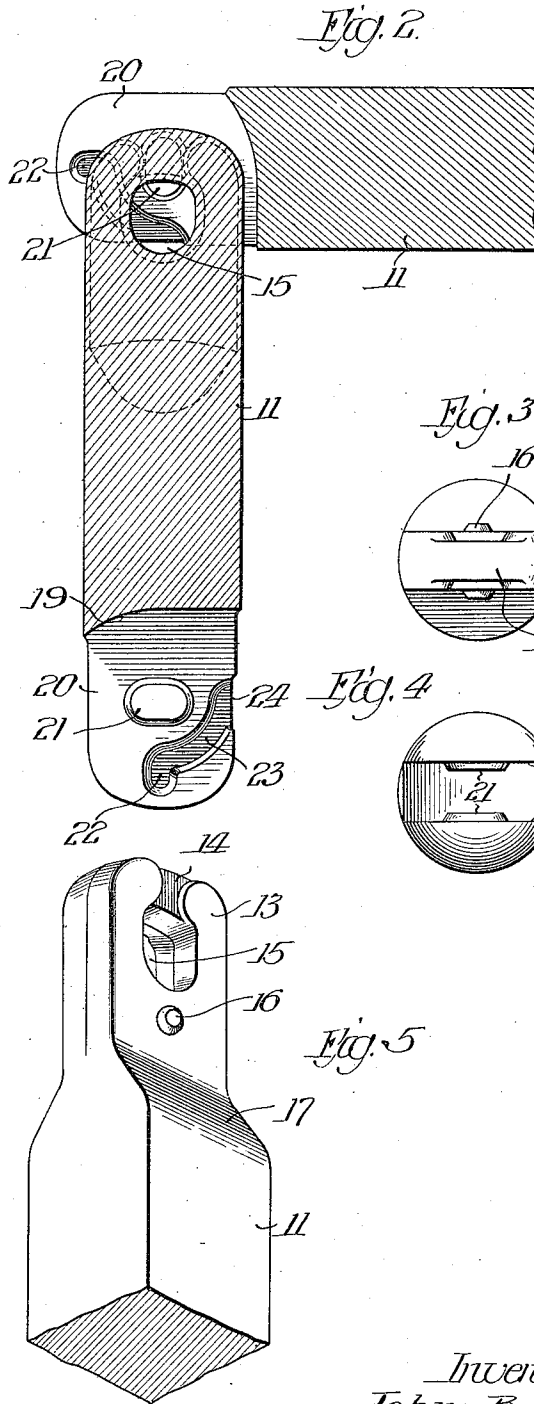
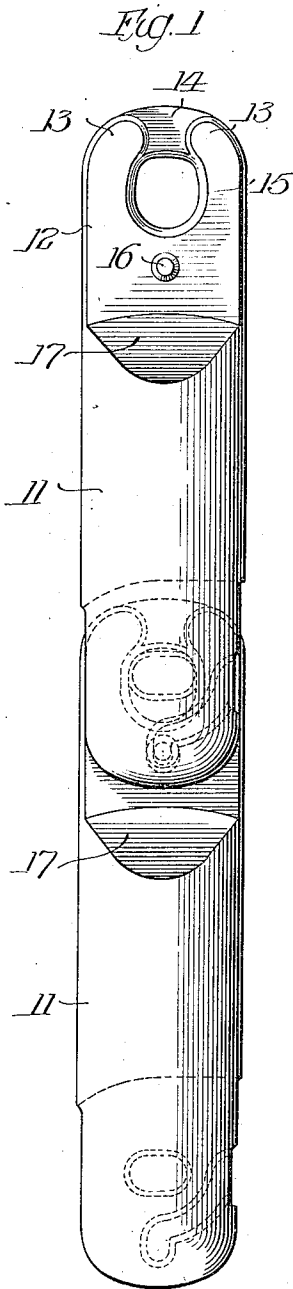


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 SASH WEIGHT.
 APPLICATION FILED AUG. 16, 1912.

Patented Feb. 11, 1913.

2 SHEETS—SHEET 1.

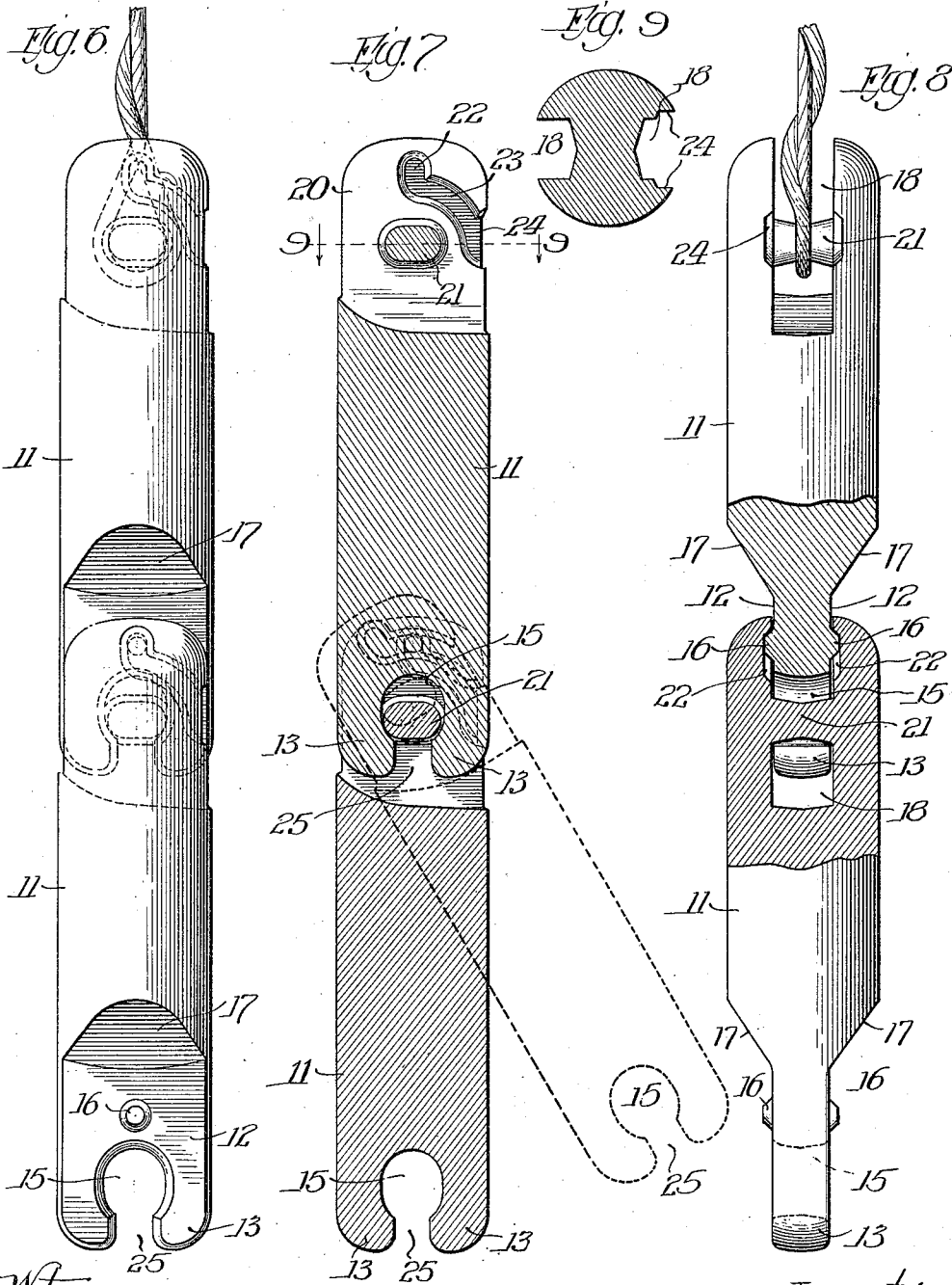
1,052,598.



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UNITED STATES PATENT OFFICE.

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SASH-WEIGHT.

1,052,598.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, JOHN B. LEE and ALFRED JOHN LEE, citizens of the United States, residing at Anniston, in the county of Calhoun and State of Alabama, have invented certain new and useful Improvements in Sash-Weights, of which the following is a specification.

This invention relates to sash weights and has for its object the provision of a sectional weight made up of articulated units readily associated and disassociated whereby the same is adapted to the counterbalancing of window sash of varying sizes merely by adding or subtracting individual units.

It is old to form sash weights of articulated sections or units connected by interengaging members releasable only when the units are disposed at an angle one to the other, and the present invention has for its further object the provision of supplemental interlocking means whereby the units can only be swung at an angle to each other for disengagement when longitudinal slack between the sections is taken up, such interlocking means being normally maintained effective by the weight of the units holding the parts longitudinally extended.

An advantage of the invention is the adaptability of the sash weight for insertion piecemeal into the constricted openings of metal window casings and the like; and also the rigidity of the assembled sash weight due to the interlocking feature whereby it moves freely within the weight channel of the casing without lateral distortion.

In order that the invention as herein-after more fully described and particularly set out in the claims may be readily understood by those skilled in the art we have in the accompanying drawings illustrated a preferred and modified embodiment of the invention.

In these drawings, Figure 1 is a side elevation of two weight-units in assembled relation; Fig. 2 is a view in vertical longitudinal section showing the units in position for disarticulation; Figs. 3 and 4 are views respectively of the two ends of a weight unit; Fig. 5 is a perspective fragmentary view showing one end of a weight unit of rectangular form; Fig. 6 is a side elevation

of a modification; Fig. 7 is a vertical longitudinal section through Fig. 6; Fig. 8 is a view taken at right angles to Fig. 6 and with the medial portion in section, and Fig. 9 is a transverse section on the line 9—9 of Fig. 7.

In the drawing wherein similar reference numerals indicate corresponding parts throughout, 11 designates (Figs. 1 to 5 inclusive) a weight-unit or section having one end flattened on its two faces as shown at 12 and provided in its terminal portion with inwardly turned arms 13, 13, the space between the same being connected by a relatively narrow bridge piece 14, the arms and bridge embracing a substantially circular opening 15. From each flattened face 12 of the unit 11 projects a stud 16 which stud is on that side of the opening 15 removed from the bridge 14 and substantially in line with the center of the opening viewed longitudinally of the weight section or unit. The flattened end of the unit may advantageously merge into the body portion thereof by means of the beveled shoulders 17. The other end of the weight unit is provided with a slot 18 open to the two sides and end of the unit and having a rear wall 19 which may be curved as shown. This slot is of a width but slightly greater than the thickness of the flattened end of the unit and is adapted to receive such flattened end of the next adjacent unit. The slot is bounded by planes parallel to the planes of the faces 12 at the other end of the unit and is provided upon its opposite walls 20, 20 with inwardly extending opposed lugs 21, 21, which are separated in this form of construction by a space sufficiently wide to accommodate a bridge piece 14. These lugs are elliptical having their major axes disposed transversely of the unit, and correspond in their major dimensions to the diameter of the opening 15 and in their minor dimensions to the distance separating the inner ends of the arms 13.

The opposed walls 20 of the slot are provided with opposed elongated recesses 22 located between the lugs 21 and the terminal portion of the unit and with their medial portion at a distance from the lug corresponding roughly to the distance of the studs 16 from the opening 15. Opposed

arcuate grooves 23, each formed about a lug 21 as a center, join the inner ends of the recesses 22 with the outer edge of the unit 11 at 24 as clearly shown in Fig. 2.

It will thus be seen that when two contiguous weight units are disposed at right angles one to the other as shown in Fig. 2, the lugs 21 will pass through the space between the arms 13, the bridge piece 14 passing between the lugs 21 and after the lugs 21 have completely entered the opening 15 the two units 11 may be brought into alinement, the lugs 21 rotating within the opening 15 whereupon the greater dimension of the lugs is brought to a transverse position within the opening which will prevent said lugs passing out through the space between the arms 13 until the units 11 are again turned to the angle shown.

In order to interlock the weight-units so as to prevent them assuming an angle one to another when suspended within the window casing, the studs 16 which, entering the grooves 23 at 24 when the units are in their angularly disposed relation, travel in said grooves as the units are brought into alinement, and in the latter condition the studs rest in the inner or upper ends of the recesses and as soon as the lower unit 11 is released its weight will cause the studs 16 to drop to the lower portion of the recesses 22 and will be confined in this position by the walls of the recesses so that the parts cannot move angularly about the lugs 21 as a pivot until the unit is lifted to a position with the studs 16 in register with the arcuate grooves 23.

It will be observed that the opening 15 in the uppermost unit is adapted for the reception of the sash cord which can be knotted about the bridge piece 14 as an anchorage. When so disposed the cord will occupy a position substantially in alinement with the axis of the weight and the lower portion thereof will be protected by the weight itself from chafing against the walls of the channel or catching upon any irregularities within the casing, the bight of the cord lying within the space between the arms 13 on the two sides of the bridge 14.

In Fig. 5 we have shown a weight unit having a rectangular cross section, the several units interengaging and interlocking in the same manner as previously described, the rectangular form being adopted for the purpose of using the limited space within the modern sheet metal channel to the best advantage so as to get the greatest weight of metal in such space.

In Figs. 6 to 9 inclusive we have illustrated a slightly modified form of construction in which the same invention is embodied. Herein the opposed lugs indicated at 21 are extended into contact one with another and may for convenience of manu-

facture be made integral so as to extend entirely across the slot 18 connecting the walls 20, 20 thereof. At the other end of the unit the bridge piece 14 is omitted leaving a narrow passage 25 between the opposed ends of the arms 13. In this form of construction the arrangement of the studs 16 and the recesses 22 and grooves 23 is the same as in the form previously described and the units are connected and disconnected in the same way, the joined lugs 21 being passed through the narrow passage 25 when the units are angularly disposed so that the major axis of the elliptical lugs coincides with the axis of said passage. The bridge piece of the former construction being omitted, the connected lugs 21 can pass between the arms 13 whereas in the former case a space between the lugs 21 was necessary in order to pass the narrow bridge 14. In this latter form of construction, the bridge piece 14 being omitted, the sash cord is not attached in the opening 15 but the weight is suspended by the opposite end, the cord being secured within the slot 18 about the opposed lugs 21. In this case, as in the other, the cord is mounted within the end of the weight and is centered and protected thereby.

While we have herein shown and described with a considerable degree of particularity a preferred and one modified embodiment of the invention it will be apparent that other changes in form, construction and arrangement may be resorted to without departing from the essence of the invention or sacrificing its material advantages.

We claim:

1. A sash weight comprising a plurality of connected units, the connections between a pair of units comprising means for preventing disconnection of the units without relative angular movement therebetween, and means for preventing said relative angular movement without first moving one of said units longitudinally relatively to the other.

2. A sash weight comprising a plurality of connected units, the connections between a pair of units comprising means for preventing disconnection of the units without relative angular movement therebetween, and means for preventing said relative angular movement without first moving one of said units longitudinally relatively to the other toward the connection between the said units.

3. A sash weight unit comprising a body portion having arms formed at its ends and extending outwardly longitudinally of the said body portion, the said arms being provided with locking recesses and locking lugs formed to engage respectively similar locking lugs and locking recesses of similar

units, the recesses at one end of the unit being formed to prevent the disconnection of the units without relative angular movement and the recesses at the other end being formed to prevent said relative angular movement therebetween until after one of said units has been moved relatively longitudinally of the other.

4. A sash weight unit formed at each end to provide a plurality of locking recesses and a plurality of locking elements, the locking elements and recesses at one end being formed to engage respectively locking recesses and locking elements formed at the end of an adjacent unit to provide a plurality of connections between each pair of units, the said locking recesses being formed to prevent disconnection of the units without relative angular movement therebetween and the said locking lugs serving to prevent said relative angular movement until after one of said units has been moved relatively longitudinally of the other.

5. A sash weight unit formed at each end to provide a plurality of locking recesses and a plurality of locking elements, the locking elements and recesses at an end of the unit being formed to engage respectively the locking recesses and elements of a similar unit, the said locking elements being formed to prevent disconnection of the units without relative angular movement therebetween and the said locking recesses being formed to prevent said relative angular movement until after one of said units has been moved relatively longitudinally of the other.

6. A sash weight composed of units having one end flattened and provided with inwardly turned arms, a relatively narrow bridge piece connecting said arms, the arms and bridge piece embracing a substantially circular opening, the other end of the unit provided with a slot bounded by planes parallel to the planes of the flattened end and of a width sufficient to receive the flattened end of an adjacent unit, opposed elliptical lugs projecting inwardly from the walls of the slot with their inner faces separated by a space corresponding substantially to the thickness of the bridge piece and the minor and major axes of the lugs corresponding substantially to the distance between the inner ends of the arms and the diameter of the opening respectively.

7. A sash weight composed of units provided with coacting interengaging members releasable when swung upon said members as a pivot, and interlocking means comprising a stud carried by one unit and an elongated recess carried by another unit and adapted to receive the stud, and an arcuate groove formed about the interengaging members as a center and leading from the inner end of the recess to the outer edge of the unit.

8. A sash weight composed of units provided with coacting interengaging members releasable when angularly swung upon said members as a pivot, and interlocking means comprising alined studs carried by one unit and opposed elongated recesses carried by another unit and adapted to receive the studs, and arcuate grooves formed about the interengaging members as a center and leading from the inner end of the recesses to the outer edge of the unit.

9. A sash weight composed of units slotted at one end and provided therein with opposed lugs, the adjacent end of another unit flattened and provided with an opening, the lugs and opening constituting coacting interengaging members releasable when the units are angularly swung upon said members as a pivot, and interlocking means comprising a stud carried by the end of one of said units and an elongated recess formed in the end of the other of said units and adapted to receive the stud, and an arcuate groove formed by the interengaging members as a center and leading from the inner end of the recess to the outer edge of the unit.

10. A sash weight composed of units slotted at one end and provided therein with opposed elliptical lugs, the adjacent end of another unit flattened and provided with an opening embraced between inwardly extending arms, the lugs and opening constituting coacting interengaging members releasable when the units are angularly swung upon said members as a pivot to bring the smaller dimension of the lugs into alinement with the passage between the arms, and interlocking means comprising alined studs carried by the flattened end on the inner side of the opening and opposed elongated recesses formed upon the inner walls of the slot and adapted to receive the studs, and an arcuate groove formed about the lugs as a center and leading from the inner ends of the recesses to the outer edge of the unit.

11. A sash weight composed of units having one end flattened and provided with inwardly turned arms, a relatively narrow bridge piece connecting said arms, the arms and bridge piece embracing a substantially circular opening, the other end of the unit provided with a slot bounded by planes parallel to the planes of the flattened end and of a width sufficient to receive the flattened end of an adjacent unit, opposed elliptical lugs projecting inwardly from the walls of the slot with their inner faces separated by a space corresponding substantially to the thickness of the bridge piece, the minor and major axes of the lugs corresponding substantially to the distance between the inner ends of the arms and the diameter of the opening respectively and interlocking means comprising alined studs projecting from the

flattened faces on that side of the opening removed from the end of the unit, opposed elongated recesses formed in the walls of the slot between the lugs and the end of the
5 unit with their medial portion at a distance from the lugs corresponding to the distance of the studs from the opening, and arcuate grooves formed in the opposed walls of the slot and joining the inner ends of the re-
10 cesses with the outer edge of the unit at a point in substantially transverse alinement

with the major axes of the lugs, said grooves formed about the lugs as the center.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
