

July 21, 1931.

F. A. SCHMITZ

1,815,484

ROLLER LEVELER

Filed June 14, 1928

2 Sheets-Sheet 1

Fig. 1

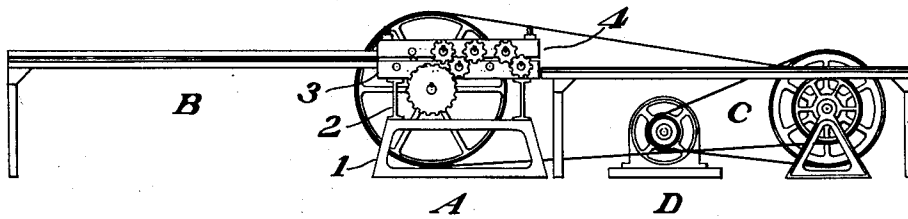
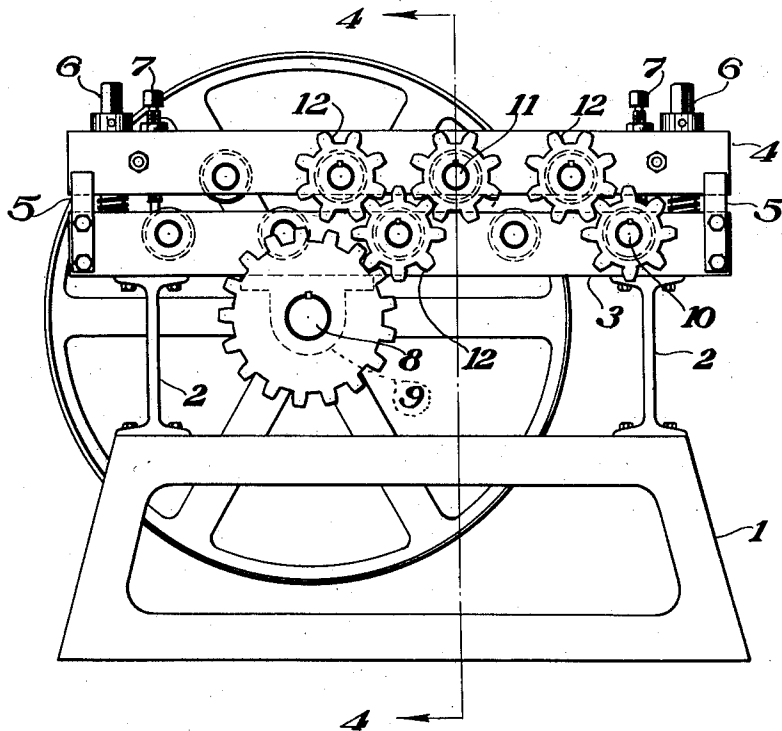


Fig. 2

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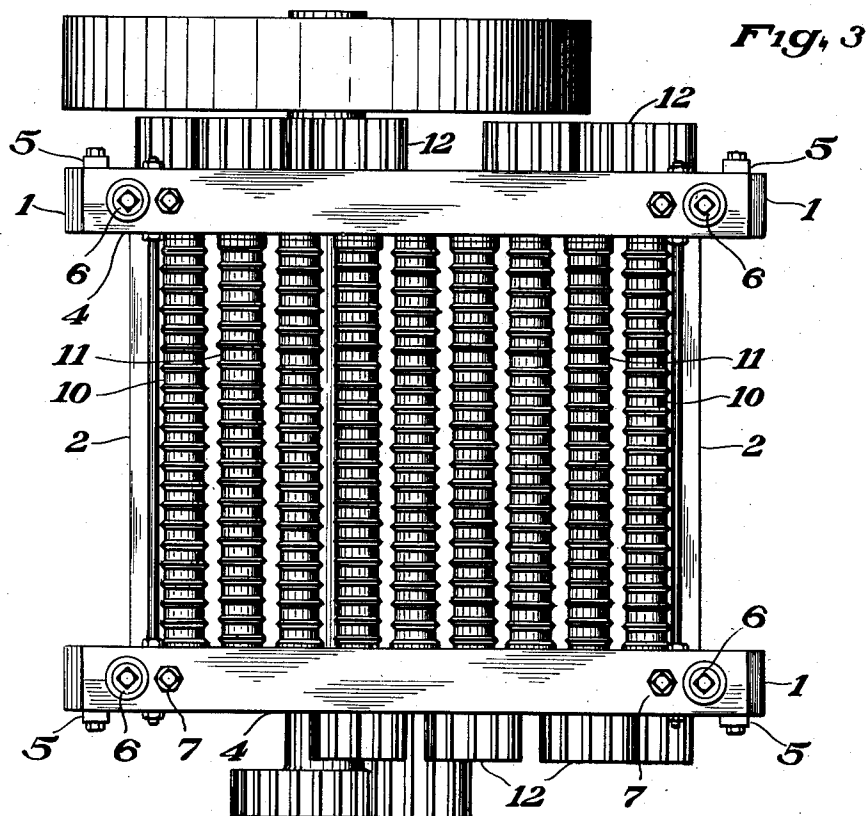
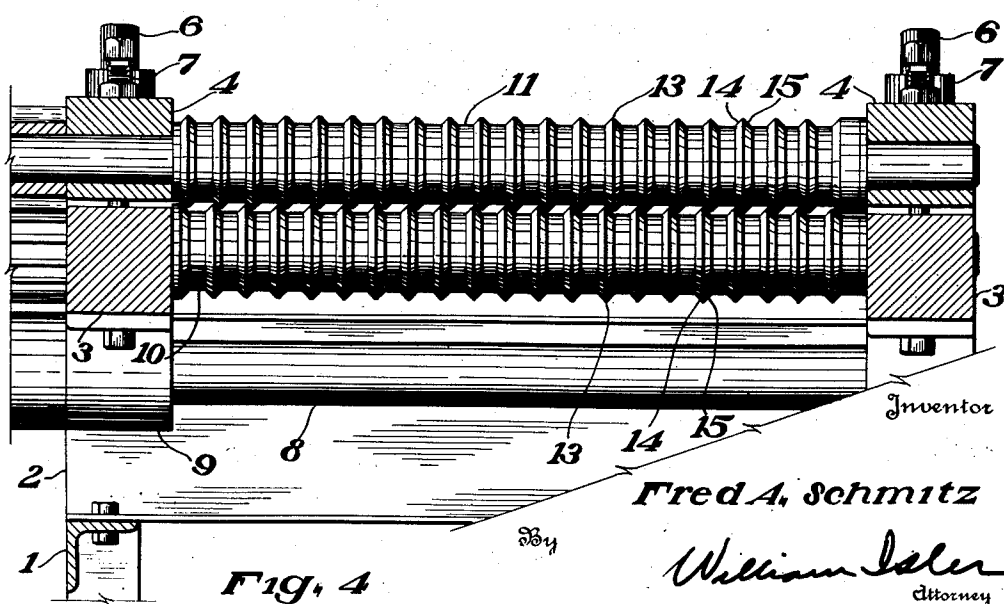
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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

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ROLLER LEVELER

Application filed June 14, 1928. Serial No. 285,263.

This invention relates in general to improvements in apparatus for manufacturing expanded metal lath, and more particularly to apparatus for roller leveling expanded metal sheets of the type disclosed in the copending application of Thomas A. Sindelar, Serial No. 269,820, filed April 13, 1928.

Slitted metal sheets of the type disclosed in the aforesaid application are preferably expanded by means of apparatus of the type disclosed in the copending application of George W. Lentz, Serial No. 269,773, filed April 13, 1928.

The expanded sheets, owing to variations in the thickness of the original metal sheets, and to improper adjustment of the slitting or expanding apparatus, are occasionally cambered longitudinally and transversely, and are characterized by ribs, which, while they are in the main uniformly spaced, are more or less sinuous or wave-like. These imperfections in the finished sheets, while they do not materially affect the utility of the sheets for building construction purposes, are objectionable to the trade, for the reason that they detract from the finished appearance of the sheets.

It is therefore a primary object of the present invention to eliminate these defects in the expanded sheet by providing an apparatus which will not only level the sheet to remove longitudinal and transverse camber, but at the same time, will effectively align the ribs, so that the finished sheet will present a neat and attractive appearance.

This and other objects of the invention will become more readily apparent in the course of the following description of a preferred embodiment of the invention, taken in connection with the accompanying drawings, wherein

Fig. 1 is a general elevation of the entire leveling apparatus;

Fig. 2 is an elevation of the leveler;

Fig. 3 is a plan view of the leveler, and

Fig. 4 is a transverse section through the leveler, taken on the line 4-4 of Fig. 2.

Referring more particularly to the drawings, the leveling apparatus comprises a leveler indicated generally at A, an entrance

table B, an exit table C, and a leveler drive D.

The leveler A includes a base 1, I-beams 2 mounted upon the base, and lower bearing boxes 3 secured to the I-beams. Upper bearing boxes 4 are guided vertically by means of guides 5 secured to the lower bearing boxes, and are vertically adjustable with respect to the lower boxes, by means of adjusting devices 6 and 7, as is well understood in the art.

A drive shaft 8 is mounted in depending bearings 9, secured to the lower bearing boxes 3, and drives lower leveler rolls 10 and upper leveler rolls 11, through the intermediary of gears 12.

The lower rolls 10 are staggered with respect to the upper rolls 11, as is common in roller-levelers of this type.

Each roll 10 and 11 is provided with uniformly spaced annular ribs 13, the sides 14 and 15 of which are straight and oppositely inclined with respect to each other. The angle of inclination of the sides of the ribs, with respect to the axis of the roll, is determined by the angle at which the ribs in the expanded metal sheet are set with respect to the general plane of the sheet.

The rolls 11 are so disposed with respect to the rolls 10, that the sides 14 of the ribs in the rolls 11 are practically in line with the sides 15 of the ribs in the rolls 10, as is clearly shown in Fig. 4.

The operation of the leveling apparatus is briefly as follows:

The expanded metal sheet is placed on the entrance table B, and is fed into the leveler A in such manner that the inclined ribs of the sheet pass between the sides 14 of the ribs in the upper rolls 11 and the sides 15 of the ribs in the lower rolls 10. The sheet passes through the leveler and onto the exit table C, from which it is removed for stacking.

The expanded metal sheet, after passing through the leveler, is free of the aforementioned defects, and presents a neat and attractive appearance.

Claims:

1. In a machine for straightening the ribs of ribbed expanded metal sheets, a series of

- lower rolls, each provided with spaced annular ribs, and a series of upper rolls arranged in staggered relation with said lower rolls and each provided with spaced annular ribs offset laterally with respect to the ribs of the lower rolls a sufficient amount to provide between the ribs of the upper and lower rolls straightening passes for the ribs of a sheet which is passed through the machine.
2. In a machine for straightening the ribs of ribbed expanded metal sheets, a series of lower rolls, each provided with spaced annular ribs having inclined faces, and a series of upper rolls arranged in staggered relation with said lower rolls and each provided with spaced annular ribs having inclined faces and offset laterally with respect to the ribs of the lower rolls a sufficient amount to provide between the inclined faces of the ribs of the upper and lower rolls straightening passes for the ribs of a sheet which is passed through the machine.
3. In a machine for straightening the ribs of ribbed expanded metal sheets, a series of lower rolls having projecting ribs with inclined faces adapted to engage the ribs of a sheet fed through the machine for supporting the lower sides of the ribs of the sheet, and a series of upper rolls arranged in staggered relation with the lower rolls and having projecting ribs with inclined faces parallel with the inclined faces of the ribs of the lower rolls and adapted to engage the upper sides of the ribs of the sheet, the ribs of the upper and lower rolls thereby cooperating with each other to straighten the ribs of the sheet as it passes through the machine.
4. In a machine for straightening the ribs of ribbed expanded metal sheets, a series of lower rolls provided with spaced apart annular ribs having inclined faces adapted to support the lower faces of the ribs of a sheet passed through the machine, and a series of upper rolls provided with annular ribs having inclined faces adapted to engage the upper faces of the ribs of the sheet, the ribs of the upper and lower rolls thereby co-operating with each other to straighten the ribs of the sheet as it passes through the machine.
5. A machine for straightening the ribs of expanded metal sheets having ribs all inclined in approximately parallel planes, comprising upper and lower rolls arranged in staggered relation, each roll having a series of spaced annular ribs corresponding with the various ribs of the sheet, the ribs of each of the lower rolls having inclined faces adapted to support the lower faces of the ribs of the sheet, and the ribs of each of the upper rolls having inclined faces inclined in the same direction as the inclined faces of the ribs of the lower rolls but offset laterally therefrom and adapted to engage the upper faces of the corresponding ribs of the sheet.
6. A machine for straightening the ribs of ribbed expanded metal sheets having ribs all inclined in approximately parallel planes, comprising a series of spaced lower rolls having projecting ribs with inclined sides for coacting with the lower sides of the ribs of the sheet, and a series of upper rolls arranged above and in staggered relation with the lower rolls and having projecting ribs with inclined sides for coacting with the upper sides of the respective ribs of the sheet.
- In testimony whereof I affix my signature.
- FRED A. SCHMITZ.