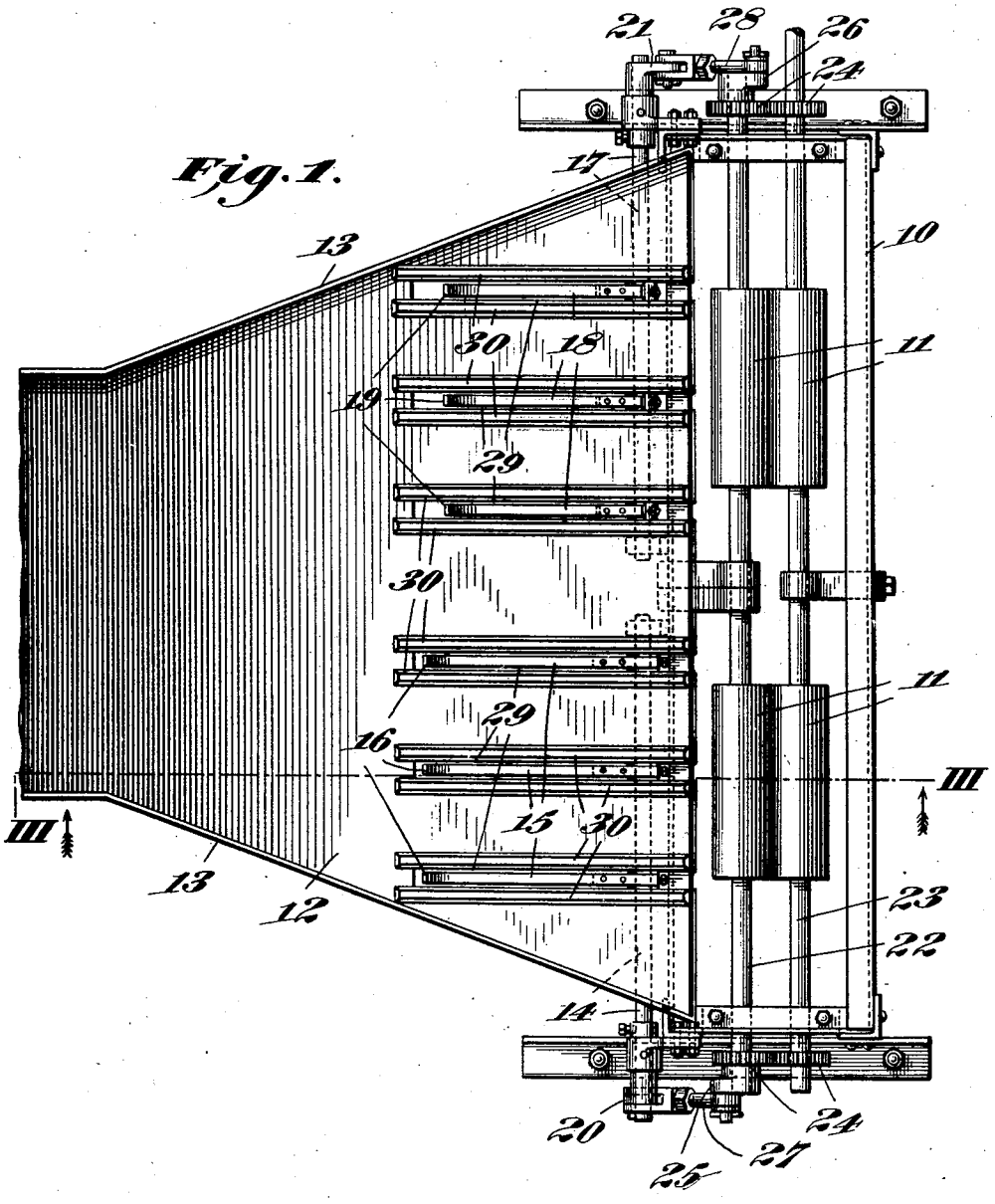
Feb. 3, 1931. L. C. STEELE 1,791,044

SHEET SPACING MECHANISM FOR TIN POTS

Filed June 10, 1927 2 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

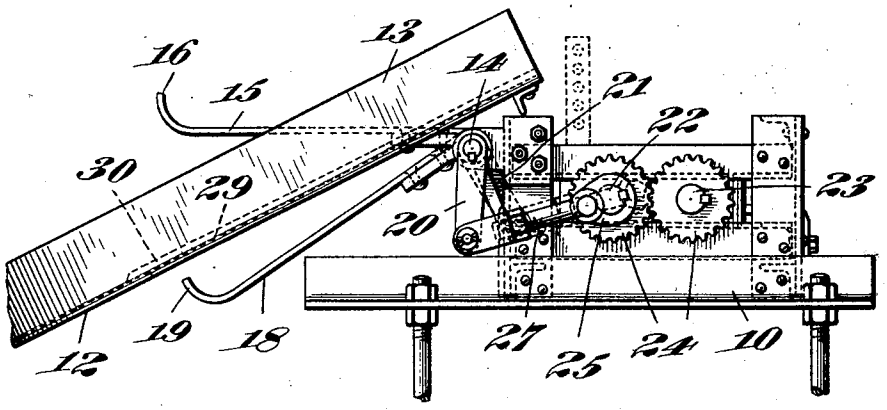
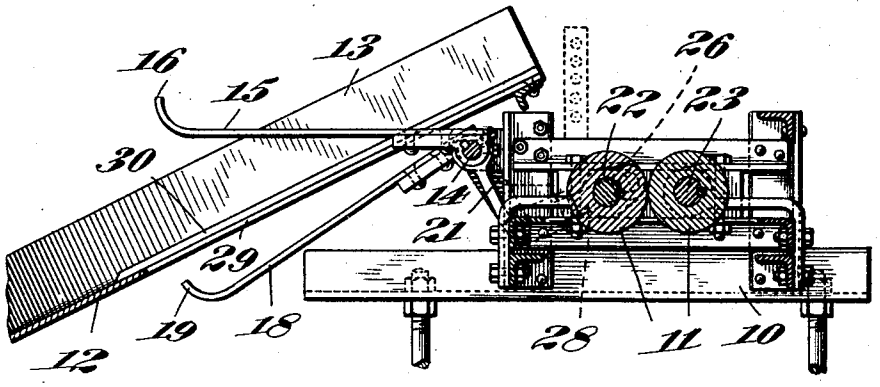


Fig. 3.



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UNITED STATES PATENT OFFICE

LAWRENCE C. STEELE, OF BALTIMORE, MARYLAND

SHEET-SPACING MECHANISM FOR TIN POTS

Application filed June 10, 1927. Serial No. 197,935.

My invention relates to sheet feeding devices and particularly to sheet feeding devices in connection with the manufacture of coated sheets.

One of the objects of my invention is to provide a mechanism for automatically stopping the advance of a sheet in such a manner that sheets fed in double line formation are momentarily caused to pause to allow the sheets to continue their advance in single file formation.

Another object of my invention is to provide a mechanism to automatically and intermittently space sheets advanced in a plurality of rows whereby they continue to advance in single file.

The novel features will be more fully understood from the following description and claims taken with the drawings in which:

Fig. 1 is a plan view of a feeding device embodying my invention;

Fig. 2 is a side elevation; and,

Fig. 3 is a cross section taken on line III—III in Fig. 1.

Referring to the drawings: 10 designates a frame and 11 catcher rolls journalled in said frame. The rolls 11 are preferably the usual appurtenances to a tinning machine and are provided for the purpose of catching the sheets from the finishing rolls of the machine. The sheets are fed through the tinning machine in double line formation and are advanced by the rolls 11 and when they are ejected from the latter they are caused to fall flat on a gravity conveyor or inclined chute 12. The chute 12, at its upper end, is broadened sufficiently to receive a pair of sheets side by side and its marginal walls 13 gradually converge toward each other, and thus define a passageway which is preferably only of sufficient width for the passage of a single sheet. A transverse shaft 14 is journalled to the frame 10 and is disposed beneath the upper end of the chute 12 and extends almost half way across the latter. Keyed to the shaft 14 is a set of spaced arms 15 which project laterally therefrom, and are provided with hooked ends 16 which extend upwardly. A second shaft 17 is journalled to the frame coaxially with the shaft 15. The second shaft extends almost half way across the other half of the chute 12 and is provided with spaced arms 18. The latter arms are also provided with vertically extending hooked ends 19. Keyed at the outer ends of the shafts 14 and 17 are downwardly extending lever arms 20 and 21, respectively, which are substantially equal as regards their length. The axles 22 and 23 of the rolls 11 extend at each end beyond the frame 10 and at their extending ends are geared together by means of the pinions 24. At each end of the axle 22 are keyed crank arms which are designated by the numerals 25 and 26, respectively, and are set at 180 degrees angularly with respect to each other. The crank arm 25 at one end is operatively connected to the lever arm 20 by means of the adjustable link 27, and the crank arm 26 is connected to the arm 21 by adjustable link 28 which is similar to the link 27.

The chute 12 is suitably slotted, as at 29, to allow for the passage of the arms 15 and 18 during their oscillation, as hereinafter described. To the upper face of the chute 12 are fixed skidways 30 which are disposed at the marginal edges of the slots 29 and are parallel thereto.

The axle 23 is connected to a suitable power source (not shown) for causing the rotation of the catcher rolls. When the catcher rolls are rotated in their feeding direction, the cranks attached to the ends of the latter shafts cause the oscillation of the shafts 14 and 17. On account of the cranks being set at 180 degrees in angular relation, the set of arms 15 oscillate in the opposite direction to the oscillation of the set of arms 18, so, it will be seen that when the arms 15 extend above the surface of the chute 12, the arms 18 are in their depressed position. During each revolution of the axle 22, the arms 15 and 18 are alternately raised and lowered through the slots 29.

In the operation of my device, sheets are delivered from the catcher rolls 11 in double formation and fall over toward the upper surface of the chute 12. Assuming that the arms 15 extend above the chute, the sheets fall flatly thereon and are retained by

the hooked ends 16. The set of arms 18 are in their depressed position, so the other sheet is free to fall on the skidways 30 and gravitate down the chute. The shafts 14 and 17 continuing their rotation, the arms 15 are gradually depressed and the arms 18 are gradually elevated, so that at a predetermined interval the sheet supported on the arms 15 is free to slide down the chute closely at the rear of the advanced sheet. The succeeding pair of sheets are delivered from the catcher roll and fall toward the chute at about the time the second sheet aforementioned has passed beyond the arms 15. At this period of the cycle, the arms 18 are being elevated above the chute and catch one of the second pair of sheets while the other of said pair is free to follow the preceding sheets in single file down the chute.

From the foregoing description, it will be seen that I have devised a simple and novel device which operates on a predetermined cycle to stop one sheet of a pair delivered in double formation, so, that the sheets may advance successively in single file.

While I have shown my invention in but one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various other changes and modifications without departing from the spirit thereof, and I desire, therefore, that only such limitations shall be placed thereupon as are imposed by the prior art or as are specifically set forth in the appended claims.

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

1. A sheet feeding device comprising a conveyor, a sheet delivery means, a movable stop member adapted to move angularly to the sheet supporting surface of said conveyor and engage a sheet, and means actuated by said delivery means for moving said stop out of engagement with said sheet.

2. A sheet feeding device comprising delivery rolls to deliver sheets in multiple formation a chute, a pair of oscillatory shafts, a stop member mounted on each of said shafts, and means to oscillate said shafts in opposite directions.

3. A sheet feeding device comprising a chute having slots formed therein, delivery rolls, means to rotate said rolls, a pair of ocillatory shafts, a stop member mounted on each of said shafts adapted to pass through said slots and project above said chute, and means to oscillate said shafts in opposite directions.

4. A sheet feeding device comprising a chute having slots formed therein, rolls having axles, gears interconnecting said axles, a crank arm fixed to each end of one of said axles, said crank arms being set angularly with respect to each other, a pair of oscillatory shafts each provided with a lateral hooked arm, said hooked arms being adapted to extend through said slots, a lever arm extending from each of said shafts, means to connect said lever arms to said crank arms, and means to rotate said rolls.

5. A sheet feeding device comprising a conveyor, means to deliver sheets in double formation to said conveyor, a movable member adapted to move angularly to the sheet supporting surface of said conveyor and to receive and hold a sheet, and means to move said member to a different angular position relative to the sheet supporting surface of the conveyor to deliver the sheet to the conveyor.

6. A sheet feeding device comprising a conveyor, means to deliver sheets in double formation to said conveyor, a pair of members operating in a predetermined alternating cycle to receive and contain said sheets and then to deliver them to the conveyor, whereby the sheets are fed successively on the conveyor in single file.

In testimony whereof I hereunto affix my signature.

LAWRENCE C. STEELE.