Sept. 6, 1932. J. KNEIER 1,875,815

WRENCH SET UNIT

Filed Dec. 17, 1927

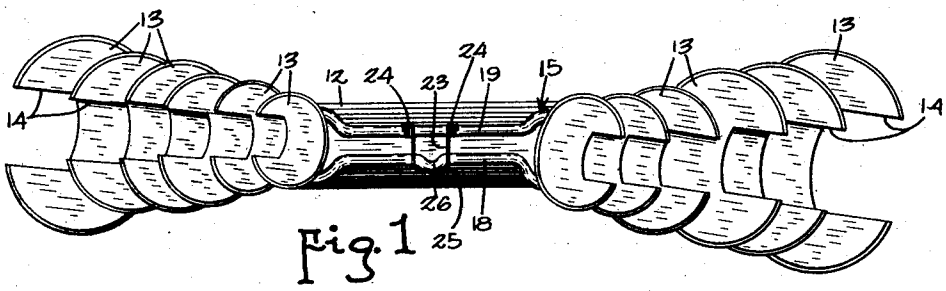


Fig. 1

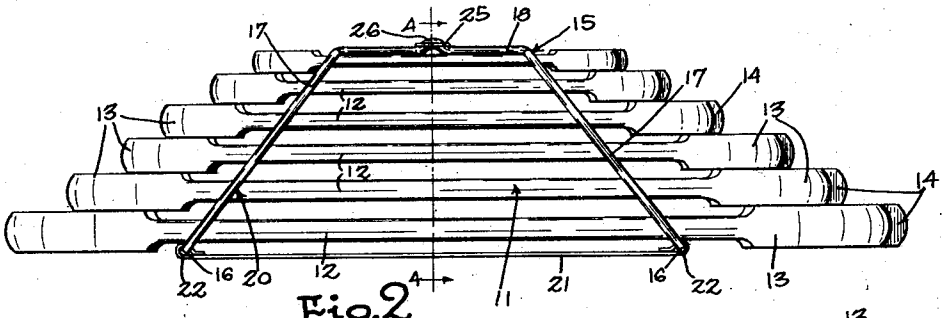


Fig. 2

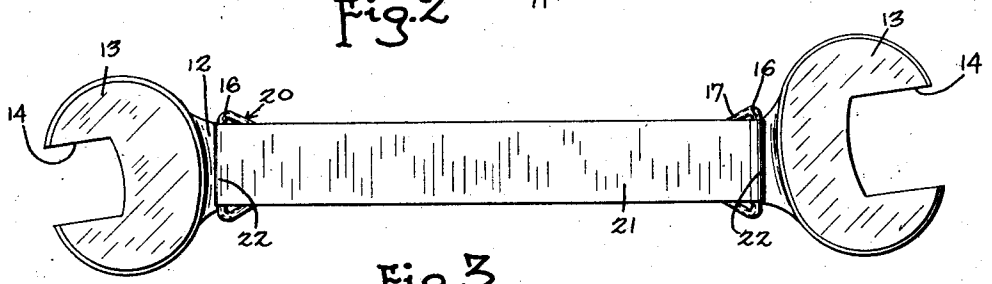


Fig. 3

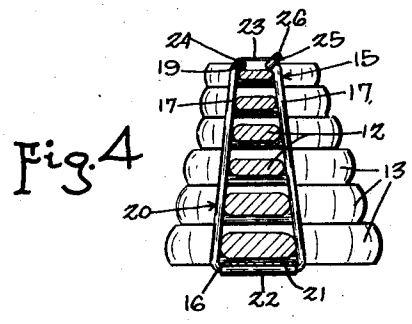


Fig. 4

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UNITED STATES PATENT OFFICE

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WRENCH SET UNIT

Application filed December 17, 1927. Serial No. 240,701.

My invention relates to wrench set units, and the principal object of my invention is to provide a wrench set assembled in a package in a manner convenient for merchandising. In the drawing accompanying this specification and forming a part of this application I have shown, for purposes of illustration, one form which my invention may assume, and in this drawing:

Figure 1 is a top plan view of the embodiment of my invention herein shown,

Figure 2 is a side elevation thereof,

Figure 3 is a bottom plan view thereof, while

Figure 4 is a section taken on the line 4—4 of Figure 2.

In the embodiment of my invention herein shown I have assembled six fixed-size wrenches 11 each comprising a shank 12 terminating at its ends in enlargements 13 containing recesses 14 formed to fit nuts of standard size and one slightly larger than the other to fit a nut of the next larger size than that fitted by the other. In addition I have selected these six wrenches 11 so that each is slightly larger than the preceding, both larger in length of the shank 12 and larger in size of the recesses 14, and I have made the selection in such manner that the small recess 14 of the second wrench 11 fits the nut of next larger size than that fitted by the large recess 14 of the first wrench 11, and so on, so that the twelve recesses 14 of the six wrenches 11 fit nuts of twelve consecutive sizes.

After assembling these six wrenches in this manner I secure them so assembled by means of a pair of U-shaped straps 15 having their bases 16 disposed beneath the bottom of the largest wrench 11 adjacent the junction of its shank 12 with its two enlargements 13, having their sides 17 extending up the two sides of the six wrenches 11 and crossing the shank 12 of each wrench 11 adjacent the junction of that shank 12 with the enlargements 13 of that wrench 11 and terminating adjacent the edges of the top face of the top wrench 11, and having the free ends of the sides 17 connected by connecting strips 18 and 19 lying above the top face of the shank 12 of the top wrench 11 adjacent the lateral edges of this shank 12 of this top wrench 11.

In the embodiment of my invention herein disclosed I have shown the straps 15 and the strips 18 and 19 formed from a continuous piece of wire 20 having its two ends welded at any convenient point, and I find this construction of the straps 15 and strips 18 and 19 particularly advantageous in actual practice. With this construction however I prefer to maintain the bases 16 of the straps 15 spaced other than by the rigidity of the connecting strips 18 and 19, and accordingly with this construction I provide below the bottom face of the shank 12 of the bottom wrench 11 a spacer strip 21 having its ends curled about the bases 16 of the straps 15 to form enclosing loops 22 fixedly securing the bases 16 of the straps 15 to the spacer strip 21 thus rendering the spacer strip 21 effective to hold the bases 16 of the straps 15 properly spaced independently of the rigidity of the connecting strips 18 and 19.

It will be obvious that with this construction the wrenches may be removed and replaced from within the binder means merely by springing apart the two sides of the binder means, that is by separating slightly the two sides 17 of each of the straps 15, and I regard this as a distinct advantage. At the same time I also find it desirable to provide some means to prevent the two sides of the binder means being operated accidentally, and I find this particularly desirable when I make the straps 15 and the connecting strips 18 and 19 from the single piece of wire 20 as herein shown, and accordingly with this construction I provide on the connecting strip 19 a loop 23 having its ends 24 curled about the connecting strip 19 to pivot the loop 23 on the connecting strip 19, and having its closed end 25 positioned to be releasably sprung over a hump 26 formed centrally of the connecting strip 18 thereby to hold the binder means assembled about the wrenches 11 holding the wrenches 11 in a single unitary package until the closed end 25 of the loop 23 is intentionally disengaged from the hump 26 of the connecting strip 18.

Under these circumstances it will be clear that the embodiment of my invention herein shown and described accomplishes at least the principal object of my invention.

At the same time it also will be understood by those skilled in the art that the embodiment of my invention herein shown and described embodies advantages other than those specifically pointed out or suggested herein, and also that this embodiment of my invention may be variously changed and modified without departing from the spirit of my invention or sacrificing the advantages thereof.

Therefore it will be understood that the disclosure herein is illustrative only, and that my invention is not limited thereto.

I claim:

1. A wrench set unit, comprising: a plurality of wrenches assembled side by side; a pair of straps extending about said wrenches, but interrupted; a pair of connecting strips securing the two ends of one of said straps respectively to the corresponding ends of the other of said straps; said straps and said strips being a single piece of wire, and resilient; and means holding said straps spaced remote from said strips; said straps and said wrenches interabutting to prevent any substantial relative longitudinal movement between said straps and said wrenches; whereby said wrenches are held both against separation and against shifting, but said straps are readily openable to permit removal and replacement of said wrenches.

2. A wrench set unit, comprising: a plurality of wrenches each provided at each end with an enlargement, and each having also a shank extending between its said enlargements connecting said enlargements, said wrenches being assembled side by side; a pair of straps extending about said shanks and spaced opposite each said wrench substantially the distance between the enlargements of that said wrench, said straps however being interrupted; a pair of connecting strips securing the two ends of one of said straps respectively to the corresponding ends of the other of said straps, said straps and said strips being a single piece of wire, and resilient, whereby said straps are readily openable; and means holding said straps so spaced remote from said strips; whereby said wrenches are normally maintained so assembled, held against both separation and shifting, but said straps may be readily opened to permit removal and replacement of said wrenches.

3. A wrench set package comprising: a stacked set of wrenches, each wrench having a shank and an enlargement at each end thereof; and packaging means comprising metal encircling three sides of the stacked shanks, and a closure for closing the fourth side, said metal and closure having interlocking portions for holding said packaging means releasably closed; and said encircling metal being made up of a single length of wire bent into four spacer portions lying along the edges of the wrenches near their enlargements to hold each wrench against longitudinal displacement.

4. A wrench set unit, comprising: a plurality of wrenches assembled side by side; and a pair of straps extending about said wrenches; and a plurality of different means holding said straps spaced apart; said wrenches having means abutting said straps for preventing any substantial relative longitudinal movement between said straps and said wrenches in either direction; whereby said wrenches are held both against separation and against shifting.

5. A holder for a stack of wrenches, said stack comprising wrenches disposed side by side, each wrench having an enlargement at each end, said wrenches varying in length and width from one end of said stack to the other and said holder comprising side sections having a connection at one set of end portions adjacent the longest and broadest of said wrenches, and said side sections extending thence along opposite sides of said stack, both of said side sections being substantially of truncated triangular form, each with its wider portion adjacent the longer wrenches and its narrower portion adjacent the shorter wrenches, each of said truncated triangular side sections having opposite converging marginal edges lying in line with the enlargements of said wrenches and adapted to abut said enlargements to limit longitudinal shifting of said wrenches with respect to said holder, said side sections extending in holding relation about the wrenches of said stack, and the opposite set of end portions of said side sections being spaced and defining a passageway to and from said holder and being separable to facilitate passage of wrenches to and from said holder.

6. A holder for a stack of wrenches, said stack comprising wrenches disposed side by side, each wrench having an enlargement at each end, said wrenches varying in length and width from one end of said stack to the other, and said holder comprising side sections having a connection at one set of end portions overlying the longest and broadest of said wrenches, and said side sections extending thence along opposite sides of said stack, both of said side sections being substantially of truncated triangular form, each with its wider portion adjacent the longer wrenches and its narrower portion adjacent the shorter wrenches, each of said truncated triangular side sections having opposite converging marginal edges lying in line with the enlargements of said wrenches and adapted to abut said enlargements to limit longitudinal shifting of said wrenches with re-

spect to said holder, said side sections extending in holding relation about the wrenches of said stack, the opposite set of end portions of said side sections being spaced and defining a passageway to and from said holder; and fastening means spanning said passageway and detachably securing said end portions together.

7. A holder for a stack of wrenches, said stack comprising wrenches disposed side by side each wrench having an enlargement at each end, said wrenches varying in length and width from one end of said stack to the other, and said holder comprising side sections having a connection at one set of end portions overlying the longest and broadest of said wrenches, and said side sections extending thence along opposite sides of said stack, both of said side sections being substantially of truncated triangular form, each with its wider portion adjacent the longer wrenches and its narrower portion adjacent the shorter wrenches, each of said truncated triangular side sections having opposite converging marginal edges lying in line with the enlargements of said wrenches and adapted to abut said enlargements to limit longitudinal shifting of said wrenches with respect to said holder, said side sections extending in holding relation about the wrenches of said stack, the opposite set of end portions of said side sections spaced and defining a passageway to and from said holder; and fastening means spanning said passageway, hingedly connected to one of said opposite end portions, and detachably engaging the other of said opposite end portions.

8. A wrench set, comprising a plurality of wrenches stacked side by side and each provided at each end with an enlargement, and a holder therefor, said holder comprising: a first U-shaped component, of stiff rod-like material, encircling the wrench stack on three sides thereof, intermediately of said enlargements; a second U-shaped component, also of stiff rod-like material and encircling said wrench stack on three sides thereof intermediately of said enlargements, but spaced from said first component longitudinally of said wrenches; a first connecting means, comprising a member of stiff rod-like material connecting one end of said first component to the corresponding end of said second component; and a second connecting means, comprising a member of stiff rod-like material connecting the other end of said first component to the other end of said second component; said connecting means retractibly overlying said wrench stack, to hold said wrenches against removal, but readily openable, to permit insertion and removal of said wrenches at will.

9. A wrench set, comprising a plurality of wrenches stacked side by side and each provided at each end with an enlargement, and a holder therefor, said holder comprising: a first U-shaped component, of stiff rod-like material, encircling the wrench stack on three sides thereof, intermediately of said enlargements; a second U-shaped component, also of stiff rod-like material and encircling said wrench stack on three sides thereof intermediately of said enlargements, but spaced from said first component longitudinally of said wrenches; the legs of said components being positioned to abut said enlargements to limit longitudinal shifting of said wrenches relative to said holder; a first connecting means, comprising a member of stiff rod-like material connecting one end of said first component to the corresponding end of said second component; and a second connecting means, comprising a member of stiff rod-like material connecting the other end of said first component to the other end of said second component; said connecting means retractibly overlying said wrench stack, to hold said wrenches against removal, but readily openable, to permit insertion and removal of said wrenches at will.

10. A wrench set, comprising a plurality of wrenches stacked side by side and each provided at each end with an enlargement, and a holder therefor, said holder comprising: a first U-shaped component, of stiff rod-like material, encircling the wrench stack on three sides thereof, intermediately of said enlargements; a second U-shaped component, also of stiff rod-like material and encircling said wrench stack on three sides thereof intermediately of said enlargements, but spaced from said first component longitudinally of said wrenches; a first member, of stiff rod-like material, connecting one end of said first component to the corresponding end of said second component; a second member, also of stiff rod-like material, connecting the other end of said first component to the other end of said second component; and latch means, releasably joining said members, to hold said wrenches against removal, but readily released, to permit insertion and removal of said wrenches at will.

In testimony whereof I hereunto affix my signature.

JOSEPH KNEIER.