

G. GLASMACHERS.  
BLACKBOARD.

No. 603,631.

Patented May 10, 1898.

Fig. 1.

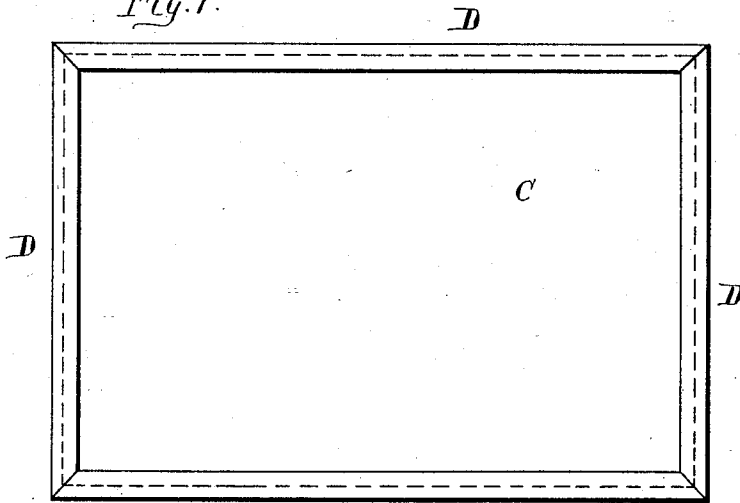


Fig. 2.

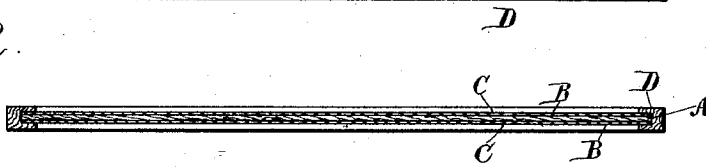
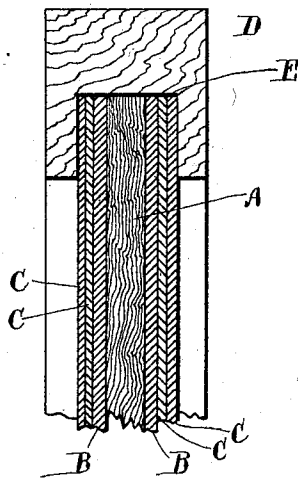


Fig. 3.



Witnesses

M. F. Boyle  
J. B. Clautice

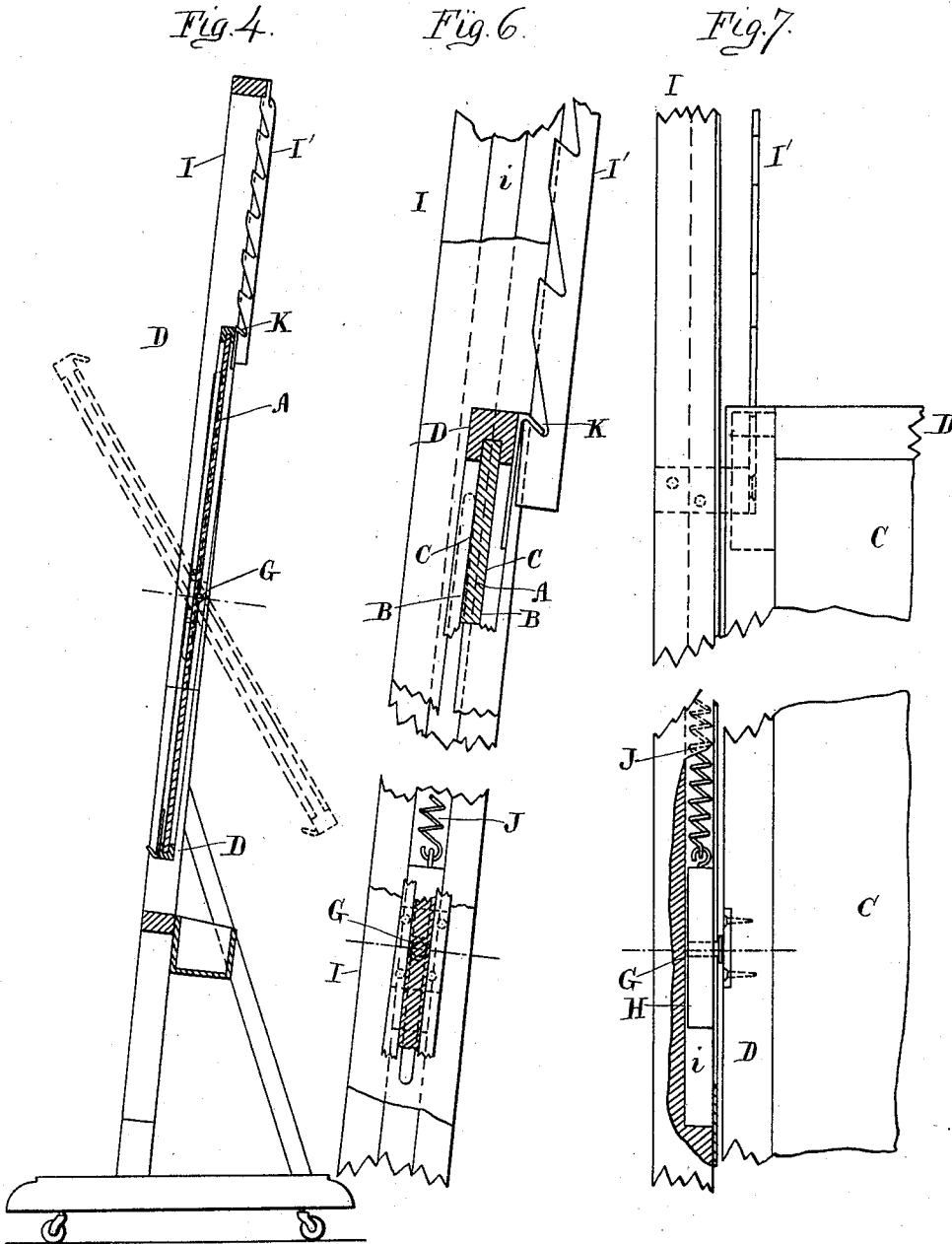
Inventor

Gottfried Glasmachers,  
By James Drew Stetson  
Attorney

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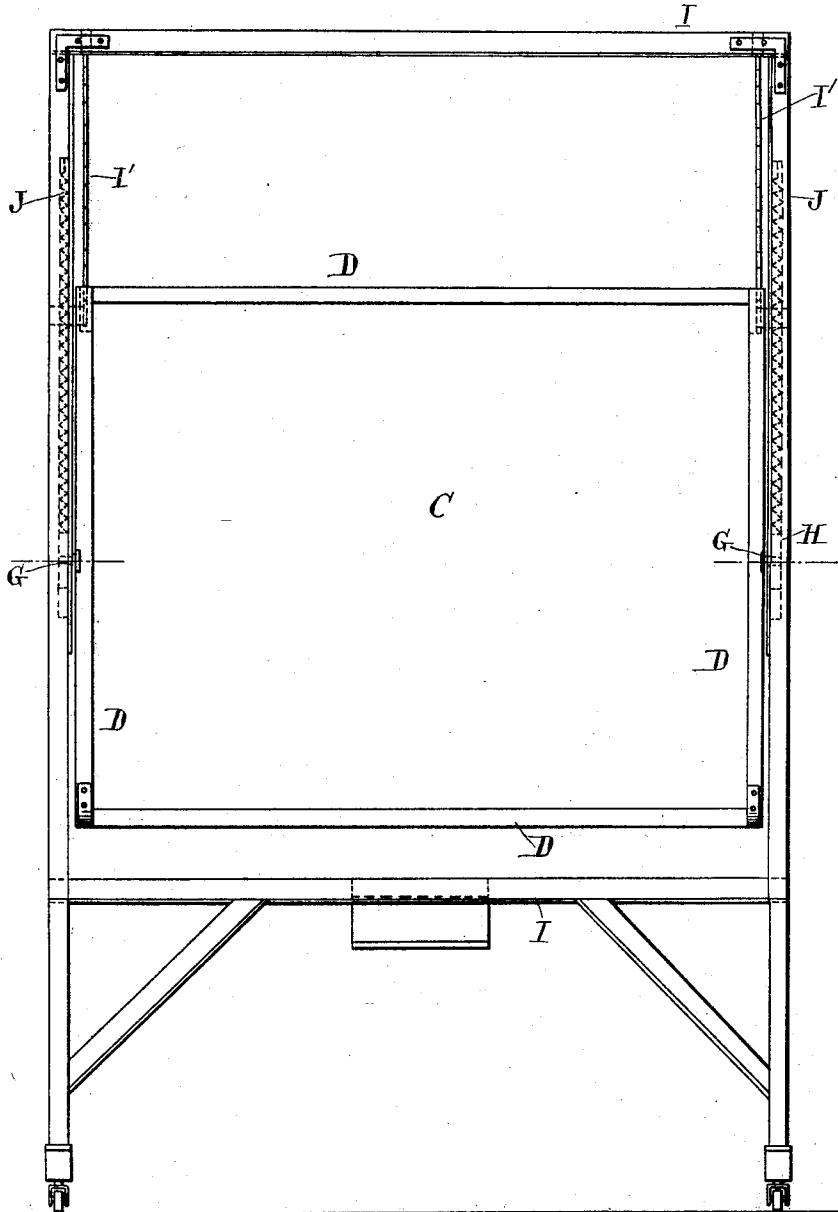
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*Fig 5*



Witnesses

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# UNITED STATES PATENT OFFICE.

GOTTFRIED GLASMACHERS, OF ESSEN, GERMANY.

## BLACKBOARD.

SPECIFICATION forming part of Letters Patent No. 603,631, dated May 10, 1898.

Application filed April 22, 1897. Serial No. 633,214. (No model.)

*To all whom it may concern:*

Be it known that I, GOTTFRIED GLASMACHERS, a subject of the Emperor of Germany, and a resident of Essen, Prussia, Germany, have invented a certain new and useful Improvement in School-Blackboards, of which the following is a specification.

This invention relates to that class of school-blackboards in which the board is designed to be set higher or lower; and said invention consists in novel devices for rendering such construction more conveniently and efficiently operable. The novel devices referred to include a board having pins carried in bearing-blocks guided up and down, said board being suspended by helical springs having a force about equal to the weight of the board attached to the supporting-frame, so that it may be easily moved downward when disengaged, the lifting action serving to correspondingly elevate the board when desired; but in order to carry this into operation it is necessary to provide a board which shall not be so heavy as the usual wooden boards.

I will describe the improved construction with reference to the accompanying drawings, in which—

Figures 1 and 2 are respectively a front elevation and a vertical section of the board without the stand. Fig. 3 is a section, on a larger scale, showing the mode of constructing the board with its frame. Figs. 4 and 5 are respectively a vertical section and a front elevation of the board together with the stand. Fig. 6 is a section of portions of the board, showing the manner of its suspension and guidance in the stand, on a larger scale. Fig. 7 is a front elevation of the same.

Like letters of reference indicate corresponding parts in the several figures where they appear.

The board is composed of holzfild (wood-felt or cork-felt) covered with leather-board. The two layers of leather-board B B, Fig. 3, are cemented onto the plate of felt A by means of water-glass, silicate of soda, or silicate of potash. The writing-surfaces are first impregnated with hot linseed-oil, then coated two or three times with a putty-like mass C C, composed of Japan lacquer and finely-reduced gray keiselguhr, an infusorial earth of great lightness occurring liberally in Ober-

lohe in Hanover, flattened down with a spatula or painter's knife, and rubbed with pumicestone and oil. The wood-felt or cork-felt plate A is characterized by great lightness and has the advantage that it does not warp. The cementing together of the three plates with water-glass serves, first, to introduce the least possible amount of moisture between the plates, and, second, to aid still more in obviating warping the plates. The repeated varnishing with the infusorial earth and rubbing down adds but inappreciably to the weight and gives a strong and durable surface, which is just sufficiently rough to receive the crayons or other ordinary writing and marking materials. The finished plate is then placed in the frame D, which consists of light wood.

The framing is effected by filling up the grooves of the frame with cement composed of keiselguhr and glue E and forcing the plate in tightly. In this manner there is produced a light elastic board firmly fixed in its frame. Right and left in the frame are carried pins G, upon which the board swivels. These pins rest in bearings H, which slide up and down in the grooves *i* in the stand I. The said bearings are suspended by helical springs J, which yield when the board is let down. The retention of the board is effected by means of hooks K, arranged at the top of the frame and formed of flat bar or strip iron, adapted to take into suitable toothed racks I', fixed to the stand.

The suspension of the board by long-action springs allows of rapid and convenient lifting up or letting down of the board, because the springs are always uniformly tensioned. These motions are performed without the possibility of jamming, and all noise and jolting of the board are obviated. The said helical springs J also have such range and length that their force is nearly equal in all positions of the board.

When the board has been let down below the toothed racks, it can be easily reversed by being swiveled on its pins, as indicated in dotted lines in Fig. 4, so as to enable either surface to be brought into position for use. I provide corresponding hooks K at the bottom of the board, which will come into position for use when the board is inverted.

The hooks which come at the top may be engaged in the lowermost or in any other of the notches in the racks, according as it is desired to have the board held high or low.

5 Modifications may be made without departing from the spirit or sacrificing the advantages of the invention. Parts of the invention can be used without the whole. The springs may be dispensed with, the board being sufficiently light to permit its weight to be sustained by the user during the adjustment.

I claim as my invention—

15 1. A school-blackboard having a writing-surface formed by a mixture of Japan lacquer and reduced keiselguhr rubbed or polished, substantially as herein specified.

20 2. A school-blackboard comprising a section of wood or cork felt having a layer of leather-board cemented thereto by soluble glass and faced with a mixture of Japan lacquer and reduced keiselguhr in two or more layers, rubbed or polished, substantially as herein specified.

25 3. In a school-blackboard, the combination of a plate A of wood-felt or cork-felt, which

is covered with two leather-boards cemented thereto by means of water-glass under the application of pressure, upon which boards B, B, the writing-surfaces C C are formed of 30 layers of Japan lacquer and keiselguhr, the whole being firmly fixed in a wood frame D, substantially as herein specified.

4. In a blackboard, the within-described board A B, D, mounted by means of the pins 35 G, in bearings H, which latter are guided in grooves *i* of the stand I, and suspended by means of contractile helical springs J, whereby the weight of the board is approximately 40 balanced and its raising and lowering is more easily effected, in combination with the hooks and toothed racks for engaging said board, all arranged for joint operation, substantially as herein specified.

In testimony whereof I have hereunto set 45 my hand, at Essen-on-the-Ruhr, this 7th day of April, 1897, in the presence of two subscribing witnesses.

GOTTFRIED GLASMACHERS.

Witnesses:

LANWOR LIEBER,  
WM. ESSENWEIN.