

Application filed December 30, 1880. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. HAM, of Rochester, Monroe county, New York, have invented a certain new and useful Improvement in Head-Lights; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of the head-light. Fig. 2 is a vertical cross-section in line *x x* of Fig. 1. Fig. 3 is a section in line *y y* of Fig. 2. Fig. 4 is a view of the supplemental reflector.

My improvement relates to what is known as "signal head-lights," in which a colored lens is used through which the light passes to indicate that another train is following.

The invention consists in the construction and arrangement of parts hereinafter more fully described.

In the drawings, A represents the casing of the head-light. C is the front glass. D is the main reflector. E is the lamp; and P is the chimney, passing through an opening, *a*, in the reflector, the whole being arranged in the ordinary manner.

My improvement is as follows:

B is a dome, which is built on top of the ordinary casing, the same being of ornamental form, as shown.

H H′ H′ are tubular extensions, built out from the narrow part of the dome and standing horizontally. The dome and the tubular extensions resemble the second story and the dormer-windows of a house.

G G′ G′ are colored bull's-eyes set in the outer ends of the tubular extensions, and constituting the signal-lenses. One of these bull's-eyes is set in the front of the dome and two on the sides, as shown. The curved upper sides of the extensions are burnished, as shown at *b b*, for the purpose of reflecting the light. The light passes into the dome through the open top of the chimney and the opening *a* in the main reflector, through which the chimney passes, and is of sufficient intensity to illuminate the whole dome. To produce a greater amount of light, however, through the front bull's eye, G, a small plain supplementary reflector, *b′*, is placed directly above the top of the chimney in the dome, and is set at such an angle that the intense light which falls upon it from the top of the chimney and the opening *a*, in which the chimney rests, is reflected directly through the bull's-eye G, as indicated by the arrows in Fig. 2, thereby making an intense illumination of the bull's-eye and sufficient for all signaling purposes.

The advantage of locating the bulls'-eyes in the tubular extensions in the dome is that the signals are placed so high that they can be readily distinguished from and will not be confounded with the main head-light. They also obtain much more light than where they are simply located in the sides of the main case. They can also be made of much larger size than usual. A direct front signal-light as well as side signal-lights can be used at once, which cannot be when located in the main case. The supplemental reflector above the chimney is an effective means for producing a brilliant signal-light.

I am aware that side signal-lenses have been used in the main case; also, that small bull's-eyes have been placed in the sides or edges of the rim of the main reflector and in the narrow space above; also, that a colored swinging lens has been arranged so as to swing down in front of the main reflector. Such I do not claim.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a head-light, the dome B above the main case, provided with tubular extensions H H′ H′, like dormer-windows, with bull's-eyes G G′ G′ at the outer ends of the extensions, whereby the signal-lights are located in a story or section above the main light.

2. In a head-light, the combination of the main reflector D, the supplementary reflector *b′*, located directly above the chimney, and the bull's-eye G, located above the main light, the supplementary reflector serving to reflect the rays that strike it to the bull's-eye, as herein shown and described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CHARLES T. HAM.

Witnesses:

R. F. OSGOOD,

JOHN H. HOPKINS.