

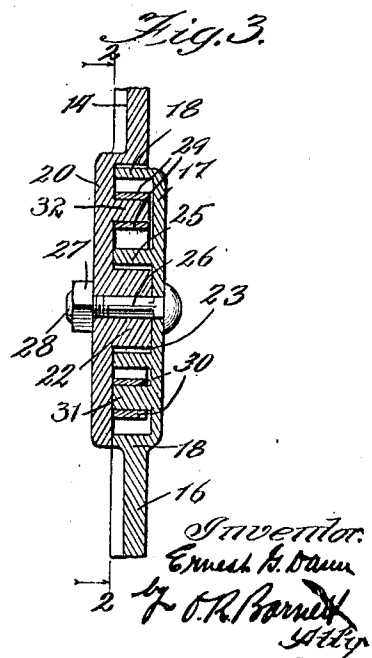
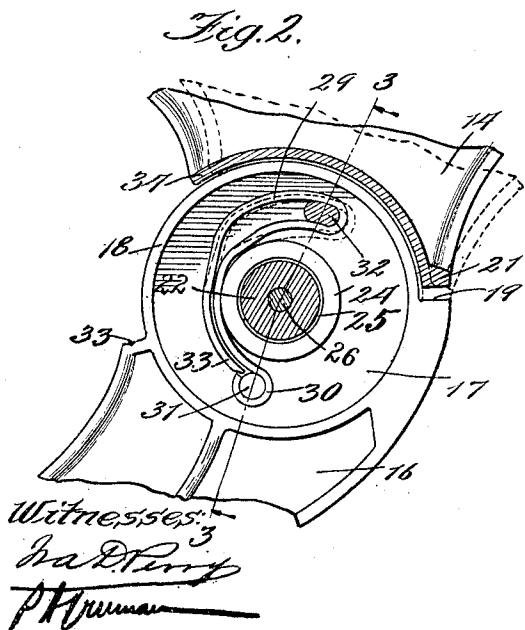
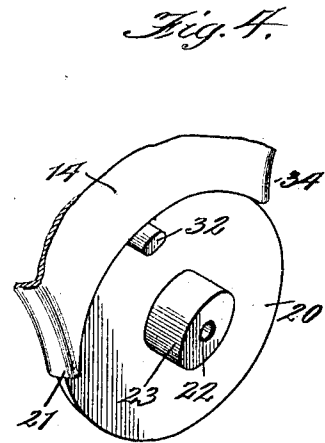
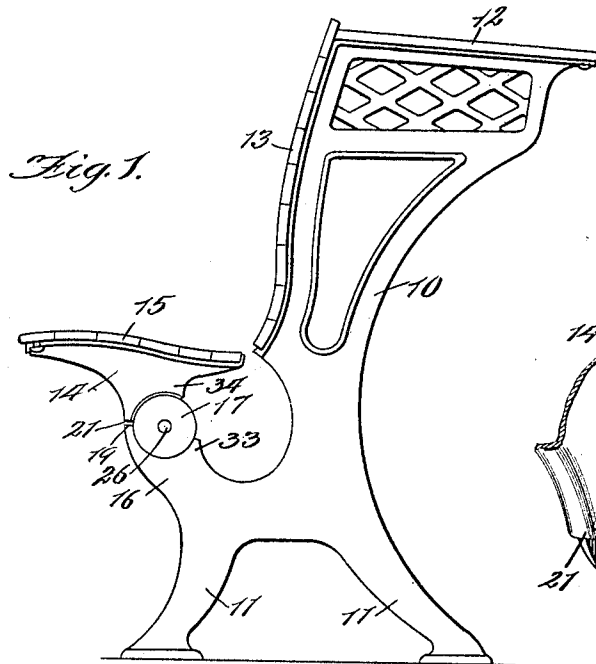
E. G. DANN.
HINGED SEAT.

APPLICATION FILED APR. 27, 1909.

984,474.

Patented Feb. 14, 1911

2 SHEETS-SHEET 1.



984,474.

Patented Feb. 14, 1911.

2 SHEETS-SHEET 2.

Fig. 7.

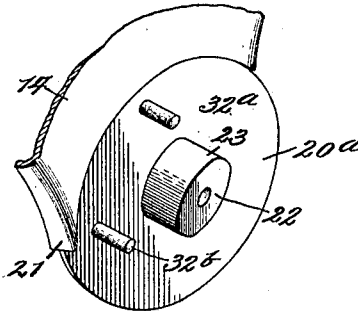


Fig. 5.

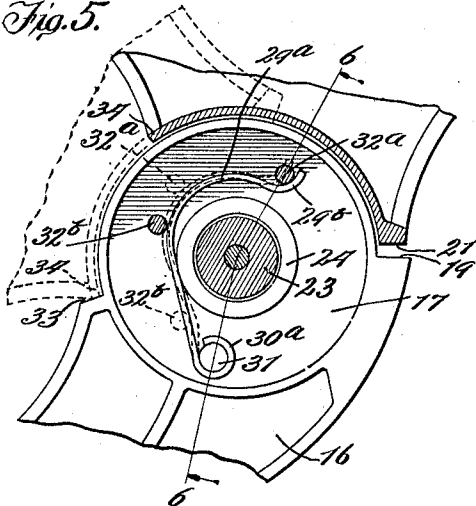
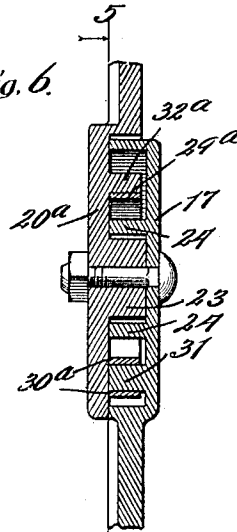


Fig. 6.



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UNITED STATES PATENT OFFICE.

ERNEST G. DANN, OF CHICAGO, ILLINOIS, ASSIGNOR TO GEORGE H. PETER AND ALBERT F. VOLZ, COPARTNERS DOING BUSINESS UNDER THE NAME OF PETER & VOLZ, OF ARLINGTON HEIGHTS, ILLINOIS.

HINGED SEAT.

984,474.

Specification of Letters Patent.

Patented Feb. 14, 1911.

Application filed April 27, 1909. Serial No. 492,455.

To all whom it may concern:

Be it known that I, ERNEST G. DANN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Hinged Seats, of which the following is a specification.

My invention relates to a hinged seat and has for its object to provide a seat of this sort which shall be simple in its structure, economical to manufacture, very durable and noiseless in its action.

More particularly, the invention has for its object to provide a hinge for a seat of this sort, for example, for the seat of a school desk, which has interposed between the parts of the hinge a new and improved form of spring which cushions one casting upon the other, thereby lessening the jar likely otherwise to break the casting when the seat is folded up or down, and likewise lessening noise. Springs of various sorts have been used to cushion hinge seats, but these constructions have all been objectionable, for one reason or another. It frequently happens that the springs used in that connection, or other parts of the hinge become broken or easily wear out or get out of order. The cushion hinge of my construction is very strong and durable.

The invention in a typical and preferable embodiment is illustrated in the accompanying drawings, wherein—

Figure 1 is a side elevation of a school desk and seat, constructed in accordance with my invention. Fig. 2 a detail elevation of the other side of the castings shown in Fig. 1, with parts in section. Fig. 3 is a section on line 3—3 of Fig. 2. Fig. 4 is a detail in perspective of a part of one of the seat supporting castings. Fig. 5 is a sectional view similar to Fig. 2 taken on line 5—5 of Fig. 6, looking in the direction of the arrows, illustrating a modification. Fig. 6 is a section on line 6—6 of Fig. 5, looking in the direction of the arrows, and Fig. 7 is a perspective view of a part of one of the seat supporting castings illustrating the modification shown in the preceding two figures.

Like characters of reference indicate like parts in the several figures of the drawings.

Referring first to Figs. 1 to 4 inclusive of the drawings, 10 represents one of the end

castings of a school desk, provided with the legs 11. 12 is the top of the desk resting upon casting 10 and another similar casting at the other side of the desk. 13 is the back of the seat secured to casting 10 in any preferred manner. 14 is the hinged seat supporting casting on which is the seat 15. Casting 10 has the forward projection 16 which terminates in a circular recessed part 17, inclosed by a flange 18. The shoulder 19 is formed by the forward corner of the projecting part 16. The casting 14 has integral therewith, the disk 20, the casting being made so as to have a shoulder 21 which comes against shoulder 19 when weight is placed upon the seat as will be hereafter described. Disk 20 fits over the recessed part 17 of the lower or fixed casting. Casting 14 may be provided with the integral stud 22, which if desired, may be provided with the hardened sleeve 23; and the recessed portion 17 of casting 10 with the boss 24, which may likewise have the hardened bearing sleeve 25, the stud 22 extending into cup 24. The parts are pivoted together by a bolt 26 on which is a nut 27, the end of the bolt being preferably riveted on the nut as at 28. Obviously, any other means of pivoting one of the castings upon the other might be employed. The recessed portion of casting 10 and the disk 20 of casting 14 constitute together, a spring chamber within which the cushioning spring is located. The spring in this form of device consists of a strap 29, preferably untempered, one end of which 30 is pivoted on a lug or other projection 31, on the recessed part 17, the strap extending around boss 24 and around a lug 32 on disk 20, the other end of the strap 33 anchored against strain, as for example, by abutment against the end 30 of the strap. The strap, it will be seen, constitutes a loop, pivoted at one end to one of the castings and looping over so as to movably engage a lug on the other casting.

The arrangement of the parts is such that when no weight is placed upon seat 15, the shoulder 21 stands slightly above shoulder 19 on the lower casting. Thus, if the seat be pushed down accidentally from its upright position, there will be little or no jar between the castings. When a person sits upon the seat, the strap 29 is flexed

around bearing 24, cushioning the impact between shoulders 21 and 19. Such cushioning is important, both because of the deadening of the noise, and also to relieve the castings of the constant jars and shocks which otherwise will occur whenever the seat is hurriedly turned down or whenever weight is put upon it suddenly. The frictional engagement between the strap and lug 32 also serves to cushion the backward movement of the seat as between the abutting parts 33 and 34.

In Figs. 5, 6 and 7 I have shown a modification in which a single spring is substituted for the spring loop of the preceding figures. The disk 20^a is provided preferably with two studs or lugs 32^a and 32^b. The spring 29^a may be bent around the stud 31, as shown at 30^a, in the same manner as in the other form of device. This spring consists of a single leaf which is bent around the boss 24, its end 29^b, extending back of lug 32^a. The full lines in Fig. 5 illustrate the position of the parts when the seat is turned down, but before weight is placed upon it. Pressure upon the seat causes the spring to be flexed around boss 24. The dotted lines illustrate the position of the parts when the seat is pushed back as far as possible. In such case the other lug 32^b comes into play, taking the position shown, and pressing against the part of the spring between stud 31 and boss 24. This cushions the abutting parts of the castings when the seat is turned back.

I do not limit myself to the particular constructions shown and described, as modifications might be devised which would come within my invention as defined by the claims. The hinge is of particular value perhaps, when employed upon school desk seats. The same or similar constructions might be employed in other sorts of

seats. I have referred to the parts 32, 32^a and 32^b as lugs. It is unessential that they should be integral with the disks 20, and 20^a, and I do not intend by the use of this term in the claims any such limitation.

I claim:

1. A seat comprising a fixed casting provided with a circular recessed part, a movable casting provided with a disk, a boss on one of said parts and a stud on the other, whereby one is pivoted upon the other, a spring pivotally attached at one end only to the fixed casting and a pair of lugs on the disk of the movable casting, said lugs being arranged so that one of them engages the free end of the spring when the seat is in horizontal position, and the other bears against the spring between the boss and its pivotal connection with the fixed casting when the seat is in its vertical position.

2. A hinge comprising hinge members, means whereby said members are pivoted together, a spring attached at one end only to one of said members, which bears against the means forming the pivot between the members at one side only, and which projects beyond the same, a lug on the other hinge member which engages the spring beyond the point where it bears against said means when one of said members is moved relative to the other in one direction, and a second lug on said hinge member which carries the first mentioned lug, which second lug engages with the spring on a reverse relative movement of the hinged members at a point between the bearing of the spring on said means and the place of attachment of said spring.

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