Feb. 19, 1929. 1,702,288

S. K. WOOD

CAR SEAL

Filed Jan. 24, 1927

Fig. 1

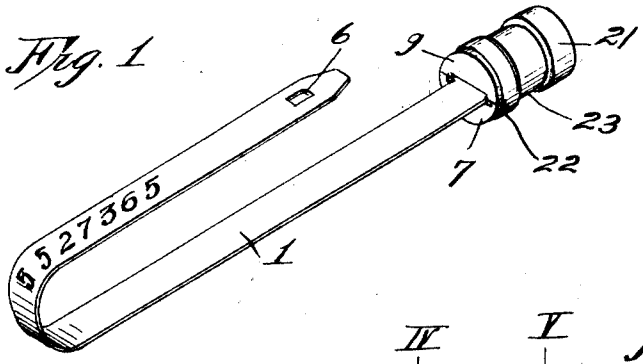


Fig. 2

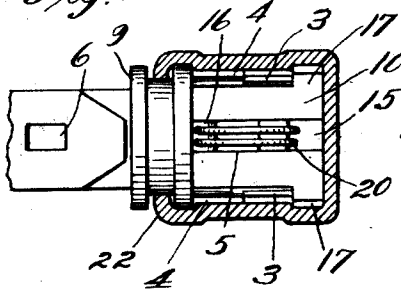


Fig. 3

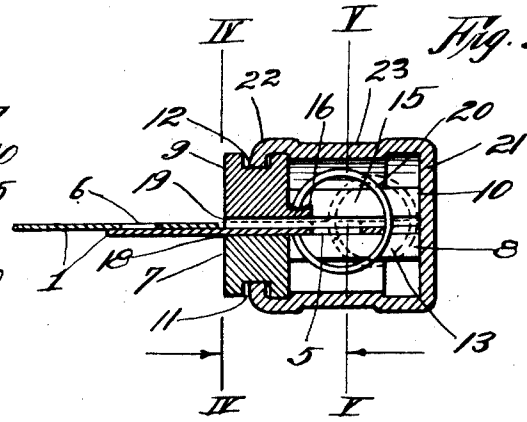


Fig. 4

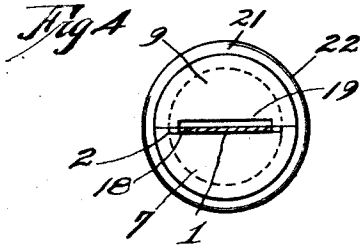
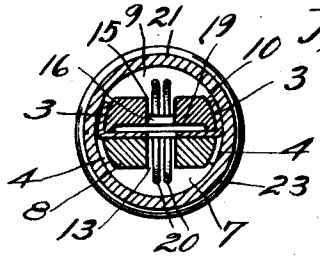


Fig. 5



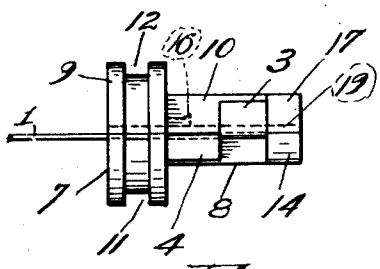


Fig. 6

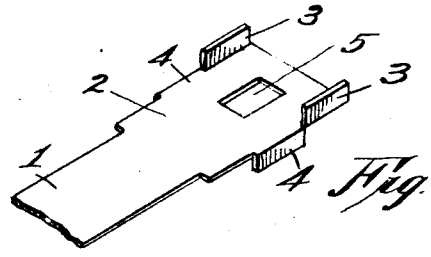


Fig. 7

Witness:

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UNITED STATES PATENT OFFICE.

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CAR SEAL.

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This invention relates to sealing devices for use in sealing box cars and for analogous purposes and has for its object to produce a sealing device of which the strip after once being closed and locked, cannot be opened without such injury or mutilation as to inhibit further practical use thereof. Another object is to produce a sealing device of simple and inexpensive construction.

With the object therefore of producing an efficient and inexpensive sealing device embodying the features of advantage hereinbefore set forth, the invention consists in certain novel and useful features of construction and organization of parts as hereinafter described and claimed; and in order that it may be fully understood, reference is to be had to the accompanying drawing, in which:

Figure 1 is a perspective view of a sealing device in unlocked or inoperative condition, and ready for use in sealing a box car or for any other appropriate use.

Figure 2 is an enlarged plan view of the same with the lock housing or casing in section and the free end of the seal occupying the position in which it is disposed preliminary to effecting the locking operation.

Figure 3 is a section taken at right angles to Figure 2, but also showing two members of the lock mechanism and the permanently attached end of the seal strip as well as the housing, in central section.

Figure 4 is a section on the line IV—IV of Figure 3.

Figure 5 is a section on the line V—V of Figure 3.

Figure 6 is a side view with the parts shown as in Figure 3, but with the housing and the spring locking rings omitted.

Figure 7 is a perspective view of the permanently attached end of the seal strip.

In the said drawing where like reference characters identify corresponding parts, 1 indicates the customary metallic seal strip, which is for the purpose of identification consecutively numbered, each bears its respective number preferably in embossed or stamped characters.

The end of the seal strip for permanent attachment to a housing, is slightly widened as at 2 and projecting upward from the free extremity of such widened portion at each side thereof are ears 3, and depending from said portion between ears 3 and the other end of the portion are similar ears 4, the widened portion being provided midway between the ears with a longitudinal slot or opening 5. The other end of the strip is preferably pointed slightly and is provided with an opening 6 set slightly farther back from the end of the pointed portion than opening 5 is set back from the other end of the strip.

A locking feature in its preferred form, consists of two locking members to embrace the widened end of the strip at opposite sides thereof, each comprising a peripherally grooved semi-circular head and a flattened stem, the head of one locking member being numbered 7 and its flattened extension 8, and the corresponding parts of the other member being numbered 9 and 10 respectively. The peripheral groove in one member is identified by character 11 while the groove in the other member is identified by the character 12, and the diameter of the peripherally grooved cylindrical head which these parts 7 and 9 constitute when fitted flatly together, is equal to the width of the flattened stems 8 and 10, so that when said locking members are fitted upon opposite sides of portion 2 of the strip, the upwardly-projecting ears 3 shall fit against opposite edges of stem portion 10, and the depending ears 4 shall fit against the corresponding edges of stem 8. The stem portion 8 is provided with a longitudinal slot 13 extending from the head to and through the free end of said stem 8, and the latter is also provided at its free end at opposite sides, with outwardly-projecting lugs 14, so that the flattened portion including said lugs, corresponds in width to the diameter of the semi-cylindrical head.

The other flattened stem 10 is provided centrally with a longitudinal slot 15, which corresponds exactly to slot 13 except that it is offset at its closed end to provide a shoulder or step 16, and at its free end said stem 10 is provided with laterally-projecting lugs 17 corresponding to lugs 14. It is practicable to make the locking feature described in one piece, but as stated, it is preferably formed in two pieces.

On the flat or inner side of the member composed of head 7 and stem 8, there is provided a channel 18 corresponding in depth to the thickness of the seal strip, and when the said member is applied to the seal strip, the ears 4 bear against the semi-circular head so as to inhibit sliding movement in one direction, of the member on the strip, as shown more clearly by Figure 6.

The flat side of the other member is chan-

nelled at 19, and at opposite sides thereof, is adapted to fit flatly upon the enlarged portion 2 of the strip, with its stem 10 fitting between the upwardly-projecting ears 3 and its lugs 17 fitting against the free ends of said ears so as to inhibit sliding movement of said member in one direction on the strip, as will also be noted by reference to Figure 6, it being noted in this connection that the two channels constitute a single passage. When the two locking members are fitted as described upon the large end of the strip, the lugs 3 and 4 prevent relative sliding movement between them and the strip, and the slot or opening 5 of the latter registering with the slot 13 intermediate the length thereof, and beyond the step or shoulder of stem 10. With said parts in the position described and as shown clearly in Figures 2, 3 and 6, one or a set of two spring rings 20 is sprung open slightly by any suitable device, such as a pair of pliers, and fitted in the registering slots 13 and 15 and over the end of portion 2 until the opening in the ring or set of rings receives the shoulder or step 16 and the portion 2 at a point opposite to said shoulder or step. When the rings are thus positioned, the pliers are disengaged to permit the jaw ends of the ring or set of rings to close upon the bottom of portion 2 and the top of the step, as indicated by Figures 2 and 3, the extremity of portion 2 at this time being against the inner side of the ring or rings opposite the spread open ends or mouths thereof. With the parts thus arranged a cylindrical cap or thimble 21 is slipped over the members so as to fit snugly upon the outer edges of the lugs 14 and 17 and the heads 7 and 9, and then through any suitable instrumentality, the extremity of the open end of the thimble is crimped or turned inwardly into the groove so as to secure the two members firmly together and upon the permanently attached end of the seal strip, and to guard against any possibility of lateral play of said end of the seal strip within the thimble, the latter is also diametrically reduced at an intermediate point, that is, between the cylindrical head and the lugs at the front end of the flattened portions, as at 23, against the ears 3 and 4. When the thimble has been thus applied it constitutes a housing or casing which secures the locking members and the interposed end of the seal strip firmly together and also guards against accidental dislodgment of the spring locking means from position.

The device as thus far described is completed as far as the manufacturing end is concerned. When ready for practical use the seal strip can be applied through a hasp or the like in the customary manner, and to set it, the pointed end is fitted flatly against the body of the strip as indicated by Figures 2 and 3, and thrust into the passage until it enters the spread-open ring or set of rings and forces the same forwardly until the jaws of the rings pass out of engagement with the step 16 and the strip where the same is engaged by one of the jaws. Immediately this shifting of the spring ring or set of rings is effected, it snaps to closed position through the slot 5 and the slot 6 and thus locks the originally free end of the seal strip from withdrawal. A plurality of rings is employed merely as a precautionary measure, as the rings under the jolting of a car will turn and thus throw at least one of their split ends at an angle to the plane of the ends of the strip so that through no possible chance could a pull on the strip open both rings and withdraw the pointed end from locked position. Ordinarily one ring would be sufficient but two will guard against any possibility of unlocking action.

It will be apparent that the rings are inaccessible when once set and that the closed end of the housing will check inward or advanced movement of the rings through pressure applied on the free end of the strip so as to inhibit any chance of springing the rings open by bringing their rear sides forcibly against the portion 2 at either end of the slot 5 thereof.

From the above description, it will be apparent that I have produced a device which embodies the features of advantage set forth as desirable in the statement of the object of the invention, and which may be modified in minor particulars within the principle of construction and mode of operation involved and also within the spirit and scope of the appended claims.

What I claim is:

1. A sealing device comprising a housing closed at one end, locking means secured in the housing and filling the other end thereof and provided with a longitudinal passage and a longitudinal slot intersecting said passage and extending from a point intermediate the length of the locking means to the end of the latter adjacent the closed end of the housing, said locking means having a step projecting into said slot toward but spaced from the closed end of the housing, a strip extending into said passage and across said slot and fastened to the locking means and provided with a slot registering with the slot of the locking means at a point between the plane of said step and the closed end of the housing; said strip having a slot near its other end, adapted to be brought into registration with the slot of the fastened end by the thrusting of said other end of the strip into said passage, and a spring locking means fitting in the slot of the first-named means and having jaws initially held open at opposite sides of said passage by engagement with said step and with the fastened end of said strip at a point opposite to said step and

to be tripped from the latter and the strip to snap through the slots of the latter, by a thrust applied on said spring locking means by the strip when the free end thereof is thrust into said passage.

2. A sealing device, comprising a housing closed at one end, and crimped inward at the other, a locking device fitted in the housing and provided with a peripheral groove engaged by said crimped end of the housing and provided with a longitudinal passage and a longitudinal slot intersecting said passage and extending from a point intermediate the length of the locking means to the end of the latter adjacent the closed end of the housing, said locking means having a step projecting into said slot toward but spaced from the closed end of the housing; a strip extending into said passage and across said slot and fastened to the locking means and provided with a slot registering with the slot of the locking means at a point between the plane of said step and the closed end of the housing; said strip having a slot near its other end, adapted to be brought into registration with the slot of the fastened end by the thrusting of said other end of the strip into said passage, and a spring locking means fitting in the slot of the first-named means and having jaws initially held open at opposite sides of said passage by engagement with said step and with said strip at a point opposite to said step, and to be tripped from the latter and said strip to snap through the slots of the latter, by a thrust applied on said spring locking means by the strip when the free end thereof is thrust into said passage.

3. A sealing device, comprising a cylindrical thimble closed at one end and crimped inward at the other and at an intermediate point of its length, a locking means fitting in the housing and comprising a circular head having a peripheral groove engaged by the crimped end of the housing, and a flattened stem enclosed by the housing and provided at the closed end of the latter with outwardly-projecting lugs, said locking means having a longitudinal passage and a slot intersecting said passage and extending from a point intermediate the length of the locking means to the end of the latter adjacent the closed end of the housing, the head of the locking means having at one side of said passage a step projecting into said slot; a strip fitting in said passage at the opposite side thereof from said step and spaced from the latter and provided with oppositely-projecting lugs respectively engaging the adjacent faces of said head and the lugs of said stem and also provided with a slot registering with the slot of the locking means at a point between the plane of said step and the closed end of the housing, and a spring ring fitting in the slot of said locking means and over the end of said strip and bearing at one of its split ends upon said step and at its other split end upon the strip at a point opposite said step, the opposite end of the strip being adapted to be thrust into said passage upon the first-named end of the strip and into said ring and against the same at a point opposite the split portion thereof to force the ring toward the closed end of the housing until its split ends are dislodged from the step and the opposite portion of the first-named end of the strip; said other end of the strip having a slot to come into registration with the slot in the first-named end of the strip as said dislodgment of the ring occurs to permit the ring to close through both slots of the strip and thus lock the ends of the strip in the housing.

4. A sealing device, comprising a housing closed at one end and crimped inward at its other end, a locking means comprising two members fitting flatly together and provided with an interposed longitudinal passage, each member consisting of a semi-circular head having a peripheral groove engaged by the crimped edge of the housing, and a flattened stem enclosed by the housing and provided with outwardly-projecting lugs adjacent the closed end of the housing, said stems having registering longitudinal slots intersecting the said passage; a strip having a widened end extending through the said passage and clamped between the members of the locking means, and provided with projecting lugs respectively engaging the side edges of the stem and the proximate faces of said heads and said lugs, and provided with a longitudinal slot registering with the longitudinal slot of said locking members at an intermediate point thereof, one of the locking members having a step projecting into its slot at a point beyond one end of the slot of said strip; a spring ring fitted through the longitudinal slots of the locking members and over the slotted end of the strip and engaging at its split ends with said step and said strip at a point opposite to said step, the other end of the strip having a slot a greater distance from its extremity than the slot of the first-named end is from the extremity of such end, so that when the said other end is thrust into said passage it shall enter the ring and apply pressure against it at a point opposite the split portion thereof and push said ring toward the closed end of the housing until the split end clears the said step and the opposite unslotted portion of the first-named end of the strip and snaps through the slots of the two ends of the latter.

In witness whereof I hereunto affix my signature.

STRAUD K. WOOD.