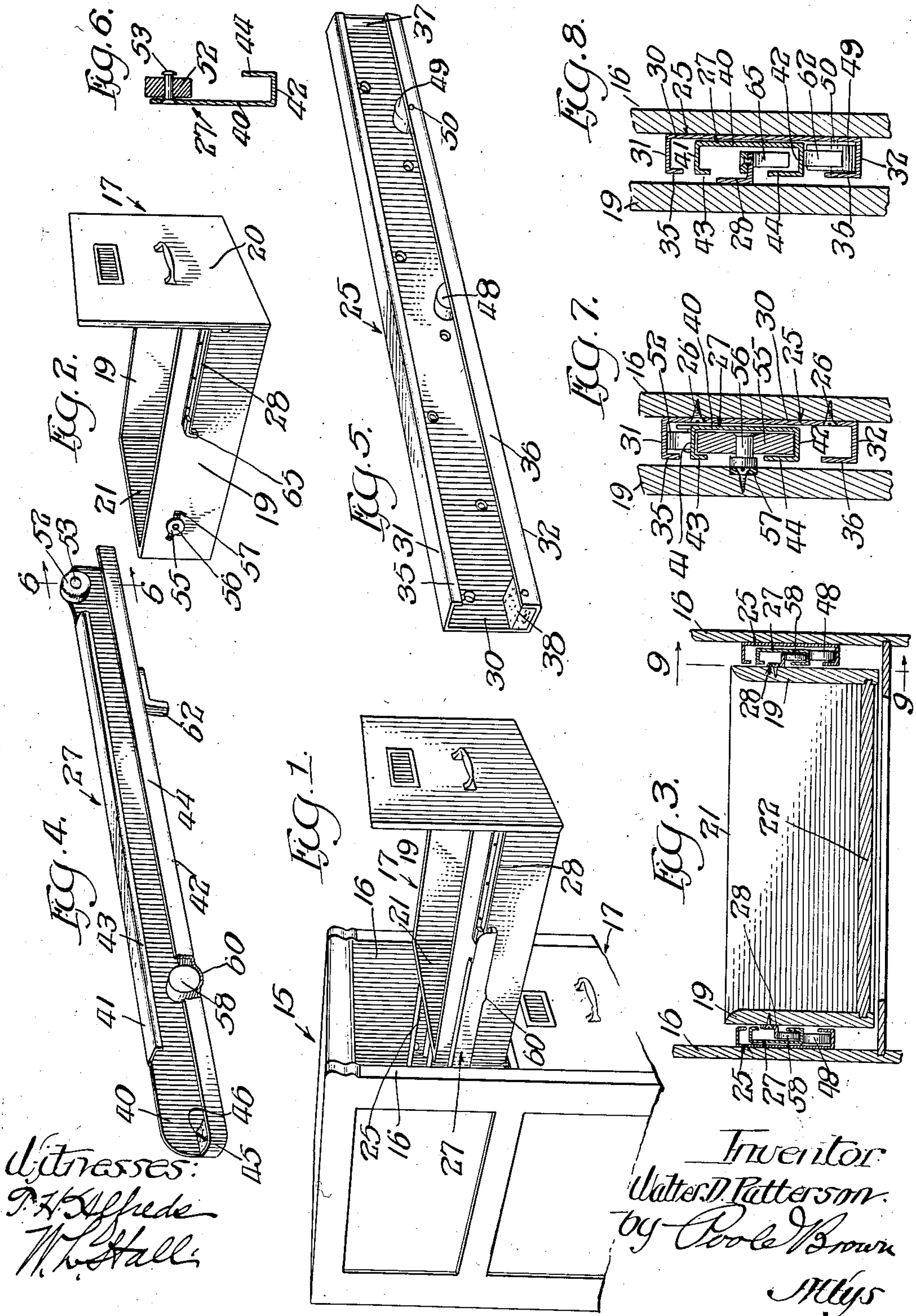


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EXTENSION DRAWER SUPPORT.  
APPLICATION FILED JUNE 15, 1908.

946,151.

Patented Jan. 11, 1910.

2 SHEETS—SHEET 1.



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W. H. Hall

Inventor  
Walter D. Patterson  
by Poole & Brown  
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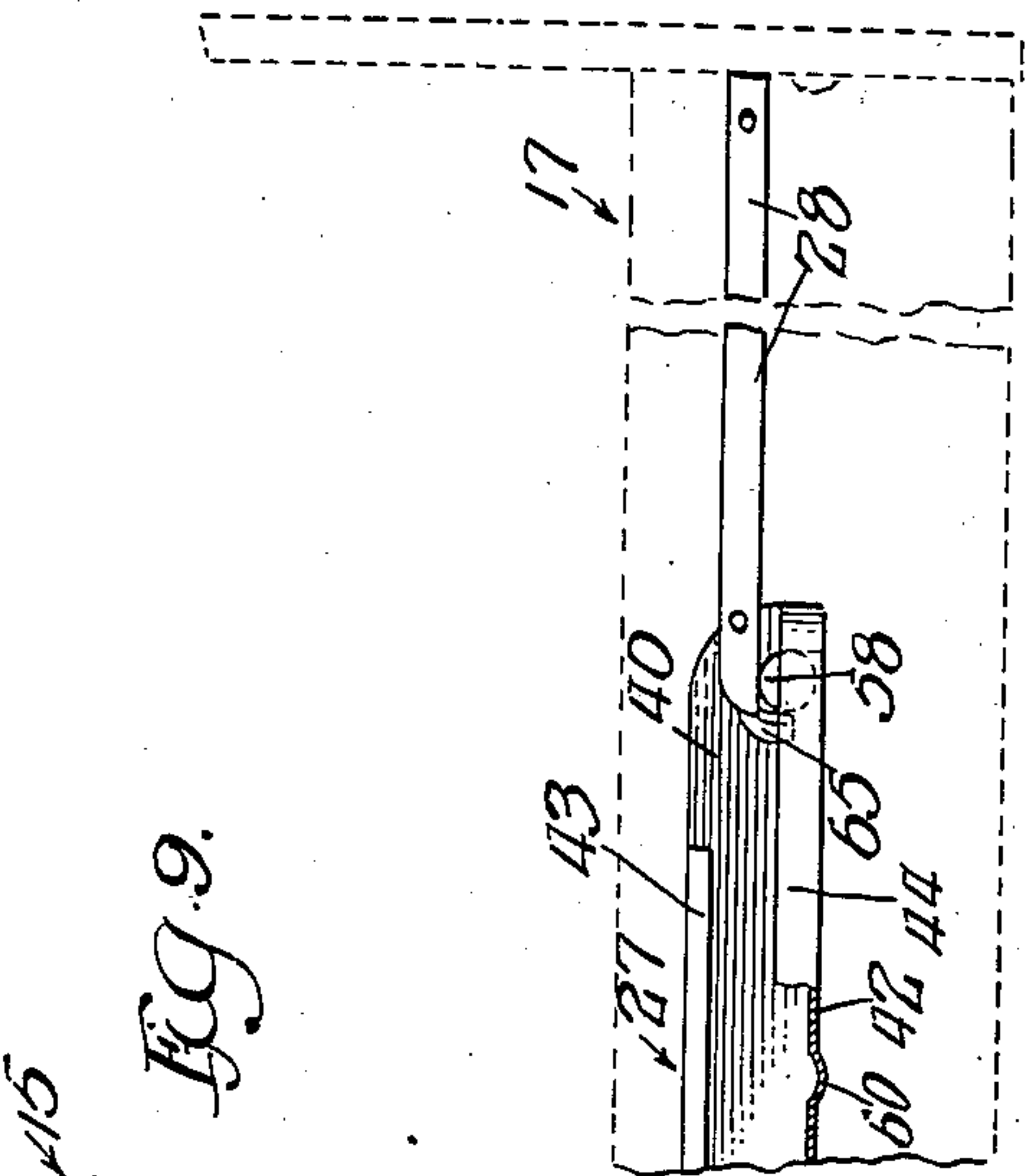


Fig. 9.

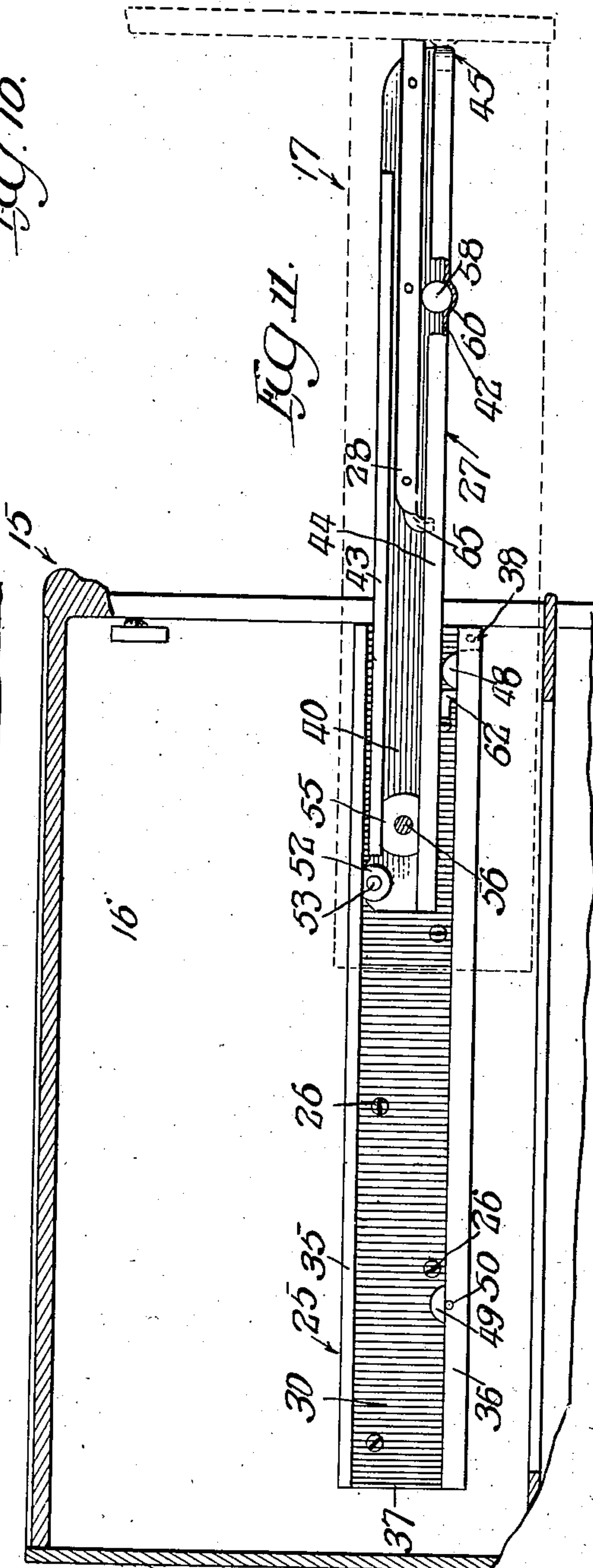


Fig. 10.

Witnesses:  
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# UNITED STATES PATENT OFFICE.

WALTER D. PATTERSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO AMBERG FILE & INDEX CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

## EXTENSION DRAWER-SUPPORT.

946,151.

Specification of Letters Patent.

Patented Jan. 11, 1910.

Application filed June 15, 1908. Serial No. 438,454.

*To all whom it may concern:*

Be it known that I, WALTER D. PATTERSON, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Extension Drawer-Supports; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form a part of this specification.

This invention relates to improvements in extension supports for drawers for cabinets and other articles of furniture, of that class in which the drawer is designed to be wholly withdrawn from its compartment and to be supported in its outermost position.

The invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

Among the objects of my invention is to provide an extension drawer supporting structure embodying roller bearings which are so arranged as to distribute the load of the drawer thereon as to insure free operation thereof and avoid binding and which will also produce a practically noiseless construction.

A further object of the invention is to provide an exceedingly strong and durable support for drawers of this character, while making the same of light construction and such as will take up but little space in the cabinet.

In the drawings:—Figure 1 is a fragmentary perspective view of a cabinet provided with an extension drawer support embodying my improvement, showing the drawer in its extended position. Fig. 2 is a perspective view of the drawer removed from the cabinet. Fig. 3 is a transverse section of the drawer and cabinet, and showing the extension supporting device for the drawer. Fig. 4 is a perspective view of one of the extension slides of the drawer. Fig. 5 is a perspective view of one of the supporting rails which is mounted on the cabinet structure. Fig. 6 is a transverse section, taken on line 6—6 of Fig. 4. Fig. 7 is a transverse section, taken on line 7—7 of Fig. 9. Fig. 8 is a transverse section, taken on line 8—8 of Fig. 9. Fig. 9 is a longitudinal sectional view, taken on line 9—9 of Fig. 3, indicating the drawing in dotted outline. Fig. 10

is a detail illustrating the forward end of one of the extension slides and its associated supplemental rail of the drawer, the drawer, which is indicated in dotted outline, being shown in its outermost position. Fig. 11 is a view similar to Fig. 9, illustrating the drawer partially withdrawn.

As shown in the drawings, 15 designates an article of furniture, which may comprise an ordinary letter file cabinet having side walls 16, 16, and 17, 17 designate the drawers which are movable into and out of the compartments of the cabinet. Said drawers each comprises side walls 19, 19, a front wall 20, a rear wall 21, and a bottom wall 22. The drawer is supported on the side walls 16 of the cabinet structure through the medium of track rails 25, 25 which are fixed by screws 26 to the inner sides of said side walls, extension slides 27, 27 which are supported on said track rails and supplemental tracks 28, 28 which are attached to the drawer and are supported on the outer ends of said extension slides. The said track rails, extension slides and supplemental drawer tracks are made of sheet metal, as herein shown, and the track rails and slides are flanged to give grooved construction thereto, said parts fitting in telescopic relation to each other. The track rails 25 each consists of a vertical web portion 30, and upper and lower flanges 31, 32, respectively, on which are formed downwardly and upwardly facing tracks. The outer margins of the track flanges terminate in guide flanges 35, 36, respectively, which serve to maintain proper guiding engagement of the parts. The inner ends of the grooved track rails thus formed are closed by end walls 37 formed by turning the end of the webs laterally. Said track rails 25 are provided at their forward ends with stop blocks 38 made of any suitable yielding or non-resonant material and which serve to limit the outward movement of the extension slides in the manner hereinafter to be described.

The extension slides 27 each comprise a central web portion 40, upper and lower horizontal flanges 41, 42, respectively, the lower one of which constitutes a track flange, and guide flanges 43, 44 extending vertically from said horizontal flanges. The guide flanges 44 of the extension slides are curved inwardly toward the webs thereof at the



front end of the slides, as shown at 45, to constitute a housing for a stop 46 which limits the outward movement of the drawer supplemental tracks 28 therein, as will hereinafter more fully appear. The extension slides 27 at the sides of the drawer fit within the hollow track rails 25, between the upper and lower track flanges of the latter, as shown best in Figs. 3, 7 and 8. The said track rails are each provided with bearing rollers 48, 49, the latter of which is rotatively mounted on a short pin 50 that is mounted at its ends in the adjacent guide flange 36 and the web of said rail. The other roller 48 is unattached, it being designed to roll along the track when the drawer is opened and closed and is arrested by its contact with the stop block 38. The said extension slides 27 rest on the bearing rollers 48 and 49, and when the drawer is in its innermost position the entire weight or load of the drawer is transmitted to the said track rails through said rollers 48 and 49. The said extension slides have further roller bearing contact with the track rails 25, consisting of bearing rollers 52, 52 carried by the rear ends of said slides which bear upon the downwardly facing track surfaces of the upper flanges 31 of the said track rails. The bearing rollers 52 are mounted on pins 53, 53 which are carried by upward extensions of the webs 40 at the rear ends of said extension slides. When the drawer is drawn out or partially drawn out, its weight is transmitted to the track rails through the front or floating rollers 48 and said rear rollers 52, as shown in Fig. 11.

The drawer is supported on the extension slides through devices made as follows: 55, 55 designate rear bearing rollers which are carried by the sides of the drawer and are mounted on studs 56, 56 extending laterally from the said walls. Said studs are shown as made integral with plates 57 which are attached by screws or the like to the drawer walls. The said drawer rollers are located within the hollow or channeled extension slides. They bear on the upwardly facing tracks of the lower flanges 42 of said slides to transmit the weight of the rear part of the drawer and its load to said extension slides when the drawer is in its closed position, as shown in Fig. 9, and engage the downwardly facing tracks of the upper flanges 41 of said slides when the weight of the extended drawer tends to tip the front end of the drawer downwardly, thus preventing such tipping. The weight of the front part of the drawer and its load is transmitted to the extension slides through the supplemental tracks 28 and bearing rollers 58, 58 which roll on the upwardly facing tracks of the lower flanges 42 of the extension slides. The said bearing rollers 58, like the bearing rollers 48,

are unattached to a fixed bearing and are free to roll bodily endwise of the extension slides. The said bearing rollers 58 occupy depressed portions 60 in the tracks of the lower flanges 42 of the extension slides when the drawer is in its closed position, as shown in Fig. 9. Thus it will be seen that when the drawer is in its closed position, as shown in Fig. 9, the weight of the drawer and its load is transmitted through the supplemental tracks 28 and the bearing rollers 55 to the extension slides, from whence it is transmitted through the rollers 48 and 49 to the track rails 25.

During the first part of the outward movement of the drawer it will move outwardly on the rollers 48 and 49 owing to the fact that said rollers are free to rotate, while the rollers 58, which directly support the front part of the drawer, are retarded by engagement with the depressions 60 in the lower tracks of the extension slides. While the drawer is moving outwardly to the position shown in Fig. 11, the supplemental tracks and rollers 58 remain in their normal positions relatively to each other and to the extension slides. During the first part of the outward movement of the drawer the forward, unattached or floating rollers 48 roll forwardly along the lower tracks of the track rails 25 toward the stops 38 at the forward ends thereof. The said free or floating rollers move forwardly and rearwardly at a speed but half of that of the drawer, and are so located that they reach the stops 38 at a time when said slides have reached their forwardmost positions.

The extension slides are provided with downwardly extending arms 62, 62 which are attached to and depend from the lower flanges thereof and extend into the space between the guide flanges 36 of said lower flanges and the webs of said rails, in line with said free or floating rollers. Therefore, when the sliding extensions reach their forwardmost positions, said arms 62 engage the floating or unattached rollers 48 just as the latter are brought up against the stops 38, whereby further outward movement of the slides is arrested. In the further opening movement of the drawer the supplemental tracks are drawn outwardly with respect to the extension slides, and in such outward movement are supported by the floating rollers 58 which travel outwardly on the flanges 42 toward the end stops 46 at the ends of the extension slides. Said floating or unattached rollers are moved outwardly at half the speed of the drawer and are brought up against said end stops 46 when the drawer has reached the limit of its movement. The said supplemental tracks 28 are provided at their rear ends with downwardly extending arms or spurs 65 which are arranged to engage said



floating rollers just as the latter are brought up against the end stops 46 and thus arrest the final forward or outer movement of the drawer. Thus it will be seen that the positions of the floating or unattached rollers 58 and 48 are always under control, and are maintained in their proper positions to support the drawer as desired, notwithstanding the fact that they are free to bodily move relatively to their engaging track surfaces. In the event that said rollers should accidentally become misplaced they would be brought to their proper relative positions upon the next full withdrawal of the drawer, inasmuch as in such event the arms or spurs 62 and 65 would bring said rollers up against their stops. When the drawer is thereafter pushed inwardly the rollers will naturally roll inwardly in proper relation to the parts which they support and stop in the positions shown in Fig. 10. During the time the drawer is passing from the position indicated in Fig. 11 to its final open position, indicated in Fig. 10, it will be noted that the weight of the drawer and its load is supported by the lower floating rollers 48 and the upper bearing rollers 52 carried by the rear ends of the sliding extensions. When the drawer is pushed inwardly from its outermost position the drawer is first moved inwardly on the rollers 55 and 58 from the position shown in Fig. 10 until the parts assume the position shown in Fig. 11, and during the continuation of the closing movement of the drawer the extension slides move inwardly on the rollers 48 and 49 until they reach the position shown in Fig. 9.

The use of the floating or unattached rollers 48 and 58 maintains the bearing rollers in proper position for supporting the load of the drawer by the use of a minimum number of rollers and a simple and inexpensive construction, it being observed that said rollers move outwardly and inwardly on their tracks as the drawer is moved outwardly and inwardly. Thus the roller support for the load is stable and largely avoids objectionable tendency of the movable parts to bind against the bearing rollers. Thus the drawer moves freely on its supports. The provision of the depressions 60 in the lower tracks of the extension slides 27 in which the floating rollers 58 rest when the drawer is in its closed position is advantageous, inasmuch as it insures that the drawer will move outwardly, when it is being opened, with the extension slides through the full travel of said slides before the drawer is moved relatively to said slides. This arrangement provides for a more freely movable drawer, as compared to a construction where the drawer is first withdrawn outwardly away from the extension slides, inasmuch as the latter arrangement has the

effect to at once throw an overweight on the forward ends of the track rails and the bearing rollers in the beginning of the opening movement of the drawer, which would continue at an increasing ratio as the drawer approached its fully opened position. In the present construction the overweight at the forward end of the drawer is not brought full upon the drawer supports until the drawer is fully extended, or occupies its fully open position. It will be manifest, therefore, that during the first part of the opening movement of the drawer, when supported as herein shown, the load of the drawer will be distributed evenly on the bearing rollers and will move freely on said rollers. Similarly, when the drawer is pushed inwardly to close the same, the drawer moves inwardly relatively to the extension slides during the first part of the closing movement and moves inwardly with said slides during the remainder of the closing movement. The said rollers, as well as the limiting stops 38 and 46, will be made of any suitable, comparatively non-rigid, non-resonant material, thus producing a noiseless extension support which is free from shocks or jars tending to break or rack the movable parts.

It will be understood that changes may be made in the construction herein shown within the spirit of my invention, and I do not wish to be limited to such construction except as hereinafter made the subject of specific claims.

I claim as my invention:—

1. The combination with a cabinet and a drawer movable into and out of the cabinet, of an extension support for the drawer comprising track rails fixed to the cabinet, extension slides supported on said track rails and movable endwise thereof and formed with upwardly facing tracks, supplemental tracks at the forward ends of the drawer which overlap the forward ends of the extension slides and are movable endwise of the upwardly facing tracks of the extension slides, and means for retarding the movement of the supplemental tracks of the drawer endwise of the upwardly facing tracks of the extension slides, whereby in the first outward movement of the drawer the extension slides first move outwardly with the drawer and in the final opening movement of the drawer the said drawer is moved or drawn forward relatively to said extension slides.

2. The combination with a cabinet and a drawer movable into and out of the cabinet, of an extension support for the drawer comprising track rails fixed to the cabinet, extension slides supported on said track rails and movable endwise thereof and formed with upwardly facing tracks, bearing rollers between said slides and tracks, supple-



mental tracks at the forward ends of the drawer which overlap the forward ends of the extension slides, bearing rollers interposed between said supplemental tracks and the tracks of said slides and movable along said tracks, and means for retarding the action of the supplemental track bearing rollers, whereby the drawer and extension slides move outwardly on the bearing rollers of the extension slides during the first part of the withdrawal movement of the drawer.

3. The combination with a cabinet and a drawer movable into and out of the cabinet, of an extension support for the drawer comprising track rails fixed to the cabinet, extension slides supported on said track rails and movable endwise thereof and formed with upwardly facing tracks, bearing rollers between said slides and tracks, supplemental tracks at the forward ends of the drawer which overlap the forward ends of the extension slides, bearing rollers interposed between said supplemental tracks and the tracks of said slides and movable along said tracks, means for retarding the action of the supplemental track bearing rollers, whereby the drawer and extension slides move outwardly on the bearing rollers of the extension slides during the first part of the withdrawal movement of the drawer, and means for limiting the outward movement of the drawer.

4. The combination with a cabinet and a drawer movable into and out of the cabinet, of an extension support for the drawer comprising track rails fixed to the cabinet, extension slides supported on said track rails and movable endwise thereof and formed with upwardly facing tracks, bearing rollers between said slides and tracks, supplemental tracks at the forward ends of the drawer which overlap the forward ends of the extension slides, bearing rollers interposed between said supplemental tracks and the upwardly facing tracks of said extension slides, and movable along said tracks, said upwardly facing tracks being provided a distance in rear of their outer ends with depressions which are engaged by said latter rollers when the drawer is closed, and stop devices on said supplemental tracks and extension slides which cooperate with said latter bearing rollers to limit the outward movement of the drawers relatively to said slides.

5. The combination with a cabinet and a drawer movable into and out of the cabinet, of an extension support for the drawer comprising track rails fixed to the cabinet, extension slides supported on said track rails and movable endwise thereof and formed with upwardly facing tracks, bearing rollers between said slides and tracks, supplemental tracks at the forward ends of the

drawer which overlap the forward ends of the extension slides, and bearing rollers interposed between said supplemental tracks and the upwardly facing tracks of said extension slides and movable along said tracks, said upwardly facing tracks being provided a distance in rear of their outer ends with depressions which are engaged by said latter rollers when the drawer is closed, said extension slides being provided at their outer ends with stops and the supplemental tracks being provided at their rear ends with downwardly extending hooks adapted to engage the latter rollers when they are arrested by said stops to arrest the final opening movement of the drawer.

6. The combination with a cabinet and a drawer movable into and out of the cabinet, of an extension support for the drawer comprising upwardly and downwardly facing tracks on the cabinet, extension slides between said tracks which are movable endwise thereof, means for limiting the outward movement of said extension slides relatively to the tracks, said slides being formed to provide upwardly facing tracks, and means for supporting the drawer on said slides comprising rollers extending laterally from the rear end of the drawer and engaging the upwardly facing tracks of the slides, supplemental tracks at the forward end of the drawer overlapping the forward ends of the extension slides, rollers interposed between said supplemental tracks and the upwardly facing tracks of said slides, said upwardly facing tracks of the slides being provided near their outer ends with depressions with which said rollers are engaged when the drawer is in its closed position, and stop devices on said supplemental tracks and slides cooperating with said rollers to arrest forward movement of the drawer relatively to said slides.

7. The combination with a cabinet and a drawer movable into and out of the cabinet, of an extension support for the drawer comprising upwardly and downwardly facing tracks on the cabinet, extension slides between said tracks and movable endwise thereof, bearing rollers interposed between said extension slides and the upwardly facing tracks, the forward rollers of which move bodily along said tracks, stop devices on said extension slides and tracks for limiting the forward movement of said slides, and means for supporting the drawer on said extension slides comprising bearing rollers extending laterally from the rear end of the drawer and engaging upwardly facing tracks formed on said extension slides, supplemental tracks on the forward end of the drawer overlapping the forward ends of said extension slides, rollers interposed between said supplemental tracks and the upwardly facing tracks on said slides and



movable along said latter tracks, said latter tracks being provided in rear of their forward ends with depressions with which said latter rollers are engaged when the drawer is in its closed position, and stop devices on the supplemental tracks and said extension slides for limiting the forward movement of the drawer with respect to said slides.

In testimony, that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 9th day of June A. D. 1908.

WALTER D. PATTERSON.

Witnesses:

JOSEPH SUESS,  
ARTHUR J. AMBERG.