Feb. 6, 1934. G. C. KIMBALL 1,945,905

SHEET HANDLING MECHANISM

Filed May 20, 1932 3 Sheets-Sheet 1

Fig. 1.

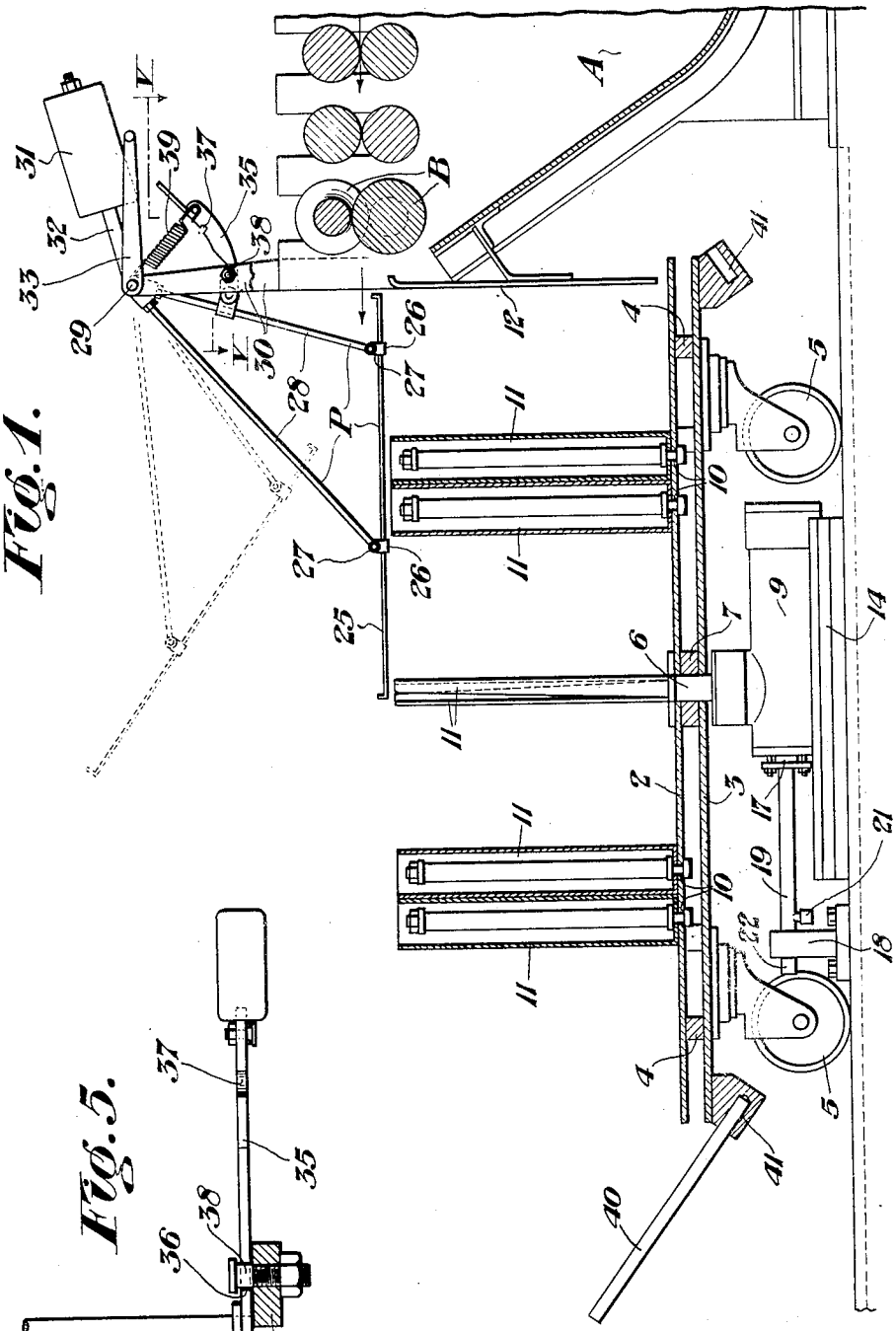


Fig. 5.

Inventor:

GEORGE COOK KIMBALL,

by: Musica & Rauber

his Attorneys.

Feb. 6, 1934. G. C. KIMBALL 1,945,905

SHEET HANDLING MECHANISM

Filed May 20, 1932 3 Sheets-Sheet 2

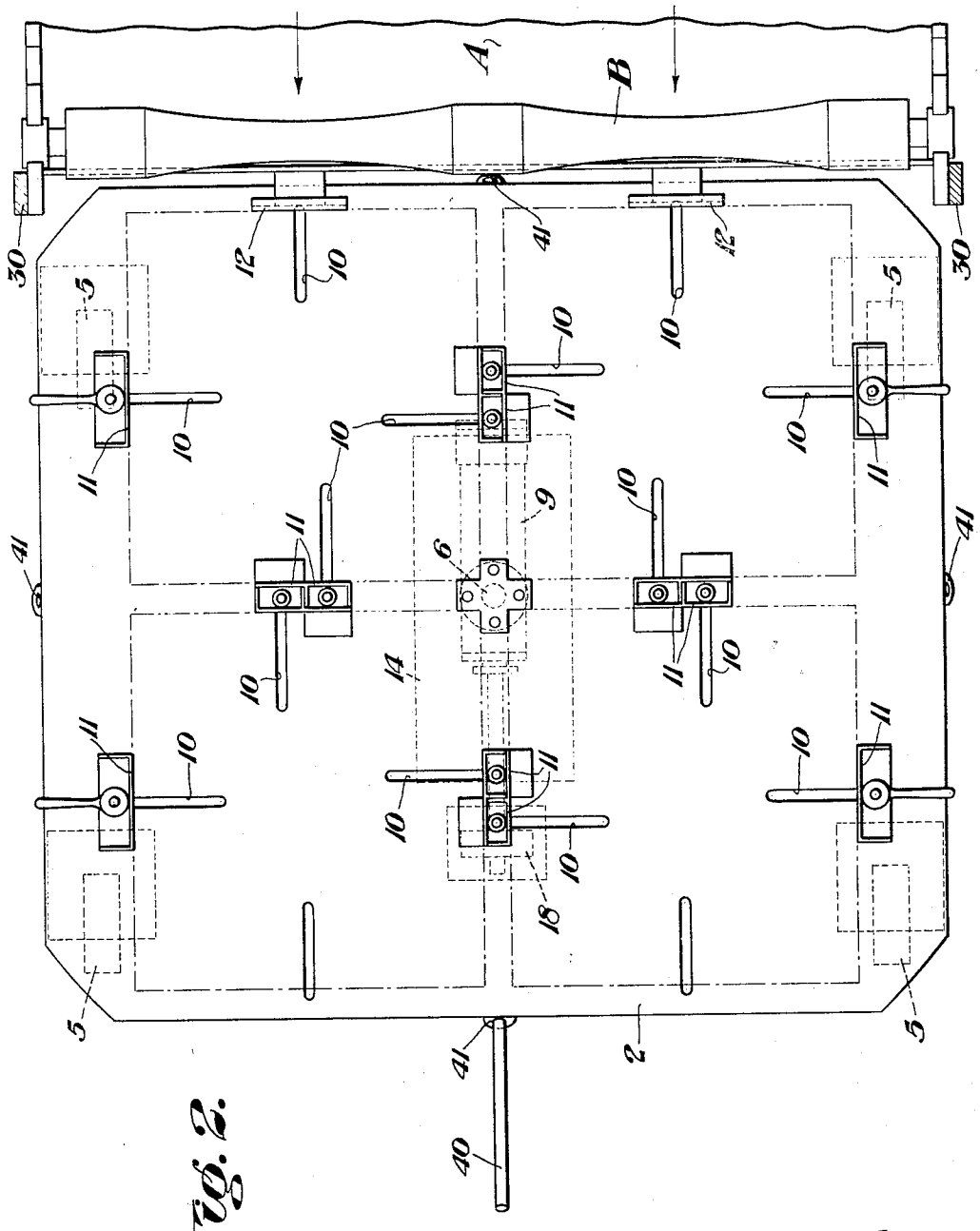


Fig. 2.

Inventor:
GEORGE COOK KIMBALL,
by: Masius & Rauber
his Attorneys

Feb. 6, 1934. G. C. KIMBALL 1,945,905

SHEET HANDLING MECHANISM

Filed May 20, 1932 3 Sheets-Sheet 3

Fig. 3.

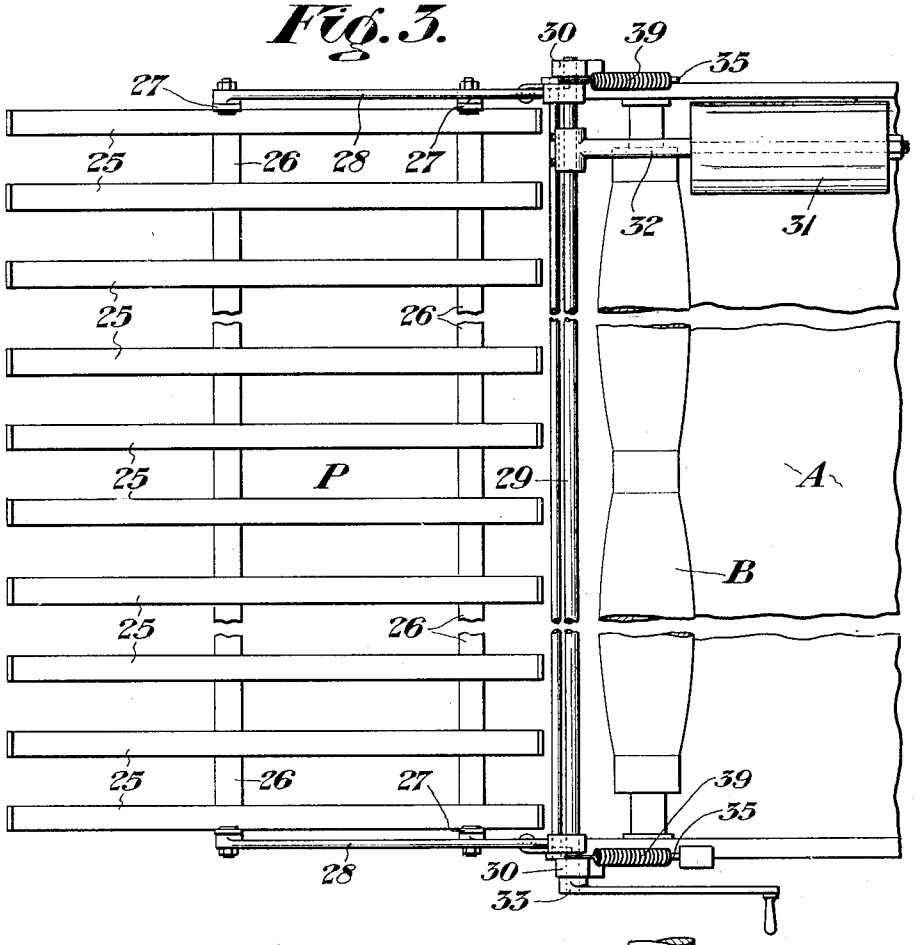
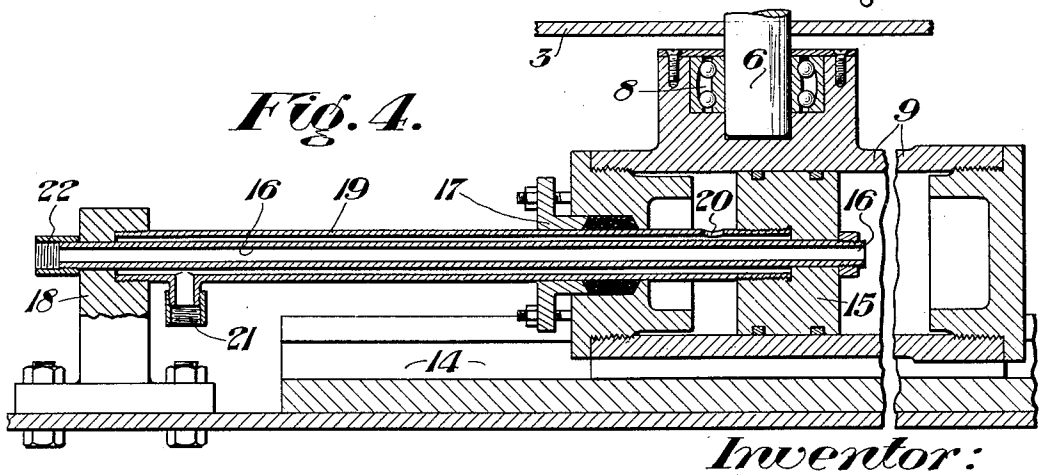


Fig. 4.



Inventor:

GEORGE COOK KIMBALL,

by: Macrae & Rauber

his Attorneys.

Patented Feb. 6, 1934 1,945,905

UNITED STATES PATENT OFFICE

1,945,905

SHEET HANDLING MECHANISM

George Cook Kimball, Pittsburgh, Pa., assignor to American Sheet and Tin Plate Company, a corporation of New Jersey

Application May 20, 1932. Serial No. 612,563

5 Claims. (Cl. 271—86)

This invention relates to sheet handling mechanism, and more particularly to mechanism for receiving polished tin plate discharged from branners and the like, and has for its object the provision of an improved turntable for receiving piles of tin plate from a multiple branner and the provision of a novel sheet or plate catching apparatus for temporarily storing the sheets or plates discharged from the branner while the table is being turned so that the branner may operate continuously.

Heretofore branners have generally been constructed to clean and polish a single row of tin plate, and relatively small turntables have been used on which a single pile of tin plate was formed on each side of their transverse centers, the table being rotated after one pile was completed so as to present the empty side of the table to the branner and the branner being stopped while the table was being turned.

Multiple branners have been developed and are now in use in which two, three and even more rows of sheets may be simultaneously fed through the branner for cleaning and polishing and it has, therefore, become necessary to provide turntables of multiple width or other means adapted to receive the tin plates discharged from the multiple rows passing through the branners. Due to the capacity of the multiple branners and the multiple tin pots and other mechanism in the train, stopping of the mechanism while the piles of plate are being removed results in a material loss in production.

The present invention provides a means whereby the branners, tin pots and other mechanism may be continuously operated while the turntables are being turned to present an unloaded side to the branners.

In the drawings:

Figure 1 is a sectional side elevation through a sheet handling mechanism constructed in accordance with this invention.

Figure 2 is a plan thereof, with the basket or platform removed for clearness.

Figure 3 is a plan showing the basket or platform in its loaded position, and with the turntable removed.

Figure 4 is an enlarged sectional detail through a turntable operating mechanism.

Figure 5 is a detailed sectional view on the line V—V of Figure 1.

Referring more particularly to the drawings, the letter A designates the branner as a whole, which is of standard construction and is provided with the usual curved exit or discharge rolls B. The turntable, which is located adjacent the discharge end of the branner A, is composed of a platform composed of spaced plates 2 and 3 which are held in spaced relation by spacer blocks 4. The platform is supported on casters 5 at its four corners and is pivotally mounted at its center by a pin 6 which extends through a suitable bearing block 7 in the platform mounted in an anti-friction bearing 8 carried by a fluid pressure cylinder 9.

The top plate 2 is provided with a plurality of slots 10 to receive the adjustable guides 11 which are adapted to be adjusted in various positions to guide the plates as they are piled on the platform. Suitable guides 12 are rigidly attached to the branner to properly adjust the rear edge of the pile of plates as they are discharged onto the turntable from the branner.

The fluid pressure cylinder 9 is mounted for reciprocating movement in a guideway 14 on the floor, and is provided with a piston 15 mounted on a tubular rod 16 which extends rearwardly through a stuffing box 17 and is anchored to a fixed support 18. A conduit 19 surrounds the tubular piston rod 16 and extends into the cylinder 9 through the stuffing box 17 and has its forward end mounted in the piston 15. A port 20 is provided in the conduit 19 which discharges into the chamber portion of the cylinder 9 to the rear of the piston 15. The conduit 19 is provided with a coupling end 21 at which a suitable source of fluid pressure is attached and the tubular piston rod 16 is provided with a coupling portion 22, also to which a source of fluid pressure may be attached. It will be understood, of course, that the fluid pressure admitted to the tubular piston rod 16 and the conduit 19 will be admitted through suitable valves so that the fluid pressure will be admitted through the rod or conduit at one time and discharged at another.

The table platform is provided with socket blocks 41 adjacent its back and front edges to receive a bar 40 for turning the table. A swinging basket or platform P is provided on the discharge end of the branner for receiving and storing the tin plate discharged from the branner during the time the turntable is being turned to present the empty side to the branner. The basket or platform P is composed of a series of flat bar slats 25 which are secured in spaced relation by transverse bars 26 which have their ends turned up to form ears 27.

Supporting rods 28 have their lower ends pivotally connected to the ears 27 and have their upper ends secured to a shaft 29 which is jour-

naled in suitable bearings in supporting brackets 30 carried by the forward end of the branner A. A counterweight 31 is mounted on a lever 32 secured to the shaft 29 and is of such weight as to normally counterbalance the basket or platform P. A hand lever 33 is secured to the shaft 29 and is adapted to be operated to swing the basket or platform P into or out of plate receiving position. Suitable latch bars 35 are mounted on the rear supporting rods 28 and are provided with notches 36 and 37 which are adapted to cooperate with latch lugs 38 to hold the basket or platform in its extreme positions. The latch bars 35 are normally biased toward the latch lugs 28 by springs 39.

After the piles of tin plate have been formed on the side of the transverse center line of the turntable next to the branner the basket or platform P will be lowered into plate receiving position and the cleaned and polished tin plate will be discharged onto the basket or platform P while the turntable is rotated to present its empty side to the branner A. In order to turn the turntable, the entire table with the piles of tin plate on it is moved away from the branner by admitting fluid pressure through the conduit 19 and into the space to the rear of the piston 15, which fluid pressure will cause the cylinder 9 to move rearwardly relative to the piston 15 and, due to the pivotal connection between the platform of the turntable and the cylinder 9, the table will move rearwardly away from the branner A with the cylinder 9. After the table has been moved away from the branner A the distance of the stroke of the cylinder 9, a suitable bar 40 may be inserted in the sockets of blocks 41 provided on the turntable platform and the table may be readily rotated to present the empty side to the branner. After the turntable has been rotated fluid pressure will be admitted through the hollow piston rod 16 to move the cylinder 9 in reverse direction or toward the branner A, and the turntable will be compelled to move with cylinder 9 to its plate receiving position adjacent the branner A.

After the turntable has been turned and repositioned to receive the cleaned plates from the branner, the operator will move the basket or platform P upwardly out of plate receiving position and will remove the plates accumulated on the basket and place then on one of the piles already formed or being formed on the turntable.

While I have shown and described one specific embodiment of my invention it will be understood that I do not wish to be limited thereto, since various modifications may be made without departing from the scope of my invention, as defined in the appended claims.

I claim:

1. The combination with a sheet delivery apparatus of a turntable for receiving the sheets discharged from said delivery apparatus, said table comprising a wheeled plate supporting platform, means for guiding sheets onto said platform, a fluid pressure operating cylinder for moving said platform toward and away from said delivery apparatus to permit rotation of said platform and a pivotal connection between said table and said cylinder.

2. The combination with a sheet delivery apparatus of a turntable for receiving the sheets discharged from said delivery apparatus at points on each side of its transverse center line, means for guiding sheets onto said turntable, said table receiving the sheets on one side of its transverse center line until a pile is formed and then being rotated about its central axis for 180 degrees to receive the sheets on the other side of its transverse center line and means carried by said delivery apparatus for receiving and storing the sheets discharged from said delivery apparatus while said table is being rotated.

3. The combination with a sheet delivery apparatus of a turntable for receiving the sheets discharged from said delivery apparatus at points on each side of its transverse center line until a pile is formed and then being rotated about its central axis for 180 degrees to receive the sheets on the other side of its transverse center line and a swinging platform mounted on said delivery apparatus for receiving and storing the sheets discharged from said delivery apparatus while said table is being rotated, means for guiding said sheets onto said turntable, means for normally biasing said platform out of sheet receiving position and means for swinging said platform into sheet receiving position.

4. The combination with a sheet delivery apparatus of a turntable for receiving the sheets discharged from said delivery apparatus at points on each side of its transverse center line, means for guiding said sheets onto said turntable, said table receiving the sheets on one side of its transverse center line until a pile is formed and then being rotated about its central axis for 180 degrees to receive the sheets on the other side of its transverse center line and a swinging platform mounted on said delivery apparatus for receiving and storing the sheets discharged from said delivery apparatus while said table is being rotated, means for normally biasing said platform out of sheet receiving position, means for swinging said platform into sheet receiving position and latch means for holding said platform in either extreme position.

5. The combination with a sheet delivery apparatus of a turntable for receiving the sheets discharged from said delivery apparatus at points on each side of its transverse center line, said table receiving the sheets on one side of its transverse center line until a pile is formed and then being rotated about its central axis for 180 degrees to receive the sheets on the other side of its transverse center line and a swinging platform mounted on said delivery apparatus for receiving and storing the sheets discharged from said delivery apparatus while said table is being rotated, counterweight means for normally biasing said platform out of sheet receiving position and means for swinging said platform into sheet receiving position.

GEORGE COOK KIMBALL.