

No. 794,653.

PATENTED JULY 11, 1905.

D. W. ALLEN.

BLACKBOARD.

APPLICATION FILED AUG. 7, 1903.

2 SHEETS—SHEET 1.

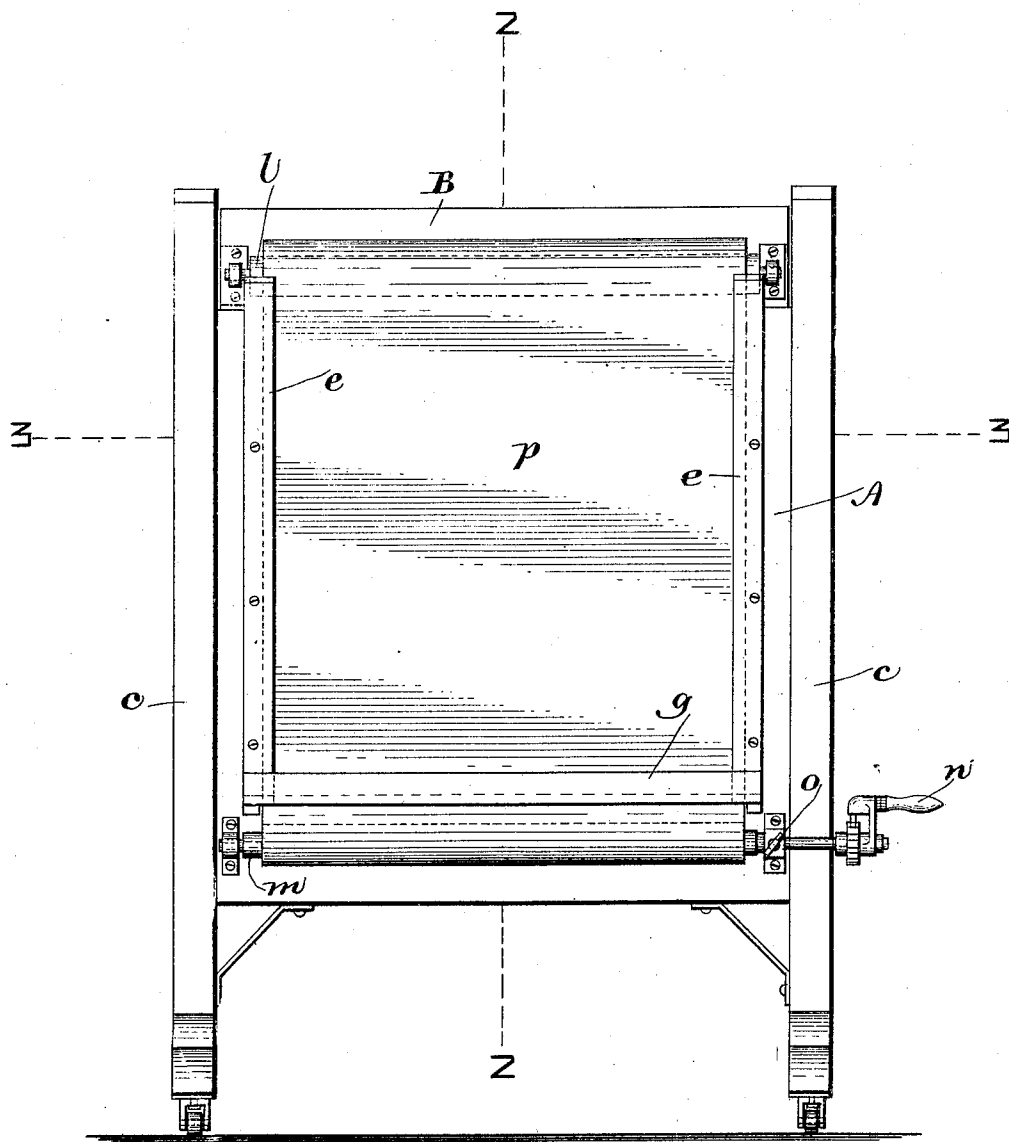


FIG. 1.

WITNESSES:

H. O. Stevens.
E. C. Upham

INVENTOR=
Daniel W. Allen
By *Chas F. Howe*
his atty.

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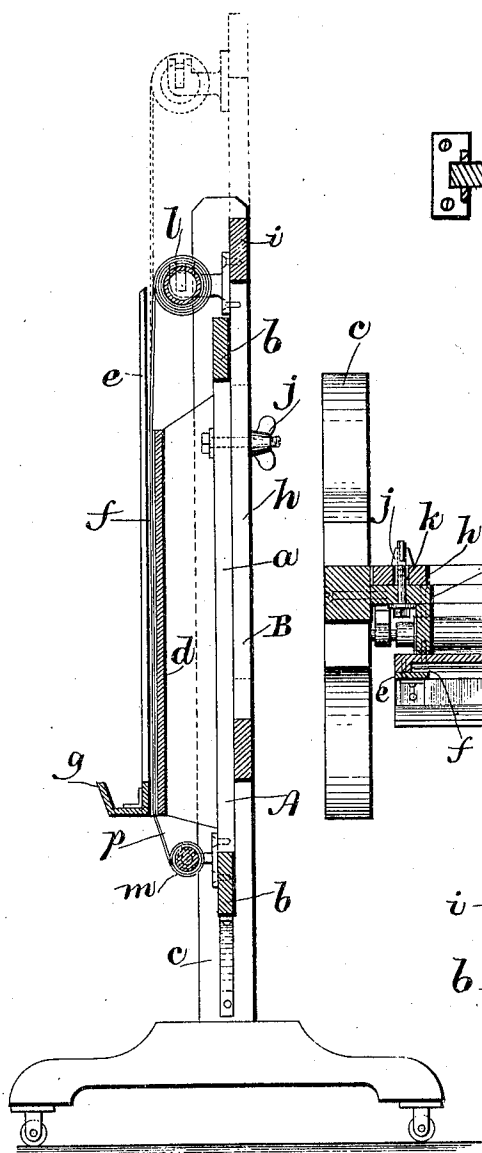


FIG. 2.

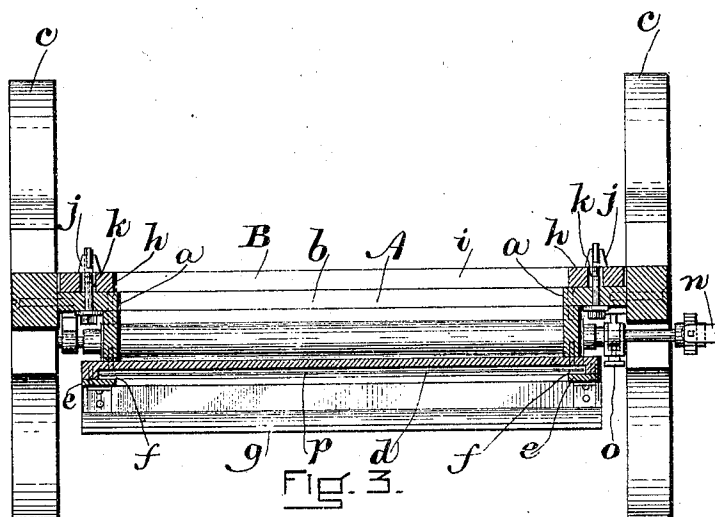
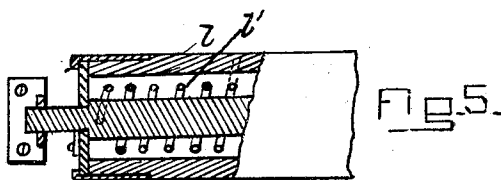


FIG. 3.

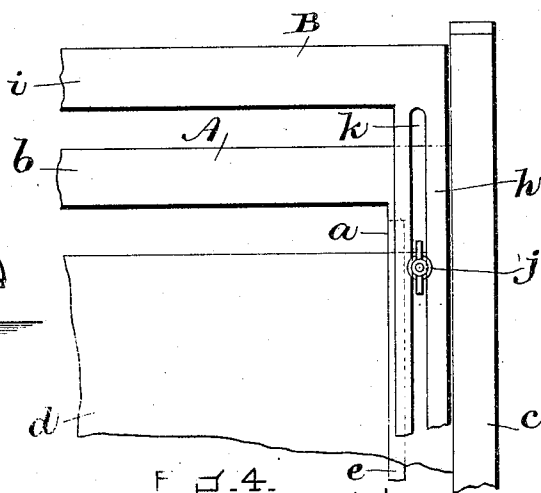


FIG. 4.

WITNESSES:
H. D. Stevens.
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INVENTOR=
Daniel W. Allen.
By Chas. F. Howe,
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UNITED STATES PATENT OFFICE.

DANIEL WEBSTER ALLEN, OF BOSTON, MASSACHUSETTS.

BLACKBOARD.

SPECIFICATION forming part of Letters Patent No. 794,653, dated July 11, 1905.

Application filed August 7, 1903. Serial No. 168,635.

To all whom it may concern:

Be it known that I, DANIEL WEBSTER ALLEN, a citizen of the United States, residing in Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Blackboards, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to blackboards formed on a fabric which is arranged so all parts of the writing-surface may be brought within convenient reach for working. A number of suggestions in this line have been proposed from time to time, consisting often of a prepared marking-surface formed on endless belts of fabric supported on rollers or sheets of slated fabric wound upon rollers having a variety of winding devices for each of the rollers, such as cranks attached either directly to the rollers or through some connection, as a band and pulleys; but so far as I am informed the rollers carrying the slated fabric must in these various devices each be adjusted when the sheet is changed in position, the portion of the sheet available for working has been restricted to the distance between the position of the rollers, and the prepared sheet of fabric has tended to work slack, often unequally, in use, causing annoyance of readjustment of the rollers or perhaps distortion of a figure.

The object of this invention is to avoid the defects of many previous constructions for this purpose and at the same time to render the device easier to manipulate, the invention consisting in mounting a roller to carry an end of a slated sheet of fabric each in a separate frame or on the same frame with a long range of adjustment, adjustably connecting the frames so either a limited portion of the sheet is exposed for use or sliding the frames apart to expose a much greater portion of the sheet of fabric, furnishing a winding-spring for one of the rollers, so at all times the sheet of fabric will be held taut, so the marking-surface will be smooth and clear of wrinkles, and in certain details of construction to be more particularly pointed out.

The invention may be applied to a wall-blackboard or to a portable structure, the latter type being very convenient for many pur-

poses. I will describe a form thereof embodying my invention with the aid of the accompanying drawings, in which—

Figure 1 is a front elevation of a blackboard. Fig. 2 is a vertical section thereof on the line 2 2 of Fig. 1. Fig. 3 is a horizontal section of the board on the line 3 3 of Fig. 1. Fig. 4 is a detailed rear view of the device for adjusting the frames carrying the rollers, and Fig. 5 is an enlarged fragmentary view in section of a portion of one of the rollers which I employ in connection with my improved blackboard.

The main frame A is rectangular and consists of the sides *a*, joined by the bars *b*, all supported in upright position by the standards *c*. From the sides *a* of the main frame a backing-board *d* is supported, and strips *e* are fastened at each side of the backing-board, so as to form grooves *f* at each side thereof. A rack *g* for chalk may be carried by the backing-board. At the back of the main frame A an auxiliary frame B is adjustably secured, consisting of vertical pieces *h*, joined by the rails *i*. The auxiliary frame is adjusted and secured to the main frame by thumb-screws *j*, projecting from the main frame through long slots *k* in the auxiliary frame. To the top of the auxiliary frame a roller *l*, having a spring *l'*, tending to turn it in one direction, is secured, devices of ordinary construction being supplied so the tension of the spring may be regulated. Just below the backing-board *d* a roller *m* is mounted on the main frame, a crank *n* affording means for turning the roller and the screw *o* furnishing a convenient frictional retarding device, so the motion of the roller may be controlled or stopped. A long sheet of fabric *p*, having a slated or other prepared marking-surface, is fastened at an end to one of the rollers, then the edges of the sheet of fabric are run in the grooves *f* to cause the fabric to rest smoothly over the backing-board *d*, and the other end of the fabric is fastened to the other roller. By this arrangement if the roller *m* is free the spring-actuated roller *l* will wind upon itself all of the sheet of fabric *p* not exposed to view, and any portion of the sheet of fabric may be

brought to view by winding, by means of the crank *n*, from the roller *l* onto the roller *m*, and when the fabric is properly located the roller *m* is fastened with the screw *o*. Then the pull of the spring *l'* will tightly stretch the fabric from one roller to the other and it will rest close to the backing-board *d*. The backing-board *d* is located at a convenient height to support the fabric when chalk is applied thereto or a brush is used for erasing; but the fabric clears the said board, so motion of the fabric from one roller to the other may not rub anything on the opposite surface of the fabric. As there is at all times a strong pull on the sheet of fabric from the spring-roller *l*, there will be no slack places in the fabric which may tend to wrinkle or crack the prepared surface as these slack places develop in use, as is common in other constructions, and no reaching or cumbersome mechanism is required to work the upper roller. If the extent of surface of the fabric exposed to view is not sufficient, the auxiliary frame *B* is extended above the main frame *A* as much as required, the long slots *k* permitting this motion, and then the frames are locked in place by the thumb-screws *j*. This is a very useful feature in a portable blackboard, as no means has heretofore been supplied for exposing varying extents of the sheet of fabric to view at once, whatever limited motion one roller has had with regard to the other in previous construction being only for feed-adjustment or to take up stretch of the fabric and not altering the portion of the blackboard in sight. With my construction I may expose what is needed of the blackboard for use. When shipping, the frames are run in to make the apparatus compact.

40 Having described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a blackboard a writing-surface composed of a continuous sheet of flexible material two rollers to which the opposite ends of the said sheet are connected and means for

exposing various extents of the writing-surface to view.

2. In a blackboard, a main frame, a roller having a crank and a retarding device, and a sheet of slated fabric fastened at one end to the roller and winding about the same, combined with an auxiliary frame, a spring-roller thereon, an end of the sheet of fabric fastened to the spring-roller and winding about the same, and means for changing the position of the auxiliary frame, substantially as described.

3. In a blackboard, adjustable frames, and means for locking them in different positions, a sheet of fabric secured to one frame and a yielding attachment between the fabric and the other frame substantially as described.

4. In a blackboard, a sheet of slated fabric, rollers connected at each end of the fabric, and a backing-board behind the fabric, combined with a spring to wind the fabric on one roller, a crank to wind the fabric on the other roller, a locking device for this latter roller, and means for altering the distance between the rollers to vary the extent of fabric in sight, substantially as described.

5. In a blackboard, a main frame suitably supported, a roller carried by the main frame, and a sheet of slated fabric with one end fastened to the roller, combined with an auxiliary frame, a roller mounted on the auxiliary frame having the other end of the sheet of fabric attached thereto, mechanism to shift the fabric from one roller to the other and to hold it in place, mechanism to shift the fabric back again to the roller from which it was first taken and means to adjust and lock one frame on the other with the rollers at different distances apart, substantially as described.

In testimony whereof I have hereunto subscribed my name this 29th day of June, A. D. 1903.

DANIEL WEBSTER ALLEN.

Witnesses:

W. D. STEVENS,
CHAS. F. HOWE.