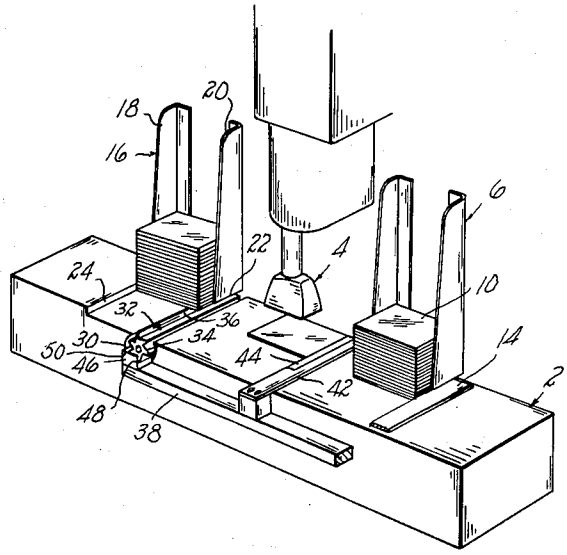
June 5, 1956 J. W. MALLORY 2749,120

APPARATUS FOR STACKING PLATES

Filed Feb. 1, 1955 2 Sheets-Sheet 1

FIG. 1



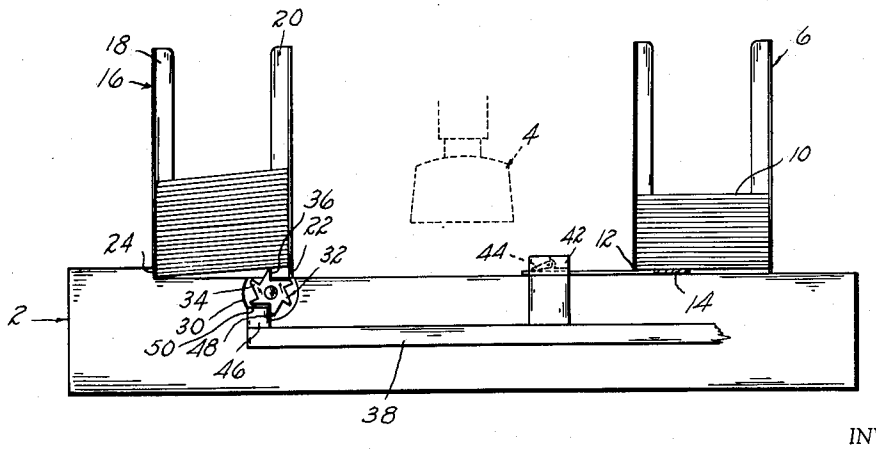


FIG. 2

INVENTOR
JOHN W. MALLORY

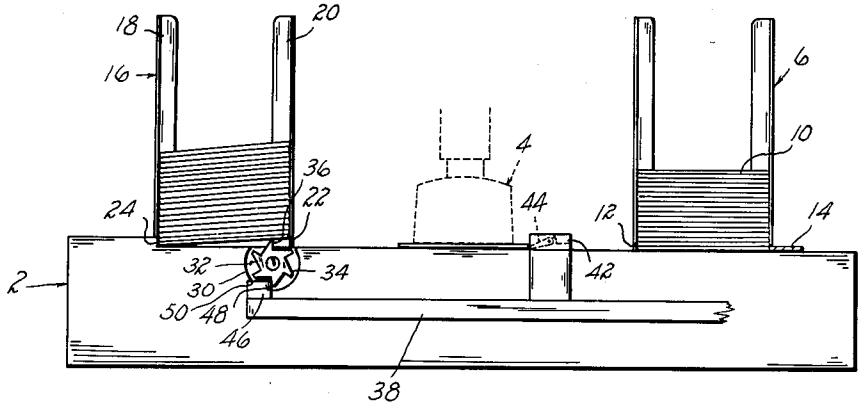
BY Lindsey and Pruitzman
ATTORNEYS

June 5, 1956 J. W. MALLORY 2749,120

APPARATUS FOR STACKING PLATES

Filed Feb. 1, 1955 2 Sheets-Sheet 2

FIG. 3



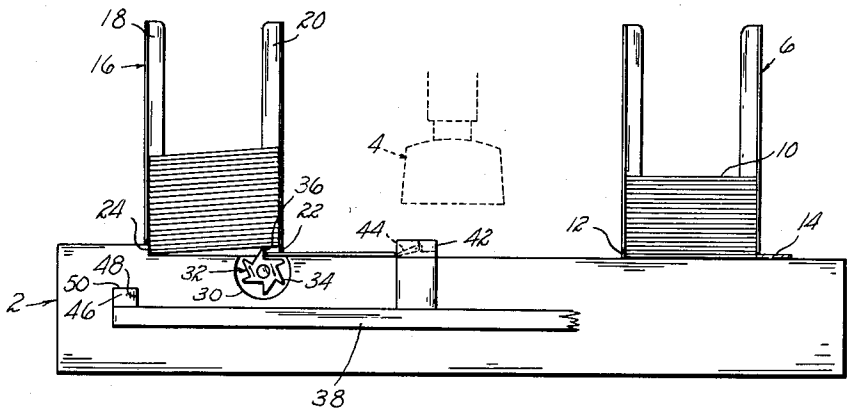


FIG. 4

INVENTOR
JOHN W. MALLORY

BY
Lindsey and Prutzman
ATTORNEYS

United States Patent Office 2,749,120 Patented June 5, 1956

2,749,120

APPARATUS FOR STACKING PLATES

John W. Mallory, West Hartford, Conn., assignor to The Parker Stamp Works, Inc., Hartford, Conn., a corporation of Connecticut

Application February 1, 1955, Serial No. 485,565

3 Claims. (Cl. 271—87)

The present invention relates to apparatus for stacking plates or platelike objects successively one below the other.

The principal object of the present invention is to provide apparatus for stacking plates in the aforesaid manner, which is simple and inexpensive in construction, which is completely automatic in operation and which is capable of effectively stacking plates at a rapid rate.

Other objects will be in part obvious, and in part pointed out more in detail hereinafter.

The invention accordingly consists in the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereafter set forth and the scope of the application of which will be indicated in the appended claims.

In the drawings:

Figure 1 is a perspective view of a machine provided with a plate-stacking mechanism constructed in accordance with the present invention;

Figure 2 is an enlarged front elevation view of the structure shown in Figure 1;

Figure 3 is a view similar to Figure 2, showing an initial phase in the cycle of operation of the stacking mechanism; and

Figure 4 is a view similar to Figure 3 showing a later phase in the cycle of operation.

Referring to the drawings, a plate-stacking apparatus constructed in accordance with the present invention is illustrated in connection with a machine for stamping nameplates. The machine includes a longitudinally extending bed **2** and a stamping head **4**. To the right of the stamping head **4** is a supply magazine **6** which holds a stack of unstamped plates **10**, and through an opening **12** in the bottom of which plates are successively fed beneath the stamping head by a reciprocal push bar **14**. After stamping, the plates are transferred to a stacking magazine at the left of the stamping head by a flap **44** pivotally mounted on a pusher **42** carried by a reciprocal slide **38**. The stacking magazine consists of a pair of longitudinally spaced angle-shaped upright posts **18, 20** supported on the bed and arranged to hold a stack of plates. The post **20** nearest the stamping head is cut away at its lower end to form an entrance **22** for the magazine, which is aligned with the surface of the bed. At the lower end of the other post **18** the bed has an upstanding shoulder **24** which faces the entrance **22** and together with the post **18** forms a stop for plates delivered into the magazine.

In accordance with the invention, there is provided in a recess **30** in the bed beneath the stacking magazine a ratchet roller **32**, the teeth **34** of which extend the width of the bed. Each of the teeth is of such a length that when rotated to its uppermost or zenith position it extends above the surface of the bed sufficiently to engage and support the bottom plate in the stacking magazine **16** with its trailing edge above the entrance to the magazine, as shown in Figure 2. Each tooth has a radial trailing face **36** which in this position is disposed normal to the surface of the bed and is adapted to be engaged by the leading edge of a plate fed into the magazine by the slide.

Arranged to cooperate with the roller **32** is a block or projection **46** on the left-hand end of the slide. The block forms an upstanding shoulder **48** which, during movement of the slide in a right-hand direction, engages the trailing face **36** of the lowermost tooth on the roller and rotates the roller counterclockwise to a position such that when the slide is at its extreme right-hand or plate-receiving position one tooth of the roller will be disposed in its zenith position. The block also forms an upwardly facing shoulder **50** which in the plate-receiving position of the slide engages the leading face of the tooth next adjacent the lowermost tooth, as shown in Figure 3, and locks the roller **32** against rotation.

In the operation of the apparatus, as the slide moves to the right, the block turns the roller so that one tooth moves to its zenith position and tilts the plates in the magazine so as to elevate the trailing edge of the bottom plate above the magazine entrance **22**. The engagement of the shoulders **48, 50** with the leading and trailing faces of adjacent teeth on the roller locks the roller against rotation during operation of the stamping head and holds the zenith tooth in proper plate-receiving position. The push bar **14** moves a plate from the supply magazine **6** to stamping position by passing it beneath the pusher **42** and pivotal flap **44**. After the plate is stamped, the slide moves to the left and the pusher **42** moves the plate from beneath the stamping head and feeds it into the entrance of the magazine **16**.

As the plate is pushed through the magazine entrance **22** its leading edge slides freely beneath the trailing edge of the upraised bottom plate in the magazine and engages the trailing face **36** of the zenith tooth. As the slide continues to move to the left, the plate rotates the roller sufficiently to slide easily over the top of its teeth **34** and move completely under the stack. The partial rotation of the roller which takes place as the freshly inserted plate passes over it, displaces the next tooth in turn on its underside into the path of the block **46** so that, as the slide returns to the right, the shoulder **48** engages this next tooth and indexes the roller enough to move another tooth to its zenith position, thereby conditioning the magazine for the smooth reception of the next plate.

Thus it may be seen that the invention provides an effective and automatic mechanism of simple construction for rapidly stacking any desired number of plates. While the invention has been illustrated in connection with a plate stamping machine, it will be understood that this particular application is by way of illustration only, since the stacking mechanism is manifestly suitable for stacking a variety of plates or platelike objects.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

I claim:

1. In an apparatus for stacking plates successively one below the other, a bed having a plate supporting surface, a magazine rising from the bed and into which the plates are adapted to be successively fed along said bed, a slide

having a pusher for moving plates along the bed into the magazine and reciprocal relative to the bed between a plate-receiving position and a plate-delivering position, a roller journaled beneath the magazine having projecting teeth arranged to be moved successively into a zenith position to engage the bottom plate in the magazine and support said bottom plate with the trailing edge thereof above said bed, and means associated with the slide arranged to successively rotate the roller to position successive teeth thereof in the zenith position upon movement of the slide to its plate-receiving position.

2. In an apparatus for stacking plates successively one below the other, a bed having a plate-supporting surface, a magazine rising from said surface and into which the plates are adapted to be successively fed along said surface, a reciprocal slide having a pusher movable over said bed for feeding the plates into the magazine over said surface and movable between a plate-receiving position and a plate-delivering position, a roller journaled beneath said magazine and below the plane of said surface and having axially extending teeth successively movable into a zenith position in engagement with the bottom plate in the magazine and supporting said bottom plate with its trailing edge above the bed, each of said teeth having a radial trailing face against which the leading edge of a plate is adapted to engage as the pusher feeds the plate into the bottom of the magazine, and a shoulder on said slide successively engageable with the teeth of the roller

so as to move successive teeth into zenith position upon successive movements of the slide into plate-receiving position.

3. In an apparatus for stacking plates successively one below the other, a bed having a plate-supporting surface, a magazine rising from said surface and into which the plates are adapted to be successively fed along said surface, a reciprocal slide having a pusher movable over said bed for feeding the plates into the magazine over said surface and movable between a plate-receiving position and a plate-delivering position, a roller journaled beneath said magazine and below the plane of said surface and having axially extending teeth successively movable into a zenith position in engagement with the bottom plate in the magazine, each of said teeth having a leading face and having a radial trailing face against which the leading edge of a plate is adapted to engage as the pusher feeds the plate into the bottom of the magazine, an upstanding shoulder on the slide successively engageable with the trailing face of successive teeth of the roller so as to position the roller with one of its teeth at its zenith position upon successive movement of the slide into plate-receiving position, and an upwardly facing shoulder on the slide engageable with the leading face of a tooth on the roller in the plate-receiving position of the slide to prevent rotation of the roller.

No references cited.