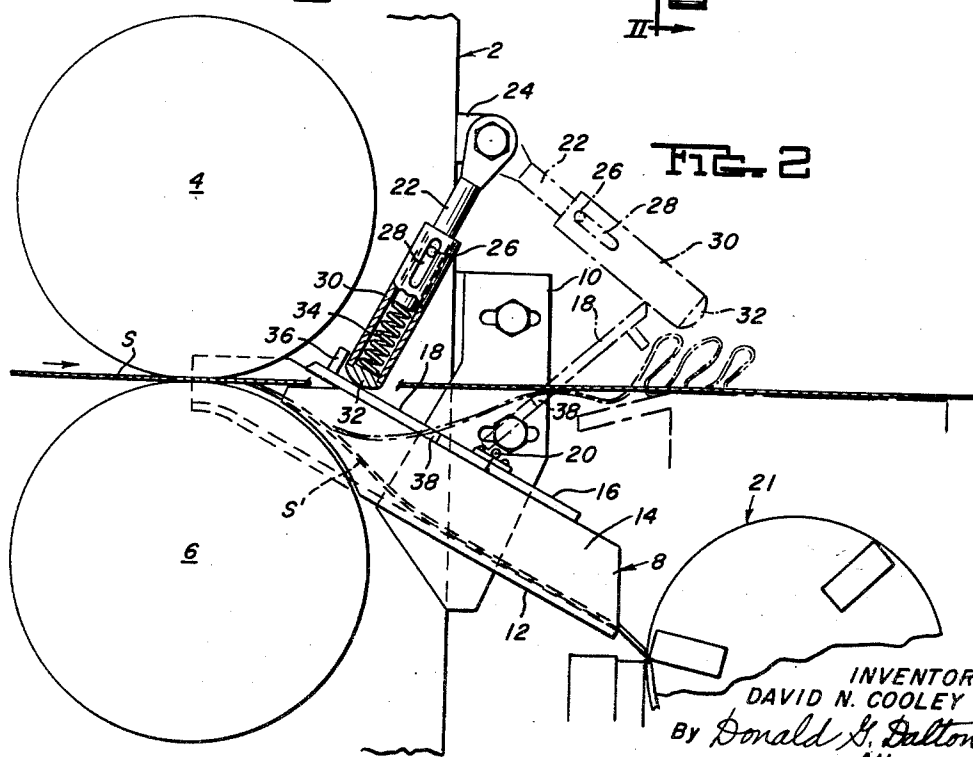
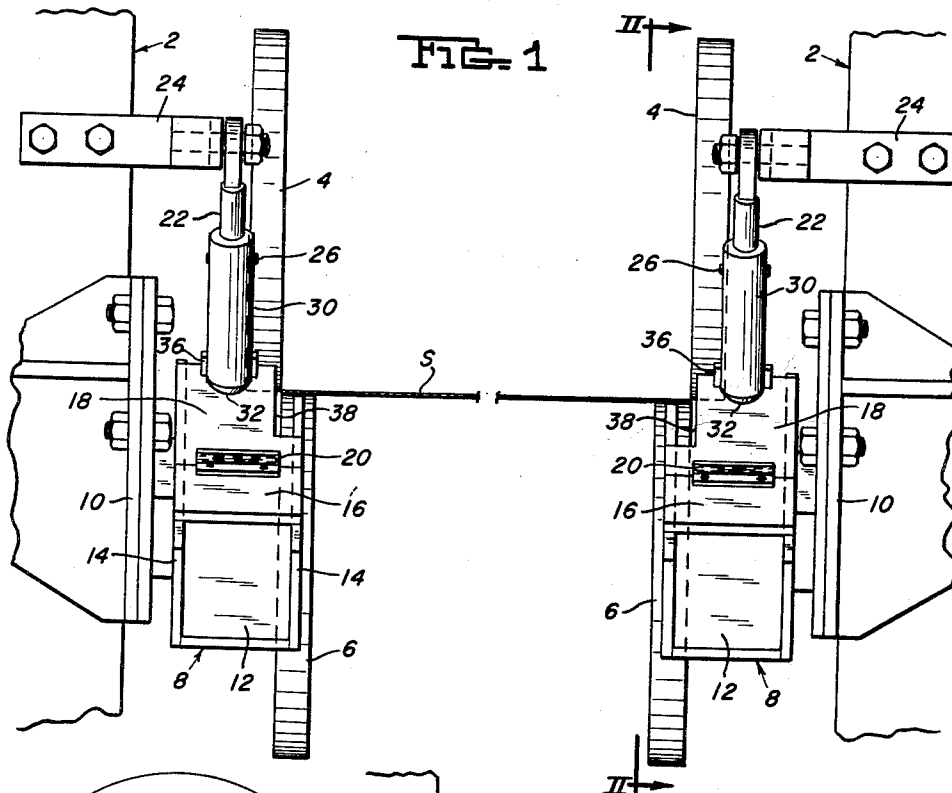


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SCRAP CHUTE WITH A SIDE TRIMMING MACHINE HAVING HINGED
COVER OPERABLE UPON PILE-UP OF WORK
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SCRAP CHUTE WITH A SIDE TRIMMING MACHINE HAVING HINGED COVER OPERABLE UPON PILE-UP OF WORK

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2 Claims. (Cl. 83-106)

This invention relates to a side trimmer and particularly to such a trimmer for removing the edges of steel strip in a processing line. As the thickness of steel strip is reduced in a rolling mill, the edges become irregular and trimming of the edges is necessary in order to obtain a product of uniform width. The trimmed-off edge portion which is normally conveyed through a chute to a scrap chopper often contains burrs and rough edges so as to be subject to binding or piling up in the chute. When such binding occurs it has heretofore been necessary to stop the processing line, remove the cover of the chute, and manually cut off the edge portion. This operation has the disadvantages that there is danger that the operator will be injured by the sharp edges of the strip, the blades of the side trimmer are often damaged before the processing line can be stopped, and the entire procedure is a time consuming one.

Therefore it is an object of my invention to provide means whereby the cover of the chute will automatically open when a pile-up of scrap occurs so as to prevent further build-up.

This and other objects will be more apparent after referring to the following specification and attached drawings, in which:

FIGURE 1 is an elevation of my device looking toward the trimmer from the exit side thereof; and

FIGURE 2 is a view taken on the line II-II of FIGURE 1.

Referring more particularly to the drawings, reference numeral 2 indicates a shear housing adjacent the pass line of strip S in a strip processing line. Mounted on the housing 2 is a shear having two conventional pairs of side trimming blades 4 and 6 powered by conventional means, not shown. A guide 8 is attached to housing 2 at the exit side of each pair of blades 4 and 6 by means of an adjustable bracket 10. The guide 8 includes a chute having a bottom 12 connecting sides 14 and a chute cover having a fixed portion 16 and a movable portion 18 connected to portion 16 by a hinge 20. The longitudinal edge portion S' of strip S which is sheared off by knives 4 and 6 is conveyed to a conventional scrap chopper 21 through guide 8 as shown in FIGURE 2. An arm 22 is pivotally mounted to housing 2 by means of a bracket 24. The end of arm 22 remote from bracket 24 has a hole therein for receiving a pin 26. The ends of pin 26 are received in elongated slots 28 adjacent one end of a sleeve 30 in which the arm 22 is slidably received. Welded to the other end of the sleeve 30 is a plug 32 which has a convex outer surface. A compression spring 34 is contained in the sleeve 30 between arm 22 and plug 32 so as to urge plug 32 away from bracket 24 axially of arm 22. A stop 36 is attached to movable cover portion 18 for preventing sleeve 30 from moving toward cutting knives 4 and 6.

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The operation of my device is as follows: Before the strip processing line is started, the hinged portion 18 is lowered to close chute 8 and is held in place by the pressure of spring 34 acting through plug 32. Such condition exists until a burr in the edge scrap S' causes a piling up in chute 8. As the pile up increases, it exerts upward pressure on cover 18 which begins to pivot in a clockwise direction about hinge 20. Continuation of this rotation causes plug 32 to slide toward hinge 20 which enables cover 18 to open upwardly and the edge scrap to escape from chute 8 as shown in dash-dot lines in FIGURE 2. The operator can then readily cut out the piled up scrap to clear the pile up after which he closes and locks cover 18 to permit resumption of normal operation. It will be noted that the cover 18 has a cut out portion 38 therein so that it will clear the strip S as it swings upwardly into the path thereof.

While one embodiment of my invention has been shown and described it will be apparent that other adaptations and modifications may be made without departing from the scope of the following claims.

I claim:

1. Apparatus for trimming a longitudinal edge of a moving metal strip comprising a pair of side trimming blades for removing the edge scrap, support means on the downstream side of said trimming blades for supporting the trimmed strip in a generally horizontal plane, a closed chute on the downstream side of said trimming blades extending downwardly away from said trimming blades to receive and guide the edge scrap, said chute having two sides, a bottom and a hinged cover, the pivot of said hinge being generally horizontal and transverse to the path of travel of said strip and scrap, said hinge being located below the horizontal plane of the trimmed strip toward the downstream end of said cover, said hinge and cover being so arranged that the cover when moved about its hinge by cobbling of said scrap will clear the trimmed strip laterally thereby releasing the scrap from said chute, and means for yieldably holding said cover in operative position on said sides.

2. Apparatus for trimming a longitudinal edge of a moving metal strip according to claim 1 in which the means for yieldably holding said cover in operative position on said sides includes an arm, pivot means for supporting one end of said arm, said pivot means being generally horizontal and above the top of said chute and said support means and transverse to the path of travel of said strip, a sleeve for slidably receiving said arm, said arm and sleeve extending downwardly from said pivot means toward the end of said cover opposite its hinge, and a spring within said sleeve biasing it against said cover to hold it in operative position against said sides.

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