

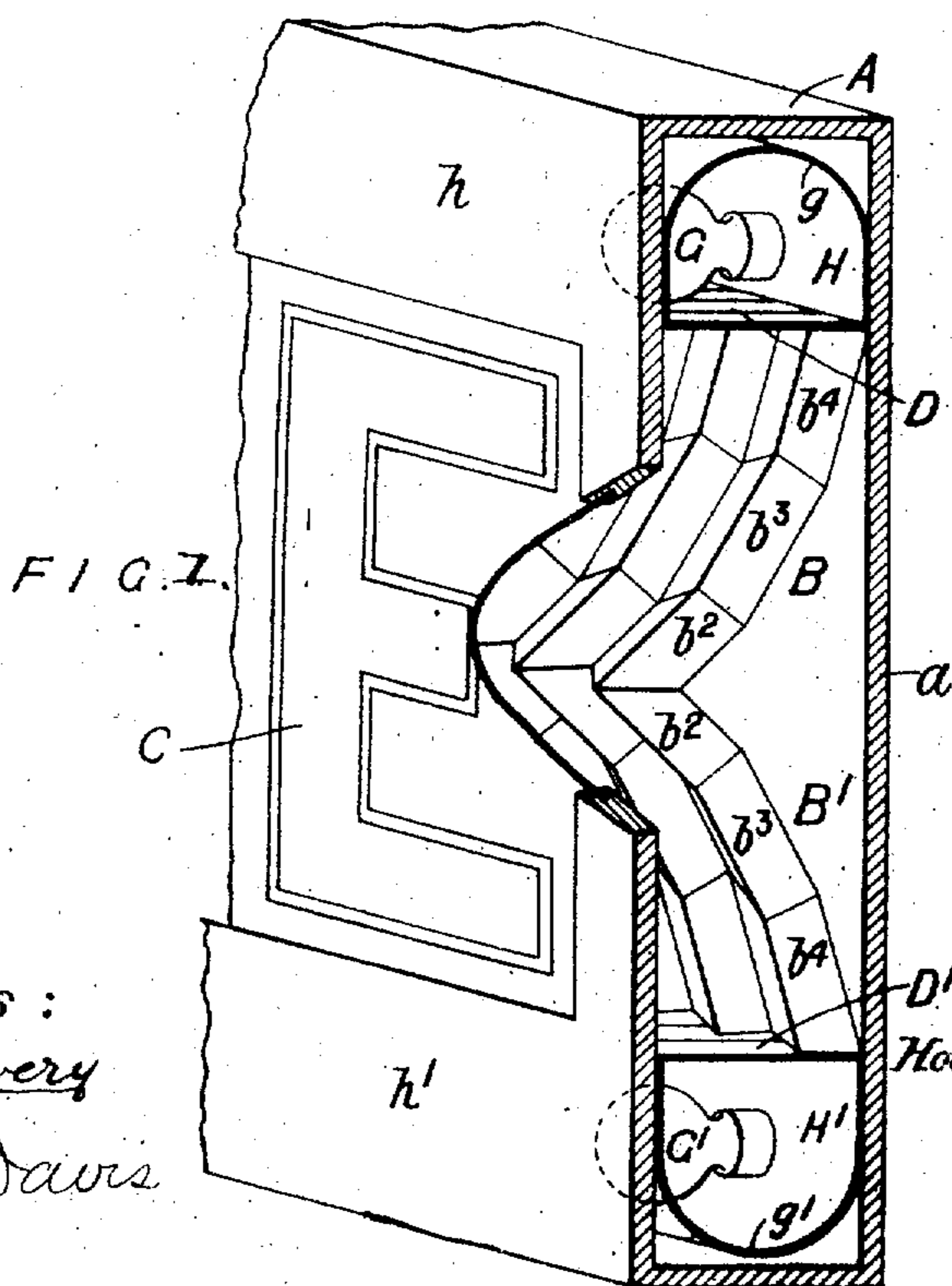
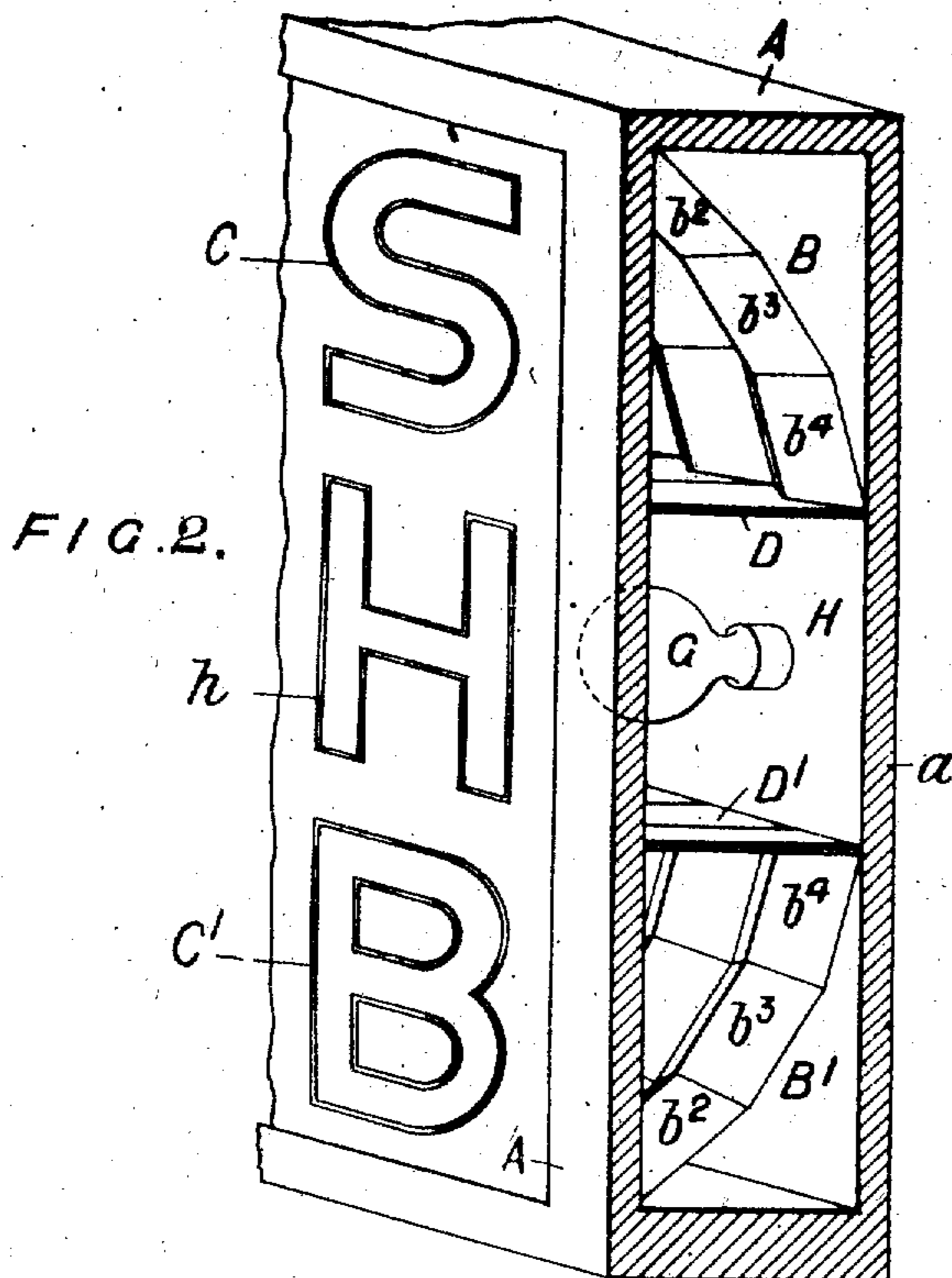
No. 859,199.

PATENTED JULY 9, 1907.

H. W. CHINNERY.  
APPARATUS FOR DISPLAYING ILLUMINATED MULTICOLORED SIGNS  
OR ADVERTISEMENTS.

APPLICATION FILED FEB. 15, 1905.

4 SHEETS—SHEET 1.



WITNESSES :

*H. M. Avery*

*A. C. Davis*

INVENTOR

*Howard William Chinnery*

BY

*Wm. M. Chinnery*  
ATTORNEYS

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4 SHEETS—SHEET 2.

Fig. 5.

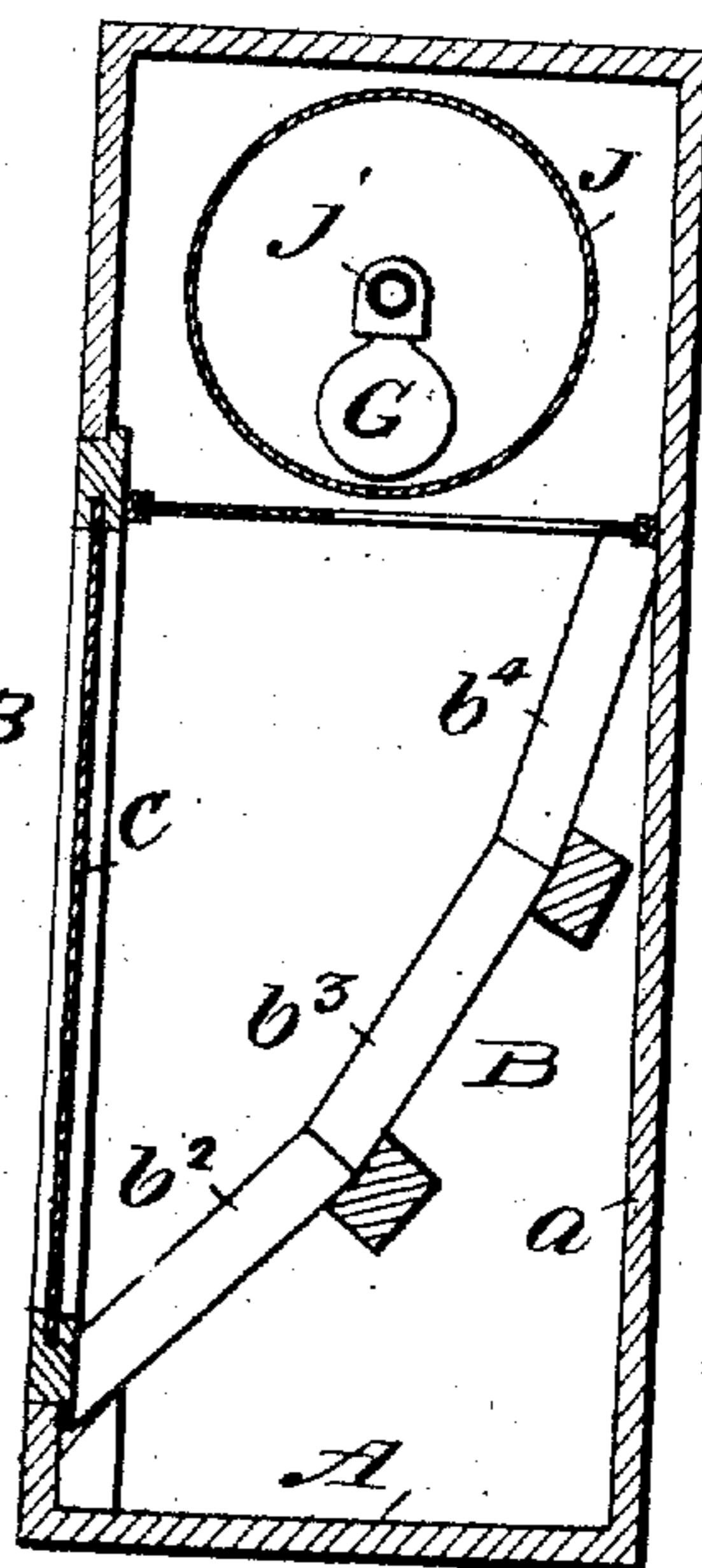


Fig. 4.

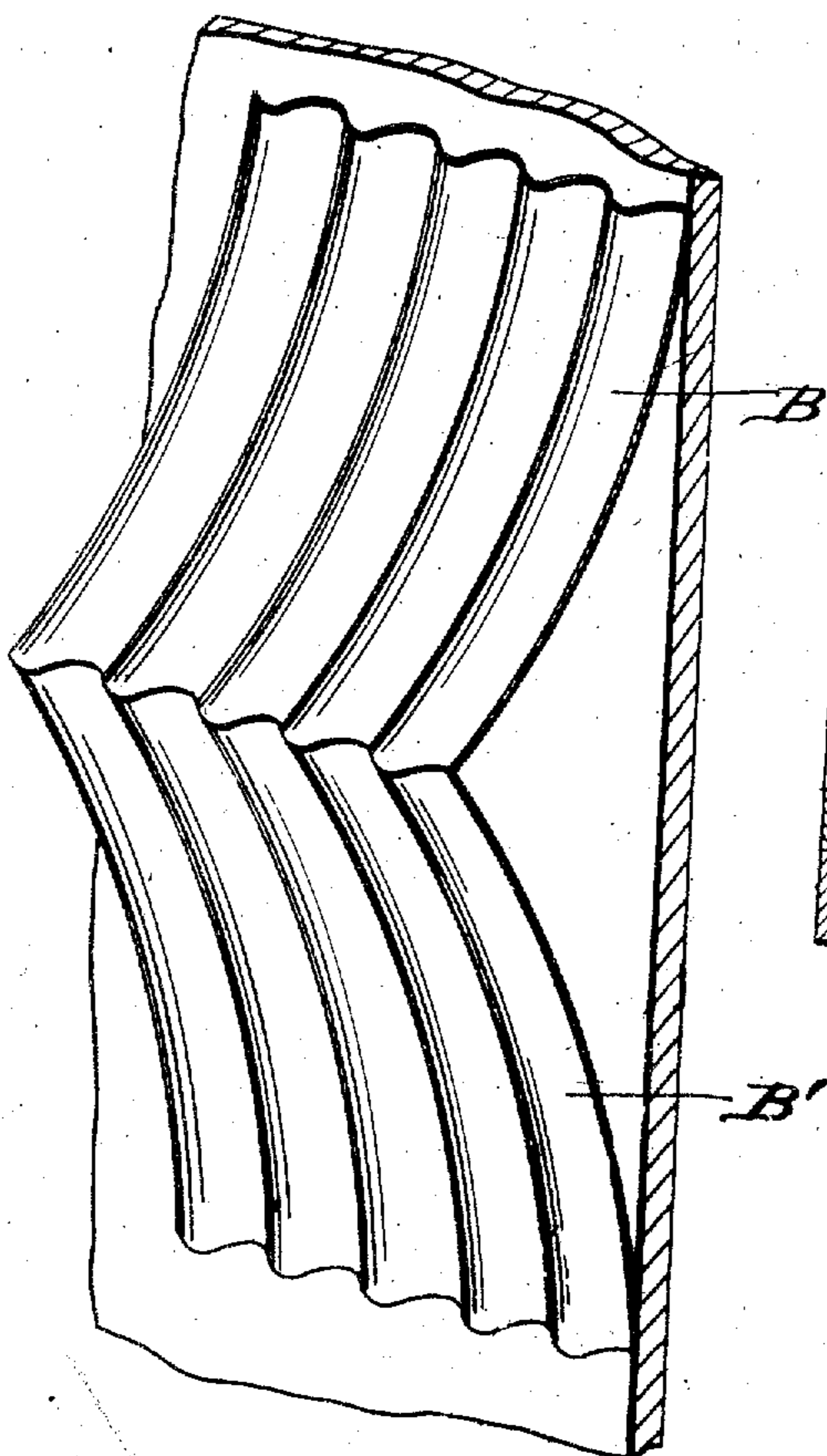
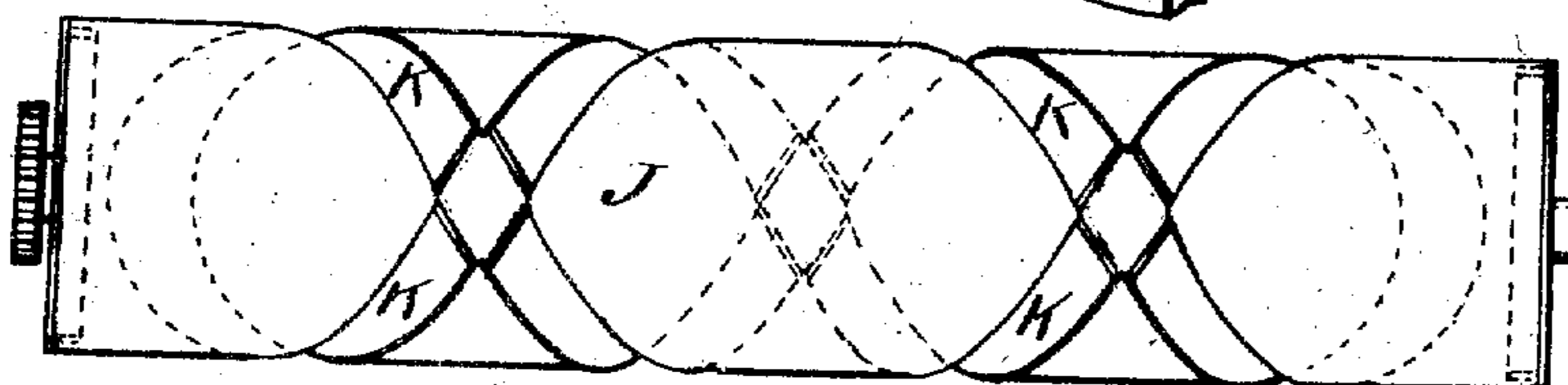


Fig. 3.



Fig. 6.



WITNESSES

*W. M. Avery*

*A. H. Davis*

INVENTOR

*Howard W. Chinnery*

BY

*Munn & Co*

ATTORNEYS

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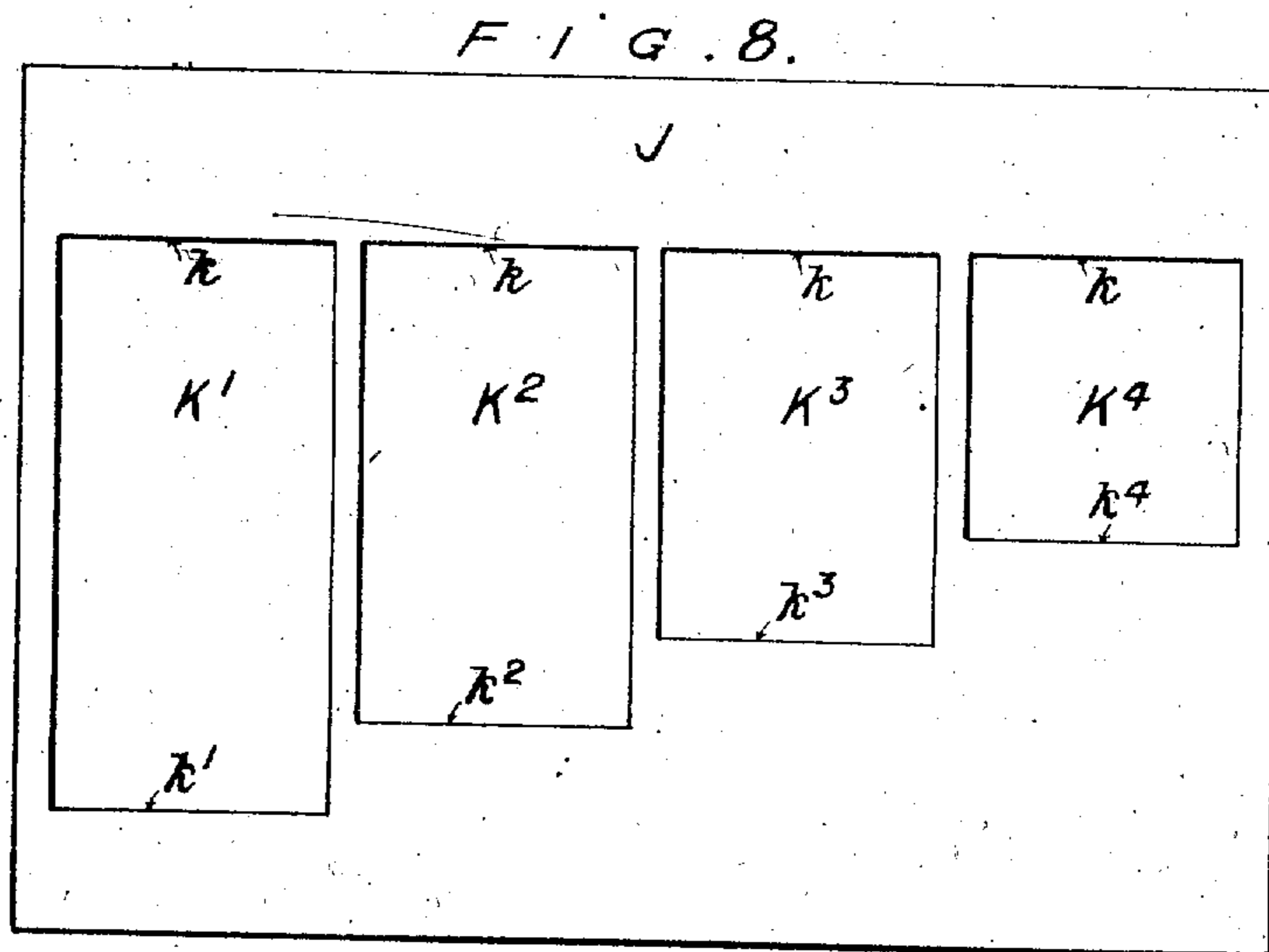
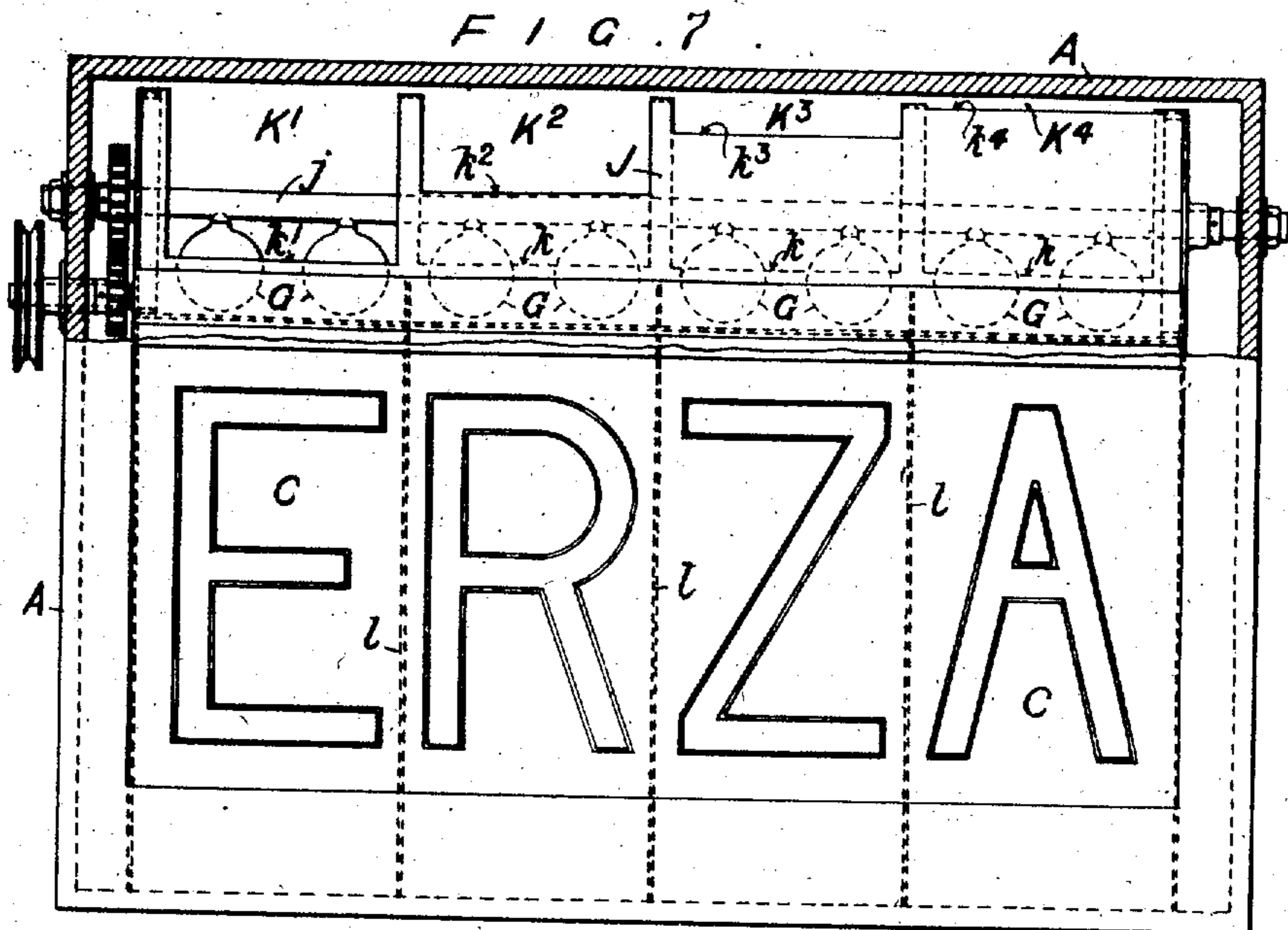
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4 SHEETS—SHEET 3.



WITNESSES:

*W. M. Avery*

*A. H. Davis*

INVENTOR

*Howard William Chinnery*

BY

*M. M. M.*

ATTORNEYS

No. 859,199.

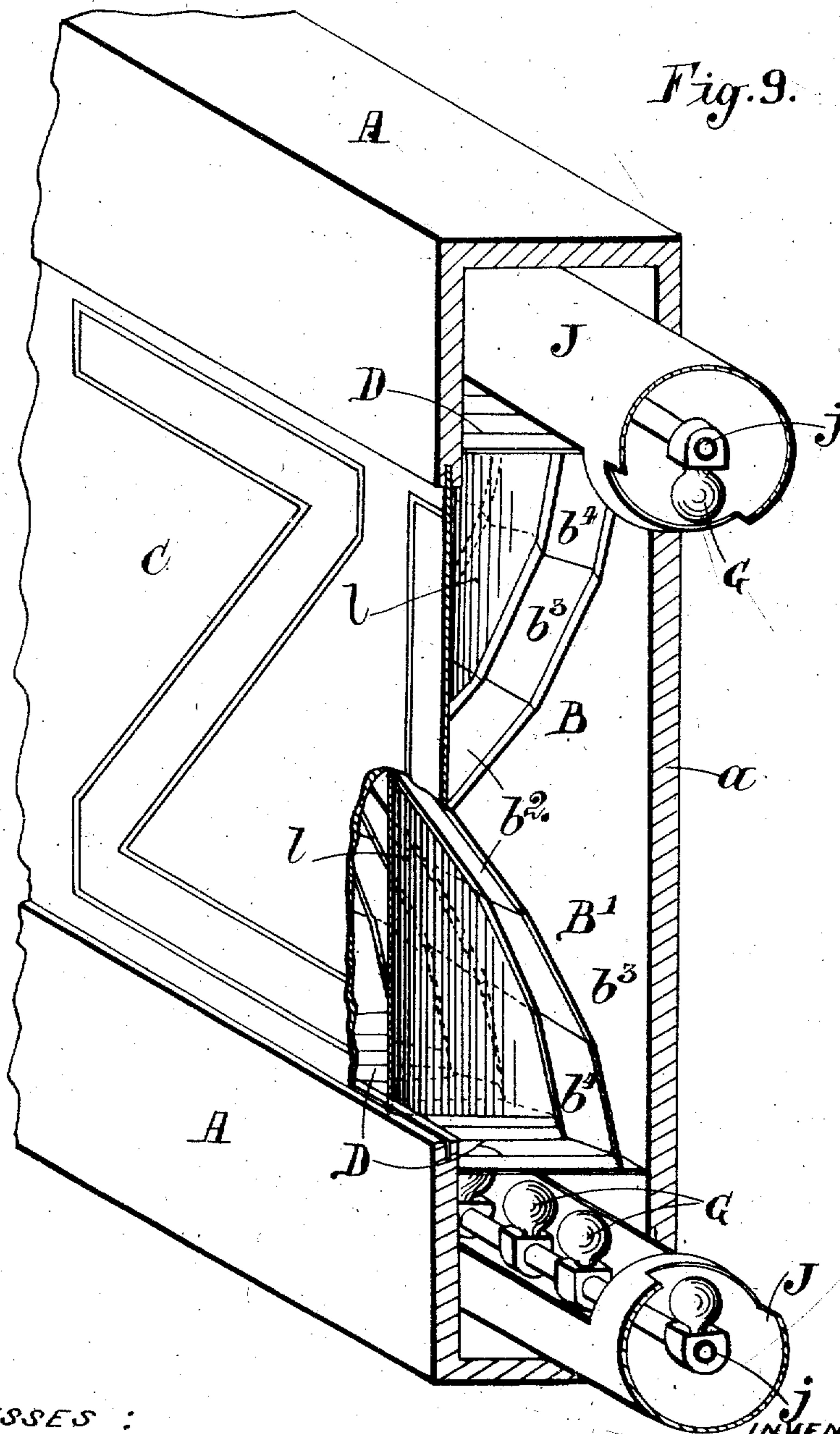
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4 SHEETS—SHEET 4.



WITNESSES :

W. M. Avery

A. H. Davis

INVENTOR  
Howard W. Chinnery

BY

Munro

# INTERALFYS

# UNITED STATES PATENT OFFICE.

HOWARD WILLIAM CHINNERY, OF LEYTONSTONE, ENGLAND.

## APPARATUS FOR DISPLAYING ILLUMINATED MULTICOLORED SIGNS OR ADVERTISEMENTS.

No. 859,199.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed February 15, 1906. Serial No. 245,711.

To all whom it may concern:

Be it known that I, HOWARD WILLIAM CHINNERY, a subject of the King of Great Britain, residing at 118 Millais road, Leytonstone, in the county of Essex, England, photographer, have invented certain new and useful Improvements in Apparatus for Displaying Illuminated Multicolored Signs or Advertisements, of which the following is a specification.

My invention is an improvement in apparatus for displaying illuminated multi-colored signs, or advertisements, wherein a stencil bearing the inscription or design to be exhibited is interposed in the path of a beam of light (natural or artificial) which is transmitted through a multi-colored translucent medium and projected by reflection. By the word stencil is to be understood a screen whereof some portions are translucent and other portions are opaque, the boundaries between the translucent and opaque portions being of such configuration as to present an outline or outlines, constituting an inscription or design adapted to be rendered visible by means of light projected through the translucent portions from the back of the screen.

In the accompanying drawings wherein are illustrated by way of example various arrangements of apparatus for carrying the invention into effect—Figure 1 is a vertical transverse sectional view partly in perspective showing a preferred form of apparatus. Fig. 2 is another similar view showing a modification. Fig. 3 is a section through a reflecting medium. Fig. 4 is a perspective view of a duplex concave corrugated reflecting medium. Fig. 5 is a vertical transverse section showing a form of apparatus wherein a rotary drum is employed to control the transmission of light. Fig. 6 is a separate and longitudinal face view of one form of such drum. Fig. 7 is a face view of a modified form of apparatus adapted to effect the spelling out of a word. Fig. 8 is a diagrammatic view of the periphery of the drum shown in Fig. 7. Fig. 9 is a perspective view partly in section of a complete form of apparatus provided at top and bottom with drums as shown in Figs. 7 and 8.

Similar letters of reference indicate like parts in all the figures.

In the form of the invention as shown in Fig. 1, the apparatus is inclosed in a casing A wherein a duplex reflector is employed, that is to say, the reflector consists of two main portions B and B' which meet at a median plane and recede from one another upwards and downwards therefrom respectively, the upper portion B sloping rearward and upward from the middle of the height of the front wall C, while the portion B' slopes rearward and downward from the same level in the height of the front wall. By arranging reflectors in this manner the depth of the casing from front to back is reduced as far as possible. An advertisement to be dis-

played by means of light thrown upon the reflectors is in the form of a stenciled design and is borne by, or forms the front wall C of the casing A. The light which may be sunlight or other source of illumination G G' (such for example as rows of electric lamps as indicated) is transmitted to the reflectors B and B' through multi-colored media D and D' respectively, so that the illuminated advertisement will likewise appear multi-colored.

The surface of the reflector as a whole is of zig-zag or ridge-and-furrow configuration, as shown in Fig. 3, the juxtaposed individual surfaces being set preferably at right angles to one another as indicated, and the ridges b and furrows b' extending in vertical planes perpendicular to the plane of the stencil C, so that while the illumination of the advertisement is continuous, its colors will appear to change with the position of the spectator. The multi-colored medium may consist of strips of glass of different colors mounted side by side so as to constitute a continuous sheet and is supported between the reflector and source of illumination.

As the surfaces of the two portions B and B' of the reflector meet as shown, they are virtually continuous with one another and the effect as regards illumination of the advertisement is equivalent to that derivable from a reflector extending from the foot of the stencil C rearwards and upwards the whole distance to the top of the stencil, whereas the depth of the casing A from the stencil C to the back a of the casing is manifestly reduced by the arrangement shown in Fig. 1.

In order to further reduce the depth of the casing from front to back, and at the same time economize the light as much as possible by causing it to be projected from the reflector in the most advantageous directions, each portion B and B' of the reflector is composed of several sections (three b<sup>2</sup> b<sup>3</sup> b<sup>4</sup> being shown) which, counting from the point or level whereat the portions B, B' meet, are set at progressively diminishing inclinations to the plane of the stencil as indicated, the precise angles being obviously dependent on the position of the source of light relatively to the reflector and stencil. Or the surface of the reflector might be made of continuously curved concave form so as to produce the same result as shown in Fig. 4.

The compartments H, H' at top and bottom of the casing A wherein the rows of lamps G, G' are contained, may be lined with reflecting material as indicated at g, g'.

Fig. 2 shows an arrangement wherein a single row of lamps as at G placed between upper and lower multi-colored media D and D' illuminate separate upper and lower stencils C and C' by reflection from oppositely inclined reflectors B and B', respectively, each of these reflectors being constructed of differently inclined sections b<sup>2</sup> b<sup>3</sup> b<sup>4</sup> as already described. In this case, as be-

fore, the front of the compartment H containing the lamps G may carry a stencil as indicated at h.

With a horizontal stationary medium as before described, a drum J (see Figs. 5 and 6) mounted on an axis j and formed of opaque material such as thin sheet metal may be employed to inclose the row of lamps G, the drum J, as indicated in Fig. 6 having a helically or otherwise shaped translucent portion or portions K provided in its periphery through which the light may be transmitted to the reflector, so that by a somewhat rapid rotation of the drum, which may be effected by any convenient means, a progressive and recurrent flickering of the illuminated advertisement will be produced.

The progressive and recurrent spelling out of words, sentences, and the like, may be effected by employing (as in the case last described) an opaque drum J' (see Figs. 7 and 8) to inclose the source of light G, said drum being provided on its periphery with translucent segmental portions or slots corresponding in position to the letters of the word to be spelled out, the successive translucent slots  $K^1, K^2, K^3, K^4$  being of progressively diminishing angular extent commencing respectively at progressively advanced points  $k^1, k^2, k^3, k^4$  in the circumference of the drum and all terminating at the same point k in the circumference, so that the letters composing the word to be spelled out may, after appearing successively and remaining until the entire word is completed, simultaneously disappear. In this case the surface of the reflector may be plane instead of zig-zag, while a partition l of opaque material would preferably extend from the back of the stencil to the face of the reflector between each two adjacent letters so as to prevent premature partial illumination of the letters and insure sharp definition.

Means similar to those described may obviously be employed to cause the whole of the advertisement to successively appear and disappear at intervals.

In Fig. 9 is shown a modification employing a duplicate reflector comprising two main portions B and B', meeting at a median plane and inclining backwardly

above and below the said plane, the portion B sloping rearward and upward, and the portion B' rearward and downward. The advertisement to be displayed is in the form of a stencil device and is borne by or forms the front wall C of the casing A. The rows of lamps G are inclosed in drums J similar to the drum shown in Figs. 7 and 8, and which may be rotated by any suitable means. The multicolored medium may consist of a sheet D of glass composed of a series of transversely extending strips of different colors placed between the drums J and the reflector B, B'. The portions B, B' of the reflector are constructed of differently inclined sections  $b^2, b^3, b^4$ , as before described.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed I declare that what I claim is:—

1. In an illuminated multi-colored sign or advertisement wherein a stencil bearing the inscription or design to be exhibited is interposed in the path of a beam of light, the combination with a stencil, of a reflector made in two portions which diverge from one another in a rearward direction from about the middle of the height of the stencil; separate sources of illumination suitably placed in relation to said portions of the reflector, and the corresponding portions of the stencil; and separate multi-colored media interposed between the respective portions of the reflector and the corresponding sources of illumination, substantially as specified.

2. In an illuminated multi-colored sign or advertisement of the kind referred to, the combination with the source of light and with the stencil, of a zig-zag reflector made in sections whereof successive sections are set at progressively diminishing inclinations to the plane of the stencil as specified.

3. In an illuminated multi-colored sign or advertisement of the kind referred to, the combination with the stencil, the reflector, and the translucent multi-colored medium, of a rotary drum inclosing the source of light and having an opaque peripheral wall apertured to give passage to the light, substantially as described.

HOWARD WILLIAM CHINNERY.

Witnesses:

H. D. JAMESON,  
A. NUTTEN.