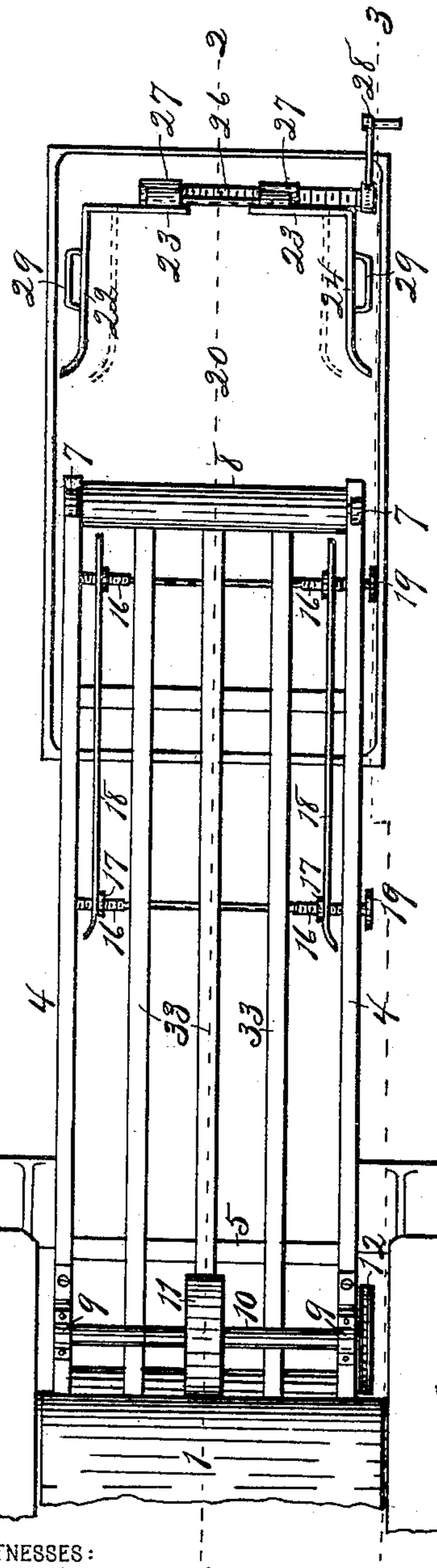
No. 703,210. Patented June 24, 1902.

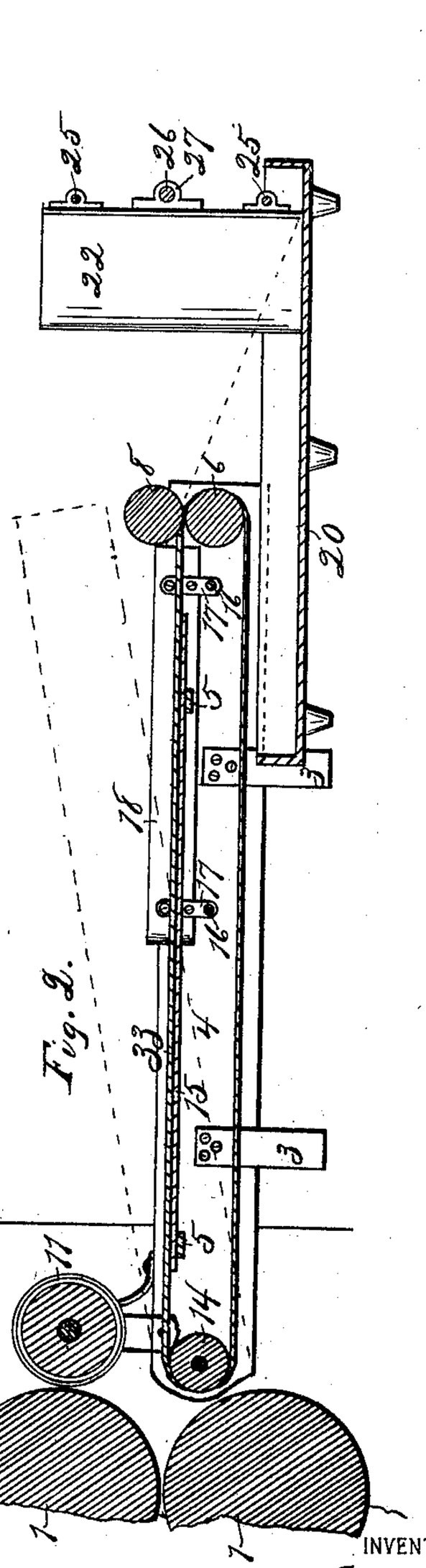
A. J. MASKREY.

SHEET CATCHING AND PACKING DEVICE.

(Application filed June 19, 1901.)

(No Model.) 2 Sheets—Sheet 1.





WITNESSES:

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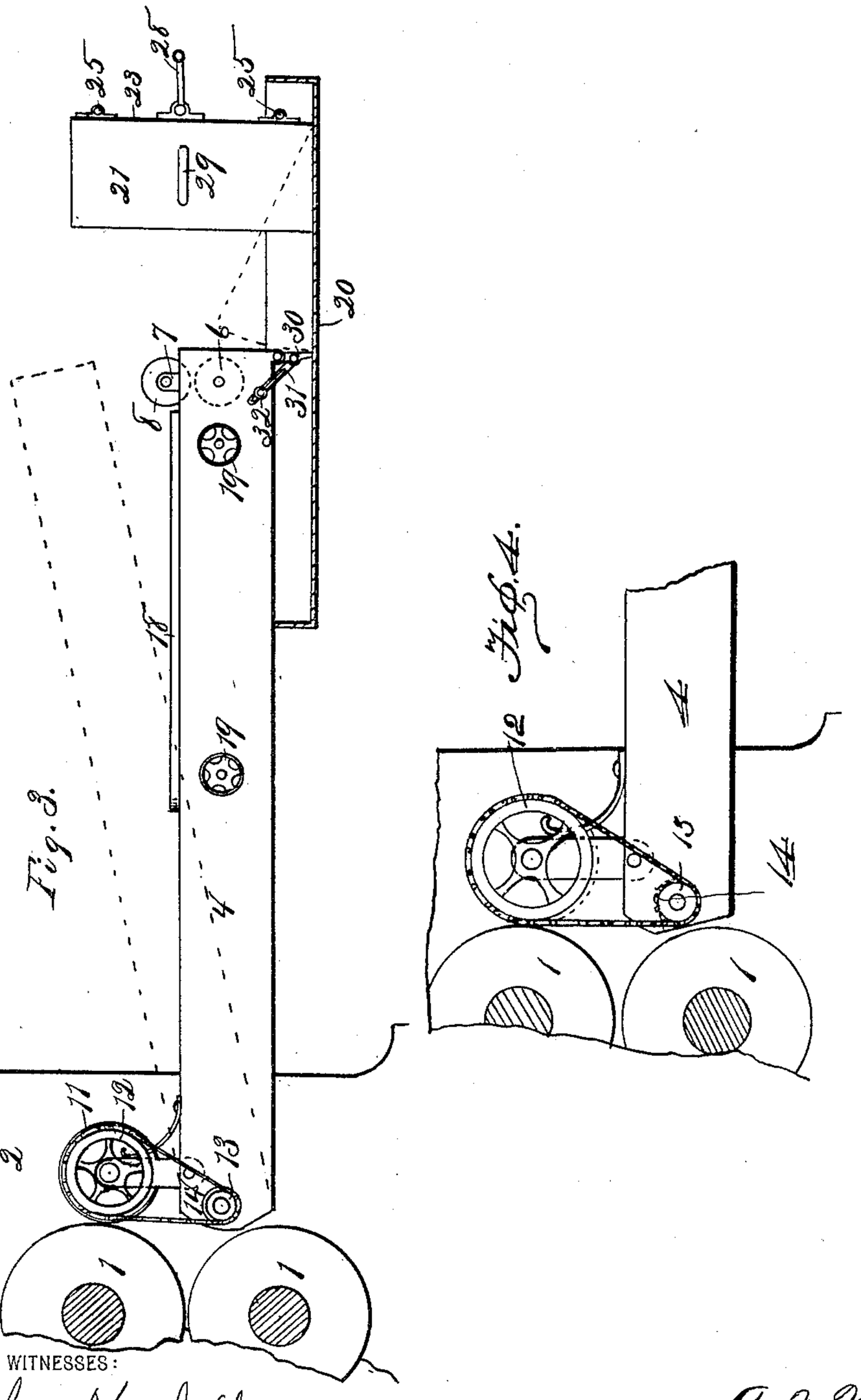

Fig. 4.

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SHEET CATCHING AND PACKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 703,210, dated June 24, 1902.

Application filed June 19, 1901. Serial No. 65,160. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR JAMES MASKREY, a citizen of Great Britain, and a resident of Martins Ferry, county of Belmont, and State of Ohio, have invented certain new and useful Improvements in Sheet Catching and Packing Devices, of which the following is a specification.

My invention relates to improvements in sheet catching and packing devices, and more particularly to an automatic device for catching sheets of metal as they pass from the "cold-rolls" and for carrying forward and piling or packing said sheets in an even pile or pack on the annealing-pan; and it consists in the particular construction, arrangement, and combination of parts, which will hereinafter be fully described, and particularly pointed out in the appended claims.

The primary object of my invention is to provide a machine operated by the cold-rolls which will catch the sheets of metal as they pass from said cold-rolls in the rolling process and which will convey them forward and deposit them in an even pack on the annealing-pan.

A further object of my invention is to provide a table pivoted at its front end and having its rear end free and adapted to be raised by hydraulic power or otherwise to permit of the sheets being delivered to a packing-box until the same is filled, thus obviating the necessity of providing means for lowering the annealing-pan, in which said packing-box sits, below the floor-level.

In describing my invention in detail reference is had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a top plan view of my invention. Fig. 2 is a longitudinal section of the same on the line 2 2 of Fig. 1, showing in dotted lines the position of the table when the rear end thereof is raised. Fig. 3 is a side elevation of the same with a section on the line 3 3 cut away. Fig. 4 is a similar view showing the spring which holds the contact-wheel 11 in contact with the upper roll 1.

Referring to the drawings, in which like reference-numerals designate like parts, 1 represents the cold-rolls, and 2 the housings therefor.

Supported on legs or supports 3 is a table having its front end near to the point of contact of the cold-rolls and on a horizontal plane therewith. Said table consists of side rails 4, on opposite sides thereof, connected by cross-bars 5. Having its bearings in the rear end of said side rails is a roll 6. Supported by bearing-blocks 7, directly over said roll 6, is a second roll 8, the face of which is in bearing contact with said roll 6.

On the side rails 4, at the front end of the table, are provided upright supports 9, said supports being pivoted to said side rails, as shown in Fig. 4, and journaled in said upright supports are the opposite ends of a shaft 10. Fixedly secured on said shaft 10, near the center thereof, is a contact-wheel 11, adapted to be revolved by contact with the upper cold-roll 1. On one of the ends of the shaft 10, outside the side rail 4, is a belt or sprocket wheel 12, which is connected by endless belt or chain, as the case may require, with a belt or sprocket wheel 13 on a roll 14, which has its bearings in said housings 2. Passing around and connecting said roll 14 with the roll 6 are a plurality of endless chains or belts 33, the latter being shown in the illustrations. Supported on said cross-bars 5 are a plurality of longitudinal bars or slats 15, which lie directly underneath the upper or carrying portion of the belts and which serve as supports for said belts when carrying metal sheets, thus preventing the sagging thereof and the consequent cutting thereof by said metal sheets. Having their opposite ends in said side rails 4 are two adjusting-screws 16, the object of which will presently be shown. Having their lower ends mounted on said adjusting-screws are four vertical clips or supports 17, two at each side of the rear end of the table, the two on each side supporting a guide-bar 18, which has its front end curved outward to facilitate the passage of the sheets between them. By means of the said adjusting-screws, each of which has a hand-wheel 19 on one of the outer ends thereof, the said guide-bars may be adjusted to any position and can therefore be adjusted to guide any-sized sheet of metal to the rolls 6 and 8.

Under the rear end of the table is shown the annealing-pan 20, the same being of the usual construction. In the rear end of said pan I provide an adjustable packing-box

adapted to coöperate with the said table and sheet-carrying means to pack the metal in the annealing-pan in an even pack. The said packing-box 21 is provided with three sides 22, 23, and 24. The rear side 23 is divided, the two sections or divisions thereof being movably connected by movable bars 25, one near the top and the other near the base thereof. Also connecting said sections is an adjusting-screw 26, which is supported in screw-threaded blocks 27, one of which is secured on each section of the rear side 23. On one of the outer ends of said adjusting-screw 26 is a crank or similar device 28, adapted to be used in operating said screw in adjusting the box to fit any-sized sheet. The front ends of the sides 22 and 24 of said packing-box are slightly curved outward to facilitate the guiding of the sheets into the box. Handles 29 are provided on the sides 22 and 24 for lifting the box to clear the pile or pack of metal when the said box has been filled.

It is obvious that by placing a movable plate sufficiently large for two annealing-pans to be placed thereon in the rear of the table two packing-boxes may be placed thereon, the object of this arrangement being to allow of full boxes being removed laterally from in front and an empty box moved in place, thus saving the time otherwise required in so doing and obviating the necessity of stopping the cold-rolls while a full box is being removed and an empty one set in place.

On the extreme rear end of the table and pivoted at its upper end to the lower edge of one of the side rails 4 is a depending arm 30. Having one end pivoted to said arm 30, near the center thereof, is a slotted rod 31. An adjusting-screw 32 is provided in the slot of said rod 31 to adjust said arm 30 to any desired position. Said arm 30 and the adjusting device connected therewith serve as an adjustable edge or evening device to the rear end of the sheets when they drop from the rolls 6 and 8.

The front end of the table is pivoted on the roll 14. As the packing-box is being filled the rear end of the table may be raised in any desired manner, so that the sheets will be delivered on the top of the pile, said table taking the position shown by dotted lines in Figs. 2 and 3. The roll 14 being journaled in the housings 2, said roll serves as a pivot on which said table is raised.

Having one end secured on the side rail 4 and its opposite end secured to the support 9 at a point above said side rail is a spring (clearly shown in Fig. 4) which is adapted to permit the said supports for contact-roll 11 to recede as the table is raised and which holds said contact-roll at all times in contact with the upper roll 1.

Now, as is apparent, when it is desired to pack any sized sheets of metal as they pass from the cold-rolls the guide-bars 16 may be adjusted to fit the width of said sheets, so that they may be guided forward evenly, and the packing-box may be adjusted to receive said sheets in an even pack or pile as they pass from said rolls 6 and 8. Now when a sheet of metal passes from the cold-rolls it will be deposited on the traveling belts 33, which will convey it forward between the guide-bars 16 to the rolls 6 and 8. Passing through between said rolls with some force, the front end of the sheet will strike the rear wall 23 of the packing-box 21. The depending or evening arm 30 having been previously adjusted to suit the size of the sheet of metal, the rear end of said sheet will drop and be guided to its proper position thereby.

I have described my invention more or less in detail and believe it to be shown in its simplest form; but, as is obvious, mere changes may be made in its construction and in the arrangement of parts without departing from the spirit and scope thereof. Hence I do not desire to limit myself to the precise construction and arrangement shown.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a machine of the character described, the combination with the housings and cold-rolls, of a small roll journaled in said housings on the exit side of said cold-rolls, a table having its front end pivotally mounted on said small roll, a pair of rolls mounted in the rear end of said table, traveling belts connecting the first-mentioned roll with the lower of the last-mentioned rolls, means for imparting motion to said first-mentioned roll, and through the belts to the last-mentioned rolls, adjustable guide-bars on said table, an adjustable sheet-packing box at the rear of said table, and an adjustable evening device on the rear end of said table, all substantially as and for the purposes set forth and described.

2. In a machine of the character described, the combination with the housings and cold-rolls, of a small roll having its bearings in said housings, a table pivoted at its front end on said small roll, the rear end of said table adapted to be raised to any position on said small roll as a fulcrum, a pair of rolls mounted on the rear end of said table, endless traveling belts connecting the said small roll with the lower roll of the pair of rolls, means for imparting motion to said rolls and belts, adjustable guide-bars on said table, an adjustable sheet-packing box in the rear of said table, and an adjustable evening device on the rear end of said table adapted to cause sheets of metal carried by the machine to be dropped in an even pack in the packing-box, substantially as set forth and described.

3. In a machine of the character described, the combination with the housings and the cold-rolls, of a small roll having its bearings in said housings on the exit side of the cold-rolls, a table having its front end pivotally mounted on said small roll, a pair of rolls mounted in the rear end of said table, traveling sheet-carrying belts connecting the lower

of said last-mentioned rolls with the said small roll, adjustable sheet-guiding bars mounted on said table, an adjustable sheet-packing box seated in the rear of said table, and an evening device adapted to keep the sheets, carried forward by the machine, in an even pack in the packing-box, substantially as shown and described.

4. In a machine of the character described, the combination with the housings and the cold-rolls, of a small roll journaled in the housings on the exit side of said cold-rolls, a table having its front end pivotally mounted on said small roll, a shaft journaled in the front end of said table, a contact-wheel fixed on said shaft and adapted to be revolved by contact with the upper of the cold-rolls, a sprocket-wheel mounted on the outer end of said shaft, a second sprocket-wheel mounted on the said small roll, a sprocket-wheel connecting the said sprocket-wheels and adapted to impart motion to the said small roll; a pair of rolls mounted in the rear end of said table, a plurality of traveling belts connecting the lower of said last-mentioned rolls with the said small roll, and adjustable guides provided on said table adapted to guide sheets of metal forward evenly to the said last-mentioned rolls, substantially as described.

Signed by me at Wheeling, West Virginia, this 8th day of March, 1901.

ARTHUR JAMES MASKREY.

Witnesses:
LOUIS F. STIFEL,
WM. H. TRACY.