

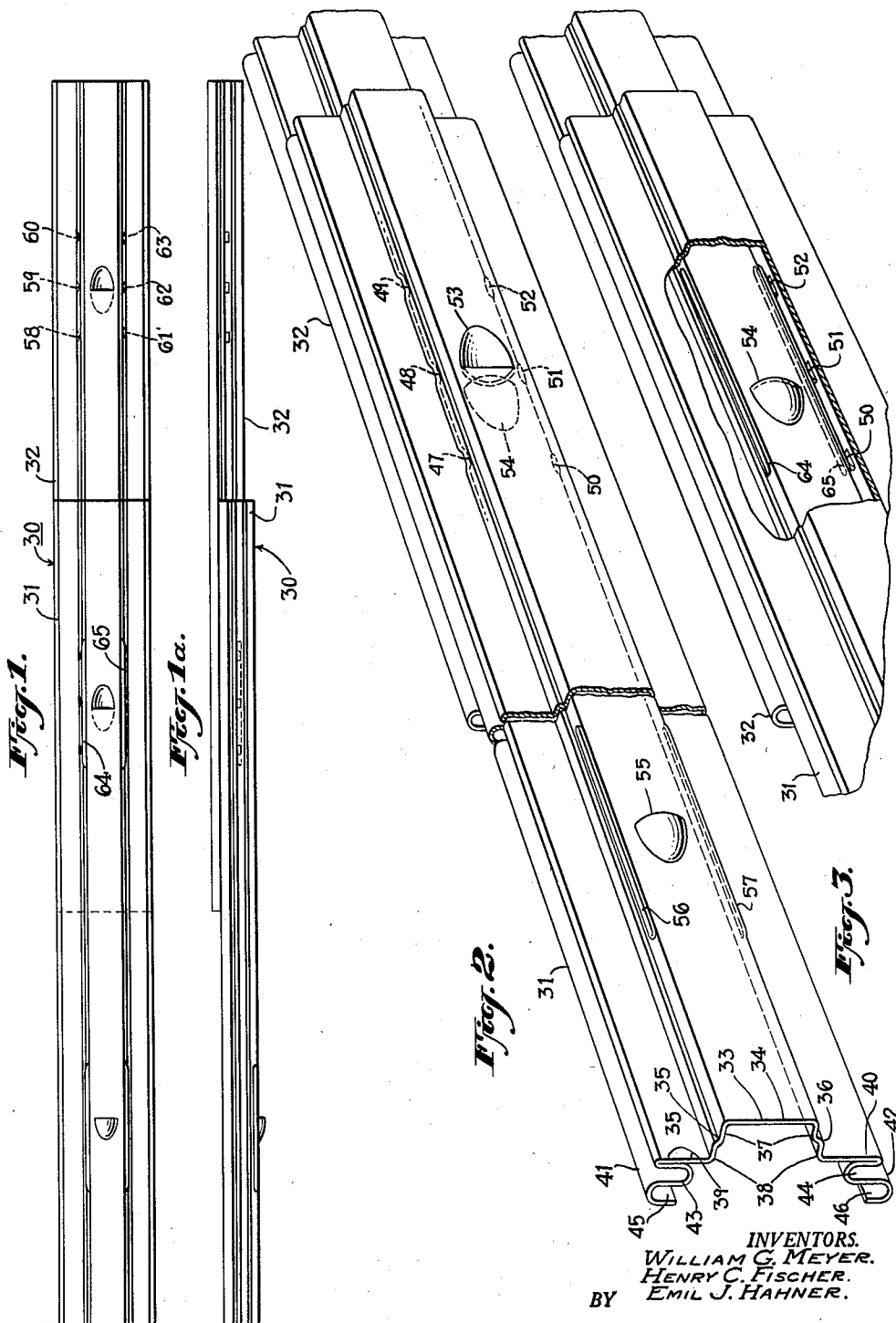
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W. G. MEYER ET AL
NON-SAG EXTENSION ARM

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Filed June 5, 1956

4 Sheets-Sheet 1



INVENTORS.
WILLIAM G. MEYER.
HENRY C. FISCHER.
EMIL J. HAHNER.
BY

Ward Keel Haselton Orm & McElhammon
ATTORNEYS.

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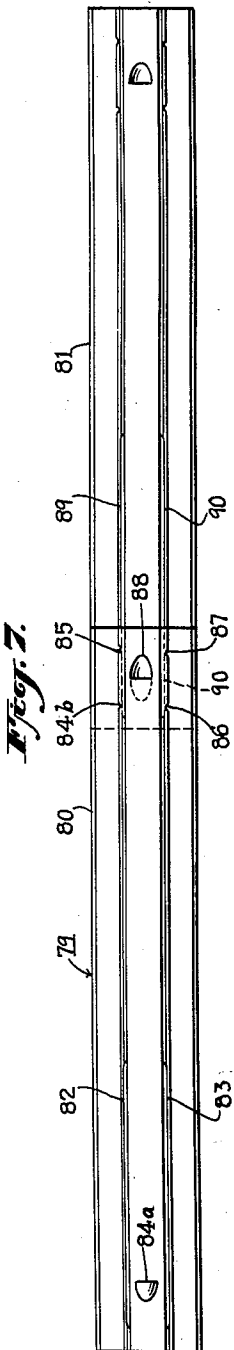
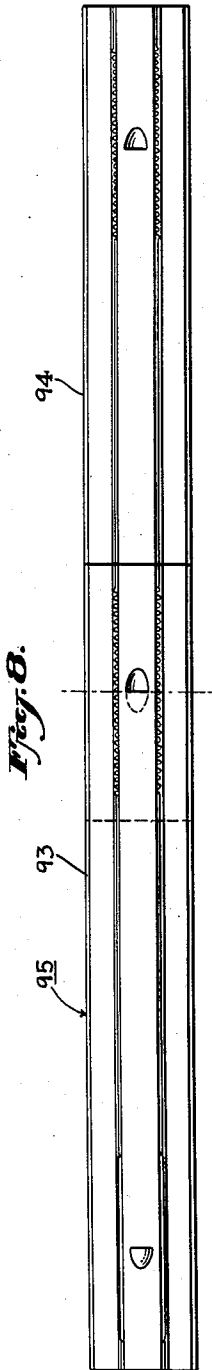
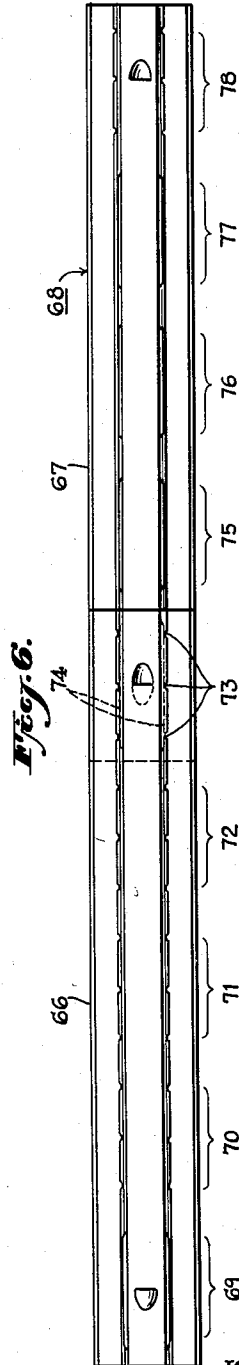
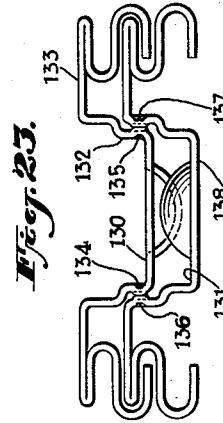
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4 Sheets-Sheet 3



INVENTORS.
WILLIAM G. MEYER.
HENRY C. FISCHER.
BY EMIL J. HAHNER.

Ward Neal Haseltine Orme & McElhammon
ATTORNEYS.

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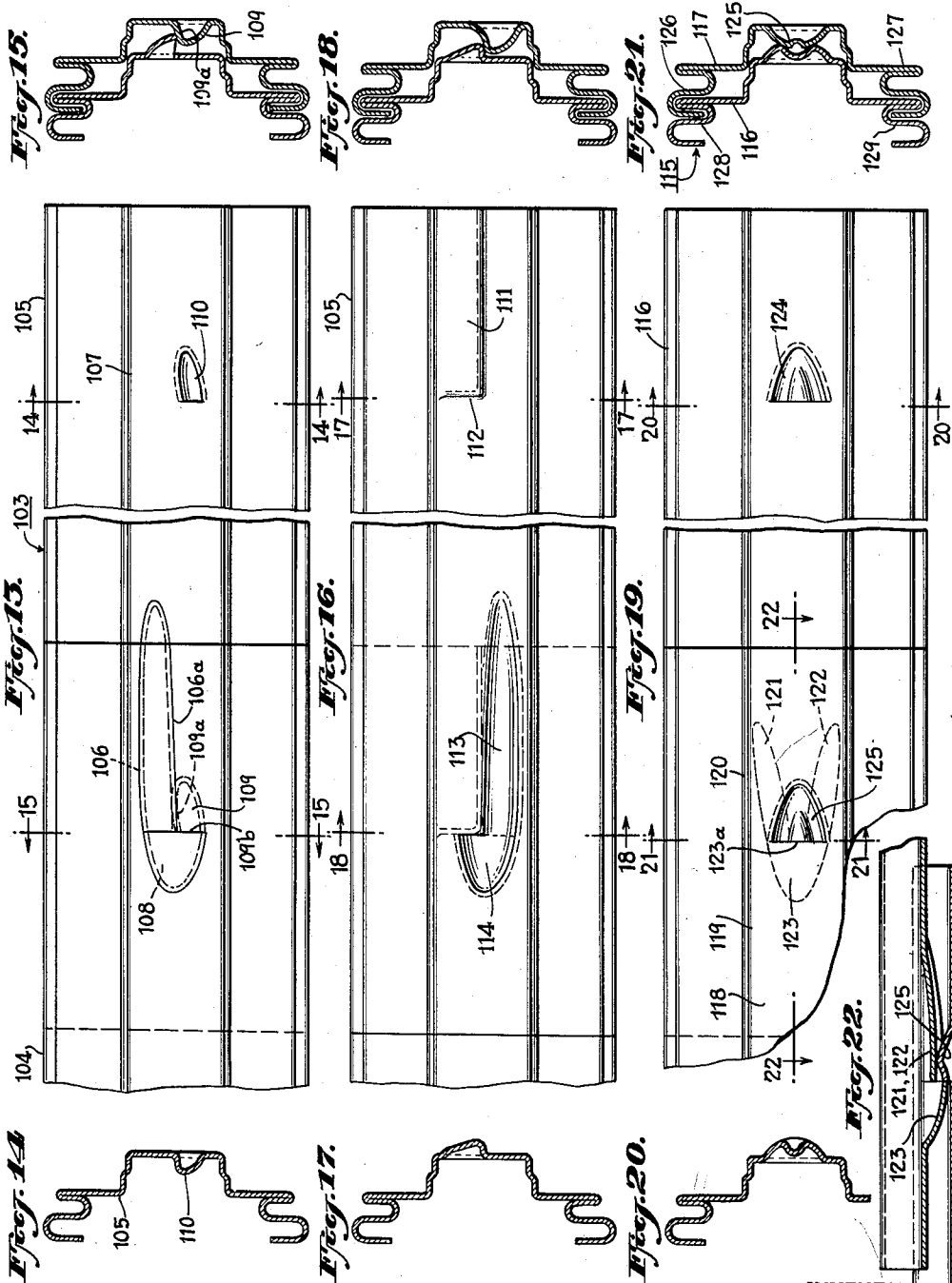
W. G. MEYER ET AL

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NON-SAG EXTENSION ARM

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4 Sheets-Sheet 4



INVENTORS
WILLIAM G. MEYER.
HENRY C. FISCHER.
BY EMIL J. HAHNER.

Ward Neal Haselton Orme & McElhannon
ATTORNEYS.

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NON-SAG EXTENSION ARM

William G. Meyer, Clifton, N. J., Henry C. Fischer, Aberdeen, Md., and Emil J. Hahner, Whitestone, N. Y., assignors to Steel Slides, Inc., Yonkers, N. Y., a corporation of New York

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9 Claims. (Cl. 308—3.6)

This invention relates to extension arms, and more particularly to such arms made up of a plurality of slide elements having coating surfaces thereon for preventing sag and causing the extension arm to be substantially rigid when in an extended condition.

The invention in a preferred form thereof comprises an extension arm composed of a plurality of slide elements, each of such slide elements comprising a central channel portion having a floor and sides, said sides forming a base portion and a flared portion, the latter being adapted for nesting in close but relatively spaced relation with the base portion of the next adjacent extension arm element. The central channel portion has formed integral therewith a pair of outwardly directed and oppositely extending primary flanges, there being a pair of exteriorly accessible subchannel portions positioned along the respective opposite and outer edges of said primary flanges. A pair of inwardly directed flanges is provided integral with and respectively connected along their outer edges to respective of the aforementioned subchannel portions, each such inwardly directed flange being spaced from its respective subchannel portion, thereby to define a pair of interiorly accessible subchannel portions conformed to receive in longitudinal sliding engagement the respective primary flanges of another such slide element. The exterior of the aforementioned base portion of such central channel portion is provided over a part thereof with relatively raised surfaces, and longitudinally spaced therefrom the interior of the aforementioned flared portion is provided over a part thereof with relatively raised surfaces. The raised surfaces of one slide element are raised for coating with the raised surfaces of the next adjacent and nesting slide element in response to the extension of the extension arm thereby to make rigid such arm when it is so extended.

One of the objects of the present invention is to provide an easily workable multi-slide element extension arm which can be extended or contracted with ease and which is rigid and without sag when in an extended condition.

The above and further objects and novel features of the invention will more fully appear from the following detailed description when the same is read in connection with the accompanying drawings. It is to be expressly understood that the drawings are for purposes of illustration only and are not intended as a definition of the limits of the invention, reference being had for this latter purpose to the appended claims.

In the drawings:

Fig. 1 is a top plan view of an extension arm embodying one form of the present invention;

Fig. 1a is a side elevation of the part shown in Fig. 1;

Fig. 2 is a perspective view, partly in section and with parts broken away, of the form of invention shown in Figs. 1 and 1a;

Fig. 3 is a further perspective view of the form of the invention shown in Fig. 2 with certain other portions in

section and with other parts cut away to illustrate the invention;

Fig. 4 is a fragmentary plan view, partly in section and with parts broken away and on an enlarged scale, illustrating the coating raised surfaces of the form of the invention shown in Figs. 1-3;

Fig. 5 is a sectional view taken substantially along line 5-5 of Fig. 4;

Fig. 6 is a plan view of a modification of the form of the invention shown in Figs. 1-5;

Fig. 7 is a plan view of a further modification of the invention shown in Figs. 1-5;

Fig. 8 is a plan view of another modification of the invention of Figs. 1-5;

Fig. 9 is a fragmentary longitudinal sectional view on an enlarged scale of certain frictionally engaged portions of the device shown in Fig. 8;

Fig. 10 is a plan view, with parts cut away, of another embodiment of the invention;

Fig. 11 is an end view of one of the slide elements shown in Fig. 10;

Fig. 12 is a sectional view taken substantially along line 12-12 of Fig. 10;

Fig. 13 is a plan view of another embodiment of the present invention;

Fig. 14 is a sectional view taken substantially along line 14-14 of Fig. 13;

Fig. 15 is a sectional view taken substantially along line 15-15 of Fig. 13;

Fig. 16 is a plan view of a further embodiment of the present invention;

Fig. 17 is a sectional view taken substantially along line 17-17 of Fig. 16;

Fig. 18 is a sectional view taken substantially along line 18-18 of Fig. 16;

Fig. 19 is a plan view of still another embodiment of the present invention;

Fig. 20 is a fragmentary sectional view taken substantially along line 20-20 of Fig. 19;

Fig. 21 is a sectional view taken substantially along line 21-21 of Fig. 19;

Fig. 22 is a fragmentary longitudinal sectional view taken substantially along line 22-22 of Fig. 19; and

Fig. 23 is a transverse sectional view of a further embodiment of the invention.

Referring now to the drawings in greater detail with particular reference to the embodiment of Figs. 1-5, inclusive, the novel invention comprises an extension arm 30 including in combination a pair of nested duplicate slide elements 31 and 32. Each of the latter elements includes a main channel portion 33 having in transverse cross-section a floor 34 and sides 35, 36. Such sides form a base part or portion 37 of relatively restricted outer transverse dimension, and a flared part 38 of relatively larger transverse inner dimension, such flared part being conformed for being positioned in normally spaced but close nested relationship with a base part of the other slide element. A pair of primary flanges 39 and 40 extend outwardly in opposite directions along respective opposite edges of the opposite sides of the flared part 38 of the main channel portion 33. A pair of opposite slide element sides 41 and 42 are formed integrally each with its respective primary flange. Such opposite slide element sides 41 and 42 are formed respectively in transverse cross-section, as is well shown in Fig. 2, in the shape substantially of an S and a reverse S thereby forming a pair of exteriorly accessible subchannels 43, 44 next adjacent respective of the opposite primary flanges 39, 40, and also forming a pair of interiorly accessible and oppositely disposed subchannels 45, 46 which are next adjacent respective of the first-mentioned subchannels 43, 44. Such inte-

riorly accessible subchannels are thus conformed for receiving the respective primary flanges of the other slide element. The transverse distance between the opposite edges of the primary flanges 39, 40 is slightly less than the transverse distance between the opposite floors of the interiorly accessible subchannels 45, 46, thus facilitating the reception of the primary flanges of one slide element by the interiorly accessible subchannels of another slide element.

For the purpose of preventing sag of the extension arm, that is, any lateral or transverse motion between the two nested duplicate slide elements when they are extended, raised surfaces on one such element are provided near one end for coacting with raised surfaces on the other such slide element formed near an end of the latter. Accordingly, such coacting raised surfaces of the slide element 31 will now be described.

Referring particularly to Figs. 2 and 5, each of two corresponding selected opposite interior surfaces of the flared part 38 of said main channel portion 33 has formed thereon near one end thereof a group of longitudinally aligned and spaced mounds. That is, on the upper of such selected interior surfaces, as viewed in Fig. 4, mounds 47, 48 and 49 are formed and upon the lower of such surfaces the mounds 50, 51 and 52 are formed. Such mounds are raised with respect to the interior surfaces of such flared part 38 and thus form a portion of such flared part which is of relatively restricted dimension. Preferably the mounds are opposite one another, that is, the mounds 47, 48 and 49 are respectively opposite the mounds 50, 51 and 52. Such mounds are also well shown in Fig. 2.

Mounds 47-52 are located near one extremity of the slide element 31 and preferably are distributed symmetrically with respect to the transverse center line of a limit-stop 53 formed therein which, as is well shown in Fig. 2, comprises a dished or cupped-like ear portion which may be struck from the base or floor 34 of the channel portion for the purpose of coacting with the similarly formed limit-stop portion 54 which is analogously formed in the floor of the channel portion of the slide element 32. This is well shown in Fig. 2 wherein the two coacting limit-stop portions are shown in engagement with one another limiting the relative movement of such elements in one direction.

Near the other end of the slide element 31 and preferably symmetrically located with respect to an analogously shaped limit-stop 55 there are formed other raised portions as follows: Each of two corresponding selected opposite exterior surfaces of the base part 37 of the main channel portion 33 has formed thereon, longitudinally spaced from the aforementioned mounds, an elongated ridge. Thus the two ridges 56 and 57 are formed which are positioned for moving in between two opposite groups of mounds analogous to mounds 47-52, inclusive, formed upon a nested duplicate slide element in response to extending the slide elements of the extension arm.

Note that the mounds 47-52, inclusive, and the ridges 56 and 57 are all formed upon the slide element 31. Analogous mounds 58-63, inclusive (Fig. 1), are formed upon the slide element 32 and further analogous ridges 64 and 65 are formed upon other and duplicate slide element 32. Thus, as is well shown in Fig. 4, the mounds 47-52 of the slide element 31 are positioned for coacting with the ridges 64 and 65 formed upon the duplicate nesting slide element 32.

Thus each group of the mounds, such as 47-52, inclusive, in response to the extending of the slide elements of the extension arm, are moved into close frictional engagement with corresponding ridges thereby to rigidify the extension arm when the elements thereof are so extended.

Consequently the transverse interior dimension between any two opposite pairs of mounds, such as 47

and 50, is selected for producing close frictional engagement of such mounds with the outer surface of the coacting ridges 64 and 65. Hence the outer transverse dimension measured transversely of said ridges 64 and 65 is selected for the same purpose.

The elongated nature of the ridges 64 and 65, together with the spaced aligned and separated disposition of the mounds of each group, that is, the mounds comprising groups 47-49 and 50-52, inclusive, insure a rigid relationship between any two slide elements when the latter are extended as shown in Fig. 4.

Note that in the embodiment shown in Figs. 1-5 the extent of overlap of slide element 31 with respect to slide element 32 when the extension arm 30 is in fully extended condition, is approximately one-half of the length of the extension arms. Such extended overlap is desirable in certain uses and applications of the invention. However, it is desirable where economy is of importance to minimize such overlap for the purpose of economizing on steel or metal or of whatever substance the extension arms are made.

The embodiment of Figs. 6 and 7 illustrates the concept wherein, for example, each of the extension arms may be eleven inches in length and the extent of overlap when extended only one and one-half inches. This small degree of overlap is made possible by virtue of the present invention wherein the coacting raised portions upon the respective slide elements makes rigid the association of such slide elements when so extended, thereby making unnecessary the high degree of overlap, as shown in Fig. 1.

Such high degree of overlap is not necessary in certain applications of the invention, for example, in extension tables in the lower price field and in other uses where economy of metal is of paramount importance. Hence the heretofore unattained low degree of overlap without sag, as shown in Figs. 6 and 7, is of substantial importance because of cost saving and is made possible by the aforementioned rigidifying means comprising the coacting raised portions upon the duplicate nesting slide elements.

In Fig. 6, slide elements 66 and 67 comprise an extension arm 68 which basically are identical in construction to the slide elements 31 and 32 described above with the exception that each slide element, such as 66, is provided with one set 69 of opposite ridges and with a plurality of sets 70, 71, 72 and 73 of inwardly extending mounds analogous to the mounds 47-52 above described. Also the slide element 67 is provided with a plurality of pairs of opposite ridges, namely, 74, 75 and 76, 77 distributed in series longitudinally along the main channel portion thereof. At the end of the slide element 67 a set of mounds 78 is formed also analogous to the mounds 47-52 above described.

The form shown in Fig. 7 is identical to that shown in Fig. 1 with the exception aforementioned of the degree or extent of overlap of the two slide elements when fully extended. Here again, in the form of Fig. 7, the extent of overlap may be approximately 10% or less of the length of a given slide.

Also, the form shown in Fig. 7 is distinct from that shown in Figs. 1-5 and that shown in Fig. 6 by virtue of the fact that while the mounds are distributed symmetrically with respect to a limit-stop, this is not true with respect to the opposite ridges. Thus in the extension arm 79 of Fig. 7 composed of slide elements 80 and 81, suitable opposite ridges 82 and 83 are formed upon the slide element 80 which are analogous to the ridges 56 and 57 of Fig. 2 with the exception that they are not symmetrically disposed with respect to the limit-stop 84a but rather the latter limit-stop is situated near the left-hand extremity of said opposite parallel ridges 82 and 83.

Near the opposite extremity of the slide element 80 a pair of mounds 84b, 85 are formed on one side of the main channel portion thereof and another pair 86, 87 are

formed on the other side of such channel portion. These two pairs of mounds, as aforementioned, may be symmetrically disposed with respect to a limit-stop 88 situated at the opposite extremity of the slide element 80.

It will be seen that one of the advantages of the construction shown in Fig. 7 is that when the extension arm 79, or a pair thereof, is employed as in an extension table, the halves of the latter can be fully pulled apart for the purpose of introducing spare leaves and when so fully pulled apart the slide elements of the extension arms will be rigidly associated with one another and adequate room will be allowed to permit the pins of each spare leaf to engage corresponding recesses of the next adjacent spare leaf. Thus when the halves and leaves are thereafter pushed together or contracted for the purpose of engaging such pins and recesses, the rigid association of the slide elements will be maintained. The construction of Fig. 7 accomplishes this inasmuch as the partial contraction of the extension arm after full extension will not disassociate the mounds of one slide element from the ridges of the next one. That is, the mounds 84-87 of the slide elements 80 will not be moved out of engagement with ridges 89, 90 of the slide element 81.

The form of the invention shown in Fig. 8 is substantially identical to that above described with the exception of the number of mounds formed upon the interior surface of the flared part of the main channel portion. Referring to Fig. 9, such mounds on each side of the element may be in a closely spaced serrated pattern and may consist, for example, of a plurality of serrations 91 which are positioned close to one another and which are substantially symmetrical and adapted for engaging a ridge 92. It is, of course, understood that the mounds or serrations 91 which engage the ridge 92 refer to the lower portion (Fig. 9) of a pair of coacting slide elements 93, 94 of an extension arm 95. The upper set of coacting ridges and serrations, of course, are identical to those shown in Fig. 9.

Referring now to Figs. 10-12, there is shown an extension arm 96 consisting of slide elements 97 and 98 which are identical to those shown and described in connection with Figs. 1-5 with the exception of the construction of the coacting raised portions upon the two slide elements.

There is formed on the slide element 98 a pushed out portion 99 which, as viewed in Fig. 10, is of concave configuration and is "lanced" along the edge 100. That is, such edge is cut or sheared in order to permit the pushed out portion 99 to be forced into a concave configuration. The edge 100a of the sheared portion 100 is adapted for coacting with a notch or pushed out portion 101 of the slide element 97.

The slide element 98 is itself provided with a notch or pushed out portion 102 at its opposite extremity which is analogous to the pushed out portion or notch 101. As is well known in Fig. 12, the pushed out portion edge 100a is positioned for coacting with the upper portion of the notch 101 thereby to urge one of the slide elements transversely against the other slide element and preventing any relative transverse movement while the pushed out portion surfaces are so coacting. This, of course, makes rigid the extension arm 96 in response to the full extension of its slide elements.

It will be noted that an edge 100b comprises a limit-stop surface which coacts with a corresponding limit-stop surface 101a of the pushed out portion or notch 101. The pushed out portion or notch 102 is similarly provided with a limit-stop edge 102a.

Referring now to the embodiment of the invention shown in Figs. 13-15, an extension arm 103 is provided consisting of slide elements 104 and 105. Upon the lowermost of the slide elements 105, as viewed in Fig. 13, a pushed out portion 106 is embossed upwardly, such pushed out portion being of elongated configuration and situated, for example, to one side of the longitudinal

center line of a channel portion 107 of such slide element 105. The upwardly embossed pushed out portion 106 is situated next adjacent an upwardly embossed limit-stop of up-struck ear shape 108. The coacting nested slide element 104 is provided with a downwardly embossed pushed out portion or notch 109 which is analogous in configuration to pushed out portion or notch portion 110 (Fig. 14) upon the slide element 105. Thus, as is well shown in Fig. 13, the upper edge 109a of the pushed out portion or notch 109 is positioned for engaging the lower edge 106a of the upwardly embossed pushed out portion 106 in response to the extension of the extension arm 103 and the pushed out portions 106, 109 are so positioned on their respective channel portions that they urge one slide element transversely against the other firmly whereby there can be no transverse lost motion. Furthermore, a lefthand edge 109b of the notch 109 engages the lefthand edge 108a of the limit-stop 108. Thus the pushed out portion of notch 109 serves the dual purpose of urging one of the slide elements transversely relative to the other and also acts as a limit-stop.

The embodiment of Figs. 16, 17 and 18 is identical to that of Figs. 13, 14 and 15 with the exception that a pushed out portion or notch portion 111 is provided which is analogous to pushed out portion or notch 110 and 109, such pushed out portion or notch portion 111 being extended from the point 112 to the right, as viewed in Fig. 16, all the way to the righthand extremity of the slide element 105. Thus a greater area of contact between the two coacting pushed out portions 111 and 113 is obtained. The pushed out portion 113 is identical to 106 of Fig. 13. Analogously limit-stop 114 is identical to the limit-stop 108 of Fig. 13. Thus a greater degree of rigidity is obtained by the embodiment of Fig. 16 by virtue of the greater length of coacting pushed out portion edges.

The form of the invention shown in Figs. 19-22 includes an extension arm 115 consisting of slide elements 116 and 117. Formed on a floor 118 of the main channel portion 119 of the slide element 116 is a V-shaped pushed out portion 120 which is symmetrically in alignment with the longitudinal center line of the main channel portion 119 of the slide element 116. That is, the V-shaped pushed out portion 120 includes legs 121 and 122 which are embossed upwardly and which coact with a bottom portion 123 to form the V. The bottom portion 123 comprises a limit-stop analogous to the limit-stops 108 and 114 of Figs. 13 and 16. The longitudinal center line of the main channel portion 119 comprises the center line for such V-shaped pushed out portion. At the opposite extremity of the extension arm 116 there is formed a downwardly embossed or concave notch or pushed out portion 124. A correspondingly downwardly embossed notch or pushed out portion member 125 is shown in Fig. 21 formed upon the slide element 117 for coacting with the V-shaped pushed out portion 120. The pushed out portion 125 is adapted for moving in between the legs 121, 122 of the V pushed out portion 120 and for contacting the righthand edge 123a of the limit-stop 123, thereby limiting the longitudinal sliding movement of one of the slide elements 117 with respect to the slide element 116. Furthermore, such coaction of the pushed out portions 120 and 125 rigidly associates their respective slide elements by rigidly urging one slide element upwardly, as viewed in Fig. 19, with respect to the other whereby the primary flanges 126 and 127 of the slide element 117 are caused to engage firmly the flanges 128 and 129 of the slide element 116. Furthermore, the coacting pushed out portions 120 and 125 will center the slide elements one with respect to the other and hold same firmly in such centered condition thereby preventing any lateral movement and holding the slide elements in relatively rigid condition preventing any sag which otherwise might occur in the absence of such pushed out portions.

The form of the invention shown in Fig. 23 is analogous to that shown in Figs. 1-5 with the exception that the channel portions 130 and 131 are interposed between their respective opposite slide element sides in the manner disclosed in copending U. S. patent application Serial No. 500,566, filed by Morris Manson and Frederick Hafekost April 11, 1955, now matured into Patent Number 2,750,244 issued June 12, 1956.

In the form shown in Fig. 23, the base portion 132 of the main channel of slide element 133 is provided on the exterior opposite surfaces thereof with the raised portions 134 and 135 which are positioned for coacting with raised portions respectively 136 and 137. It is, of course, understood that the raised portions 134, 135 of Fig. 23 are analogous to the ridges 64 and 65 of Fig. 4, and the raised portions 136 and 137 of Fig. 23 are analogous to the mounds 47-52 of Fig. 4.

It will be noted that in the embodiment of Fig. 23 the aforementioned raised portions 134, 135 and 136, 137 are in alignment with one another and with the primary flanges of the lowermost slide element designated 138, which primary flanges in turn are slidably engaged by the interiorly accessible subchannel members of the slide element 133. Such latter subchannel members are also in alignment with such raised portions. This particular alignment of parts provides a high degree of strength and rigidity when the slide elements are fully extended.

What is claimed is:

1. An extension arm comprising in combination: a pair of nestable duplicate slide elements, each of such elements including: a main channel portion having in transverse cross-section sides which form a flared outer part for engaging in nested relationship with the channel portion of the next adjacent slide element, a pair of primary flanges extending outwardly in opposite directions along respective opposite edges of the opposite sides of the flared part of said channel portion, said flanges being integral with said channel portion, a pair of opposite slide element sides formed integrally each with its respective primary flange, said opposite slide element sides being formed respectively in transverse cross-section in the shape substantially of an S and a reverse S thereby forming a pair of exteriorly accessible subchannels next adjacent respective of said opposite primary flanges, a pair of interiorly accessible and oppositely disposed subchannels next adjacent respective of said first-mentioned subchannels, said interiorly accessible subchannels being thus positioned for receiving the respective primary flanges of the next adjacent slide element, the transverse distance between the opposite edges of said primary flanges being less than the transverse distance between the opposite floors of said interiorly accessible channels thereby to facilitate the nesting of the duplicate slide elements, and a portion of one of such slide elements near the end thereof having formed thereon an elongated ridge-like raised region extending substantially longitudinally of the element, the other of such slide elements having formed thereon near an end thereof a raised region positioned for engaging the first-mentioned raised region and moving longitudinally along same in response to extending the slide elements of such extension arm thereby to hold said elements against transverse relative movement and to form a rigid arm when so extended.

2. An extension arm including in combination a pair of duplicate slide elements, each slide element including a pair of outwardly directed primary flanges, a pair of exteriorly accessible subchannel members positioned next to and along respective of said flanges, a pair of interiorly accessible subchannel members positioned next to and along respective of said first-mentioned subchannel members and conformed to receive in relatively loose longitudinal sliding engagement the respective primary flanges of the other such slide element, limit-stop means mounted upon one of said slide elements for coacting with limit-stop means mounted on the other element thereby to limit the relative longitudinal movement of such elements, and

cooperating frictionally engageable means formed on each of said duplicate nesting slide elements for close frictional engagement with one another, said frictionally engageable means being positioned near the respective coacting limit-stop means thereby rigidly to associate said elements in response to moving same to engage said limit-stop means.

3. An extension arm including a pair of slide elements, each having a channel portion adapted for nesting with an identical channel portion of the other element which slidably engages same, such channel portion having a primary part with a first preselected transverse outer dimension at the bottom of such channel portion and a secondary part having a first transverse inner dimension slightly greater than the aforementioned first preselected transverse outer dimension whereby such secondary part can slidably fit in relatively close but spaced nested relation over the primary part of the other duplicate channel portion, a pair of primary flanges integral with and extending in opposite directions outwardly respectively from opposite edges of such channel portion, a pair of double groove portions integral with respective of said flanges each along the outer lip thereof and extending longitudinally of the slide elements, said double groove portions being respectively in transverse cross-section substantially in S shape and reverse S shape, said channel portion being interposed between said double groove portions, said double groove portions forming a pair of subchannels having mouths in fact-to-face relation which on one such element are adapted for receiving the primary flanges of the other element, said primary part on one side of the longitudinal mid-point thereof and along a selected part of the length thereof having a second preselected transverse outer dimension greater than the first, said secondary part having on the other side of such mid-point and along a selected part of the length thereof a second transverse inner dimension selected for a close frictional fit with such second transverse outer dimension of the primary part of the duplicate nesting slide element.

4. An extension arm in accordance with claim 3 wherein such nesting primary and secondary parts of the pair of elements are positioned substantially in alignment with the aforementioned primary flanges received by said subchannels.

5. An extension arm comprising in combination: a pair of duplicate slide elements, each slide element including a main channel portion having a bottom part formed over a part of the length thereof with a first preselected uniform outer transverse dimension and a top part formed also over a part of the length thereof with a first selected uniform inner transverse dimension slightly in excess of said first preselected outer dimension whereby the top part of one of such channel portions is nestable with respect to the bottom part of the channel of the next adjacent slide element, a pair of outwardly extending primary flanges integral with respective opposite edges of the top part of such channel portion; a pair of secondary flanges secured to respective of said primary flanges in spaced relation thereto, said secondary flanges thereby forming parts of opposite subchannels which are substantially perpendicular to the channel defined by said first-mentioned main channel portion and exteriorly accessible with respect to the extension arm, a pair of tertiary flanges secured to respective of such secondary flanges respectively along the outer edges thereof and in spaced relationship thereto thereby forming another pair of subchannels having mouths in opposite face-to-face relationship each opening inwardly toward said first-mentioned channel portion, a transverse dimension as measured from opposite edges of said primary flanges being less than the transverse dimension as measured from the opposite bottoms of said second-mentioned subchannel portions, said main channel portion having a floor, a first limit-stop for a slide element secured to and positioned at a selected location in such floor for coacting with a limit-stop of a duplicate slide element, a

second limit-stop secured to and positioned at another selected location in such floor longitudinally spaced from such first limit-stop, said second limit-stop also being for the purpose of coacting with the limit-stop of a duplicate slide element, said bottom part along a selected region on either side of one of the limit-stops of such slide element having a second preselected uniform outer transverse dimension greater than said first transverse outer dimension, said top part along a selected region on either side of the other of such limit-stops having a second preselected uniform inner transverse dimension selected for a close frictional fit with such second outer transverse dimension of the corresponding bottom part of the duplicate nesting slide element.

6. An extension arm comprising in combination: a pair of duplicate slide elements, each slide element including a main channel portion having a bottom part having over a part of the length thereof a first preselected uniform outer transverse dimension and a top part having over a part of the length thereof a first selected uniform inner transverse dimension slightly in excess of said first preselected outer dimension whereby the top part of one of such channel portions is nestable with respect to the bottom part of the channel of the next adjacent slide element, a pair of outwardly extending primary flanges integral with respective opposite edges of the top part of such channel portion; a pair of secondary flanges secured to respective of said primary flanges in spaced relation thereto, said secondary flanges thereby forming parts of opposite subchannels which are substantially perpendicular to the channel defined by said first-mentioned main channel portion and exteriorly accessible with respect to the extension arm, a pair of tertiary flanges secured to respective of such secondary flanges respectively along the outer edges thereof and in spaced relationship thereto thereby forming another pair of subchannels having mouths in opposite face-to-face relationship each opening inwardly toward said first-mentioned channel portion, a transverse dimension as measured from opposite edges of said primary flanges being less than the transverse dimension as measured from the opposite bottoms of said second-mentioned subchannel portions, each of said slide elements having a pair of limit-stops at selected longitudinally spaced locations thereupon each adapted for coacting with a cooperating limit-stop formed upon a duplicate nesting slide element, said bottom part along a selected part of the length thereof adjacent one of such limit-stops having a second preselected uniform outer transverse dimension greater than said first preselected transverse outer dimension, said top part along a selected part of the length thereof adjacent the other limit-stop of such slide element having a second transverse inner dimension selected for a close frictional fit with that portion of the bottom part of a duplicate nesting slide element having such second transverse outer dimension.

7. An extension arm including in combination a pair of duplicate slide elements, each slide element comprising: a main channel portion, a pair of primary flanges extending longitudinally of such element on opposite edges of said channel portion throughout the length thereof and having opposite parallel edges having a selected uniform transverse distance therebetween throughout the length of such element; a pair of double channel portions secured respectively to the outer edges of said flanges and integral therewith, said double channel portions being in transverse cross-section respectively substantially S shaped and reverse S shaped whereby the peak of the S and the reverse S is connected to the outer edge of its respective primary flange, thereby forming a pair of subchannels with the mouths thereof opening outwardly with respect to said slide element and another pair of subchannels with the mouths thereof facing one another inwardly toward said main channel portion, said main channel portion having a floor, the latter having curved surface means extending

along a part of the length thereof, the other and duplicate slide element on its corresponding channel floor also having follower means positioned for engaging and longitudinally sliding along said curved surface means thereby to urge said slide elements to move transversely of one another into close frictional engagement.

8. An extension arm comprising in combination: a pair of nested duplicate slide elements, each of such elements including: a main channel portion having in transverse cross-section sides which form a base part and a flared part, the latter conformed for being positioned in normally spaced but close nested relationship with a base part of the other slide element, a pair of primary flanges extending outwardly in opposite directions along respective opposite edges of the opposite sides of the flared part of such channel portion, said flanges being integral with said channel portion, a pair of opposite slide element sides formed integrally each with its respective primary flange, said opposite slide element sides being formed respectively in transverse cross-section in the shape substantially of an S and a reverse S thereby forming a pair of exteriorly accessible subchannels next adjacent respective of said opposite primary flanges, and a pair of interiorly accessible and oppositely disposed subchannels next adjacent respective of said first-mentioned subchannels, said interiorly accessible subchannels thus being conformed for receiving the respective primary flanges of the other slide element, the transverse distance between the opposite edges of said primary flanges being less than the transverse distance between the opposite floors of said interiorly accessible subchannels thereby to facilitate such reception of the primary flanges by said interiorly accessible subchannels, each of two corresponding selected opposite interior surfaces of such flared part of said main channel portion of each slide element having formed thereon near the end thereof a group of longitudinally aligned and spaced mounds, each of two corresponding selected opposite exterior surfaces of said base part of said main channel portion having formed thereon near the other end thereof an elongated ridge, such two ridges being positioned for moving in between such two opposite groups of mounds of the nested duplicate slide element in response to extending the slide elements of the extension arm, each group of such mounds being in close frictional engagement with its corresponding ridge when the elements are so extended thereby to rigidify the extension arm when so extended.

9. An extension arm comprising in combination: a pair of nested duplicate slide elements, each of such elements including: a main channel portion having in transverse cross-section sides which form a flared outer part for being positioned in normally spaced but close nested relationship with the channel portion of the other slide element, a pair of primary flanges extending outwardly in opposite directions along respective opposite edges of the opposite sides of the flared part of such channel portion, said flanges being integral with said channel portion, a pair of opposite slide element sides formed integrally each with its respective primary flange, said main channel portion being interposed between such opposite slide element sides, said opposite slide element sides being formed respectively in transverse cross-section in the shape substantially of an S and a reverse S thereby forming a pair of exteriorly accessible subchannels next adjacent respective of said opposite primary flanges, and a pair of interiorly accessible and oppositely disposed subchannels next adjacent respective of said first-mentioned subchannels, said interiorly accessible subchannels thus receiving the respective primary flanges of the other slide element, the transverse distance between the opposite edges of said primary flanges being less than the transverse distance between the opposite floors of said interiorly accessible subchannels thereby to facilitate such reception of the primary flanges by said

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interiorly accessible subchannels, the two corresponding opposite interior surfaces of such flared outer part of said main channel portion of each slide element having formed near the end thereof two groups of mounds, one such group on each such surface, and also having formed near the other end thereof along opposite exterior surfaces of such main channel portion a pair of elongated ridges for moving in between such two opposite groups of mounds of the nested duplicate slide element in response to extending the slide elements of the extension 5 10

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arm, each group of such mounds being in close frictional engagement with its corresponding ridge when the elements are so extended thereby to rigidify the extension arm when so extended.

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