

A. RYDQUIST.
SHELF TONGS.

APPLICATION FILED JAN. 29, 1908.

944,214.

Patented Dec. 21, 1909.

2 SHEETS—SHEET 1.

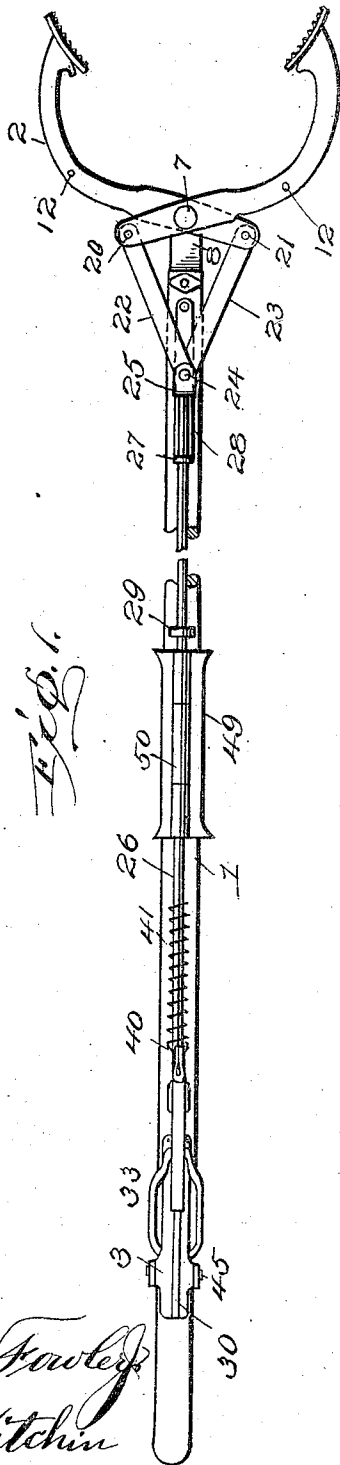


Fig. 1.

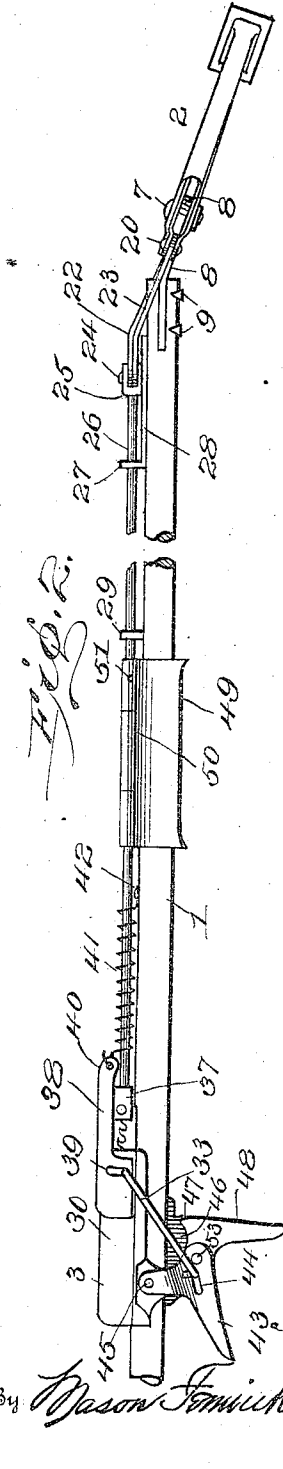


Fig. 2.

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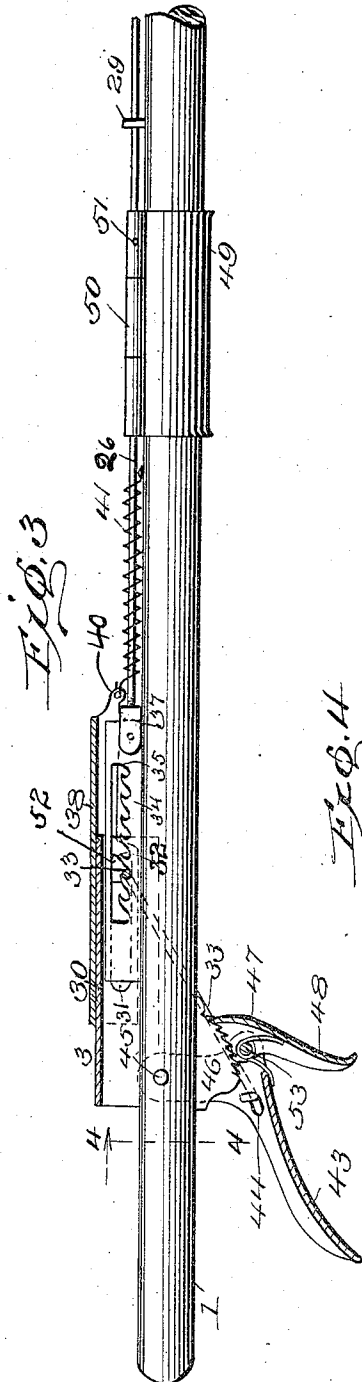


Fig. 3

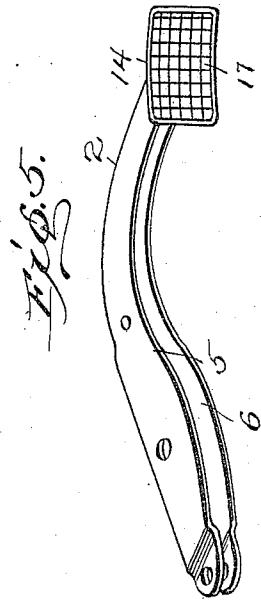


Fig. 5

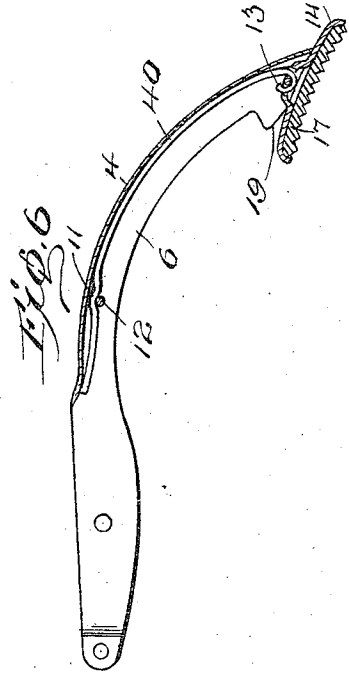


Fig. 6

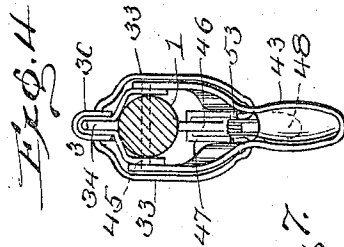


Fig. 4

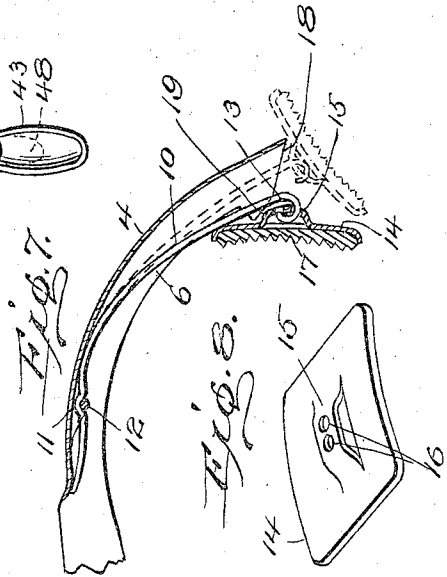


Fig. 7

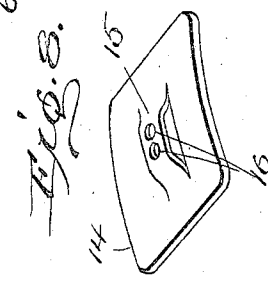


Fig. 8

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UNITED STATES PATENT OFFICE.

ADOLPH RYDQUIST, OF ROCHESTER, NEW YORK,

SHELF-TONGS.

944,214.

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Application filed January 29, 1908. Serial No. 413,281.

To all whom it may concern:

Be it known that I, ADOLPH RYDQUIST, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Shelf-Tongs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in tongs, and more particularly to what is known as "long arms" or "shelf tongs", and has for an object the provision of tongs that may grasp an article upon a high shelf or at a distance, and then be locked into engagement therewith previous to the removal of the article so as to obviate any liability of dropping the article.

Another object in view is the provision of tongs that are simple in construction and yet very strong, and easily operated, the construction permitting a comparatively wide range for the opening and closing of the jaws previous to engaging an article, and then a limited range for tightening or locking the jaws in position against the article.

A still further object of the invention is the provision of tongs that may be opened and closed by a sliding hand hold connected to the tongs to open and close the same for engaging an article and then locking mechanism for clamping the jaws tightly against the article to be moved that has a leverage for providing or using additional power.

With these and other objects in view the invention comprises certain novel constructions, combinations and arrangement of parts as will be hereinafter more fully described and claimed.

In the accompanying drawings: Figure 1 is a top plan view of my improved shelf tongs. Fig. 2 is a side elevation of the tongs shown in Fig. 1. Fig. 3 is an enlarged view of the operating mechanism for opening and closing the tongs shown in connection with a fragmentary view of a pole to which the same is secured. Fig. 4 is a section through Fig. 3 on line 4-4. Fig. 5 is an enlarged detail perspective view of one of the clamping jaws. Fig. 6 is a horizontal section through the clamping jaw shown in Fig. 5. Fig. 7 is a fragmentary horizontal sectional view through the jaw shown in Fig. 5, the outer auxiliary clamping member being

shown turned for setting forth certain capabilities of the tongs. Fig. 8 is an inverted perspective view of the auxiliary clamping member.

In the construction of shelf tongs it is very desirable to provide a structure in which the article to be grasped, as for instance a can, may be readily engaged and to then lock the tongs so as to prevent disengagement therefrom during the movement of the article. It is also desirable in tongs of this character to provide a structure that may be readily and quickly adjusted for varying size articles, and when so adjusted to quickly lock the clamping jaws, and in the locking to give an auxiliary tightening impulse or motion to the jaws so as to positively clamp or squeeze the article between the jaws and insure against any accidental removal therefrom. In the present invention it has been aimed to accomplish all these results and others so as to quickly engage any size article and give the jaws an extra squeezing or tightening effect and then lock the same. In addition, also, the locking means are arranged to be readily moved for unlocking the jaws and permitting the removal of the article from the jaws, or rather the removal of the jaws from the article.

In providing this structure the same is preferably constructed as shown in the drawing in which 1 represents a handle of any desired kind and length, having a pair of jaws 2 that are positioned near one end, and a locking member 3 positioned near the opposite end. The jaws 2 are formed preferably from metal stamped out from one piece, as seen in Figs. 5 and 6, having a back member 4 and side members 5 and 6. By this structure a very light, and yet very strong, clamping arm is formed. Two of these arms are pivoted together at 7, as clearly seen in Fig. 1, and form the clamping member or tong 2. The pivotal member 7 is designed to pass through a metallic extension 8 that is secured in handle 1 by suitable rivets, bolts, or the like, 9. The member 8 is preferably bent at an angle to handle 1 so as to permit tongs 2 to readily clasp an article on a shelf almost directly above the operator or to grasp an article at an angle to the handle.

Mounted in each of the arms or clamping members 2 is a spring 10 that is bent at 11 and is held in place by a rivet or bolt 12, as

clearly seen in Figs. 6 and 7. The spring 10 is formed at its outer end with a hook 13 that is designed to engage an auxiliary clamping member 14. The auxiliary clamping member 14 is formed with a raised or pressed out portion 15 that is provided with a plurality of apertures 16 for permitting member 14 to pivotally move upon hook 13. By this pivotal movement the auxiliary clamping members may adjust themselves to the peculiar contour of any of the articles desired to be moved and present a comparatively large surface for gripping the article so as not to injure the same. The auxiliary clamping members 14 are usually provided with cushions 17, preferably of rubber and usually corrugated for forming better frictional contact with the article to be moved and at the same time not to injure the article. The arms of the clamping member 2 are formed with flattened portions 18 at their outer ends against which auxiliary clamping member 14 normally rests. When, by the peculiar shape of the article to be moved, the inner end of the auxiliary member 14 is depressed the same will move off of the flattened portion 18 over to a flattened portion 19 or partially to that position as the case may be. If necessity should require, the inner end or the end nearest to pivotal point 7 of the auxiliary clamping member may be moved toward the arms 2, as seen in full lines on Fig. 7. Also if desirable the auxiliary clamping member 14 may be moved in an opposite direction to the dotted position shown in Fig. 7. From this it will be seen that by providing spring 10 and mounting the same as shown in Figs. 6 and 7 the auxiliary member 14 will adjust itself to any desired position for readily clamping any shaped article and permitting the full face of the auxiliary clamp to engage the article. As soon as the article has been released the spring 10 will move the auxiliary clamping member 14 back to the position shown in full lines on Fig. 1 and Fig. 6.

Pivotally secured to the ends of the clamping members 2 at 20 and 21 are links 22 and 23. Links 22 and 23 are pivoted together at their opposite ends by means of pin 24 which is mounted in a bracket or connecting member 25, as clearly seen in Figs. 1 and 2. The bracket or connecting member 25 is designed to have secured thereto a reciprocating bar 26 in any desired way, as being threaded thereto. The bar 26 is designed to reciprocate in a bracket 27 at the end of plate 28, which plate affords a suitable bearing surface for member 25 if the same should be bent down or caused to engage the plate, though ordinarily the member 25 is held a short distance above the plate by rod 26 and links 22 and 23. Positioned along handle 1 is any desired number of auxiliary

brackets 29 similar to bracket 27 for receiving and guiding rod 26. It will be evident that if the handle 1 is comparatively short that simply two brackets as 27 and 29 will be necessary for properly guiding rod 26, but if the handle 1 is longer additional brackets for guiding the rod 26 may be used.

Lock 3 positioned near the opposite end of handle 1 to clamping member 2 is provided with a housing 30 that is rigidly secured to handle 1. Housing 30 is designed to be formed with a slot 31 having a beveled end 32 for disengaging a catch or cross bar 33 more fully hereinafter described. Within housing 30 is located a reciprocating bar 34 formed with a cut out portion 35 having teeth 36 formed along one edge of the cut out portion. Reciprocating bar 34 has secured to one end thereof a lug 37 which in turn has secured thereto rod 26 in any desired way, preferably by being threaded therein. By this arrangement whenever bar 33 engages any of the teeth 36, as seen in Fig. 3, and is then moved member 34 will be moved and in turn rod 26 and finally clamping members 2 as heretofore described.

Mounted upon housing or casing 30 is a reciprocating member 38 that is formed with a slot 39 through which the bar 33 is designed to pass. The member 38 is cut away for accommodating member 37 and is normally in contact therewith, as clearly seen in Fig. 2. At one end of member 38 is formed an eyelet 40 to which is secured a spring 41 that surrounds rod 26, as clearly seen in Figs. 1, 2 and 3 and spring 41 is secured at 42 to handle 1 so that any movement of member 38 away from gripping members 2 will be resisted and member 38 will be returned to its original position whenever permitted to do so. Rod or bar 33 passes transversely of handle 1 through slots 39, 35 and 31 and is then bent down at an angle, as clearly seen in Figs. 1 and 2 for engaging lever 43. The lever 43 is slotted on each side at 44 for receiving the ends of bar 33 which is bent toward handle 1 so as to be in line substantially at right angles with the handle 1, as clearly seen in Fig. 3. The lever 43 is pivotally mounted at 45 so as to form a substantial leverage and an almost direct pull upon bar 33, as shown in Fig. 3. As bar 33 engages the teeth 36 of member 34 any movement of bar 33 toward the end of handle 1 will move member 34, which in turn will move rod 26 for closing clamping members 2. It will be understood that when lever 43 is grasped by the hand and moved upon its pivot 44 toward handle 1 an almost direct pull will be given upon bar 33, which in turn will move member 34 and rod 26 toward the end of handle 1 farthest from gripping member 2. A movement of rod 26 in this direction will close or partially close

jaws 2 accordingly to the distance the rod is moved. If the first movement of lever 43 does not move member 34 a sufficient distance to cause jaws 2 to close the lever may be released and forced downward for causing bar 33 to engage another one of the teeth 36 and then again moved for pulling upon member 34. Secured in handle 1 by any suitable means is a rack 46 which is designed to be engaged by pawl 47 that is normally spring pressed for engaging the rack. Pawl 47 is provided with a handle 48 for more easily disengaging pawl 47 from the rack.

Positioned upon handle 1 at any desired place, preferably near the end opposite the clamping member 2, is a hand hold 49 that is loosely mounted upon the handle and designed to reciprocate thereon. The hand hold or gripping member 49 is provided with extensions 50 that may be formed from the same material as member 49. These extensions 50 are designed to encircle and grip bar 26 but to insure a good connection between rod 26 and members 50 a rivet 51 is passed through both members so that any movement of hand hold 49 will move rod 26 for opening or closing gripping members 2, provided lever 43 and pawl 47 are not holding bar 33 in engagement with one of the teeth 36.

In operation when it is desired to grasp an article at some distance on the same level as the operator or upon a shelf above the operator pawl 47 is disengaged from the rack 46 and handle 43 is moved by a pulling action upon bar 33 caused by spring 41 pulling or drawing member 38 forward or toward the spring. When bar 33 has reached the bevel 32 it will ride up the same and take a position at a point 52 and remain in that position until the lever 43 has been moved. When bar 33 is at point 52 the operator may move hand hold 49 backward and forward as often as desired and thereby reciprocate rod 26 and move jaws 2 together and apart. Ordinarily the hand hold is forced outward toward bracket 29 as seen in Figs. 1 and 2 which will open the jaws 2. The jaws are then placed around or with the auxiliary gripping members 14 upon opposite sides of the article, and then hand hold 49 is moved away from bracket 29 as far as possible by simply pulling upon the same. This will grip the article with a certain pressure, but to be positive that the article is gripped sufficiently tight to raise the same, lever 43 is moved which will cause bar 33 to engage one of the teeth 36 for further moving rod 26 and to give an auxiliary or additional squeezing or clamping action to the jaws 2. As lever 43 moves pawl 47 will also move over rack 46 as the pawl is pivotally mounted upon lever 43 at 53. This will lock or prevent lever 43 from returning and will

consequently lock rod 26 against movement, and also gripping members or jaws 2. The article then may be moved to any place desired. By the movement of pawl 47, the lever 43 may be permitted to move to its original position, and bar 33 to engage cam 32 and take a position in contact with member 34 at 52. After bar 33 has been disengaged from teeth 36 hand hold 49 may be moved for opening positively jaws 2 and disengaging the same from the article moved.

It will be evident that the tongs may not only be used as shelf tongs but also for numerous other purposes. In trimming and also in removing articles from windows it will prove of great advantage as the same may be used in removing articles from the windows without molesting any of the articles except the one removed. This will obviate the necessity of any one going in the window. The tongs may be used for these purposes and also for numerous other purposes as will be evident for moving articles at a distance either on the same plane or surface of the operator or above or below him.

What I claim is:

1. In shelf tongs, a handle, a pair of gripping jaws pivotally mounted at one end, means for opening and closing said jaws, means independent of said first mentioned means for slightly moving said jaws after the same have been adjusted, and means for holding said last mentioned means against movement.

2. In shelf tongs, a handle, gripping jaws positioned at one end thereof, links secured to said gripping jaws, a rod secured to said links, means for moving said rod for opening and closing said jaws, and means for giving a slight additional closing movement to said jaws and locking the jaws against movement.

3. In shelf tongs, a handle, jaws pivotally mounted at one end, means for opening and closing said jaws, auxiliary gripping members secured to said jaws, a spring secured to said jaws and normally holding said auxiliary members in position against the outer end of said jaws, but permitting movement of the auxiliary members to conform to the contour of the article grasped.

4. In shelf tongs, a handle, gripping jaws mounted at one end thereof, means for moving said gripping jaws, a hand hold for moving said means, and means for giving an additional movement to said first mentioned means and means for locking said last mentioned means against movement.

5. In shelf tongs, a handle, gripping jaws mounted upon one end of said handle, means for moving said gripping jaws, means for giving additional squeezing action to said gripping jaws and means for locking said jaws against movement, said locking means comprising a bar for engaging said first

mentioned means, a lever for moving said bar, and means for preventing a reverse movement of said lever.

6. In shelf tongs, a handle, jaws mounted in one end of said handle, means for opening and closing said jaws for gripping an article, and a lock for holding said means against movement, said lock comprising a bar adapted to engage said means, a link for moving said bar longitudinally of said handle, and a pawl and rack for preventing a reverse movement of said link.

7. In shelf tongs, a handle, gripping jaws, means for moving said gripping jaws for opening and closing the same for grasping an article, and means for giving an additional squeezing action to said jaws after the same have been closed around an article, and means for locking a jaw against movement, said means comprising a bar formed with a rack secured to said first mentioned means, a bar for engaging said rack, means for moving said bar longitudinally of said handle, and a pawl for preventing a reverse movement of said last mentioned means.

8. In shelf tongs, a handle, gripping jaws mounted upon one end of said handle, auxiliary gripping jaws secured to said first mentioned jaws, links secured to said first mentioned jaws for opening and closing the same, a reciprocating rod secured to said links for moving the same, a hand hold secured to said rod for reciprocating the same, a rack secured to said rod, a bar engaging said rack, means for moving said bar longitudinally of said handle for moving said rack, and means for locking said bar against reverse movement.

9. In shelf tongs, a handle, jaws pivotally mounted at one end, a rod for moving said tongs for opening and closing the same, a bar formed with a rack for moving the same, a second bar for engaging said rack, means for moving said second bar longitudinally of said handle, means for normally holding said bar against reverse movement, and means for disengaging said second bar from said rack.

10. In shelf tongs, a handle, jaws pivotally connected with said handle, means for actuating said jaws, auxiliary gripping members secured to the outer end of said jaws, and resilient means secured to said jaws and normally holding said auxiliary gripping members in position against the outer end of said jaws but permitting the auxiliary gripping members to conform to the contour of the article being grasped.

11. In shelf tongs, a handle, gripping means connected therewith, means for actuating said gripping means, a reciprocating hand-hold for actuating said second mentioned means, auxiliary gripping means pivotally mounted on said first mentioned gripping means, and a spring for each of the auxiliary gripping means for holding the auxiliary gripping means against the outer end of said first mentioned gripping means but permitting a pivotal movement of said auxiliary gripping means for permitting the same to conform to the article grasped.

In testimony whereof I affix my signature in presence of two witnesses.

ADOLPH RYDQUIST.

Witnesses:

JENNIE B. GRIMM,
MARIE N. BURKE.