

April 15, 1958

S. B. HEPPENSTALL, JR., ET AL

2,830,842

PROTECTIVE STRUCTURE FOR LIFTING TONGS

Filed July 18, 1955

2 Sheets-Sheet 1

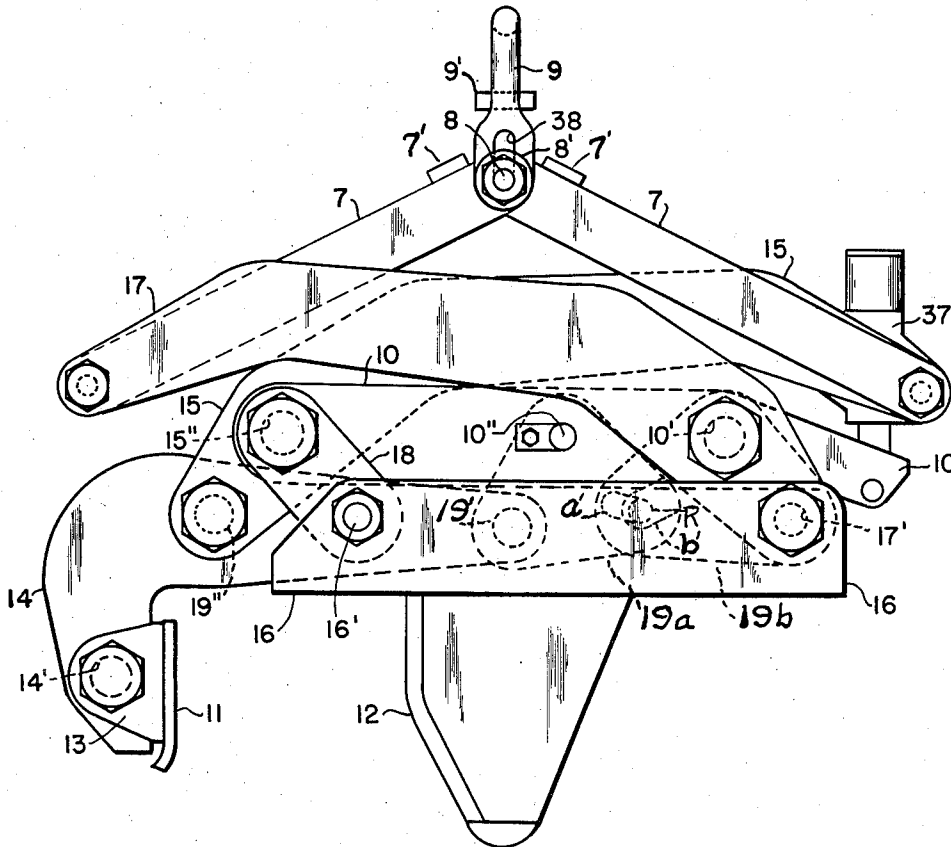


Fig. 1

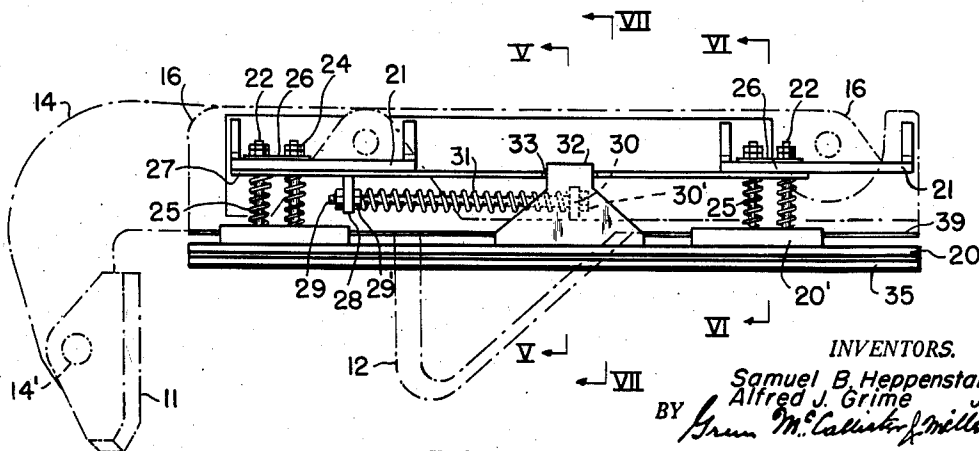


Fig. 2

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2 Sheets-Sheet 2

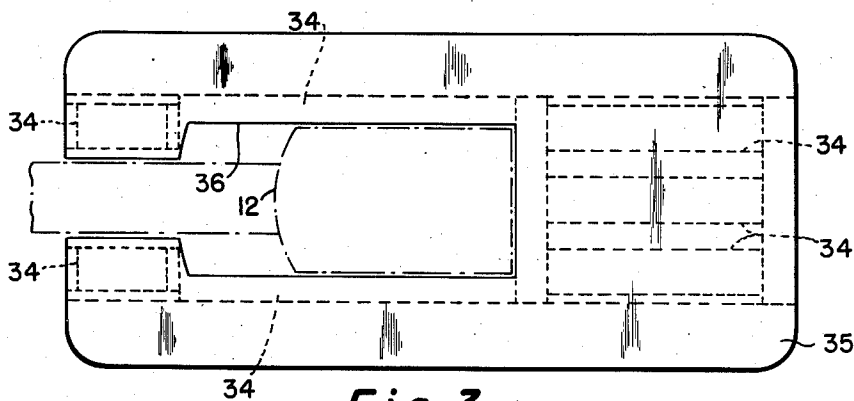


Fig. 3

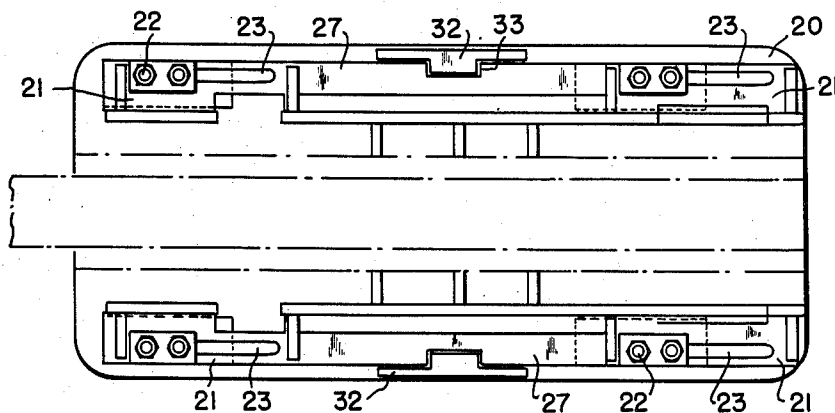


Fig. 4

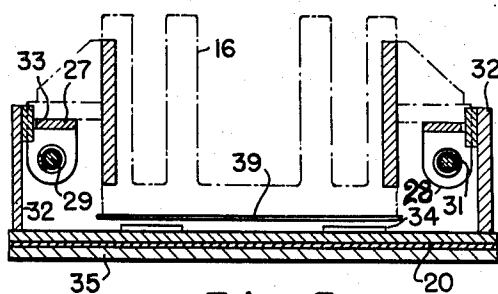


Fig. 5

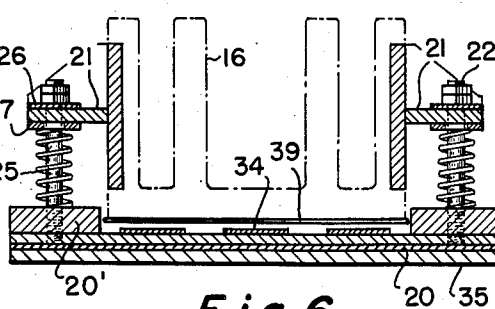


Fig. 6

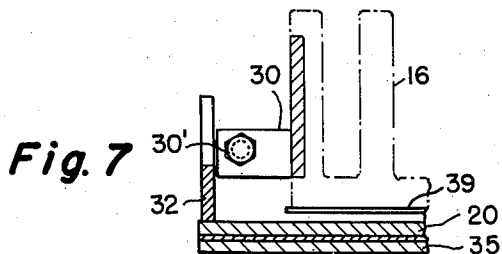


Fig. 7

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PROTECTIVE STRUCTURE FOR LIFTING TONGS

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9 Claims. (Cl. 294—104)

This invention relates to improvements in lifting tongs and particularly tongs employed in lifting and transporting coils of strip material such, for example, as metal strip material. An object of this invention is to provide means for protecting the edge of the coiled strip material against damage at the time the coil is engaged by a set of tongs and also during the operation of gripping the coil by the work-engaging members of the tongs.

A further object is to equip coil-lifting tongs with resiliently mounted means for contacting the edge portions of a coil of strip material as the tongs move into engagement with such a coil and for moving in response to forces imparted thereto as the work-engaging elements of the tongs move into gripping engagement with such a coil.

There have been previous attempts to minimize or prevent damage to the edge portion of a coil of strip material as the coil is engaged by tongs, such for example, as tongs suspended from and manipulated by an overhead crane.

An object of our invention is to so equip the tongs that as the coil of strip material is engaged by them, the weight of the tongs is spread over a substantial portion of the coil edge, thus minimizing the chance of damaging the edge of the coil as the tongs are moved into engagement with it. We have also discovered that after a coil has been engaged by tongs, the operation of closing the tongs into gripping engagement with the coil is likely to damage portions of the edge of the coiled strip material. A specific object of the invention is, therefore, to prevent such damage to the edge of a coil of strip material as, and after the tongs engage the coil and also as the work-engaging elements of the tongs are moving into gripping engagement with the coil.

Tongs employed for lifting and transporting coils of strip material are usually provided with a bar-like element to which a coil-engaging member, such as a nose, is secured. The nose is adapted to enter the central cavity of a coil of strip material as a preliminary to gripping and lifting the coil. The usual procedure involves setting a coil on end, i. e., in an upright position. The nose of the tongs is then moved into the cavity of the coil and the bar-like element, to which the nose is secured, rests on and lies diametrically across the edge portions of the coiled strip material.

Briefly stated, the invention consists in equipping coil-handling tongs with a protective plate which is yieldingly mounted on the aforementioned bar-like element and is so positioned that it intervenes between that element and the coil as the tongs engage the coil. The plate is movable toward and away from said element and is also movable longitudinally of the element. That is to say, protective plate is so mounted that it intervenes between the coil of strip material and the bar-like element, as the tongs move into engagement with the coil and the arrangement is such that the plate not only acts as a buffer plate between the coil and the tongs, but is also capable of moving with the coil as the coil moves in response to

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the force applied to it by the tongs. The plate is also so dimensioned that it minimizes the effect of the weight of the tongs on the edge portion of the engaged coil.

In the accompanying drawings Figure 1 is a side elevation of a set of lifting tongs such as are usually employed with overhead cranes and are used for engaging and moving coils of strip material from place to place. It is, however, noted that the tongs shown are merely illustrative of tongs which may be equipped with an embodiment of the invention.

Figure 2 is a side view of an embodiment of the invention shown in connection with a fragmental shadow view of a portion of a set of tongs equipped therewith. The view shows a portion of the tongs by dot-dash line, but omits all structural details thereof except those necessary to disclose the application of this invention to a set of tongs.

Figure 3 is a bottom view of a protective plate forming a detail of the illustrated embodiment of the invention as the same is shown in Figure 2.

Figure 4 is a top plan view of the protective plate shown in Figures 2 and 3.

Figure 5 is a sectional view (on a somewhat enlarged scale) along the line V—V of Figure 2, and Figure 6 is a sectional view along the line VI—VI of Figure 2. In both Figures 5 and 6 an element of the tongs per se is indicated by dot-dash lines.

Figure 7 is a sectional view along the line VII—VII of Figure 2.

The tongs illustrated in Figure 1 are a well-known type, and tongs such as may be equipped with an embodiment of the invention. As illustrated, the tongs include a pair of toggle members 7 which are secured together at one end thereof by means of a pivot pin 8. The pin 8 also forms a support for a lifting yoke 9 which is adapted to be engaged by a crane hook, not shown. The tongs also include an equalizing member 10 and work-engaging members 11 and 12.

The member 11 is a slightly curved coil-engaging plate provided with two rearwardly extending spaced brackets 13, which span a grappling member 14 of the tongs and are pivotally secured thereto by a pin 14'. The member 14 is pivotally connected to the toggle link 15 by a pin 19". The toggle link 15 is pivotally connected to the equalizing member 10 by a pin 15". Link 15 is also pivotally connected to one of the links 7. The grappling member 14 is also pivotally connected to the equalizing member 10 by means of a plate 19a, a pin 19' and a pin 10". The pin 10" pivotally connects the plate 19a to the equalizing member 10.

The work-engaging member 12 is secured to a grappling member 16. The member 16 is pivotally connected to the toggle link 17 by a pin 17', and the link 17 is pivotally connected to the other of the two links 7—7. Link 17 is pivotally connected to the equalizing member 10 by a pin 10'. A plate 19b is pivotally connected to the member 16 by pin 17' and to the member 10 by the pin 10' and is operatively connected to the plate 19a by a roller and slot connection. Each of the plates 19a and 19b is provided with a roller mechanism-engaging slot and the two plates overlap so that the slot in the one plate extends across the slot of the other plate. The slot in the plate 19a is indicated by the reference character a' and the slot in the plate 19b is indicated by the reference character b' and the roller connection which engages both slots is diagrammatically illustrated and indicated by the reference character R.

The work-engaging member 12 is in the form of a nose which is rigidly secured to the bar-like grappling member 16 at a point intermediate the ends of the member 16. It projects downwardly from the member and is so positioned that it is capable of entering the central cavity of

a coil of strip material as the tongs are moved into engagement with the upper edge of the coil.

As noted, the grappling member 16 is a bar-like member and extends substantially parallel to the equalizing member 10 as it moves to different positions relatively to that member. The nose 12 is located on the lower side of the member 16 which, for convenience of description, we hereafter refer to as the bar 16. This bar is located on the lower side of the set of tongs and after the nose 12 has moved into the central aperture of a coil of strip material, the bar engages the edge of the coil and lies transversely across the coil. It will also be understood that in gripping a coil, the member 11 engages the outer peripheral face of the coil so that the coil is gripped by the member 11 and the nose 12 as they move relatively toward each other.

In order to prevent damage to the edge portion of the strip material of a coil as the coil is engaged by the tongs, it has been suggested to employ a buffer plate between the edge portion of the coil and the member of the set of tongs corresponding to the bar 16. The buffer plate employed as a detail of the invention is clearly shown in Figure 2 of the drawings and is designated throughout various views of the drawings by the reference character 20. Experience has demonstrated that a buffer plate yieldingly mounted so as to move toward and away from the bar 16 is not sufficient to fully protect the edge portion of a coil of strip material. We have, therefore, so mounted the plate 20 that it not only yields to the impact forces encountered by it as the tongs move into operative engagement with a coil, but also yields to such forces as are imparted to it as the work-engaging members 11 and 12 of the tongs move into gripping engagement with the coil. It will thus be apparent that the protective plate 20 has a double function; it protects the edge portion of the coiled strip against damage by impact and also against such damage as might be occasioned by the movement of portions of the coil edge occasioned by relative movements of the work-engaging members 11 and 12 of the tongs as they move into gripping engagement with the coil.

As shown in Figures 2 to 6 inclusive of the drawings, we provide plate-supporting brackets 21 on each side of the bar 16. In the illustrated embodiment one pair of such brackets are located on one side of the bar 16 and a similar pair is located on the other side of the bar 16. As shown, each bracket projects laterally of the bar and also extends in a direction substantially parallel to the plate 20 which is normally so located that while spaced from the lower face of the bar 16 it is substantially parallel with the adjacent face of that bar and is of such shape and dimensions that it substantially coincides with the shape and size of the lower face of the bar 16. It is also so mounted on the bar that it is normally located below the lower face of the bar 16 so that its edges are aligned with the lower edges of the bar.

A plurality of sets of studs 22 are secured to the plate 20 and project at right angles thereto from the face thereof adjacent the bar 16. Each set of studs projects through an elongated slot 23 formed in one of the brackets 21. That is to say, each bracket 21 is provided with an elongated slot 23. The slots in the different brackets are of equal length and each extends parallel to the longitudinal axis of the bar 16 and also the plate 20. The end of each stud which projects through a slotted bracket is shown as fitted with holding nuts 24. Each such stud is also surrounded by a compression spring 25 which is located between the plate 20 and the bracket 21 engaged by the stud.

As clearly shown in Figures 2 and 4, each bracket 21 is provided with an apertured friction plate 26 which engages the surface of the bracket remote from the plate 20. Each such plate is substantially shorter than the elongated slot 23 formed in the engaged bracket but it spans the slot 23 of the bracket and is capable of moving

to different positions along the slot. The studs 22 of each set project through one of the plates 26 and each plate forms a bearing plate for the nuts 24 secured to the studs engaged by it.

As shown in the drawings, a separate bearing plate 27 is located on each side of the bar 16 and extends from one to the other of the pair of brackets 21 located on that side of the bar 16. Each of the plates 27 is movable longitudinally of the brackets engaged by it and is located on the faces thereof adjacent the plate 20 and constitutes a bearing plate for the compression springs 25 which surround studs 22. The plates 27, like the plates 26, span slots 23 and are movable to different positions along the slots. It will thus be apparent that the studs 22 of each set project through apertures formed in one or the other of the plates 27 and that each set of studs is, therefore, operatively secured to one of the plates 26 and also to one of the plates 27.

As shown in Figures 2 and 5, each plate 27 is provided with a depending lug 28 which is apertured to receive a guiding pin or rod 29. The lug 28 is shown as located adjacent one end of the plate 27 and the rod 29 extends parallel to the plate 27, is secured to the lug 28 and passes through an aperture formed in a lug 30 which is secured to the side of the bar 16 as shown in Figures 2 and 7. It will be apparent that a lug 30 is secured to each side of the bar 16 and is spaced from the lug 28 with which it cooperates. Each rod 29 is secured to one of the lugs 28 by nuts 29' and is surrounded by a separate compression spring 31 which acts between lugs 28 and 30 to hold the plates 27 and, consequently, the protective plate 20 at one end of its longitudinal travel of the bar 16. It is noted that each rod 29 moves freely through the apertured lug 30 but is provided on the end thereof with a head 30' which, with the ends of the slots 23, limits the movement of the plates 27 and, consequently, of the plate 20, in one direction.

Figures 2, 4, 5, and 6 of the drawings, disclose that the plate 20 is provided with two upstanding brackets 32. One such bracket is located on each side of the plate intermediate the ends thereof and the bar 16 is located between these brackets. Each bracket 32 extends upwardly beyond the adjacent bearing plates 27 and each plate 27 is notched, as shown at 33 in Figure 4 so as to operatively engage the adjacent bracket 32. With this arrangement the longitudinal forces imparted to the plate 20 are substantially equally distributed as between the several sets of studs 22 with the intent of minimizing strains such as cross bending strains, imparted to some or all of the studs 22. In the drawings we have shown the plate 20 as provided with four lugs 20', each of which is tapped to receive a set of studs 22. The lugs are again referred to and their function more fully described.

As shown in the plan view of Figure 3, the protective plate 20 is appropriately slotted at 36 to provide for the nose 12 and to accommodate such relative movement as may take place between the plate 20, the nose 12 and the grappling member 14 during the operation of the tongs.

A reference to Figures 3, 5 and 6 of the drawings will disclose that we provide wear plates 34 on the plate 20 so arranged that they will contact with the bar 16 if and when the compression springs 25 are fully compressed. As shown, each wear plate 34 is fitted into a groove formed in the upper face of the plate 20 and it is desirable to make provision for lubricating the exposed face of the wear plates and also the surfaces of the plates 26 and 27 which engage brackets 21. The plates 34 may be, and preferably are formed of graphitized bronze for lubrication purposes.

The coil-engaging surface of the plate 20 is provided with a non-abrasive covering 35 which may be formed of any suitable material such as asbestos plate or gasket material. The purpose is to provide the plate 20 with a

contact surface which will not damage the coil edges as the tongs move into engagement with the coil and during such relative motion as takes place between the plate 20 and the different portions of the edge of the coil as the members 11 and 12 move into gripping engagement with the coil.

Referring again to the buffer or protective plate 20, it will be apparent that the compression springs 31 which surround the guide rods 29 normally hold the plate 20 in a position such that one of the studs 22 of each set engages the end of the slot 23 through which it projects, i. e., the end of the slot nearest the work-engaging element 11 or the lefthand end of the slot as shown in Figures 2 and 3.

Under normal operating conditions the nose 12 enters the cavity of an upright coil and the plate 20 distributes the weight of the tongs across a substantial portion of the edge of the coil and also protects the edge portion of the coil from damage occasioned by impact of the tongs as the coil is engaged. As the tongs operate to grip the coil, the work-engaging member 11 moves into contact with the outer peripheral surface of the coil and the two members 11 and 12 move toward each other. This movement tends to cause relative movement between the bar 16 and the plate 20 in which bar 16 and the plate in effect move in opposite directions. As a result, each of the coiled springs 31 surrounding the rods 29 is compressed between one of the lugs 28 carried by plate 27 and one of the lugs 30 on bar 16 and the studs 22 move through their engaged slots 23 toward the ends of the slots remote from the work-engaging member 11. Thus the yieldingly mounted plate 20 protects the edge of the coil strip material from damage both during the operation of moving a set of tongs into engagement with the coil and also during the operation of moving the work-engaging elements of the tongs into gripping engagement with the coil.

As previously noted and as is clearly shown in Figures 2 and 6 of the drawings, the plate 20 is provided with stud-receiving pillows or lugs 20'. Four such lugs are provided, two located adjacent each longitudinal edge of the plate. Each lug is tapped to receive studs 22 and is so located relatively to the bar 16 or, as shown in Figures 5, 6 and 7, relatively to a separate plate 39 secured to the lower face of the bar, that they cooperate with the plate 39 in taking up transverse strains which otherwise would be transmitted to the studs 22. Thus, the lugs 20' and the plate 39, in effect, provide longitudinal guides which control the relative movement between the plate 20 and the bar 16 and also contribute to a reduction of the strain on the studs 22.

A feature of the present invention is embodied in the yoke 9 shown in Figure 1 of the drawings. As there indicated, the yoke is U-shaped and each leg thereof is provided with an elongated slot 38 which engages the pin 8 which constitutes the pivot connection between the toggle members 7-7. The yoke 9 is provided with a spreader plate 9' which is located between the legs of the yoke at a point above the slots 38. The plate prevents the yoke from yielding under strains imposed upon it and thus imparting clamping pressure to the toggle members 7-7 which are spanned by it. A washer 8' is shown located between the nut carried by the pin 8 and the adjacent toggle member 7. A similar washer is employed on the other end of the pin 8.

As noted, the yoke 9 is adapted to be engaged by a crane hook and it is apparent that when so engaged, a substantial portion of the slot 38 will be exposed above the pin 8 and washer 8' as long as the weight of the tongs is borne by the crane hook. As an open set of tongs is set down on, for example, a coil of strip material to be lifted, the crane hook is relieved of the weight of the tongs, with the result that the yoke will move down with the hook and the upper portion of the slot 8 will be covered or partially covered, by the washer 8'. As a

result, the disappearing slots 38 will indicate to the crane operator that the crane hook is relieved of the weight of the tongs and because of this the crane hook may be readily manipulated from the crane so as to operate the latching mechanism 37 with which the set of tongs is provided and this can be done while the crane hook is retained in the lug-engaging position with relation to the yoke 9.

Another feature of the invention which is directly associated with the yoke 9, involves stop plates or lugs 7', one of which is carried by each pair of toggle members 7-7 secured to the pin 8. As disclosed, these lugs 7' are located on opposite sides of the pin 8 and, consequently, of the yoke 9 and are so positioned with relation to the yoke and the pin 8 engaged by it, that the yoke is always held in an inclined position when the toggle members 7-7 are in the position illustrated in Figure 1, i. e., when the tongs are in the open position and the crane hook is removed. With such an arrangement the yoke may be readily engaged by the crane hook as a preliminary to picking up a set of open tongs.

From the foregoing it will be apparent that the crane operator will receive a visual indication that the open tongs are in place and that the latch mechanism 37 has operated as the tongs are set down and this will make it possible for him to apply a lifting force to the tongs without running the chance of disengaging the crane hook from the yoke 9. As indicated, the lugs 7' also make it possible for a crane operator to move the crane hook into engagement with the yoke 9 of an open set of tongs without requiring the assistance of some one on the floor.

The latching mechanism 37 here referred to, is a well-known mechanism which has been in use for many years with cranes of the type disclosed and which is fully illustrated and described in expired United States Patent No. 1,839,398 of January 5, 1932.

While we have described an embodiment of our invention, it will be apparent that various changes, additions and omissions may be made in the apparatus illustrated and described without departing from the spirit and scope of the invention as defined by the appended claims.

What we claim is:

1. A set of tongs for lifting coils of strip material, including a bar; a coil-engaging element secured to said bar; a grappling member; a second coil-engaging element secured to said member; means including toggle members forming a part of said tongs for moving said bar and said grappling member relatively to each other and said coil-engaging elements into and out of engagement with a coil, in combination with a buffer plate mounted on said bar and movable toward and away from said bar and longitudinally thereof and two sets of springs each seating on said bar with one set normally holding said plate spaced from said bar and the other set normally holding said plate in a fixed position longitudinally of said bar.

2. A set of tongs for lifting coils of strip material, including a bar; a coil-engaging element secured to said bar; a grappling member; a second coil-engaging element secured to said member, means including toggle members forming a part of said tongs for moving said bar and said member relatively to each other and said coil-engaging elements into and out of gripping engagement with a coil of strip material, in combination with a buffer plate mounted on said bar and movable toward and away from the bar and longitudinally thereof, yielding means normally holding said plate spaced from said bar; additional yielding means for normally holding said plate in a fixed position longitudinally of said bar and means carried by said plate and for engaging said bar and limiting relative transverse motion between said bar and said plate.

3. A set of tongs for lifting coils or strip material, including a bar; a coil-engaging element secured to said

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bar; a grappling member; a second coil-engaging element secured to said member, means including toggle members forming a part of said tongs for moving said bar and said member relatively to each other and said coil-engaging elements into and out of gripping engagement with a coil of strip material, in combination with a buffer plate mounted on said bar and movable toward and away from the bar and longitudinally thereof, yielding means normally holding said plate spaced from said bar, said means moving with said plate longitudinally of said bar, and additional yielding means normally holding said plate in a fixed position longitudinally of said bar and yieldingly resisting longitudinal movement of said plate relatively to said bar.

4. A set of tongs for lifting coils of strip material, including a bar; a coil-engaging element secured to said bar; a grappling member; a second coil-engaging element secured to said member, means including toggle members forming a part of said tongs for moving said bar and said member relatively to each other and said coil-engaging elements into and out of gripping engagement with a coil of strip material, in combination with a buffer plate carried by said bar and movable longitudinally thereof and toward and away from said bar; yielding means located between said plate and said bar and normally holding said plate spaced from said bar; additional yielding means normally holding said plate in a fixed position longitudinally of said bar and yieldingly resisting movement of said plate longitudinally of said bar; and means for guiding longitudinal movement of said plate relatively to said bar.

5. A set of lifting tongs including a bar having a coil-engaging nose operatively secured thereto and adapted to be inserted into the central cavity of a coil of strip material; a work-engaging element adapted to engage a peripheral portion of a coil engaged by said nose and means including toggle members forming a part of said tongs for moving said nose and said element relatively to each other into and out of gripping engagement with a coil, in combination with a buffer plate secured to and extending longitudinally of said bar and normally spaced therefrom; plate-supporting brackets on said bar and projecting outwardly thereof, each such bracket having an elongated slot formed therein extending longitudinally of said bar; a plurality of bearing plates, each engaging at least one of said brackets and located between such bracket and said buffer plate, each of said bearing plates being movable with said buffer plate and relatively to the bracket engaged thereby and overlying the elongated slot formed in such bracket; a plurality of studs secured to said buffer plate with each such stud projecting through an aperture formed in one of said bearing plates and through the elongated slot formed in one of said brackets; a compression spring surrounding each such stud and located between said buffer plate and one of said bearing plates, said springs normally holding said buffer plate spaced from said bar; yielding means acting between said buffer plate and said bar for normally holding said buffer plate in a fixed position longitudinally of said bar; and means for guiding said buffer plate in its movement longitudinally of said bar.

6. A set of lifting tongs including in its make-up an elongated bar; a coil-engaging nose secured to said bar and adapted to be inserted into the central cavity of a coil of strip material preliminary to the gripping thereof by said tongs; a work-engaging element adapted to engage a peripheral portion of a coil engaged by said nose and means including toggle members of said tongs for moving said nose and said element relatively to each other into and out of gripping engagement with a coil, in combination with a buffer plate extending longitudinally of said bar and normally spaced therefrom; at least four plate-supporting brackets mounted on said bar with two such brackets on each side of said bar and projecting laterally thereof and with each such bracket hav-

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ing an elongated slot formed therein and extending longitudinally of said bar; a plurality of upstanding studs secured to said buffer plate with each such stud projecting through an elongated slot formed in one of said brackets; a separate compression spring surrounding each such stud and located between said buffer plate and the one of said brackets engaged by such stud; a separate bearing plate mounted on the surface of each of said brackets remote from said buffer plate and overlying the elongated slot formed in such bracket and movable longitudinally thereof, with each such bearing plate apertured to receive at least one of said studs; a nut secured to each of said studs engaging said bearing plate and limiting the spring-impelled movement of said buffer plate away from said bar; and a separate compression spring located on each side of said bar and acting between said bar and said buffer plate to normally yieldingly hold said buffer plate in a designated position longitudinally of said bar.

7. A set of lifting tongs including a bar having a coil-engaging nose operatively secured thereto and adapted to be inserted into the cavity of a coil of strip material preliminary to the lifting of such coil by said tongs; a coil-engaging element adapted to engage a peripheral portion of a coil engaged by said nose and means including toggle members forming a part of said tongs for moving said nose and said element relatively to each other into and out of gripping engagement with a coil, in combination with a buffer plate carried by said bar and movable toward and away from such member and longitudinally thereof; four plate-supporting brackets secured to said bar, with a pair of said brackets located on each side of such element and projecting laterally thereof, each such bracket being provided with an elongated slot extending longitudinally of said bar; a plurality of studs secured to said plate, each extending at right angles thereto and each projecting through an elongated slot of one of said brackets; a separate bearing plate movably mounted on the surface of each such bracket remote from said buffer plate and overlying the elongated slot formed therein and movable to different positions along such slot and apertured to receive the end of at least one of said studs projecting through one of said elongated slots; a nut fitted to the projecting end of each of said studs and engaging the one of said bearing plates through which such stud projects; a separate spring-engaging plate extending longitudinally of said bar between the pair of brackets mounted on each side thereof and movable along the surfaces of such brackets adjacent said buffer plate, each of said spring-engaging plates being apertured to receive at least two of said studs; a compression spring surrounding each of said studs and engaging said buffer plate and one of said spring-engaging plates; a separate lug secured to each of said spring-engaging plates; two apertured lugs secured to said bar, one being located on each side of such member and each being spaced from the adjacent lug on said spring-engaging plate; a separate guide rod secured to each of said first mentioned lugs and extending longitudinally of said bar and projecting through the aperture of the adjacent lug on said bar; and a separate coiled spring surrounding each of said rods and operating between the lugs engaged by the rod surrounded thereby.

8. A set of tongs for handling coils of strip material, including a bar; a coil-engaging element secured to said bar and dependent therefrom; a grappling member; a second coil-engaging element secured to said member; means including toggle members forming a part of said tongs for moving said bar and said grappling member relatively to each other and said coil-engaging elements into and out of coil-gripping positions; in combination with a buffer plate located below and secured to said bar and movable longitudinally of, and toward and away from said bar; a set of springs normally and yieldingly

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holding said plate spaced from said bar; a second set of springs normally and yieldingly holding said plate in a fixed position longitudinally of said bar and cooperating means carried by said plate and said bar for guiding longitudinal movement of said plate relatively to said bar and for limiting lateral movement of said plate relatively to said bar.

9. A set of tongs for handling coils of strip material, including a bar; a coil-engaging element secured to said bar and projecting therefrom; a grappling member; a second coil-engaging element secured to said member; means including toggle members forming a part of said tongs for moving said bar and said grappling member relatively to each other and said coil-engaging elements into and out of coil-gripping positions; in combination with

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a buffer plate carried by said bar and movable longitudinally of, and toward and away from said bar; yielding means normally holding said plate spaced from said bar; additional yielding means normally holding said plate in an intermediate position longitudinally of said bar and cooperating means between said plate and said bar for guiding longitudinal movement of said plate relatively to said bar and for limiting lateral movement of said plate relatively to said bar.

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