W. T. CALLAGHAN.

EXTENSION DRAWER SLIDE.

APPLICATION FILED JAN. 19, 1911.

1,067,404.

Patented July 15, 1913.

2 SHEETS—SHEET 1.

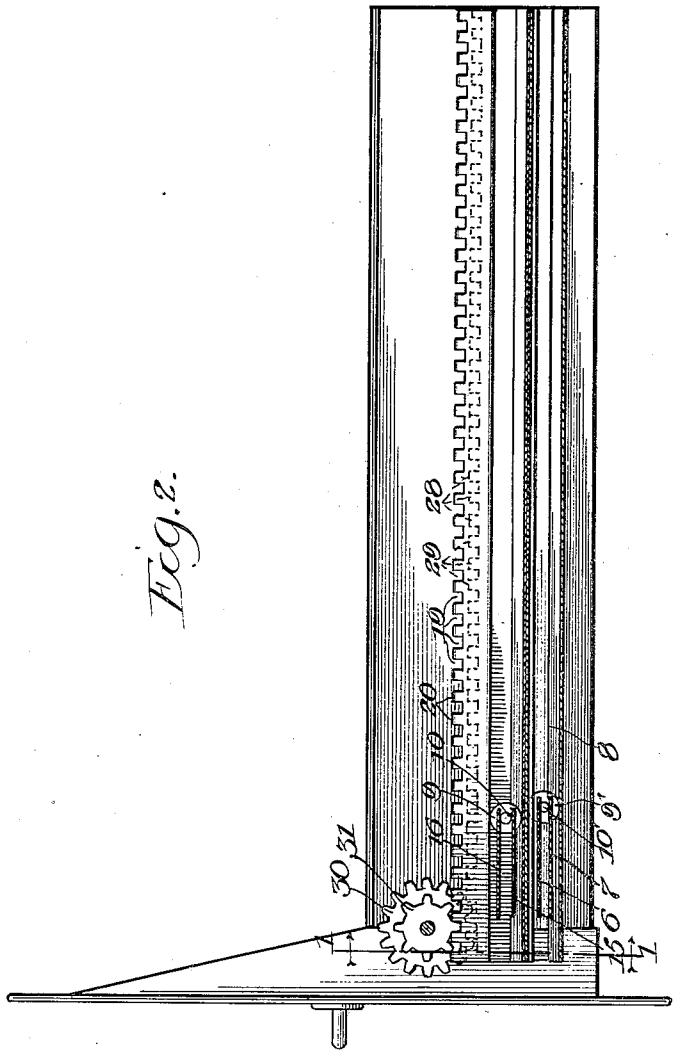


Fig. 2.

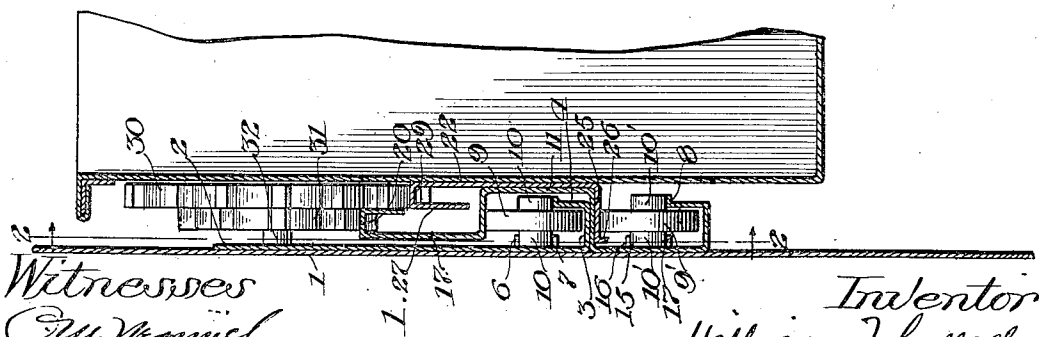


Fig. 1.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

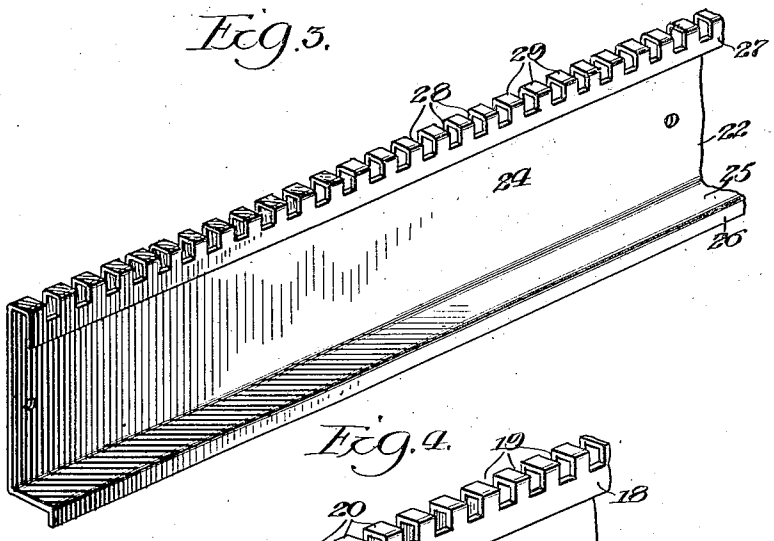


Fig. 4.

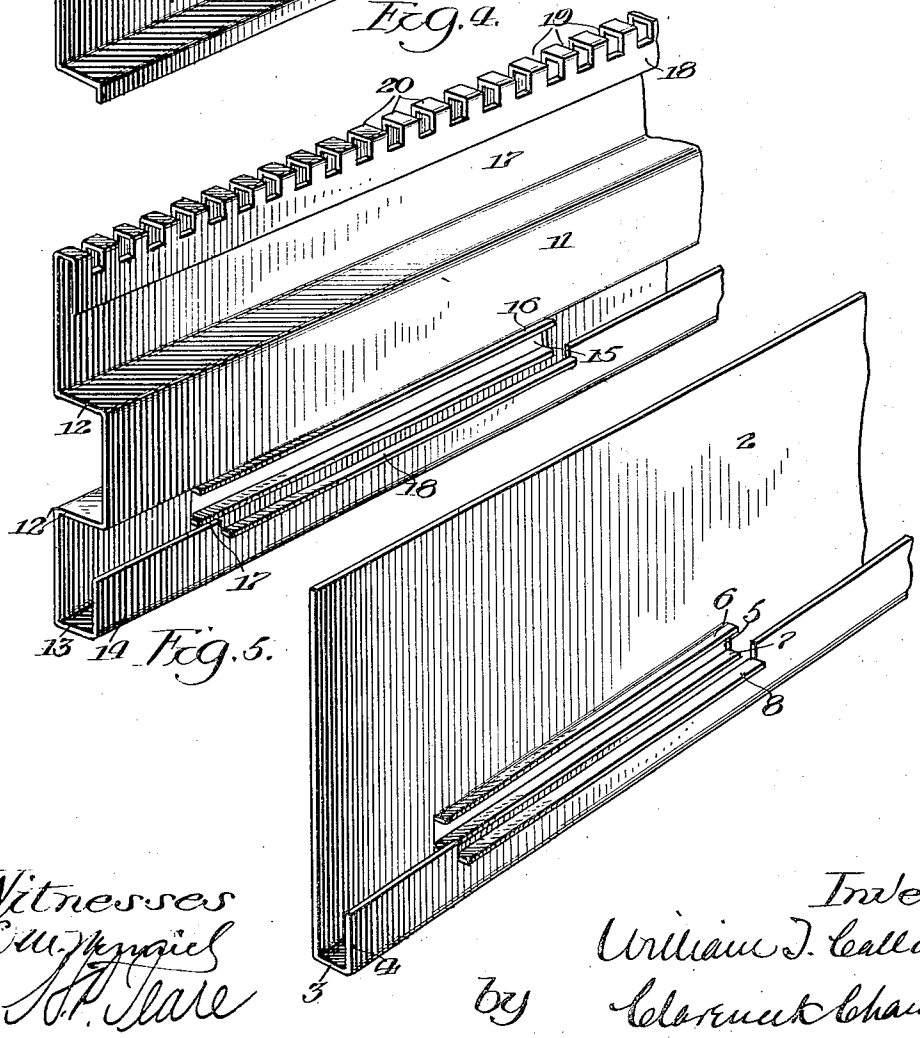


Fig. 5.

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EXTENSION DRAWER-SLIDE.

1,067,404. Specification of Letters Patent. Patented July 15, 1913.

Application filed January 19, 1911. Serial No. 603,601.

To all whom it may concern:

Be it known that I, WILLIAM T. CALLAGHAN, a citizen of the United States, residing at the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Extension Drawer-Slides, of which the following is a specification.

My invention relates to cabinets or similar furniture having drawers in which papers may be filed for ready and convenient reference. It is especially applicable to filing cabinets of the vertical class. In these it is important that the drawers should open throughout their length so as to disclose their entire contents. To do this it is necessary that they shall be supported upon extension slides which extend outwardly when the drawer is drawn out and which return to their places when the drawer is closed. The slides are usually actuated by engagement with the drawer at some portion of its travel. More or less shock or noise results from the positive and sudden engagement of the parts. It is desirable that such slides shall move at a definite rate proportionate to that of the drawer movement and that they will be extended or retracted in direct relation to the position of the drawer in its case or support. A mechanical device for this purpose is the subject matter of another application for patent which I now have pending in the Patent Office.

The purpose of this device also is to effect the object stated by cheap and practical means. The several elements of the structure are not liable to become disarranged. They are simple to construct and quiet and effective in operation.

The principles of my invention are illustrated in the drawings, in which—

Figure 1 shows a vertical section of one side of a metal filing cabinet, together with the drawer and slides on the section line 1—1 of Fig. 2. Fig. 2 is a section of Fig. 1 on the line 2—2; Fig. 3 is the inner guide which is attached to the drawer; Fig. 4 is an intermediate slide, and Fig. 5 is the outer or stationary slide by means of which the drawer and the other slides are supported.

Further describing my invention with reference to the drawings, 1 represents the upright side of a metal filing case. 2 is a vertical guide secured thereto. It is provided with a channel formed by the portion 3 and flange 4 formed by right angle bends. It is provided with the slot 5, having the flanges or lips 6 and 7 and a similar lip 8 is formed on the flange 4. A roller 9 having the journals 10 adapted to roll on the flanges 7 and 8 is placed on the said slide as shown in Figs. 1 and 2.

The intermediate slide shown in Fig. 4 has a bead 11 which provides a central channel in the rear thereof which is adapted to fit over the flanged construction of the stationary guide 2 last described, and the inner face 12 of such channeled portion will ride upon the roller 9. The main body of said intermediate slide is provided with a downwardly extended part 12′, a transverse portion 13, and a vertical portion 14 at right angles thereto, and it is provided with a longitudinal slot 15 and the flanges 16, 17 and 18 in all respects similar to the same construction shown on slide 2. The said intermediate slide also has a vertical portion 17′, a transverse portion at right angles thereto, and a downwardly projecting portion 18′. The transverse portion is provided with slots 19 forming teeth 20 therebetween, the whole forming a rack adapted for engagement with the teeth of a pinion as hereinafter described.

The drawer or inner guide 22 shown in Fig. 3 has a vertical body portion 24, a right angle portion 25, and a downwardly turned flange 26. On the other edge it is turned at right angles and then downward to form the part 27. The right angle portion is provided with cuts 28 forming teeth 29 therebetween, the whole forming a rack similar to that on the upper edge of the intermediate slide. In further assembling the device the drawer or inner guide is applied to the side of the drawer as shown in Fig. 1 and the transverse portion 25 is placed under the central channel of the intermediate slide and rests upon the roller 9′ which is provided with the journals 10′ which roll on the flanges 17 and 18 of the intermediate slide. It will be seen that when the parts are thus assembled in the described relation to each other, the drawer is supported by the intermediate slide which in turn is supported and slides upon the outer or stationary guide, but that the relation of the intermediate slide to the drawer in action will be that of chance only or as governed by accidental friction. But

I use the double pinion consisting of the large member 30 and the small member 31, which are securely fastened together and attached by the pivot 32 to the stationary part of the cabinet frame. The larger member as shown has twice the number of teeth on its periphery that the smaller member has. The composite pinion should be so placed that the teeth of the larger member mesh with the rack on the upper edge of the drawer guide, and the teeth of the smaller member mesh with the teeth or forming the rack on the upper edge of the intermediate slide. When so placed and when the teeth on the two members of the pinion are in the relation to each other of two to one, it is clear that when the drawer is extended the action of the pinion will extend the intermediate slide to just half the distance that the drawer itself has moved, and that all movements of the parts will be in like relation. And, by varying the number of teeth on the pinion, any desired relation of movement between the slide and the drawer may be secured.

I claim:

1. In a cabinet having a vertical wall, an angular guide secured therein, an intermediate single piece sheet metal slide having three oppositely opening longitudinal depressions therein and provided with a top rack, a drawer guide provided with a rack at its top, said slide and guide provided with longitudinally extending slots and terminal flanges, anti-friction rollers journaled in said slots and upon said flanges, said drawer guide adapted to ride upon the roller of the intermediate slide and the latter upon the roller of the cabinet guide, a two-stepped pinion rotatably secured to said cabinet guide and adapted to mesh with the said racks.

2. In a cabinet having a vertical wall, an angular guide secured therein, an intermediate single piece slide having three oppositely opening longitudinal depressions therein and provided with a top rack cut therefrom, a drawer guide provided with a rack at its top, said slide and guide each having a short length slot adjacent its lower front corner and also having a flanged lower edge positioned in horizontal alinement with the adjacent slot, anti-friction rollers movably journaled in each of said slots and revolubly mounted upon said flanged edges, said drawer guide adapted to ride upon the roller of the intermediate slot and the intermediate slide adapted to ride upon the roller of the cabinet guide, a two stepped pinion rotatably secured to said cabinet guide and adapted to mesh with said racks, one step of said pinion having twice the number of teeth provided upon the other step thereof and the teeth of the smaller step positioned in meshing engagement with the intermediate slide rack.

In witness whereof, I have hereunto set my hand, this 7th day of January A. D. 1911, in the presence of two subscribing witnesses.

WILLIAM T. CALLAGHAN.

Witnesses:
C. K. CHAMBERLAIN,
A. S. PHILLIPS.