

(No Model.)

C. H. KOYL.
SEMAPHORE SIGNAL FOR RAILWAYS.

No. 410,599.

Patented Sept. 10, 1889.

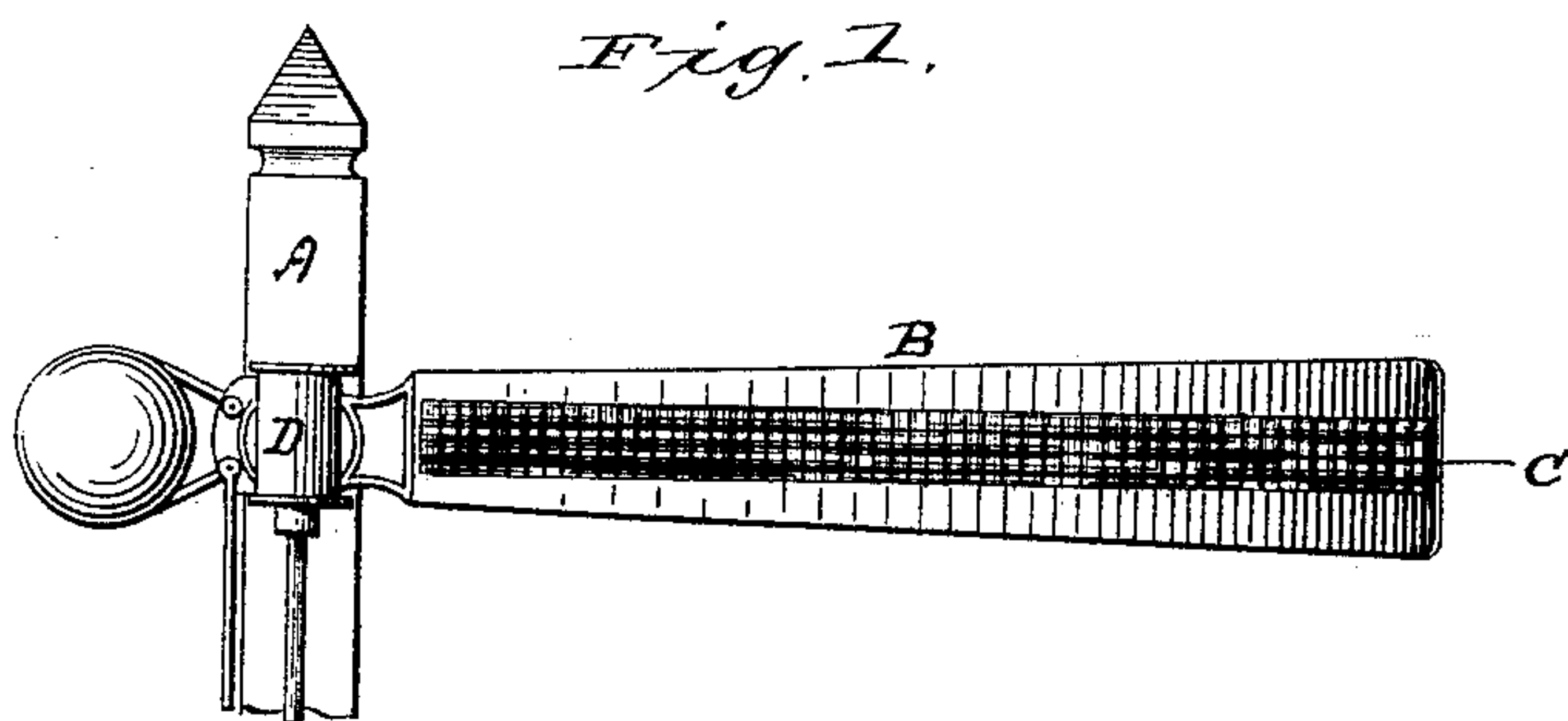


Fig. 3.

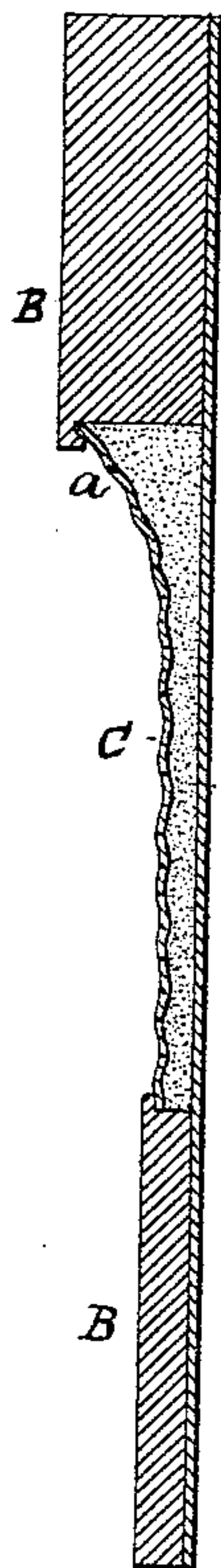
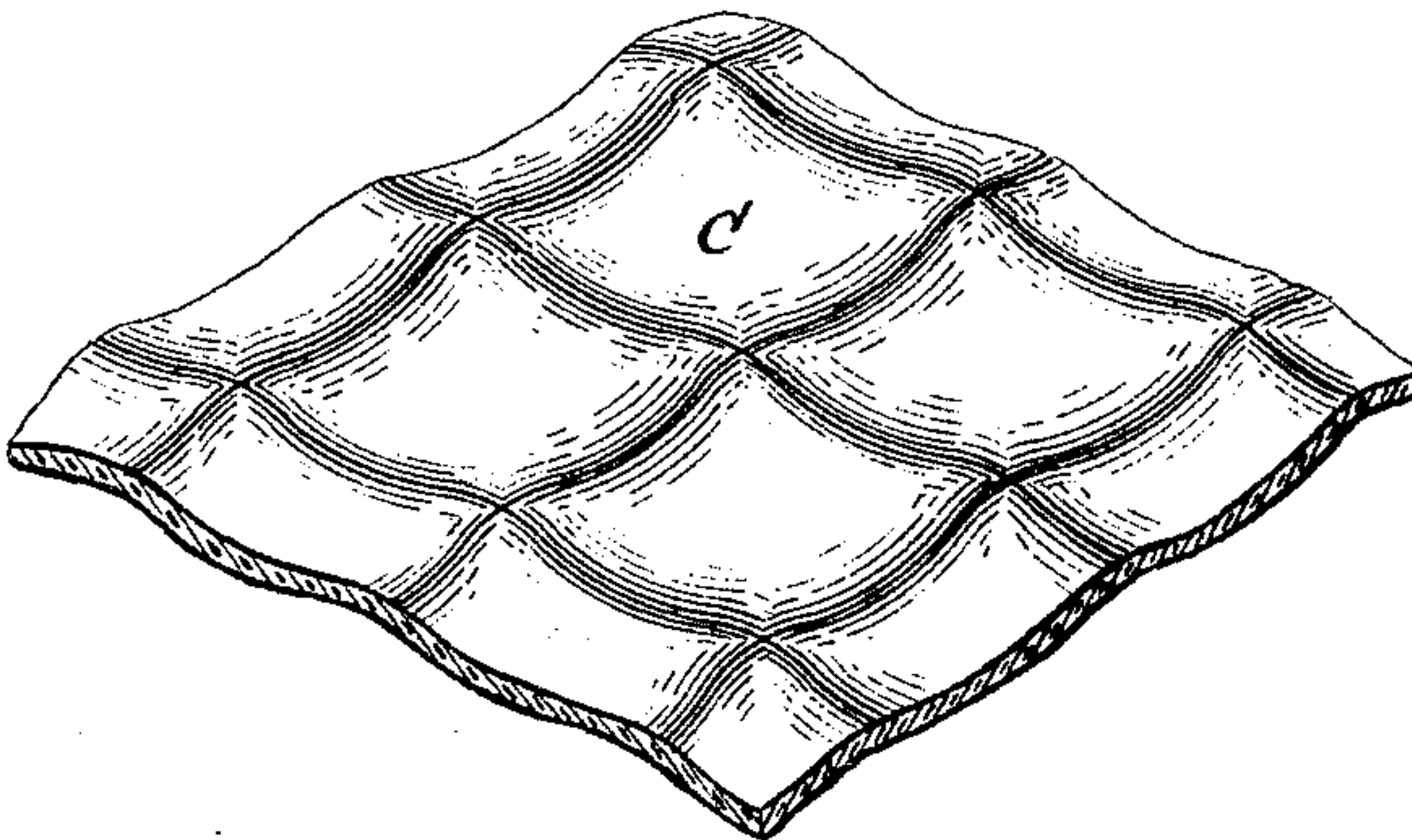


Fig. 2.



Witnesses

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CHARLES HERSCHEL KOYL, OF PHILADELPHIA, PENNSYLVANIA.

SEMAPHORE-SIGNAL FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 410,599, dated September 10, 1889.

Application filed July 16, 1889. Serial No. 317,737. (No model.)

To all whom it may concern.

Be it known that I, CHARLES HERSCHEL KOYL, of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Semaphore-Signals for Railway and other Uses, of which the following is a specification.

My invention relates to that kind of semaphore-signal embraced in my Letters Patent of the United States, No. 384,170, dated June 5, 1888, viz: a signaling apparatus comprising, essentially, a reflector having the shape of the segment of a paraboloid rotatable about an axis coincident with the axis of the paraboloid of which the reflector is a segment and a lamp or other source of light located at the focal point of said paraboloid.

In the practical use of this kind of semaphore-signal it has been ascertained that while it is exceedingly efficient at long distances, yet when it is closely approached the observer gets out of range of the reflected rays, which pass above and beyond him, the consequence being that the signal at close range is not distinct, and, indeed, is so obscure at times as not to be easily seen. This is a feature which is criticised, not without reason, by train-men, and particularly by the locomotive-engineers, who prefer, in coming to a standstill, to run their engines as close up to and under the signal as is practicable, but who in so doing reach a point where the reflected rays are not perceptible, and consequently where changes in the position of the semaphore are not easily discernible at night. To remedy this is the object of my invention, to which end I provide along the upper edge of the paraboloidal reflecting-surface an overhang or hood, which forms part of and in effect a continuation of such reflecting-surface, and which acts to deflect rays directly downward, or nearly so, whereby there is made visible to one closely approaching the semaphore at night a band of light by which the position of the semaphore can be determined and its movement readily ascertained and followed, this reflecting overhang or hood being so formed that it does not in any way interfere with or detract from the usefulness of the paraboloidal reflecting-surface for long-distance signaling.

The nature of my invention and the manner in which the same is or may be carried into effect will be readily understood by reference to the accompanying drawings, in which—

Figure 1 is a front elevation of the semaphore-arm and upper part of post on which the same is mounted. Fig. 2 is a view, on enlarged scale, of a part of the reflecting-surface, having a double wave surface, this being the preferred form of surface. Fig. 3 is a transverse vertical section, on enlarged scale, of the semaphore-arm, showing the downwardly-deflecting overhang or hood.

In the drawings, A is the semaphore-supporting standard or pole. B is the semaphore-arm, having the reflector C (usually glass with a silvered back) formed as a segment of a paraboloid, said arm being pivoted upon an axis coincident with the axis of the paraboloid, and D is the lamp or other source of light, all as in my aforesaid Letters Patent.

The overhang or hood hereinbefore referred to is indicated at *a*. This device may be made separately from the paraboloidal reflecting-segment C; but I prefer and find it more convenient, on many accounts, to form it in one with the segment, to which end the segment may be made of sufficient width and dimensions to permit it to be bent over along its upper edge to such extent and with such curve or at such inclination as to make this part (which, like the rest of the segment, is of silvered glass, preferably) a reflector which will cast the reflected rays downward, so that it shall be visible as a band of light to an observer below at a very short distance from the foot of the standard.

This reflecting overhang or hood is applicable not only to a plain-surfaced paraboloidal reflecting-segment such as described in my aforesaid Letters Patent, but also to a paraboloidal reflecting-segment impressed with corrugations or waves, as set forth in my application for Letters Patent, Serial No. 313,336, filed June 6, 1889.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

In a semaphore signaling apparatus, a reflector having the shape of a paraboloidal

segment formed or provided along its upper
edge with a downwardly-reflecting overhang
or hood and rotatable about an axis coinci-
dent with that of the paraboloid, in combina-
5 tion with a lamp or other source of light lo-
cated at the focal point of the paraboloid, sub-
stantially as and for the purposes hereinbe-
fore set forth.

In testimony whereof I have hereunto signed
my name this 12th day of June, A. D. 1889.

CHARLES HERSCHEL KOYL.

Witnesses:

OLIN ROHN,
H. B. SILSBEE.