

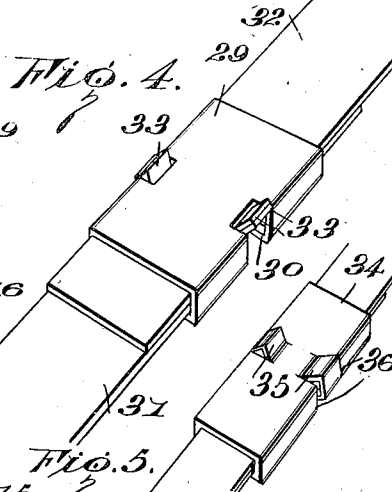
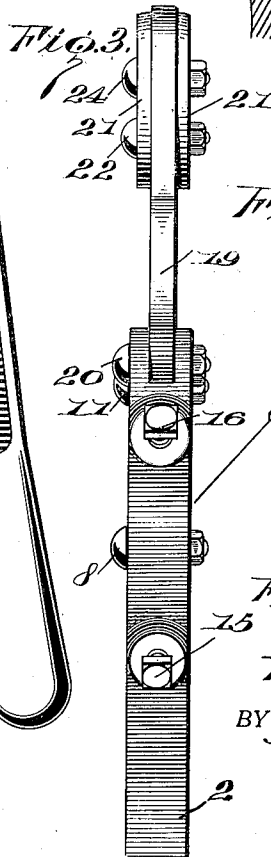
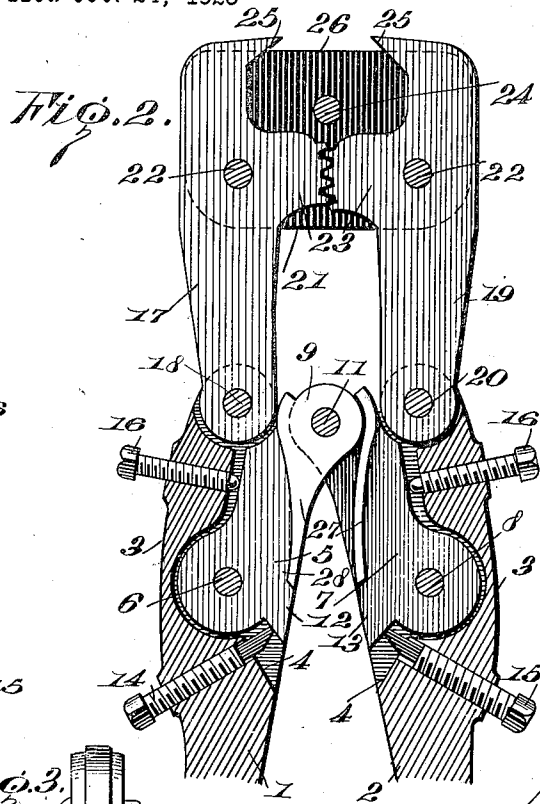
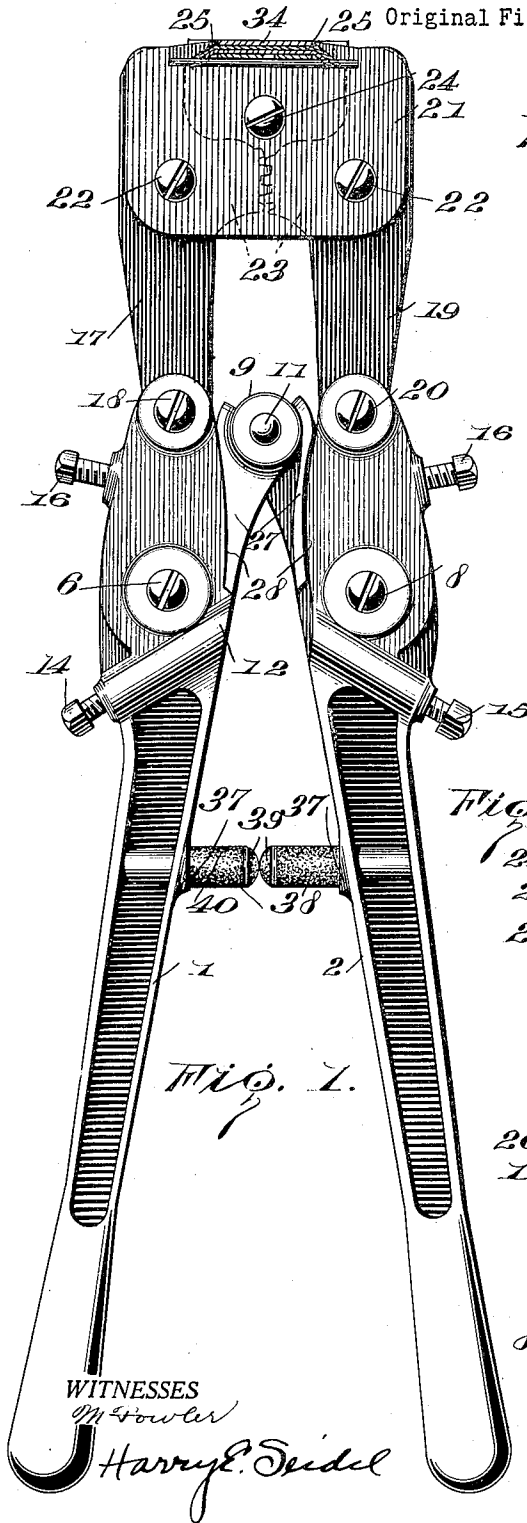
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DEVICE FOR APPLYING BOX STRAPS

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WITNESSES

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DEVICE FOR APPLYING BOX STRAPS.

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This invention relates to devices for applying box straps or barrel hoop seals of the type described and claimed in my Patent No. 1,517,515, December 2, 1924.

Box strap sealing implements have been so constructed that it is necessary to insert a portion of the implement beneath the box strap whereby the straps are raised so that after the seal has been locked in place upon the overlapping strap ends by the operation of the implement the straps are not rigidly bound about the box. Such loose application of the straps permits the straps to shift and in effect do not act as a binder for said boxes.

It is an object of my invention to provide a device for simultaneously deforming portions of the longitudinal side edges of the overlapped ends of a box or barrel strap in such a manner that the strap will be in rigid engagement with the container to which it has been applied throughout its entire length so that there will be no shifting or looseness in the strap when the ends have been sealed.

A further object of my invention is the provision of a device for readily applying seals to overlapped strap ends whereby said ends are locked against movement with the strap in rigid clamping engagement with the box, the implement being adapted to cut upturned lips either in both the seal and the overlapped strap ends or portion of the side edges of the overlapped strap ends may be sheared to provide upturned lips to project upwardly through slotted portions of the usual sealing sleeve.

Another object of the invention is the provision of a device for gripping only the longitudinal side edges of the overlapped ends of a box or barrel strap and for readily shearing the same by an upward cutting of the material when the device is operated, thereby forming upturned lips on the strap ends or simultaneously forming upturned lips of the strap ends together with a sheared and upturned portion of the sealing sleeve embracing said lips.

This invention will be best understood from a consideration of the following detailed description in view of the accompanying drawing forming a part of the specification; nevertheless it is to be under-

stood that the invention is not confined to the disclosure, being susceptible of such changes and modifications which shall define no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:

Figure 1 is a plan view of the box strap sealing implement.

Figure 2 is a fragmentary view in horizontal section showing details of the implement.

Figure 3 is a side view of the same.

Figure 4 is a view in perspective of one form of sleeve locked to the overlapped ends of the box strap by means of the device illustrated in Figures 1 to 3 inclusive.

Figure 5 is a view in perspective of another form of sealing sleeve having parts of the sleeve simultaneously deformed with portions of the overlapped strap ends.

Referring to the drawings, 1 and 2 designate handles which have enlarged portions 3 at their upper ends. Said enlarged portions are provided with sockets 4. The socket 4 at the upper end of arm 1 is adapted to receive a link 5 pivoted on a pin 6 mounted in the enlargement of the arm. A link 7 received within the socket 4 of the arm 2 is pivoted at 8 on a pin mounted in the enlargement of said arm.

The upper end of the link 5 is bifurcated as at 9 to receive the upper end 10 of link 7. A pin 11 pivotally connects the upper ends of these links. A toe 12 projects inwardly from the lower end of link 5 while a toe 13 projects inwardly from the lower end of link 7. One edge of the toe 12 is engaged by the inner end of a set screw 14 which is screwed into a threaded passage in the arm 1. A set screw 15 is screwed into a threaded passage in the arm 2 and has its inner end in engagement with the toe 13 of link 7.

The rear edges of the links 5 and 7 are each engaged by a set screw 16 which are screwed into threaded passages in the respective arms 1 and 2. The lower end of a toggle lever 17 is pivotally mounted at 18 in the bifurcated upper end of the arm 1 while a toggle lever 19 is pivotally mounted on the bifurcated upper end of the arm 2 on a pin 20. The intermediate portions of

the toggle levers 17 and 19 are pivotally connected to front and rear plates 21 by means of bolts 22. The intermediate portions of the levers 17 and 19 adjacent the bolts 22 are provided with inwardly projecting members 23 which have cooperating teeth in engagement with each other for a purpose which will be presently explained.

A bolt 24 rigidly locks the plates 21 together. The upper free ends of the toggles 17 and 19 are provided with jaws 25 which project towards each other and are adapted to cooperate with the outer edges 26 of the plates 21 to deform or shear the metal of the sealing sleeve and the longitudinal side edges of the strap ends embraced by said sleeve. The jaws and the outer edges 26 of the plates form the die for deforming the metal of the sealing sleeves and overlapped ends of the straps.

Each of the links 5 and 7 are provided with ribs 27 which project laterally from opposite sides of the links and are adapted to engage the inner edges 28 of the upper ends of the arms 1 and 2 and limit the inward movement of the links within their sockets 4.

Figures 4 and 5 disclose the sheared sealing sleeves and overlapped strap ends described in my patent mentioned above. The sleeve 29 is provided with slots 30 and designates the point at which the strap ends 31 and 32 are to be sheared so that when the tool engages the longitudinal side edges of the strap ends at this point the metal of the strap ends will be raised upwardly to form lips 33 and thereby lock the strap ends and seal as a unitary structure. The sleeve 34 of Figure 5 is devoid of the slots 30 so that the tool when engaged with the sleeve will not only form elevated lips 35 of a portion of the side edges of the strap ends but will also raise a portion 36 of the sleeve in embraced relation with the lips 35.

The arms 1 and 2 are provided with perforated bosses 37 adapted to receive pins 38. The outer ends of the pins are provided with heads 39 which are adapted to abut when the arms 1 and 2 are moved toward each other. Elastic sleeves 40 are mounted on the pins 38 and between the heads 39 and the inner ends of the bosses 37 and are adapted to be compressed when pressure has been applied to the arms 1 and 2 for moving the arms toward each other. The elastic material of the sleeves 40 forces the arms apart when pressure has been relieved from said arms.

The operation of my device is as follows:

Before applying the device to a sleeve embracing an overlapped strap end, the links 5 and 7 must be adjusted to properly space the jaws 25 in order that the jaws will sufficiently shear the metal of the sleeve and the overlapped strap ends for locking the same together. If it is desired to space the jaws 25

farther apart, the set screws 16 are adjusted outwardly for removing their inner ends of the set screws from the outer edges of the links 5 and 7, while the set screws 14 and 15 are screwed inwardly respectively against the toes 12 and 13 of the set screws 16. The reverse movements of the set screws brings the jaws closer together. The lever arms 1 and 2 are then moved outwardly from each other to sufficiently spread the jaws 25 from each other in order to be engaged around either the sleeve 29 or the sleeve 34. The ends 25 of the jaws engage around the lateral edges of the sleeve while the outer ends 26 of the plate 21 rest upon the upper surface of the sealing sleeves. The arms 1 and 2 are forcibly moved toward each other whereby the side edges of the sleeve 34 together with the portions of the overlapped strap ends are sheared and moved upwardly between the plates 21 by the cutting jaws 25. Where the device is applied to the sleeve 29 the jaws 25 are fitted within the slots 30 and those portions of the overlapped strap ends 31 and 32 confined within the slots 30 are engaged by the jaws 25 while the outer edges 26 of the plates 21 rest upon the upper surface of the sleeve 29. The inward movement of the handles toward each other will cause the jaws 25 to move forwardly between the plates 21 and shear the edges of the overlapped strap ends and force them upwardly through the slotted portion 30 of the sleeve 29 and thereby lock the sleeve and the strap ends together.

It will be noted with my device that the strap ends are at no time elevated above the box or barrel when the strap is being applied so that the strap will be always taut and in rigid engagement with the container to which it has been applied. The jaws cooperating with the outer edges of plates 21 merely serve to deform portions of the side edges of the overlapped straps in the case of the sealing device shown in Figure 4 while in Figure 5 the metal of the sleeve 34 together with the adjacent portions of the side edges of the overlapping straps are sheared and locked in cooperative engagement and this is done without elevating the strap at the point where the slot is applied.

The jaws of the die have an upward shearing action while the outer edges of the plates 21 press downwardly on the sleeve and strap ends and aid in maintaining the strap ends against displacement and thus prevent loosening of the strap. During the cutting action of the jaws, the cutting edges of said jaws move into shearing contact with the outer edges 23 of the plates 21 whereby the metal of the assembled sleeve and strap ends are sheared and forced inwardly of the outer edges of the plates.

The plates 21 act not only as a mounting for the jaws but provide a housing for the

same and instead of the plates a housing may be employed for pivotally mounting said jaws.

The plates and jaws form what I term the tie head of the implement.

What I claim is:

1. A device of the character described, comprising a die head formed of a pair of plates and a pair of jaws pivotally mounted between the plates, said jaws being provided with inwardly projecting biting portions extending beyond the outer ends of the plates to receive an assembled sleeve and overlapped strap ends between the jaws, with the outer face of the sleeve engaged by the outer ends of the plates, and means connected with the jaws for causing said jaws to be moved inwardly of the housing whereby the metal of the assembled sleeve and overlapped strap ends are sheared and forced upwardly from the object to which the strap ends have been applied.

2. A device of the character described comprising a housing, a pair of spaced jaws pivotally mounted in the housing with the biting ends of the jaws sufficiently projecting beyond the outer end of the housing to receive an assembled sleeve and overlapped strap ends between the jaws with the inner adjacent faces of the jaws engaging the opposite side edges of the assembled sleeve and strap ends, the outer end of the housing resting upon the top of the sleeve, and means connected with the jaws for causing said jaws to be moved inwardly of the housing whereby the metal of the assembled sleeve and overlapped strap ends are sheared and forced upwardly.

3. A device for applying box straps comprising a pair of spaced plates, a pair of jaws pivoted on and between the plates and having V-shaped ends adapted to project beyond the outer edges of the plates, the

outer edges of the plates forming a fulcrum for the device and engaging a box strap when said strap is acted upon, means for causing movement of the V-shaped end inwardly of the plates.

4. A device for applying box straps comprising a housing, a pair of similarly formed toggle levers pivotally mounted intermediate the ends thereof in the housing, each of the levers being provided with a jaw projecting beyond the outer end of the housing, with the jaw of one lever facing the jaw of the other lever, the outer end of the housing forming a support for the device when the same is operated and adapted to rest upon the box strap, said jaws being movable into the housing, and means for moving the jaws into said housing.

5. A device for applying box straps comprising a housing, a pair of levers pivoted in the housing and provided with jaws projecting beyond the outer end of the housing to engage box straps, said jaws being movable within the housing when the levers are operated for cutting and forcing the cut portion of the box strap into the housing, and means for operating the levers.

6. A device for applying box straps comprising a pair of plates, jaws pivotally mounted on and between the plates and provided at their inner faces with cutting edges, said jaws normally projecting beyond the outer edges of the plates to receive simultaneously the opposite side edges of an assembled sleeve and overlapped strap ends, and means connected with the jaws for causing the cutting edges to be moved into shearing contact with the outer edges of the plates whereby the metal of the assembled sleeve and strap ends are sheared and forced inwardly of the outer edges of the plates.

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