

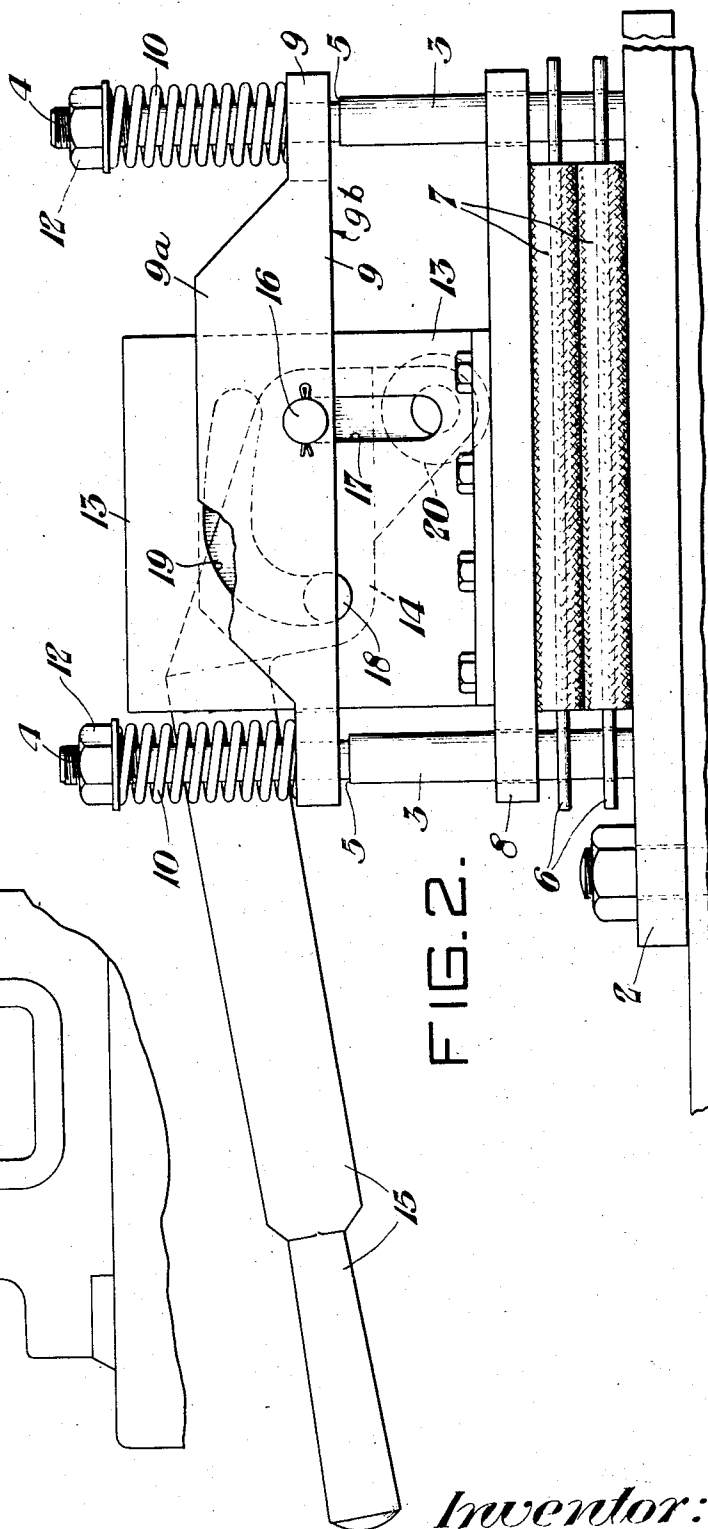
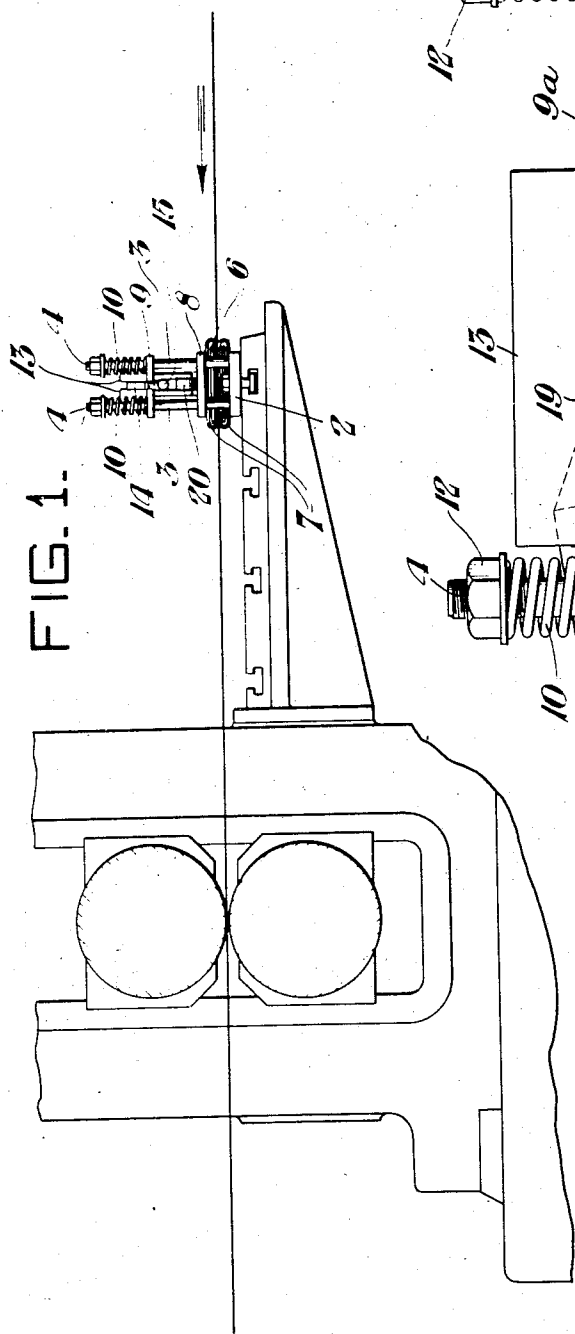
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WIPING DEVICE

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2 Sheets-Sheet 1



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WIPING DEVICE

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5 Claims. (Cl. 15—102)

This invention relates to a wiping device and, particularly, to such a device for cleaning continuous strip metal.

In the cold rolling of strip metal it is necessary that the strip be perfectly clean as it passes into and between the rolls of the mill. This is necessary in order to protect the rolls and to prevent foreign matter, which may have collected on the strip, from being rolled thereinto. Heretofore, some make-shift wiping means was usually provided but generally was unsatisfactory and very inefficient.

It is an object of the present invention to provide an improved wiping device which will efficiently and effectively clean the strip as it passes into the rolls of a mill.

It is another object of the invention to provide an adjustable wiping device which will automatically adjust itself to the strip as it passes there-through.

It is a further object of the invention to provide a wiping device which can be used for cleaning strips of various thicknesses and one in which the desired pressure of the device on the strip can be adjusted.

Various other objects and advantages of this invention will be more apparent in the course of the following specification and will be particularly pointed out in the appended claims.

In the accompanying drawings, there is shown, for the purpose of illustration, one embodiment which my invention may assume in practice.

In these drawings:

Figure 1 is a side elevation of a rolling mill, partly in section, showing the improved wiping device of my invention assembled in operable position thereon;

Figure 2 is a front elevation of the improved wiping device, showing it in its closed and operable position;

Figure 3 is a view similar to Figure 2, showing the wiping device in its open and inoperable position; and,

Figure 4 is a side view thereof.

Referring more particularly to the drawings, the improved wiping device of my invention comprises a supporting member or base-plate 2 having a pair of upwardly extending posts or studs 3 arranged at each end thereof. Each of the posts 3 has a reduced upper threaded portion 4 providing a shoulder 5 intermediate the ends thereof. The base 2 is so constructed that it can be conveniently arranged, preferably on the base of the rolling mill with which it is to be used.

There is assembled on the posts 3 a pair of rectangular-shaped movable plates 6, each having a pad 7 arranged thereon. This pad preferably consists of a piece of fabric wrapped several times around the plate, but it will be understood that any other suitable pad could be used. There is arranged on the posts 3 above the pad carrying plates 6, a movable hold-down plate 8. Above the hold-down plate 8 on the upper threaded portion of the posts or studs there is arranged a rectangularly plate-like member 9 which is adapted to rest normally on the shoulders 5 of the posts. There is arranged adjacent the sides of the plate-like member 9, upwardly extending flange portions 9^a, and there is arranged there-between in the plate-like member 9 a rectangularly-shaped opening 9^b. There is arranged on the threaded portion 4 of each of the posts 3 above the plate-like member 9 a coil spring 10 and an adjusting nut 12 positioned thereabove.

The hold-down plate 8 carries spaced-apart 20 upwardly extending plates 13 which are adapted to extend up through the rectangularly-shaped opening in the plate-like member 9. There is movably positioned between the upwardly extending plates 13 an actuating member 14 having 25 a handle portion 15. This actuating member 14 carries a pin 16, the ends of which are adapted to extend through vertically extending slotted holes 17 arranged in the vertical plates 13 and through suitable holes positioned in the flanges 9^a of the 30 plate-like member 9 to pivotally attach the actuating member 14 thereto.

The actuating member also carries a second pin 18, the ends of which are adapted to extend through curved or arcuate-shaped slotted holes 35 19, also arranged in the vertically extending plates 13. There is also positioned on the actuating member 14 a suitable roller 20 suitably spaced from the pin 16 and which is adapted to cooperate with the top surface of the hold-down 40 plate 8.

The improved wiping device of my invention operates as follows:

It will be assumed that the wiping device is in its open and inoperable position as shown in Figure 3. The metal strip is first threaded between the pads 7 into the rolling mill and the wiping device is then ready to be set in operable position. As the handle 15 of the actuating member 14 is moved downwardly about its pivotal connection, 50 namely, the pin 16 carried by the plate-like member 9, the pin 18 carried by the actuating member 14 and disposed in the arcuated slotted holes 19 of the upwardly extending plate-like flanges 13 carried by the hold-down plate 8 will follow 55

the path of the arcuated slotted holes 19, and the roller 20 arranged on the lower side of the actuating member 14 will ride over the top of the hold-down plate 8 thereby forcing the same downwardly against the topmost pad 7, so as to force the pads together, as shown in Figure 2 of the drawings. It will thus be seen that in this position the hold-down plate 8 and the upper plate-like member 9 are then held in a spaced-apart position from each other by the actuating member 14. It will be understood that the posts 3 act as a guiding means for both the wiping pads and the hold-down plate 8 in their movement.

In this closed position the plate-like member 9 is forced upwardly away from the shoulders 5 on the posts 3 against the action of the coiled springs 10, so as to yieldably position the hold-down plate 8 against the top pad 7 and thereby holding the pads yieldably in contact with the metal strip as it passes continuously between the pads. The amount of pressure that it is desired to exert by the pads against the metallic strip can be adjusted by means of the adjusting nuts 12 on the top of the posts.

To release the pressure on the wiping pads the handle 15 is moved upwardly about its pivotal connection, and the pin 18 carried by the actuating member 14 and disposed in the arcuated slotted holes 19 of the plate-like flanges 13 carried by the hold-down plate 8, follows the slotted holes and forces the hold-down plate 8 upwardly due to a camming action out of contact with the topmost pad to a position as shown in Figure 3 of the drawings.

As a result of my invention, it will be seen that a continuous strip of metal can be effectively and efficiently cleaned and the device can be easily and quickly adjusted for any thickness of metal which is adapted to be cleaned. Also, after the pads 7 have worn out or possess no further cleaning properties, they can be easily removed and replaced with fresh pads.

While I have shown and described an embodiment of my invention, it will be understood that this embodiment is merely for the purpose of illustration and description and that various other forms may be devised within the scope of my invention, as defined in the appended claims.

I claim:

1. A wiping device of the class described comprising a supporting member, two pairs of spaced apart upwardly extending vertically disposed post members arranged on said support, a pair of superimposed removable pliable pads arranged on said supporting member between said pairs of post members to which they are movably attached, a movable hold-down plate member arranged above the upper pad and extending between said pairs of post members to which it is movably attached, each of said posts having a shoulder portion arranged therearound intermediate their length, a plate-like member arranged above said hold-down plate member and extending between the pairs of post members above the shoulder portions thereof, a coil spring arranged on each of said post members above the plate-like member for normally forcing the same against the shoulder portions of said posts, means interconnecting said plate-like member and said hold-down plate member so as to permit them to move relative to each other, and means associated with said interconnecting means which is adapted to cooperate between the plate-like member and the hold-down plate mem-

ber to positively hold and lock them in spaced apart relation in one position so as to position said hold-down plate member yieldably against the upper pad and to move them toward each other and hold them in another position, whereby the hold-down plate member is out of contact with and spaced from said upper pad.

2. A wiping device of the class described comprising a support, guiding means arranged on said support, a pair of pliable wiping pads arranged on said support with at least one of said pads having means arranged therewith cooperating with said guiding means for guiding the same, a movable member arranged on said guiding means on the outer side of said movable pad, means for holding said movable member yieldably against said movable pad in one position whereby the pads are held yieldably together, and means for moving said movable member to a retracted position out of contact with said movable pad.

3. A wiping device of the class described comprising a supporting member, two pairs of spaced-apart guide posts arranged on said supporting member, a pair of pliable wiping pads arranged on said support with at least one of said pads having means arranged therewith for movably positioning the same on the guide posts, a movable hold-down plate member arranged on the guide posts on the outer side of said movable pad, means for holding said plate member yieldably against the movable pad in one position whereby the pads are held yieldably together, and means for moving said hold-down plate member to retracted position out of contact with said movable pad.

4. A wiping device of the class described comprising a support, a guiding means arranged on said support, a pair of superimposed wiping pads, means arranged with said pads cooperating with said guiding means for positioning the same, a hold-down member arranged above the upper pad with both said pads and said hold-down member movably arranged on the guiding means carried by said support, a member yieldably arranged above said hold-down member and said pads, means for supporting said yieldably arranged member, means for positioning said yieldably arranged member and said hold-down member in a spaced relation to each other in one position so as to position the hold-down member against the upper pad whereby the pads are held yieldably together, and means for moving said hold-down member upwardly to a retracted position out of contact with said upper pad.

5. A wiping device of the class described comprising a support, a guiding means arranged on said support, a pair of superimposed pads, a hold-down member arranged above the upper of said pads with both said pads and said hold-down member movably arranged on the guiding means carried by said support, a member yieldably arranged above said hold-down member and said pads, means for supporting said yieldably arranged member, and actuating means carried by said hold-down member which cooperates with means carried by said yieldably arranged member to position the hold-down member in a spaced relation therefrom in one position so as to position the hold-down member against the upper pad whereby the pads are held yieldably together, said actuating means adapted to move said hold-down member upwardly to a retracted position out of contact with said upper pad.

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