

No. 741,708.

PATENTED OCT. 20, 1903.

A. PATERSON.
PACK FOR ROLLING SHEET METAL.

APPLICATION FILED APR. 19, 1902.

NO MODEL.

Fig. 1.

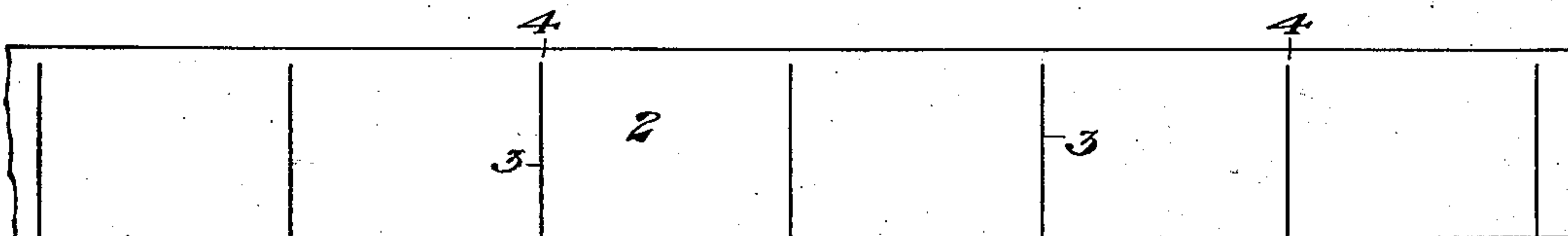


Fig. 2.

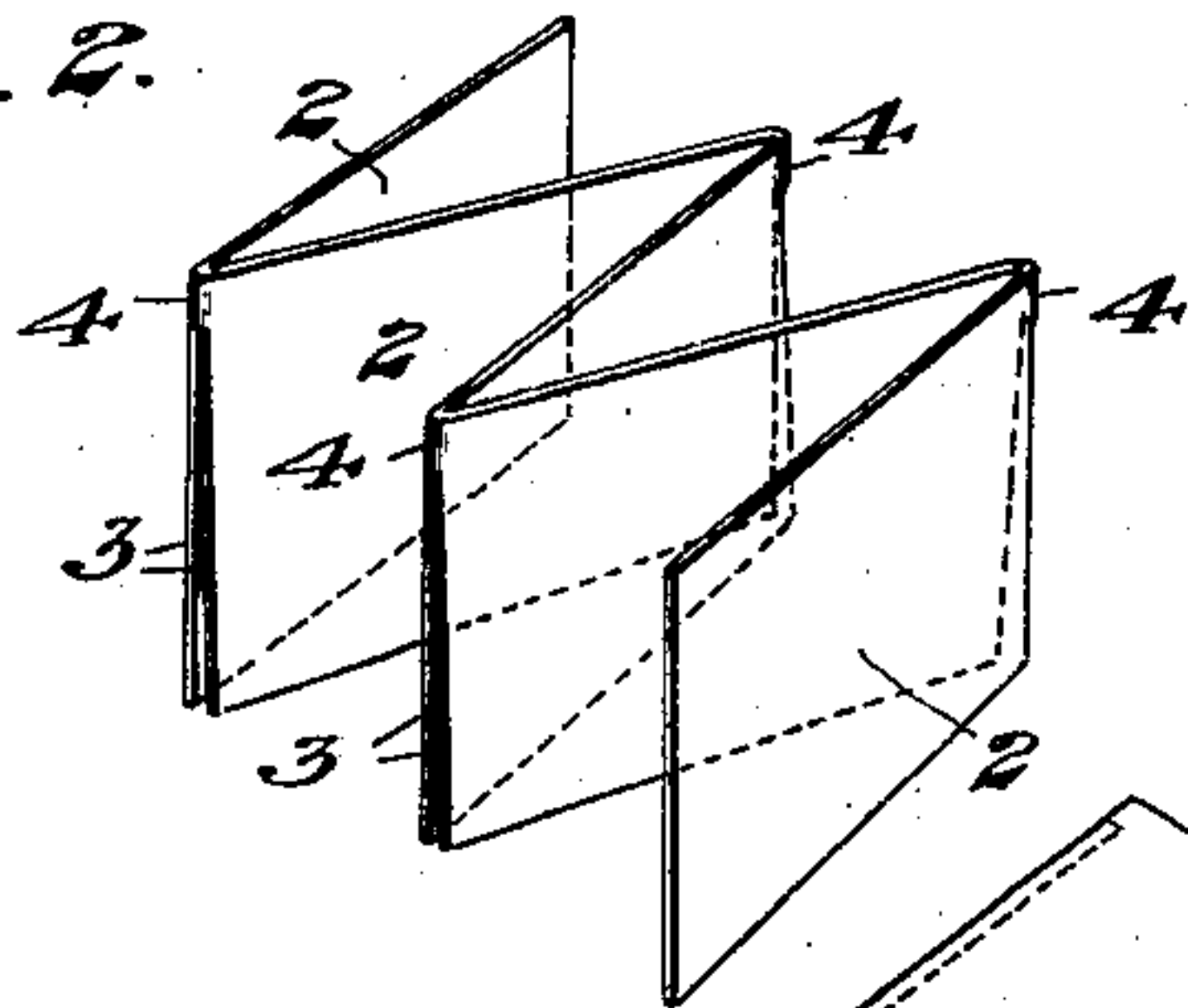


Fig. 3.

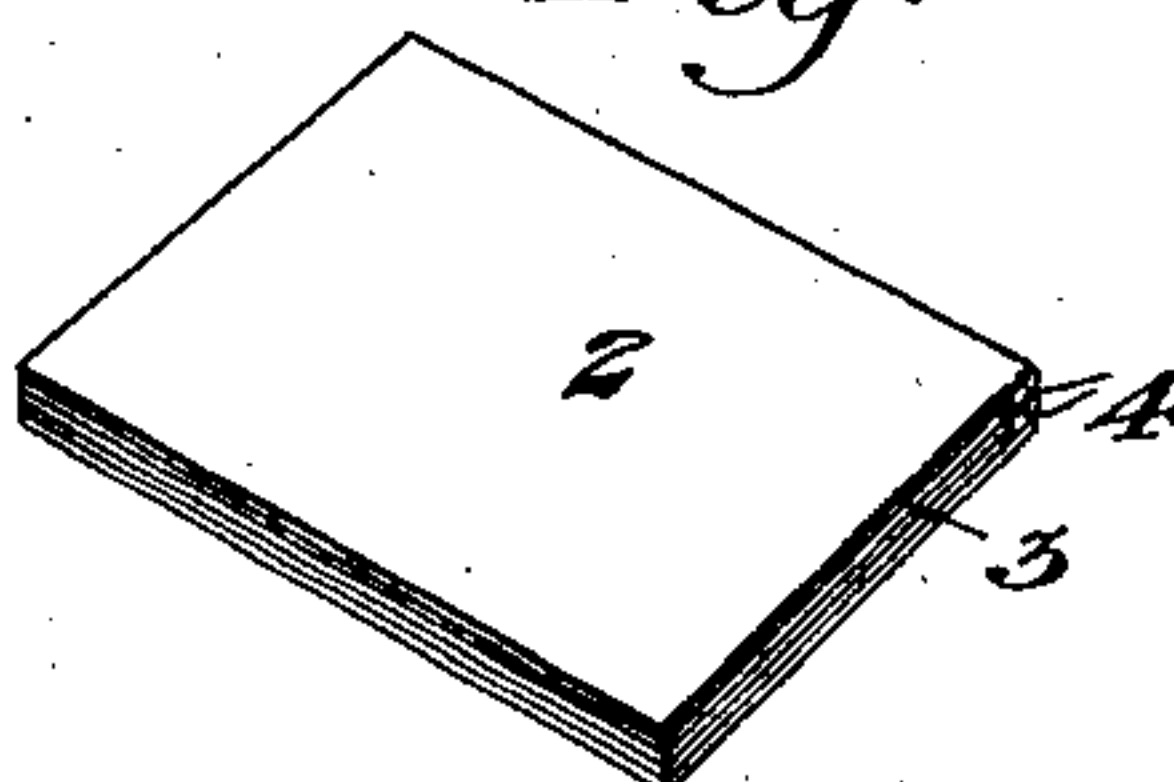
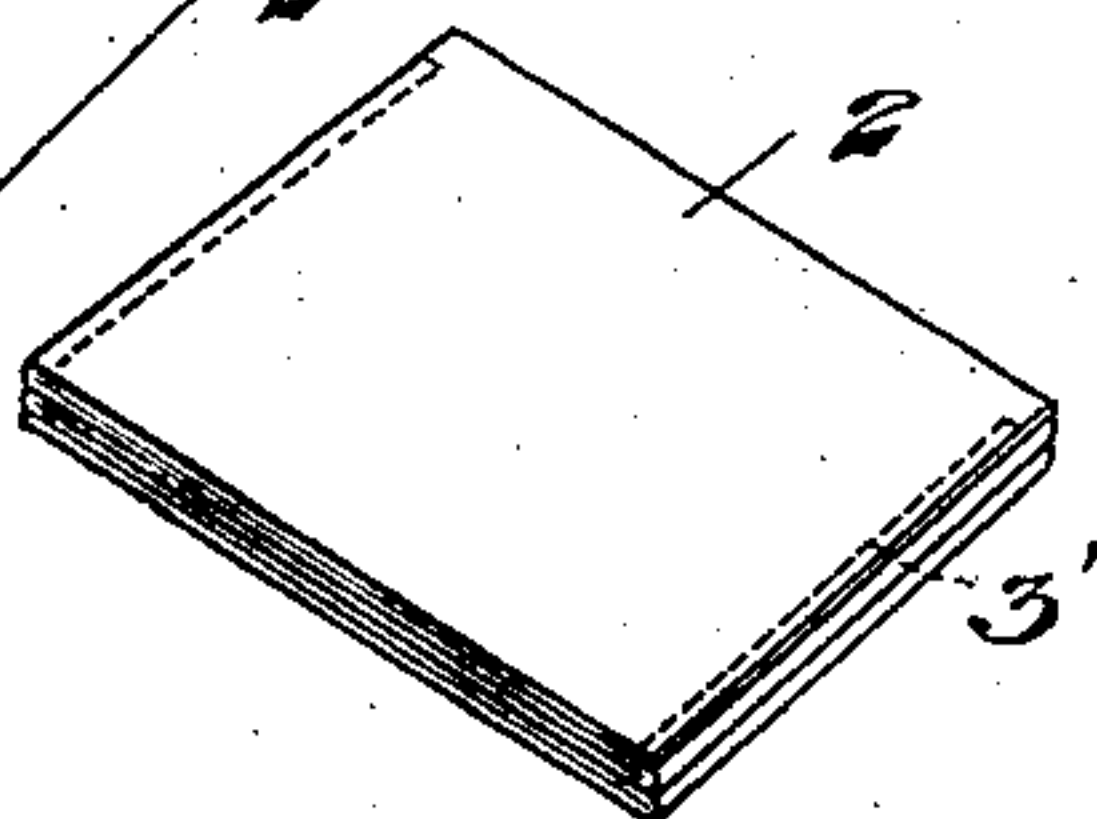


Fig. 4.



WITNESSES

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PACK FOR ROLLING SHEET METAL.

SPECIFICATION forming part of Letters Patent No. 741,708, dated October 20, 1903.

Application filed April 19, 1902. Serial No. 103,762. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER PATERSON, of Wilkinsburg, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Pack for Rolling Sheet Metal, of which the following is a full, clear, and accurate description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents my improved sheet or strip slit preparatory to folding to form a pack in accordance with my invention. Fig. 2 is a perspective view showing the sheet or strip folded to form my improved pack. Fig. 3 is a perspective view of the pack after being pressed preparatory to being further rolled. Fig. 4 is a perspective view of another way of forming the pack.

In the usual method of rolling thin sheet metal the slab or billet is rolled to a bar or strip which is cut into separate pieces of a length equal to the width of the sheet desired. These pieces are then heated and rolled transversely, singly or in pairs, to the length and thickness required, according to the uses to which the metal is to be put, thus producing the sheet metal of commerce of any desired gage. In no case have I known of more than two sheets being rolled together at this stage. The metal is heated five times between the billet and the finished sheet, the first heating being the heating of the billet before it is rolled into a bar, which is then cut into pieces the width of the sheet, as already described. The second heating is the heating of these pieces, which are then rolled into blanks of single pieces or sheets. The third heating is the heating of these singles, which after they are heated are rolled out two at a time and doubled lengthwise, forming packs of four layers. These packs of four layers are then heated, which makes the fourth heating. They are rolled out and doubled again, forming packs of eight layers, which are again heated, constituting the fifth heating, and they are finally rolled out into finished black plate. All of these different heatings and rollings require speedy manipulation by skilled workmen to prepare the material for each succeeding step in the process, thus necessitating the expenditure of a large amount of labor and time.

I will now describe my invention, so that others skilled in the art may manufacture and use the same.

Instead of cutting the sheet or strip 2 into separate pieces, as has been done in the method heretofore generally employed, I cut it into lengths corresponding to several multiples of the width of the sheet desired and then cut these lengths transversely by slits extending partially across, leaving a connecting-web of metal along one edge of the strip. The strip so cut is then folded on the lines of the cuts 3 into multiples of three or more, the folding being preferably in a zigzag fashion—that is, it is folded first one way and then the other way—thus forming a pack of three or more sections, layers, or leaves, all of which are united by the connecting-web of metal 4 at the forward end of the pack—i. e., the end which first enters the rolls—the direction of rolling being indicated by the arrows in Figs. 3 and 4. The pack is preferably pressed to the shape shown in Fig. 3, forming a piece suitable for handling in piles with a number of other similar packs, which enables them to be manipulated in the heating-furnace for further rolling with the same facility as if they were simple bars or billets. This obviates the difficulty which has attended the handling and adjusting of single sheets and packs composed of single sheets as in the method now generally employed.

In forming my improved pack only two heatings between the billet and the finished sheet of black plate are required instead of the five heatings required in the old form of pack. The first is the heating of the billet before it is rolled into the strip or sheet, and after this strip has been folded into the pack in the manner described and has been subjected, preferably, to a cold forming treatment in rolls, presses, or other suitable apparatus the pack so formed is heated for the second time, after which it may be rolled into finished black plate without need of any further heating.

Although, as hereinafter stated, I do not desire to limit myself to the particular operation above described, yet, owing to the peculiar formation of the pack, it is capable of being formed in this economical and rapid manner. This not only enables the rolling

of the sheet metal to be accomplished in a much less time than has heretofore been possible, but it results in a very considerable saving in labor. It also enables the packs to be
5 heated more uniformly and economically than heretofore, as will be apparent to those skilled in the art. The pack is a unit instead of being composed of separate sheets and may be formed of many sections folded one on the
10 other and still comprising a unit.

Although I have described one method of forming my improved pack, I do not desire to limit myself to the same, as other methods or modifications may be employed. One
15 such modification is shown in Fig. 4 of the drawings, in which the metal is folded in a zigzag direction into several sections or leaves, and after it is so folded the doubled edges, excepting the connecting-web at one
20 edge, are sheared off along the lines 3', leaving the pack in almost precisely the same form as that produced by the method hereinbefore described. Nor do I desire to limit myself to the zigzag folded pack, though im-
25 portant results are secured by such folding, and I intend to claim it specifically.

My packs may be reheated in any suitable

furnace and rolled through any suitable rolls until sheet metal of the desired gage is produced.

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

1. A sheet-metal pack, comprising a sheet folded into layers disconnected along the
35 sides and connected at the forward corner or corners only by portions forming integral parts of the original sheet.

2. A sheet-metal pack, comprising a sheet folded in a zigzag direction into three or more
40 layers connected together alternately at their forward corners only.

3. A sheet-metal pack formed of a strip having a transverse cut or cuts extending from one side almost to the other side of the strip,
45 the strip being folded along the lines of said cut or cuts.

In testimony whereof I have hereunto set my hand.

ALEXANDER PATERSON.

Witnesses:

JAMES K. BAKEWELL,
A. M. STEEN.