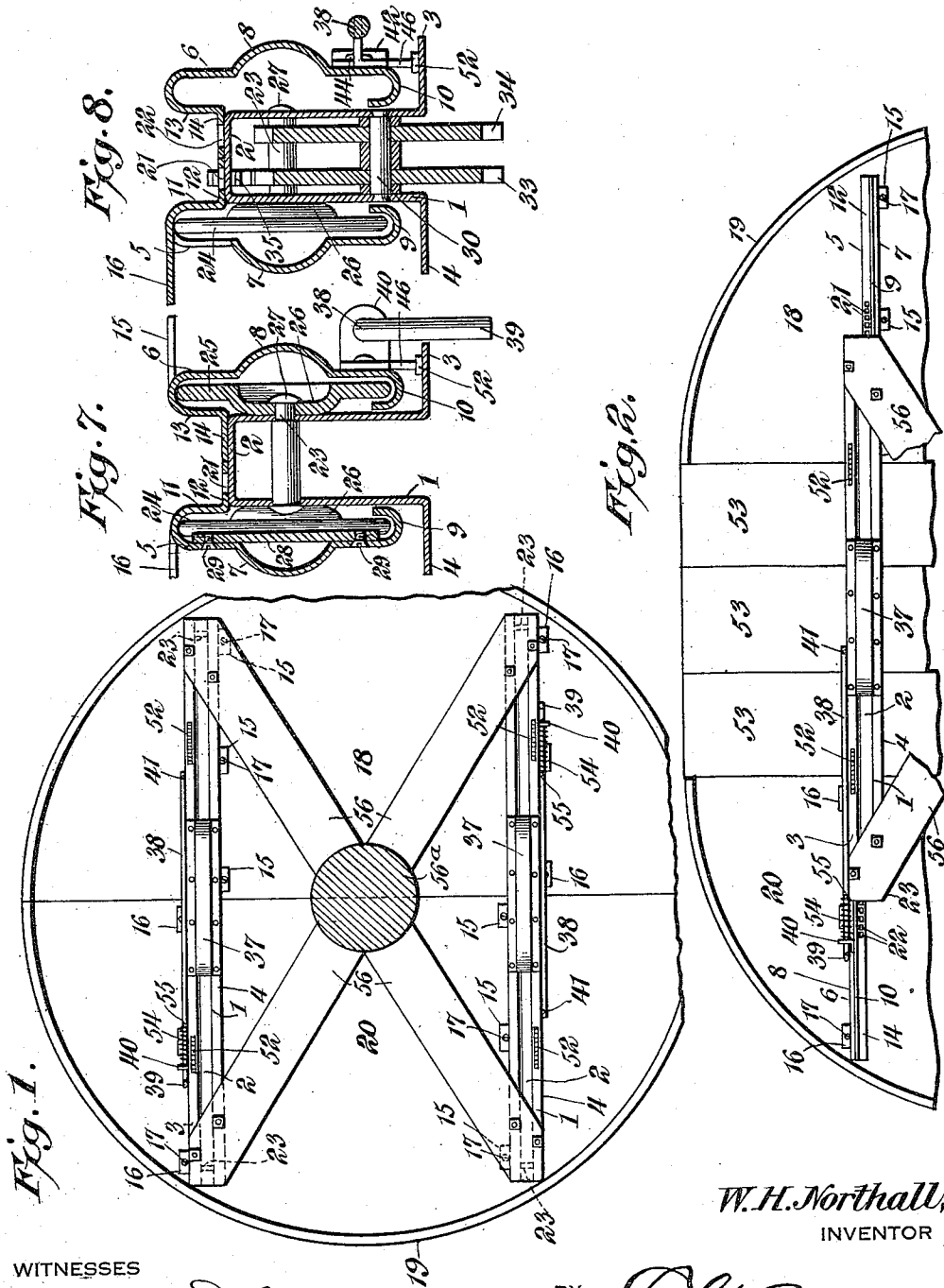


W. H. NORTALL.
 SELF CENTERING SLIDE FOR EXTENSION TABLES.
 APPLICATION FILED MAY 2, 1914.

1,175,801.

Patented Mar. 14, 1916.

3 SHEETS—SHEET 1.



WITNESSES
 Howard D. Orr.
 F. T. Chapman.

BY *E. J. Siggers*
 ATTORNEY

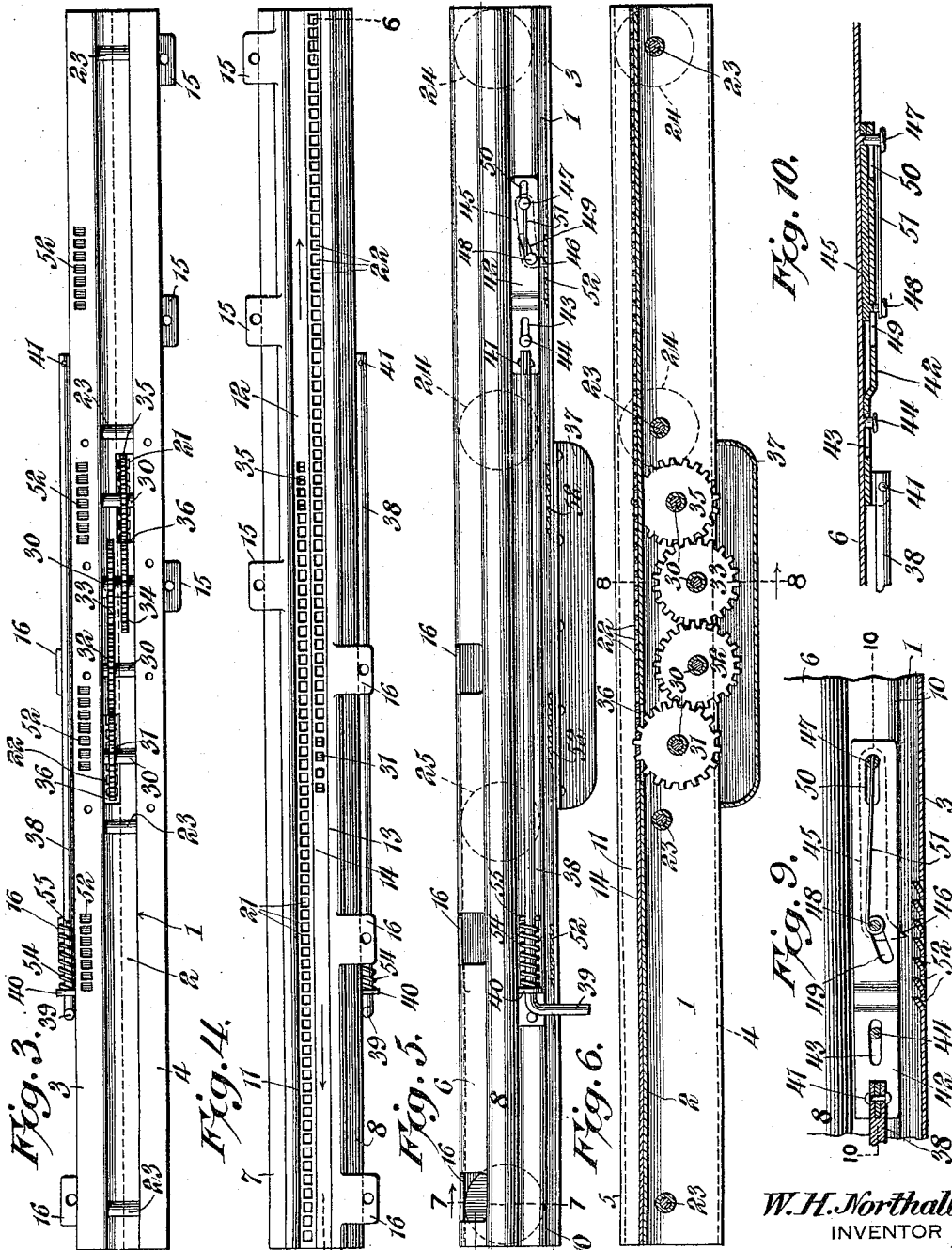
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3 SHEETS—SHEET 3.

WITNESSES

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FREDERICK W. GOEDEKE, OF EVANSVILLE, INDIANA.

SELF-CENTERING SLIDE FOR EXTENSION-TABLES.

1,175,801.

Specification of Letters Patent.

Patented Mar. 14, 1916.

Application filed May 2, 1914. Serial No. 835,955.

To all whom it may concern:

Be it known that I, WILLIAM H. NORTHALL, a citizen of the United States, residing at Evansville, in the county of Vanderburg and State of Indiana, have invented a new and useful Self-Centering Slide for Extension-Tables, of which the following is a specification.

This invention has reference to improvements in slides for extension tables, and its object is to provide a self-centering slide for the purpose which will at all times remain positive in action, and which will avoid certain objections to other slides of like character.

In accordance with the present invention each slide comprises two members made fast to respective sections of the table, and these sections are movable lengthwise along an intermediate section carrying intermeshing gearing in turn engaging respective outer sections, so that the slide sections will each have the same extent of travel as the other, although the two sections move in opposite directions.

The invention also provides roller supports taking up the major portion of the friction of the slide sections, these roller supports in conjunction with the gearing serving to hold the oppositely movable slide sections against lateral displacement with respect to the intermediate slide section.

The invention also includes locking means, whereby the table either in the extended or contracted positions, or any intermediate positions, may be locked against movement of the parts one relative to the other.

The invention will be best understood from a consideration of the following detailed description, taken in connection with the accompanying drawings forming a part of this specification, with the further understanding that while the drawings show a practical form of the invention, the latter is not confined to any strict conformity with the showing of the drawings, but may be changed and modified so long as such changes and modifications mark no material departure from the salient features of the invention.

In the drawings:—Figure 1 is a bottom plan view of an extension table equipped with slides constructed in accordance with the present invention. Fig. 2 is a fragmentary bottom plan view of the table of

Fig. 1 showing the latter extended and provided with intermediate leaves. Fig. 3 is a bottom plan view of one of the slides drawn on a larger scale than in the preceding figures, and having a gear shield omitted to expose the gearing. Fig. 4 is a top plan view of a slide on the same scale as Fig. 3. Fig. 5 is a side elevation of the structure of Figs. 3 and 4. Fig. 6 is a longitudinal section on the line 6—6 of Fig. 4. Fig. 7 is a section on the line 7—7 of Fig. 5, but drawn on a larger scale. Fig. 8 is a section on the line 8—8 of Fig. 6, but drawn on a larger scale. Fig. 9 is a fragmentary section of a portion of the latch mechanism. Fig. 10 is a section on the line 10—10 of Fig. 9 with some parts in elevation. Fig. 11 is a plan view of another form of slide. Fig. 12 is a side elevation of the structure of Fig. 11, showing portions of the table structure in cross section. Fig. 13 is a longitudinal vertical section of the slide of Fig. 11. Fig. 14 is a section on the line 14—14 of Fig. 11. Fig. 15 is a section on the line 15—15 of Fig. 12.

Referring to the drawings, there is shown a channel strip 1 usually constructed of pressed steel, but not necessarily made of such material, and this strip has a connecting wall 2, while the side members of the channel terminate at the long edges remote from the wall 2 in outstanding flanges 3, 4, respectively. The channel member is made fast to crossed bars 56 on a pedestal 56^a.

On opposite sides of the channel member 1 are slide members 5 and 6, respectively, each in the form of a plate with a longitudinal central rib or bead 7 or 8, as the case may be, this bead serving to impart stiffness to the slide member. The member 5 has one long edge returned upon itself in spaced relation to the body of the member and to that face remote from the bead 7 to form a U-shaped inturned flange 9, and the member 6 has a similar flange 10. The other long edge of the member 5 is returned upon itself in like manner as the flange 9 to form a channel portion 11 with the inner long edge of the channel portion outturned in a direction substantially perpendicular to the channel portion 11 to form a flange 12 which, when the parts are assembled, extends along the connecting wall 2 of the channel member 1, the flange 12 being in close relation to the wall 2 without undue

frictional contact therewith. The slide member 6 has a return portion 13 similar to the flange 12 of the member 5, and this portion terminates in an outstanding flange 14 similar to the flange 12, and when the parts are assembled the flanges 12 and 14 are in close edge to edge relation.

The slide member 5 is provided from one end toward the middle portion with a series of outstanding ears 15, and the slide member 6 has a similar series of ears 16 but located at the opposite end of the slide member 6 from the ears 15 of the slide member 5. These ears are designed for the passage of fastening devices 17, such as screws, for securing the slide member 5 to one section 18 of a table top 19, and the other slide member 6 to the other section 20 of the table top.

Extending throughout somewhat more than half the length of the flange 12 is a series of perforations 21 therethrough, while the flange 14 has a similar series of perforations 22, but extending from the opposite end of the slide member 6 from the series of perforations 21 of the flange of the slide member 5. These series of perforations are of sufficient length so that when the corresponding ends of the slide members 5 and 6 coincide, the series of perforations 21 overlap the series of perforations 22 at the central portion of the slide as a whole, all as shown in Fig. 4. For convenience of description, the ends of the series of perforations 21 and 22 at the corresponding ends of the slide members will be termed the outer ends of the series of perforations, while those which are brought into overlapping relation will be termed the inner ends of the series of perforations.

Extending across and passed through the side walls of the chamber member 1 are pins 23 suitably secured at the ends as by riveting, or otherwise, and these pins are distributed at suitable intervals along the length of the intermediate channel member 1. In the particular showing of the drawings four such pins are indicated, but it will be understood that a greater number may be provided. One end of each pin is continued through the respective wall of the channel member, and there carries a disk-like roller 24 or 25, as the case may be. Two of the rollers, say the rollers 24, are lodged in the slide member 5 near one end thereof, and the other two rollers 25 are lodged in the slide member 6 near the other end thereof. The rollers 24 and 25 each have a dished hub portion 26 through which the respective pin 23 extends, the pin being headed, as at 27, or otherwise formed to support the roller. The dished portion 26 serves to offset the roller from the respective side of the channel member 1 to allow for the thickness of the flanges 9 and 10 and the channel edges 11 and 13 of the slide members 5 and 6.

Near one end of one of the slides, say, the slide 5, there is secured a strip 28 as by screws 29 or otherwise, this strip serving a function to be described.

Since the channel members 5 and 6 are made fast to the table top sections, the rollers 24 and 25 serve as anti-friction supports for the channel member 1, and the rollers also serve as supporting anti-friction bearings for the respective members 5 and 6 keeping them out of such contact as would produce undue friction, and, moreover, holding the members in proper substantially parallel relation. The channel member 1 with the rollers 24 and 25 operates as a spacer for the slide members 5 and 6 and constrain them to parallelism of movement.

Extending between the side walls of the channel member 1 and at the ends secured thereto, is a series of pins 30, and mounted on these pins is a series of gear wheels 31, 32, 33, 34, and 35, the gear wheels 33 and 34 being mounted upon the same pin 30, and are secured together for simultaneous rotation in any suitable manner. The gear wheels 31, 32 and 33 are in mesh one with the other, and the gear wheels 34 and 35 are in mesh one with the other and are displaced laterally with respect to the first-named group of gear wheels. Since the gear wheels 33 and 34 are connected for simultaneous movement, there is provided a train of gearing including the gear wheels 31, 35, so that movements of the gear wheel 31 are transmitted to the gear wheel 35, and vice versa. The end gear wheels 31 and 35 of the series are so situated as to engage in the notches 22 and 21, respectively. The other gear wheels serve as transmission and idler gear wheels between the end wheels 31 and 35, and are so arranged that the end wheels 31 and 35 rotate in opposite directions. The series of perforations 21 and 22 operate as racks, so that when one of the slide members, say the slide member 6, is moved to the left, as shown by the arrow thereon in Fig. 4, the gear wheel 31 is rotated, and this motion is transmitted to the gear wheel 35, so that the latter rotates in the opposite direction, thus by engagement in the rack made up of the series of notches 21 the slide member 5 is propelled toward the right, as viewed in Fig. 4, the direction being indicated by an arrow on the slide member 5. Under these circumstances the channel member 1 does not move in either direction, but simply maintains its relation to both members 5 and 6. The slide therein becomes automatically self centering, so that the table top members move equal distances from or toward the central position, and this relation is always constant due to the positive connection formed by the train of gearing, and which connection is not subject

to any changes which might occur from stretching or other displacements where the connections are not of such a positive nature as in the present structure. The terminal gear wheels 31 and 35 extend through respective slots 36 in the connecting wall 2. In order to cover the gearing against contact which might cause injury, a shield 37 is provided, and is made fast to the flanges of the channel member 1.

It is desirable to lock the table top sections in different positions of adjustment, so that they may not be accidentally separated when once adjusted, and for this purpose a rod 38 is provided, this rod having one end formed with an angle extension 39, and adjacent such end slidable longitudinally in a bracket 40 carried by one of the members 5 or 6, the particular showing of the drawings indicating that the rod 38 is carried by the member 6. The end 39 of the rod 38 is located at some convenient point of manipulation, and is of a length to extend toward the other end of the member 6 where the rod is made fast by a pin 41 or otherwise to a slide plate 42, and adjacent to the rod 38 the plate 42 is provided with a longitudinal slot 43 through which there extends a pin 44 fast to the slide member 6. The plate 42 is suitably bent so as to be spaced from the corresponding face of the slide member 6 for a portion of the length of the plate, and between said plate and the slide member 6 there is lodged a latch member 45 having one end formed into a tooth 46, and the other end mounted on a pin 47 carried by the slide member 6. The latch near its tooth end 6 carries a pin 48 projecting through an inclined slot 49 in the plate 42, and said plate is also provided with a longitudinal slot 50 traversed by the pin 47. Carried by said pin 47 is one end of a spring 51, the other end of this spring engaging the pin 48. Both of the pins 44 and 47 are headed so as to hold the plate 42 against the slide member 6, but permitting the longitudinal movement of the plate 42.

At appropriate points along the flange 3 of the channel member 1 the latter is completely punched out to form a series of teeth 52, there being usually as many different series of teeth 52 as there are positions to which it is desired to adjust the table top. For instance, in Fig. 2 the table top is shown as containing three leaves 53 and if such number of leaves represents the extreme extension of the table top, then there are provided four series of teeth 52, one series representing the closed position of the table top, and the other three series representing positions for one, two or three leaves. By arranging the teeth 52 in series, provision is made for different widths of insert leaves as may be desired.

The rod 38 is constrained toward one limit of its travel by a spring 54 surrounding the rod and abutting it at one end against the bracket 40 and at the other end against a pin 55 extended through the rod. Under the normal action of the spring 54 the plate 42 is moved toward one limit of its travel, and the inclined slot 49 is so arranged that at such limit of its travel the tooth 46 is moved into engagement with one of the teeth 52. These teeth are inclined, so that the table top may be readily moved toward the closed position, and will lock automatically at the proper point during such movement, but if it be desired to extend the table, then the manipulating end 39 must be actuated to move the rod 38 against the normal action of the spring 54, thereby causing the walls of the inclined slot 49 to act on the pin 48 to move the latch 45 in a direction to carry the nose 46 out of the path of the teeth 52, whereupon the table may be extended as far as desired. On the release of the rod 38, the spring 54 propels it to its normal position, thus allowing the latch 45 to move with its nose 46 in engagement with the teeth 52, the spring 51 causing such movement of the latch under the conditions named.

The strip 28 is arranged in the path of one of the rollers 24, so that the slide members 5 and 6 cannot extend beyond a point determined by the engagement of the strip 28 with the nearer roller 24, since the two slide members are permanently connected through the gearing.

Each slide is composed of an intermediate member and two flanking members carrying the intermediate member by means of roller supports, so that the outside or flanking members move with great ease, and are the ones attached to the table top, while the intermediate member has no positive connection at all with the table top aside from that provided by the flanking members. The racks formed on the flanking members are of the open type preventing clogging by any accumulations. Moreover, the intermediate member forms the sole support for the connecting gearing, causing the flanking side members to move with equal speed in opposite directions, and also causing such movement to be positive. The flanking members also serve as inclosing means for all the moving parts, so that these parts are protected against access and any possibility of harm to persons manipulating the table, and avoiding any danger of entangling anything into the moving parts.

In the structure described the self-centering means comprises two associated racks in overlapping relation when the table is in a closed position and the racks extending on opposite sides of the center point of the table. When the table top sections are ex-

tended the two normally overlapping members of the self-centering means move lengthwise of each other but in opposite directions, being caused to move simultaneously, though oppositely, at equal speeds by the interconnecting gearing, which latter engages the racks on respectively opposite sides of the center point of the table, with the terminal members of the train of gearing constituting the gears which engage the racks spaced apart for a considerable distance. This spacing in the particular showing of the drawings is measured by the combined widths of two intermeshing idler gear wheels which mesh together in about the cross-central line of the table. With a round top pedestal table the length of the self-centering interconnections and the length of a self-centering slide is limited and hence the extension of such a self-centering device or of such a slide is likewise limited, especially if the self-centering means be such that the racks when extended still overlap at their inner ends. By the interposition of the longitudinally extended train of gearing the inner ends of the racks may both overrun the lateral center line of the table to respectively opposite sides of the latter and the travel of the runners or racks may be correspondingly enlarged. Because of this it is quite possible to extend a round top pedestal table to double its closed diameter, or even more. With such an arrangement if the central member and the runners of a slide be all of equal length and consequently coinciding at the ends in the closed position, each runner may be extended beyond the corresponding end of the middle member which serves as a support to an extent representing more than half the length of the runner and consequently the extended slide may be more than twice the length of the contracted slide, such slide including self-centering mechanism.

In Figs. 11 to 15 a modified form of the slide is shown, and since in many respects the parts are similar the same reference numerals are employed except that they are supplied with the exponent "a." In Fig. 11 and associated figures there is shown a channel strip 1^a having a connecting wall 2^a and terminating at the long edges remote from the wall 2^a in outstanding flanges 3^a, 4^a, respectively. Slide members or runners 5^a and 6^a are provided, each having a longitudinal central rib 7^a or 8^a as the case may be. The member 5^a has an intumed U-shaped flange 9^a and the member 6^a has a similar flange 10^a, while the other edges of these members have respective intumed flanges 11^a and 13^a. The slide members or runners 5^a and 6^a have ears 15^a and 16^a for attachment to the separable parts of a table top. The slide members or runners 5^a and 6^a are supported by the intermediate member 1^a through roll-

ers 24^a and 25^a which may correspond to the rollers 24 and 25 of the structure of Fig. 1 and associated figures, and these rollers are shown as provided with dished portions 26^a and mounted on pins 23^a carried by the intermediate member 1^a.

The structure of Fig. 11 is shown as applied to cross bars 56 such as are usually carried by the top of the post of a pedestal extension table. Under such conditions the ends of the member 1^a are each provided with a perforation through the connecting wall 2^a for a bolt 57 extending through the respective bar 56 and struck in from the side walls of the member 1 are ears 58 having matching perforations through which the bolt 57 extends. In order to hold the member 1 to the bars 56, and also relieve the bolts 57 of undue strain, each flange 3^a and 4^a is formed with a struck out tooth 59 near the ears 58, this tooth being located to enter the respective bar 56, and thus in conjunction with the bolt 57 anchor the corresponding end of the slide member 1.

Instead of the gearing connections shown and described with reference to the structure of Fig. 1 and associated figures, a self-centering interconnection of a somewhat different type is employed in the structure of Fig. 11 and associated figures. Mounted in the interior of the channel member 1^a near the ends thereof are flanged rollers 60, being supported upon journal pins 61 carried by the side portions of the channel member 1^a. Each roller has a portion extending through a passage 62 in the connection portion 2^a so as to enter the space between the intumed edges 11^a and 13^a of the runners 5^a and 6^a. One runner, say, the runner 5^a, has a bracket 63 fast thereto near the lower edge, while the corresponding portion of the side of the channel member 1 is cut away for a greater portion of the length of the side member as indicated at 64 to admit of the travel of the bracket 63 therealong, this bracket entering the interior of the channel member 1^a. Made fast to the intumed edge 13^a of the runner 6^a so as to project over the top of the channel member 1^a is a bracket 65, the brackets 63 and 65 being in the same vertical plane as the rollers 60. A chain 66, which may be either a two part chain or an endless chain, is made fast to the two brackets 63 and 65 so that even if the chain be of two parts it is in effect an endless chain. When the parts are in the contracted or closed position as shown in Figs. 11, 12 and 13, the brackets 63 and 65 are at the limit of their travel in one direction and are located near that end of the slide from which the runners move away in the extension of the slide. The rollers 60 are in effect direction-changing rollers, and when one runner is pulled out it acts upon the chain 66 through the respective brackets 63 or 65 and this chain in turn acts

upon the other runner to project it to a like extent, since it is connected thereto by the other bracket 65 or 63 as the case may be. The action of the structure of Fig. 11 and associated figures is the same as that of Fig. 1 and associated figures, so far as the simultaneous and centering movements are concerned and needs no further description.

In each embodiment of the invention illustrated in the drawings the direction-changing means is elongated in the direction of the length of the slide and engages the respective flanking members, when the slide is closed, at points spaced apart in the direction of the length of the slide. Also, the direction-changing devices are in the main of less width than and located within the space defined by the sides of the central or intermediate member, while those portions of the flanking members or runners where connected to the direction-changing means overhang or underride the intermediate or central member, so that even in a structure such as shown in Figs. 11, 12 and 13 where a flexible strand in the form of a chain is shown, such chain rides upon or is supported by the intermediate member and cannot sag or fall into a position where it is liable to jam during the operation of the slide.

The latch mechanism for permitting the slide to be extended to any desired length and then locking it in the adjusted positions against further extension is structurally different, but operatively the same as in the arrangement shown in Fig. 1 and associated figures. There is provided a latch dog 45^a having a nose 46^a arranged to engage series of teeth 52^a. The latch dog is urged to the latching position by a spring 51^a. The dog is mounted on a pivot pin 47^a, but is provided with an angle arm 67, and this latch dog being mounted on the outer face of the respective runner, such runner being the runner 6^a in the showing of the drawings, the arm 67 is carried through matching slots 68 in the rib 8^a. At the free end of the arm 67 it is pivotally attached to one end of a reach rod 38^a, while the other end of this rod is connected to one end of a manipulating lever 69 extending through matching slots 70 in the rib 8^a, the lever being conveniently situated for manipulation. The operation of the latch is the same as described with reference to the other figures of drawing, and hence no detailed description is herein necessary.

What is claimed is:—

1. A table slide comprising a central or intermediate member and flanking runners carried by and movable along the intermediate member on opposite sides thereof and in opposite directions one to the other, and connecting gearing for the runners comprising racks on the respective runners and a

series of connected and direction-changing gears carried by the intermediate member within the latter, said series of gears being elongated in the direction of the length of the slide.

2. A table slide comprising a central or intermediate member having spaced rollers journaled thereto on opposite sides near respectively opposite ends, runners carried by the rollers on opposite sides of the central member and movable in opposite directions one to the other, racks carried by the runners in overriding relation to the central member, and in longitudinally overlapping relation one to the other when the slide is closed, and a series of connected direction-changing gears carried by the intermediate member and extended lengthwise thereof with the terminal gears of the series on respectively opposite sides of the mid point of the intermediate member and each meshing with that respective rack movable toward the same end of the slide when being projected, whereby a slide with two runners of equal length to the intermediate member may be extended to or more than double the length of the closed slide.

3. A table slide comprising an elongated channel member with an elongated series of connected direction-changing gears mounted therein, and flanking elongated runners on opposite sides of the intermediate member and each provided with a rack in engagement with respective terminal members of the series of gears, the intermediate member being provided with rollers on opposite sides near opposite ends and the flanking members having coacting parts embracing the rollers for holding the flanking members to the intermediate member and permitting oppositely directed longitudinal movements of the flanking members.

4. A table slide comprising an elongated sheet metal intermediate channel member with rollers on opposite sides near respectively opposite ends, elongated sheet metal flanking members or runners each having opposite edges intumed in embracing relation to the rollers and each formed with a rack in overriding relation to the intermediate member, and an elongated series of gears mounted in the intermediate member with the terminal members of the series of gears laterally displaced and in engagement with the rack portions of the respective runners.

5. A table slide comprising an elongated sheet metal intermediate channel member with rollers on opposite sides near respectively opposite ends, elongated sheet metal flanking members or runners each having opposite edges intumed in embracing relation to the rollers and each formed with a rack in overriding relation to the intermediate member, and an elongated series of

gears mounted in the intermediate member with the terminal members of the series of gears laterally displaced and in engagement with the rack portions of the respective runners, said racks being arranged side by side and lapping lengthwise of the slide to an extent corresponding to the elongation of the series of gears.

6. A table slide comprising an elongated intermediate member with a series of connected direction-changing gears mounted between the sides and intermediate of the length of said member and elongated lengthwise of said intermediate member, rollers carried by the intermediate member on opposite sides thereof adjacent to correspondingly opposite ends, and slide members or runners mounted on and carried by the rollers for movement longitudinally of the intermediate member and held to said intermediate member by the rollers, said runners being provided with rack portions overriding the intermediate member and lapping lengthwise thereof with the lapped parts engaged by respectively opposite ends of the series of connected gears.

7. A table slide comprising an elongated intermediate member with a series of connected direction-changing gears mounted intermediate of the length of said member, and said series being elongated lengthwise of the intermediate member, rollers carried by the intermediate member on opposite sides thereof adjacent to correspondingly opposite ends, and slide members or runners mounted on and carried by the rollers for movement longitudinally of the intermediate member and held to said intermediate member by the rollers, said runners being provided with rack portions overriding the intermediate member and lapping lengthwise thereof with the lapped parts engaged by respectively opposite ends of the series of connected gears, the intermediate member and the runners being formed of sheet metal and the connected series of gears being housed in the intermediate member.

8. A table slide comprising an intermediate member of channel form with rollers mounted on opposite sides near opposite ends, and with a connected series of direction-changing gears mounted in the channel member, and flanking slide members having inturned long edges in embracing relation to respective ones of the rollers, and with overlapping rack portions engaged by the terminal ones of the connected gears, said flanking slide members having means for attachment to respective sections of a table top.

9. A table slide comprising an intermediate member of channel form with rollers mounted on opposite sides near opposite ends, and with a connected series of direction-changing gears mounted in the channel

member, and flanking slide members having inturned long edges in embracing relation to respective ones of the rollers and with overlapping rack portions engaged by the terminal ones of the connected gears, said flanking slide members having means for attachment to respective sections of a table top, said channel member having an outstanding flange with series of latch means thereon, and one of the flanking slide members being provided with latch means movable into coactive relation with any one of the series of latch means on the intermediate member.

10. In a table slide, an elongated intermediate member having a longitudinal flange with a series of groups of closely associated latch means thereon, runners on opposite sides of and carried by the intermediate member, interconnecting means between the runners and carried by the intermediate member to cause simultaneous movement of the runners in opposite directions, and a latch member on and movable with one of the runners into operative relation to any one of the latch means of any group thereof on the flange of the intermediate member.

11. In a table top slide, an intermediate member provided with a longitudinal flange having series of teeth formed therein interconnected slide members on opposite sides of the intermediate member, and latch means carried by one of the interconnected slide members, said latch means comprising a toothed latch having a normal constraint to engage the teeth on the intermediate member, and an actuating means for the latch for moving it against its normal constraint comprising a slidable plate with pin and slot connections with the latch for causing the latch to approach or move away from the teeth in accordance with the direction of movement of the slide, and actuating means for the slide having a manipulating portion.

12. A table slide provided with an elongated intermediate member, oppositely movable slide members on opposite sides of said intermediate member, means carried by the intermediate member for engaging the slide members, and the latter having coacting means for causing the positive movement of the slides in opposite directions, and latch means on one of the side members comprising a spring-actuated manipulating rod, a slidable plate connected thereto and secured to the slide member carrying it, said plate having an inclined slot, and a pivoted latch member with a pin movable in the slot, and with a spring constraining the latch member in one direction, the intermediate member being provided with a flange portion having series of teeth thereon in the path of the latch member.

13. A table slide comprising an elongated

channel member, an elongated series of connected gears mounted in the channel member with the terminal gears rotatable in opposite directions, rollers carried by the channel member on opposite sides near opposite ends thereof, and flanking slide members carried by the rollers and each having inturned long edges embracing the rollers, and with one long edge formed into a flange having an elongated series of perforations constituting a rack and engaged by a respective one of the terminal gears of the series.

14. A table slide comprising an elongated channel member, an elongated series of connected gears mounted in the channel member with the terminal gears rotatable in opposite directions, rollers carried by the channel member on opposite sides near opposite ends thereof, and flanking slide members carried by the rollers and each having inturned long edges embracing the rollers, and with one long edge formed into a flange having an elongated series of perforations constituting a rack and engaged by a respective one of the terminal gears of the series, each of the flanking members having means for attachment to a respective member of a table top.

15. A table slide comprising an intermediate sheet metal channel member, flanking runners connected to and carried by the intermediate member and each formed with a flange overriding the intermediate member with said flange in turn formed into an elongated rack longitudinally lapping the rack portion of the corresponding flange of the other runner, and an elongated connected series of gears mounted in the intermediate member with the terminal gears of the series laterally offset with respect one to the other and in mesh with respective rack portions of the slide members.

16. A table slide comprising an intermediate member, flanking slide members or runners connected to the intermediate member for simultaneous longitudinal movement therealong in opposite directions, each runner being provided with an elongated flange portion directed toward that of the other member and said flanges being arranged side by side and each provided with a longitudinal series of perforations lapping at one end the respective other end of the series of perforations of the other flange, and an elongated connected series of gears located within the intermediate member and having the terminal members of the series rotatable in opposite directions and

laterally offset to respectively opposite sides of the longitudinal center line of the intermediate member and in mesh with the lapping portions of the respective series of perforations.

17. A table slide comprising a central or intermediate channel member and flanking runners movable therealong in opposite directions one to the other, and direction-changing means mounted in the channel member and acting on the runners to move them simultaneously in opposite directions.

18. A table slide comprising a central or intermediate channel member, runners mounted on the channel member on opposite sides thereof and movable therealong in opposite directions one to the other, and direction-changing means carried by and in part lodged in the channel member and having portions exterior to the channel member in position to engage and act upon the runners to move them simultaneously in opposite directions.

19. A table slide comprising a central or intermediate member, flanking runners movable therealong in opposite directions one to the other, and self-centering interconnections comprising rack bars on the respective runners and movable therewith with the rack bars in longitudinally overlapping relation when the slide is closed, and an elongated series of interconnected gears carried by the intermediate member and extending to opposite sides of the mid point thereof with the terminal gears engaging the rack bars on correspondingly opposite sides of the said mid point, whereby the racks have a range of extension to override said mid point at their inner ends.

20. A self-centering mechanism for extension tables comprising two elongated racks simultaneously movable longitudinally of each other in opposite directions and an intermediately located elongated series of intermeshing gears having the terminal members of the gears spaced apart and engaging respective ones of the racks, whereby the inner ends of the racks may overrun in opposite directions the mid point of the train of gears.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of witnesses.

WILLIAM H. NORTHALL.

Witnesses:

LOUIS O. RASCH,
LOUISE DAVIS,
ALMA E. MEYER.