(No Model.)

# J. S. BIRT.

## PAN MAKING MACHINE.

No. 525,383. Patented Sept. 4, 1894.

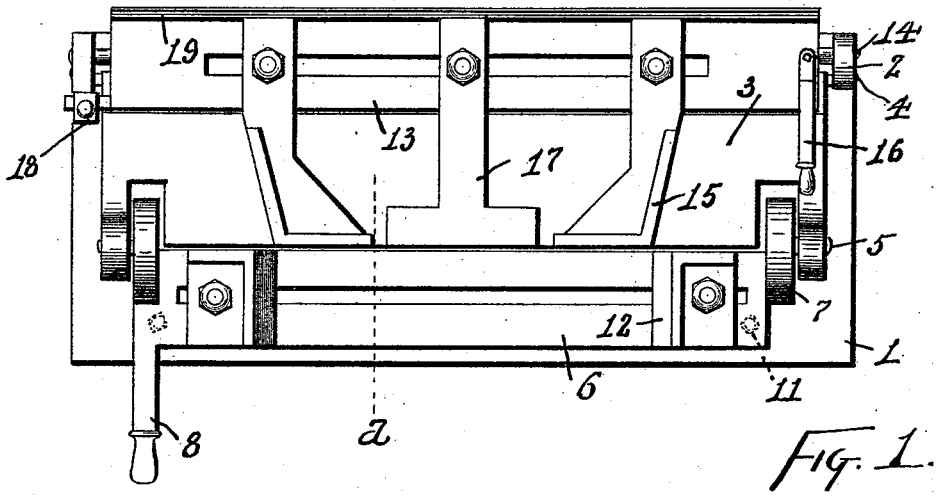


FIG. 1.

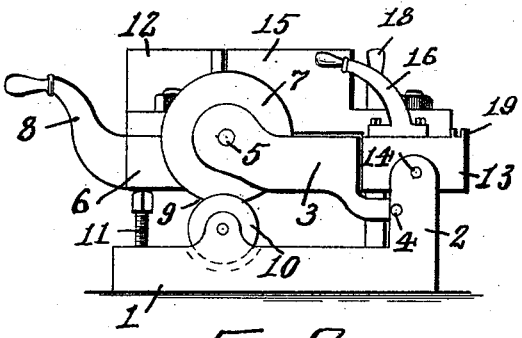


FIG. 2.

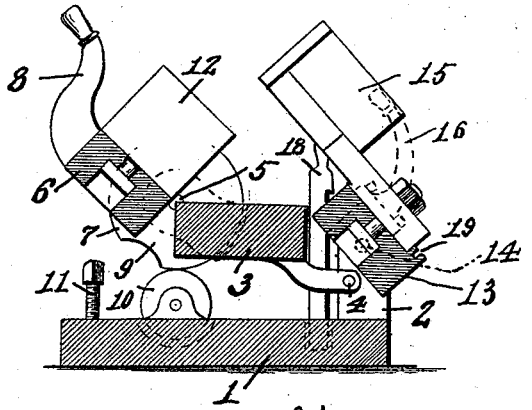


FIG. 3.

Witnesses:
E. R. Shipley.
C. M. Sheehan.

John S. Birt Inventor
by James W. See
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

JOHN S. BIRT, OF ARLINGTON, INDIANA, ASSIGNOR TO F. & L. KAHN & BROS., OF HAMILTON, OHIO.

## PAN-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 525,383, dated September 4, 1894.

Application filed June 16, 1894. Serial No. 514,734. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN S. BIRT, of Arlington, Rush county, Indiana, have invented certain new and useful Improvements in Pan-Making Machines, of which the following is a specification.

This invention relates to improvements in that class of machines employed by sheet metal workers in making rectangular baking and dripping pans, and the improvements will be readily understood from the following description taken in connection with the accompanying drawings, in which—

Figure 1, is a plan of a machine exemplifying my improvements; Fig. 2, an end view of the same, showing the right hand end of Fig. 1; and Fig. 3, a vertical transverse section of the machine in the plane of line *a* of Fig. 1, looking toward the left. Fig. 3 is designed to illustrate the capacity for movement of the various parts rather than the relative position of the parts during their movements.

In the drawings:—1, indicates a fixed base part: 2, housings rising therefrom at each end: 3, a long table, having a length in excess of the greatest length of sheet to be folded and having a width equal at least to the greatest width of flanging which is to be done on a pan: 4, pivots uniting this table at each end of the housings 2 so that the front edge of the table is capable of a rising and falling motion: 5, pivots at each end of the table 3, the common axes of these two pivots being in line with the upper front corner of the table 3: 6, a folder-bar lying along the front of the table 3, the top of the two being even, and the rear edge of the folder-bar coming against the front edge of the table 3, the folder-bar being united to the table by the pivots 5: 7, disks formed upon the folder-bar, at the pivots 5, and with their axes coincident with those pivots: 8, a lever handle projecting transversely from folder-bar 6, whereby the folder-bar may be rocked on pivots 5: 9, notches or recesses in the lower peripheries of the disks 7: 10, rests supported by the bed and having, preferably, the form of wheels, the upper periphery of these rest-wheels engaging the notches 9 in the disks of the folder-bar, the rests being of such height as, when the folder-bar is down, to support the folder-bar 6 and table 3 in a level position: 11, adjusting screws forming stops to limit the descent of the front edge of the folder-bar: 12, forming gages secured to the upper surface of folder-bar 6 and adjustable along the same, by means of bolt and slot arrangement, these forming gages being beveled upon their inner faces so that the space between them is wider at the top than at the bottom: 13, a back-bar forming, normally, a rearward continuation of the table 3: 14, pivots at each end of the back-bar 13, whereby it is supported in the housings 2 and rendered capable of being tipped back as indicated in Fig. 3: 15, forming gages secured to the upper surface of back-bar 13 by bolt and slot arrangement so as to be adjustable along the same, these gages projecting, normally, forwardly and somewhat above table 3 and to the front edge thereof, and presenting vertical front faces and having vertical outer faces converging forwardly at such angle as to correspond with the bevel on the inner faces of forming gages 12 when folder-bar 6 is turned back so that forming gages 12 come on top of table 3 and alongside of gages 15: 16, a lever handle attached to back-bar 13 by means of which the back-bar may be rocked upon its pivot 14: 17, a gage secured to the upper surface of back-bar 13 and projecting forward over and somewhat above table 3 and to the front edge of that table: 18, a lock in the form of a lever mounted on the base and hooking over a portion of the front edge of back-bar 13 and holding it down to normal position: and 19, an upwardly open narrow groove in the rear edge of back-bar 13.

Normally, folder-bar 6 and back-bar 13 are both down, they in conjunction with table 3, then forming a continuous flat surface. The sheet for the pan having been properly cut is now taken in hand and one of its edges set down into the groove 19 and the sheet bent backwardly and downwardly, thus forming a hooking flange upon the edge of the sheet for the reception of the wire which is to strengthen the pan. The other three edges of the sheet are then to be treated in the same way. If desired, this flanging of the rim of the pan may be deferred until after the sheet has been folded into pan form.

Back-bar 13 being tipped back lifts gages 15 and 17 from table 3 and one edge of the sheet is now laid upon table 3 with its folding line even with the front edge of the table, gages 12 being separated so as not to interfere with the width of the sheet being operated upon. Back-bar 13 is now turned down again to horizontal position, bringing gages 15 and 17 down over the rearwardly projecting margin of the sheet and the back-bar is then locked by lock 18, thus preventing the rising of those gages. Folder-bar 6 is now tipped up, resulting in a turning upward of the body of the sheet while its rearward margin is caught under the gages 15 and 17, thus producing one turned up flange to the pan. When folder-bar 6 was down, notches 9 engaged wheels 10, but the first effect of the tilting of the folder-bar was to cause disks 7 to ride upon the wheels and thus elevate the pivots 5 and, consequently, the front edge of table 3, thereby pinching the sheet between the table and the gages 15 and 17 at the initiation of the folding portion. The opposite edge of the pan is then turned up in a similar manner. Gages 15 are then set so that their front width will correspond with the interior width of the pan, gage 17 being removed if necessary, or a narrower one put in its place. Gages 12 are then set to correspond with the width of the pan. The end of the pan sheet is then presented over table 3 and under gages 15, as in the former case, and when folder-bar 6 is turned up, as before, the end flange becomes formed on the pan, gages 12 snugging the side flanges of the pan against the outer faces of gages 15, the outwardly projecting surplus corners of the pan becoming pressed against the upper surface of table 3 by the rear faces of gages 12 which have become turned over and down toward the table. The other end of the pan is then treated in the same way, leaving the pan with its four flanges but with its surplus corner metal projecting outwardly. The pan is then set edgewise transversely across table 3 with its end even with the front of the table and its side metal engaging under an end of gage 17, a corner of gage 17 then fitting up in an interior corner of the pan, one of the surplus corners of the pan thus projecting out forwardly over folder-bar 6. Folder-bar 6 is then turned up, thus turning the surplus corner metal up against the side of the pan. This operation is then repeated with the other three corners of the pan, leaving the pan complete so far as folding is concerned. The wire, properly bent, may then be placed in the rim flanging of the pan and the flanging swaged in by the usual plan but it may be done directly upon this machine, by getting gages 12 out of the way and laying the pan top down on folder-bar 6 with the wire part projecting over the front edge of table 3 and then working handle 16 to bring gages 15 or 17 down, thus swaging the rim of the pan inwardly around the wire. It will be observed that the machine, within its limits of capacity is suited for all sizes of pans, and that it performs all of the operations upon the pan except the riveting of the corners if corner riveting is to be done.

I claim as my invention—

1. In a pan forming machine, the combination, substantially as set forth, of a table, a folder-bar at the front edge thereof and attached thereto by pivots in line with said edge, a back-bar at the rear of the table and mounted on pivots at each end, forming gages secured to the back-bar and projecting over and to the front edge of the table, and handles for rocking the former-bar and back-bar upon their pivots.

2. In a pan forming machine, the combination, substantially as set forth, of a table, a folding-bar pivoted thereto, a back-bar supporting forming gages projecting over and to the front edge of the table, and an upwardly open groove in said back-bar.

3. In a pan forming machine, the combination, substantially as set forth, of a pivoted table, a folder-bar pivoted thereto, adjustable former gages mounted on the folder-bar, a back-bar pivoted at the rear of the table, two adjustable former gages mounted on the back-bar and projecting over the table and to the front edge thereof, and a former gage secured to the back-bar between the other two gages thereon and similarly projecting over the table.

JOHN S. BIRT.

Witnesses:
FRANK WALTMAN,
I. N. DECKER.