

May 28, 1963

W. J. NEUHAUSER

3,091,348

ROLL STACKING DEVICE

Filed Nov. 14, 1960

FIG. 1

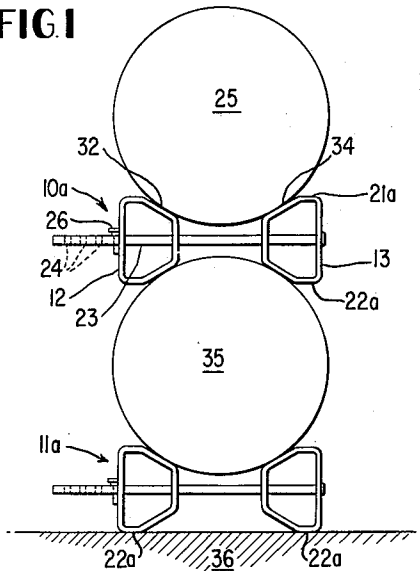


FIG. 2

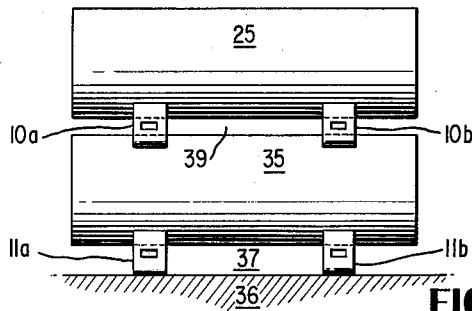


FIG. 3

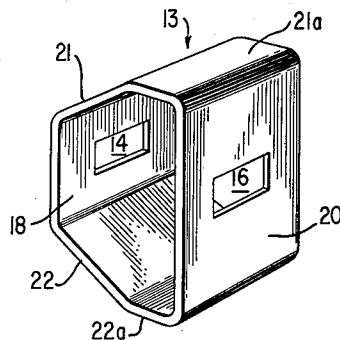


FIG. 4

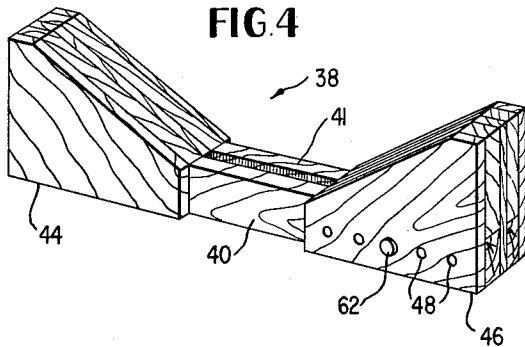


FIG. 5

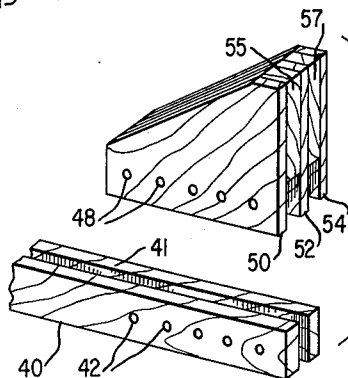


FIG. 6

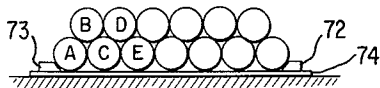


FIG. 7

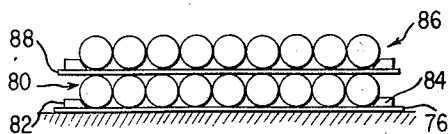
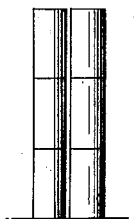


FIG. 8



INVENTOR

WILLIAM J. NEUHAUSER

by his attorneys
Glenn & Jackson

1

3,091,348

ROLL STACKING DEVICE

William J. Neuhauser, Jefferson County, Ky., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Nov. 14, 1960, Ser. No. 69,139

1 Claim. (Cl. 214—10.5)

This invention relates generally to a roll stacking device and, more particularly, to a stacking device which both supports and spaces rolls.

Roll stacking devices are broadly well known in the prior art. However, the use of such devices for stacking heavy foil rolls, for example, necessitates using special equipment or a great deal of manpower to remove a roll from a stacked position.

In accordance with the present invention, therefore, there is provided a roll stacking device which serves as both a support and a spacer and also enables a conventional fork dolly to be used in removing a roll from a stack. Each stack of rolls is self-supporting and does not depend on laterally adjacent rolls or stacks for stability. Each roll is supported at only two spaced points along the periphery of the roll. Furthermore, the roll stacking device is made adjustable so that it may receive rolls of different diameters.

For a better understanding of the invention and its other objects, advantages and details, reference is now made to the present preferred embodiment of the invention which is shown, for purposes of illustration, in the accompanying drawings, wherein:

FIG. 1 is a front view of two rolls supported on two pairs of roll stacking devices embodying this invention;

FIG. 2 is a side view of FIG. 1;

FIG. 3 is a perspective view of one of the V-shaped blocks of the stacking device illustrated in FIG. 1;

FIG. 4 is a perspective view of a modified stacking device embodying this invention;

FIG. 5 is an exploded view of a portion of FIG. 4; and

FIGS. 6, 7 and 8 show various prior art roll stacking methods.

With reference to FIGS. 1, 2 and 3 there are shown two pairs of identical roll stacking devices 10a, 10b, 11a and 11b. Device 10a, for example, incorporates substantially trapezoidal extruded metal blocks 12 and 13. Aligned rectangular bores 14 and 16 are formed in the short end wall 18 and the opposite longer end wall 20, respectively, of block 13. The upper wall 21 has a flattened portion 21a, and the lower wall 22 has a flattened portion 22a. A rectangular metal rod 23 is passed through the bores 14 and is welded at one end thereof to the wall 20 of block 13. The other end of rod 23 has formed therein a plurality of vertical bores 24 for receiving a pin 26.

When it is desired to stack a roll 25 on the device 13, pin 26 is removed from one of the bores 24 and block 12 is moved horizontally to vary the distance between the blocks. The distance is chosen such that roll 25 is engaged at only two points by blocks 12 and 13. Block 12 engages roll 25 at point 32 and block 13 engages the roll at point 34. Pin 26 is inserted in the bore 24 nearest the left end wall of block 12 after the proper horizontal distance is selected and in effect locks block 12 against movement to the left.

Since the stacking device 10a is a symmetrical device, it may be placed on top of another roll 35, thereby allowing one roll to be stacked upon another. Roll 35 is supported by stacking device 11a whose lower flattened portions 22a rest flush on a floor 36. As shown best in FIG. 2, a pair of stacking devices 11a and 11b rest on flattened portions 22a on floor 36 to support roll 35 and space the

2

roll from the floor. A pair of devices 10a and 10b rest on top of roll 35 to support roll 25 and space roll 25 vertically from roll 35. The use of stacking devices 10 and 11 allow a conventional fork dolly to insert its lifting fork in spaces 37 and 39 to remove rolls 35 and 25, respectively, from the stack.

A modification of stacking devices 10 and 11 is shown in FIGS. 4 and 5 in the form of a stacking device 38. Device 38 may be made of wood and incorporates two horizontal elongated members 40 and 41 made of a strong wood, such as oak, each having formed in one end thereof a plurality of horizontal bores 42. A horizontal wedge-shaped block 44 is rigidly affixed to the left hand end of members 40 and 41, whereas a movable wedge-shaped block 46 is slideably mounted on the right hand end of members 40 and 41. Block 46 has formed therein a plurality of horizontal bores 48 which are adapted to be aligned with the bores 42 and members 40 and 41 to receive a stop pin 62. The blocks 44 and 46 are each formed of three wedge-shaped pieces 50, 52 and 54 of plywood separated by oak spacing blocks 55 and 57.

In use, stacking device 38 is adapted to rest flush on a floor to form the bottom member for a stack of rolls in a manner similar to devices 11a and 11b in FIG. 2. As described in connection with the stacking devices illustrated in FIG. 1, block 46 is horizontally movable so that the space between blocks 44 and 46 may be adjusted to receive a roll placed thereon and be engaged at only the two points on the inclined surfaces 58 and 60 in the same fashion as shown in FIG. 1 so that the roll is spaced from members 40 and 41. Pin 62 is placed through bores 42 and 48 to lock block 46 in place.

FIGS. 5, 6 and 7 show various prior art ways in which rolls have been stacked. In FIG. 6, rolls A and C must be positioned first before roll B can be stacked. Then roll B is placed on top of roll C and rolled into its stacked position. Wedge blocks 72 and 73 maintain the rolls in position. In unstacking roll C must be manually restrained while it is slowly inched away from roll A to permit roll B to be lowered slowly to the floor by its own weight. Usually, the rolls are damaged during handling, and, in addition, a three-man crew is required for safety reasons. The restraining of roll C is accomplished by manpower, because the pair of spaced, parallel runners 74 on which the rolls are stacked prohibits the use of mechanical means.

FIG. 7 shows a roll stacking method wherein a lower pair of spaced parallel runners 76 are provided for carrying a lower row 80 of rolls. Wedges 82 and 84 at each end of row 80 maintain the rolls in position. However, the wedges are affixed to the ends of the runners and, therefore, it is required that the lower row 80 be completely filled with rolls before an upper row 86 is formed. Row 86 is formed by placing a pair of spaced parallel runners 88 on top of the rolls in lower row 80. The upper row is filled by placing the first roll on the right hand ends of runners 88 by means of a fork dolly, then manually rolling the first roll to the extreme left hand position. The following rolls are placed similarly until the upper row is completed. This very common method of stacking heavy rolls is relatively unsafe and requires a three-man crew.

FIG. 8 shows a simple method of stacking rolls in which the rolls are stacked end on end. This fairly common method of stacking rolls requires the use of a special attachment, such as a "roll grab," for the dolly and at the same time limits the use of the dolly to this type of operation so that it cannot be used for other jobs.

The advantages of the stacking devices 10, 11 and 38 are obvious when FIGS. 1 and 2 are compared with FIGS. 6, 7 and 8. The stacking devices are adjusted so

3

that the rolls do not touch the center portion of the device, but rather touch the stacking device at only two points as described previously. Such an arrangement provides free-standing stacks from which rolls may be removed undamaged and easily by a conventional fork dolly operated by one man.

While present preferred embodiments of the invention have been illustrated and described, it will be recognized that the invention may be otherwise variously embodied and practiced within the scope of the following claim.

What is claimed is:

A roll stacking device for supporting and spacing one roll above another in a free-standing vertical stack, said device likewise being adapted for supporting the lowermost roll of such a stack, comprising a rigid elongated member, a pair of support blocks retained in alignment along said member, means for varying the spacing between blocks, each of said blocks having a long end wall, a short end wall, upper and lower inclined walls sloping outwardly away from said elongated member and interconnected at their innermost ends by said short end wall, and flattened portions substantially parallel to said elongated member interconnecting said long end wall and the outermost ends of said inclined walls, the corresponding flattened portions of said blocks on one side of the elongated member providing laterally spaced supports for

4

stabilizing the stacked rolls when the device is employed beneath the lowermost roll of the stack, the blocks being disposed along said rigid member with their short end walls facing each other, whereby the corresponding inclined walls of said blocks thereby define upper and lower substantially V-shaped roll-receiving portions of the device, that portion formed by the lower inclined walls of the blocks being adapted to rest on opposite sides of the lower roll of a pair to be stacked without contact between said roll and the elongated member, and the upper inclined walls providing a roll-receiving portion to receive and support the upper roll free of contact with said lower roll.

References Cited in the file of this patent

UNITED STATES PATENTS

1,802,917	Kennedy	Apr. 28, 1931
2,334,336	Lathrop	Nov. 16, 1943
2,377,803	Morner	June 5, 1945
2,611,495	Weaver	Sept. 23, 1952
2,701,648	McBath	Feb. 8, 1955
2,810,602	Abrams	Oct. 22, 1957
3,019,916	Malcher	Feb. 6, 1962

FOREIGN PATENTS

760,927	Germany	July 19, 1954
---------	---------	---------------