No. 885,241. PATENTED APR. 21, 1908.

A. G. GRANT.

ADJUSTABLE BLACKBOARD.

APPLICATION FILED JUNE 21, 1907.

Fig. 1.

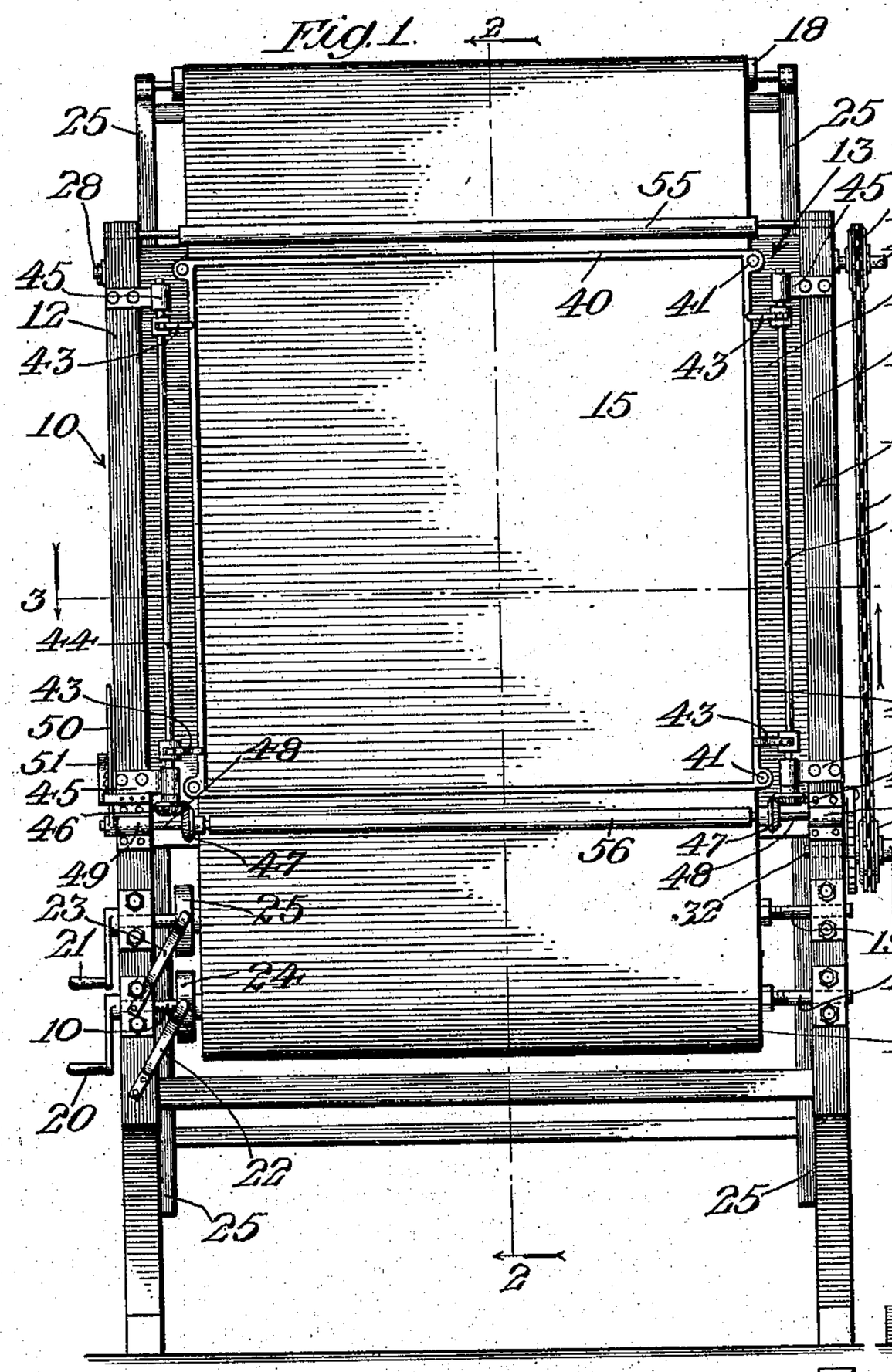


Fig. 2.

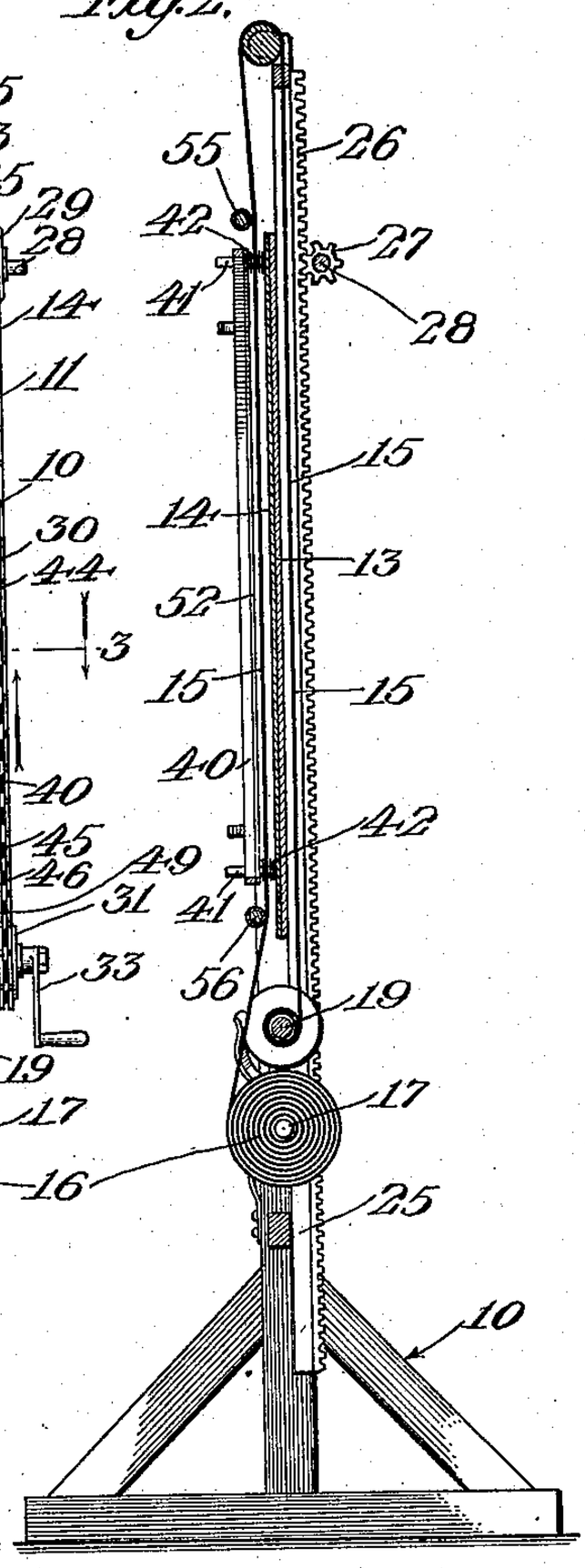


Fig. 3.

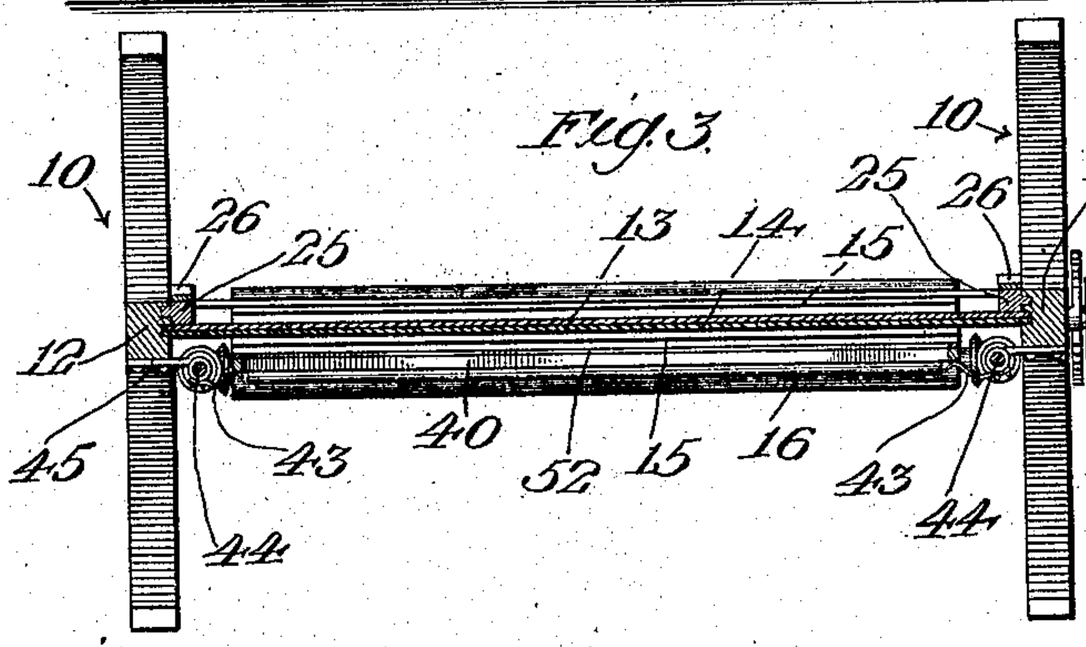


Fig. 4.

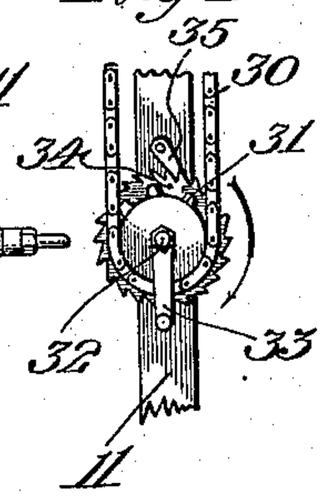
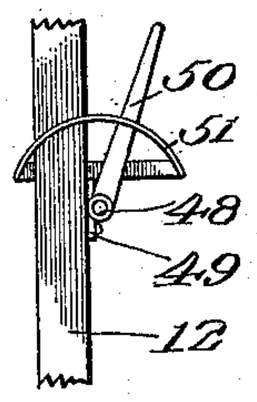


Fig. 5.



Witnesses:

Wm. H. Eckelberry

Luther S. Alter.

Inventor:

Aaron G. Grant,

By Hazard & Howe.

Attorneys.

UNITED STATES PATENT OFFICE.

AARON G. GRANT, OF DOWNEY, CALIFORNIA.

ADJUSTABLE BLACKBOARD.

No. 885,241. Specification of Letters Patent. Patented April 21, 1908.

Application filed June 21, 1907. Serial No. 380,021.

To all whom it may concern:

Be it known that I, AARON G. GRANT, a citizen of the United States, residing at Downey, in the county of Los Angeles and State of California, have invented new and useful Improvements in Blackboards, of which the following is a specification.

My invention relates to a blackboard which provides means for writing in large characters for the benefit of a number of persons as a class in a school room, and an object thereof is to provide a writing surface on which writing may be executed continually within convenient reach of a person standing before the same and which may subsequently be elevated so as to display a large amount of such writing in a convenient position for class reading.

A further object is to provide means whereby a fresh writing surface may be always used, thus eliminating the necessity of erasure and consequent chalk dust.

A further object is to provide means whereby the matter written upon the surface may be concealed and subsequently exposed.

A further object is to provide a resilient backing for the writing surface which is adhesive under pressure and which enables the use of a single thickness of writing paper.

I accomplish these objects by means of the device described herein and illustrated in the accompanying drawings, in which:—

Figure 1.— is a front elevation of my improved blackboard. Fig. 2.— is a vertical section taken on line 2—2 of Fig. 1. Fig. 3.— is a horizontal cross section taken on line 3— 3 of Fig. 1. Fig. 4.— is a detail view of a part of the supplementary frame hoisting mechanism. Fig. 5.— is a detail view of the lever which operates the paper holding frame.

Referring to the drawings 10 designates a frame composed of two uprights 11 and 12 adapted to stand on a floor and to carry the mechanism of the blackboard. A backing board 13 provided with a resilient backing surface 14, described hereinafter, is secured in grooves in uprights 11 and 12, as is best shown in Fig. 3, and forms a resilient and adhesive backing for paper 15 which normally stands a small distance in front of backing surface 14. Paper 15 is supplied in a roll 16 mounted on shaft 17 journaled on uprights 11 and 12 near the bottom of the frame and passes from that roll upwardly in front of backing board 13 over a roller 18 above the frame and downwardly to a second shaft 19 journaled in frame 10 directly above shaft 17. Shafts 17 and 19 are adapted to be manually operated through the medium of cranks 20 and 21 respectively, and are frictionally retarded from motion by spring brakes 22 and 23 acting on drums 24 and 25 rigidly secured to the respective shafts.

Roller 18 above the main frame is mounted on a supplementary frame 25 provided with racks 26 on its rear face adapted to be engaged by pinions 27 rigidly mounted on shaft 28 journaled at the top of standards 11 and 12. A sprocket wheel 29 is rigidly mounted on shaft 28 and is connected by chain 30 to a second sprocket wheel 31 mounted on a shaft 32 on standard 11 within convenient distance from the floor. Shaft 32 is also provided with a crank 33 by means of which it may be manually rotated and a ratchet wheel 34 and dog 35 to prevent the rotation of sprocket wheel 31 in a direction which will allow the supplementary frame to be lowered. Frame 25 is of approximately the same height as frame 10 and is provided with a tongue and groove connection with frame 10 so that it may be hoisted by an operation of crank 33 to an elevation approximately twice that of frame 10. When in this position paper 15 presents a considerable area to view from the front of the board so that a large amount of writing may be exposed to view at one time.

A rectangular frame 40, preferably of metal, is slidably mounted on studs 41 secured to backing board 13, being normally held from engagement with the board by coiled springs 42 around each of studs 41. Fingers 43 mounted on shafts 44 journaled in bearings 45 are provided to bear against frame 40 and press the same into contact with the writing board or the paper thereon upon the inward rotation of shafts 44. Shafts 44 are provided on their lower ends with bevel gears 46 adapted to mesh with bevel gears 47 rigidly mounted on a horizontal shaft 48 journaled in bearing 49 secured to uprights 11 and 12. Shaft 48 is provided on one of its ends with a lever 50 adapted to work against a toothed segment 51 and be held by the teeth of the segment from rotation in a direction which permits frame 40 to be forced away from writing board 13 by coiled springs 42.

Frame 40 is preferably provided with a

rubber or other resilient facing 52 which is adhesive under pressure and is adapted to come into immediate contact with paper 15 and press the same against resilient surface 14 of writing board 13. When frame 40 is pressed against the writing paper by the movement of lever 50 the paper inside the frame is held against any movement induced by the motion of a crayon over its surface. Facing 52 is preferably of softer and more resilient material than backing surface 14 as surface 14 is adapted to afford a backing for the writing surface which is resilient and adhesive under pressure and yet not so soft as to render liable the punching of holes in the writing paper. Substances other than rubber may be used to good advantage for facing 14 such as oil cloth, pantasote, or the like as the substances offer the requisite qualities, namely adhesiveness under pressure so that a sufficient friction is created between the writing paper and the backing surface under the pressure of the crayon to prevent local movement of the paper. Rollers 55 and 56 are provided above and below frame 40 to guide the paper between surface 14 and surface 52.

By means of the above described construction one is enabled to write continually at a convenient height from the floor as the paper may be raised by the operation of cranks 20 and 21 as the writing progresses. The supplementary frame may be raised to a sufficient height to display from the front side of the board a large extent of surface which has been written upon and when such writing has been finally used the paper may be pulled over to the back of the board by the rotation of crank 21 so that a fresh and clean writing surface is exposed to view on the front. This operation may be continued until one side of all the paper in roll 17 has been utilized and rolled up on shaft 19 when shafts 19 and 17 may be interchanged by removing the same from their bearings in frame 10. When this is done the roll on the bottom is arranged so as to unwind from the back side instead of from the front as illustrated in the drawings and the clean side of the paper will be exposed on the front of the board as before.

I do not limit myself to the specific construction shown in the drawings and which embodies a frame adapted to stand on the floor of a room, but my blackboard may be built directly into the walls of a building. In this case the roll of paper may be completely inclosed so that only the writing space may be exposed to view.

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

1. In a black-board, stationary and movable frames, rollers on the stationary frame, a writing surface supported by the outer end of the movable frame and having its ends wound around the rollers, and means for moving the movable frame whereby the area of the writing surface is increased or decreased.

2. In a blackboard a frame, a backing board mounted on said frame and adapted to support a movable writing surface, a shaft mounted in said frame from which the writing surface is adapted to unroll, a second shaft mounted in said frame on which the writing surface is adapted to be rolled up, a vertically adjustable supplementary frame slidably mounted in said first named frame, and a roller rotatively mounted in the upper end of said supplementary frame over which the writing surface is adapted to pass on its passage from one of said shafts to the other.

3. In a blackboard a frame, a backing board mounted on said frame and adapted to support a writing surface movably mounted on said frame, a shaft rotatively mounted on said frame from which the writing surface is adapted to be unrolled, a second shaft rotatively mounted in said frame upon which the writing surface is adapted to be rolled up, a vertically adjustable supplementary frame slidably mounted in said first named frame, a roller revolubly mounted on the upper end of said supplementary frame and over which the writing surface is adapted to pass on its passage from one of said shafts to the other, means to hold the writing surface in engagement with said backing board, and means to raise and lower said supplementary frame.

4. A blackboard having a movable writing surface, means for moving the surface, a backing board provided with a resilient surface possessing sufficient friction to hold the writing material to the backing board under pressure of a crayon, but having but slight friction under mere contact the writing surface being movable over said board.

5. A blackboard having a movable writing surface, a backing board adapted to support said writing surface, said board being provided with a resilient surface possessing sufficient friction to hold the writing material to said backing board under pressure of a crayon and having but slight friction under mere contact, and a frame adapted to press said writing surface into engagement with the resilient surface on said writing board, said frame being provided with a surface of resilient material adapted to engage said writing surface.

In witness that I claim the foregoing I have hereunto subscribed my name this 8th. day of June, 1907.

AARON G. GRANT.

Witnesses:
TRIMBLE BARKELEW,
EDMUND A. STRAUSE.