July 11, 1944. H. BOBST 2,353,214

AUTOMATIC BLANK FEEDER

Filed Sept. 17, 1941

Fig. 1.

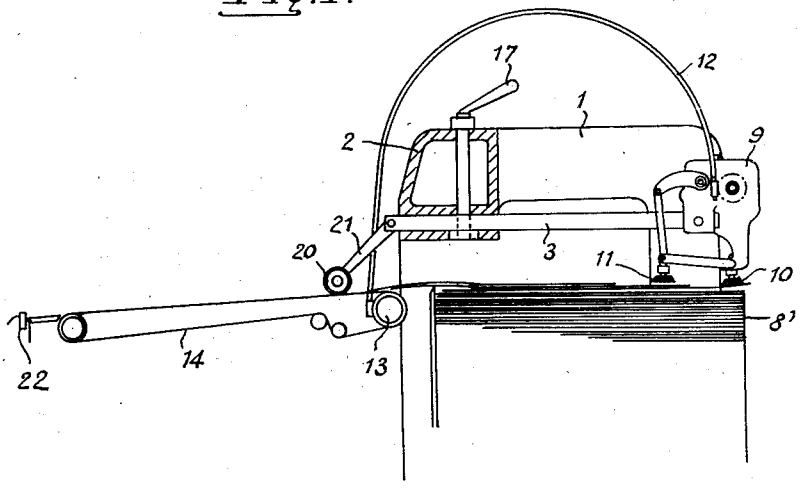
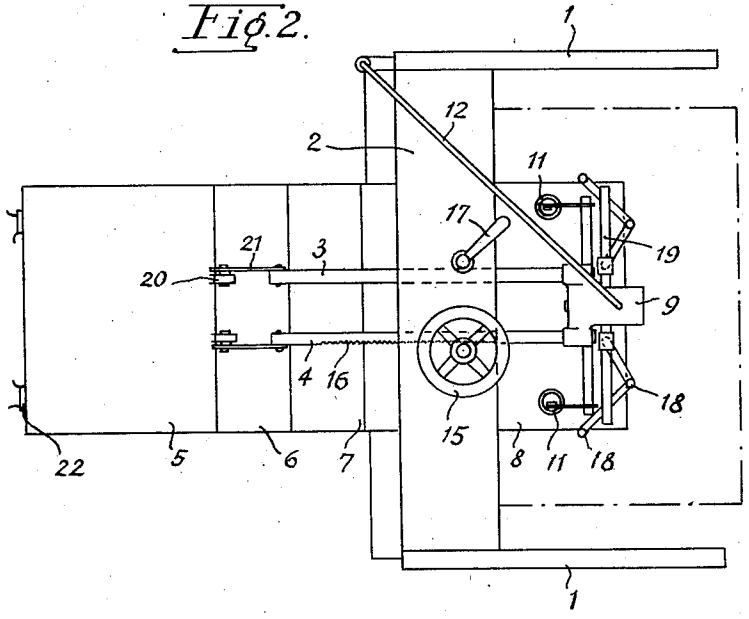


Fig. 2.



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Patented July 11, 1944 2,353,214

UNITED STATES PATENT OFFICE

2,353,214

AUTOMATIC BLANK FEEDER

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Application September 17, 1941, Serial No. 411,143
In Switzerland October 8, 1940

5 Claims. (Cl. 271—11)

In automatic blank feeders in which separating and feeding operations take place in front of the pile with regard to feeding direction, it is easy to dispose the separating and feeding means anywhere over the pile, so that the back of the pile is accessible for controlling and loading.

In some feeders, it is preferred to dispose at least the feeding means for the blanks at the back of the pile; in stackers, it is necessary to separate and transport the blanks by catching them near the rear edge. Then the separating and feeding means are commonly supported by tie bars of the blank feeder frame, the rigidity of which being more often ensured by auxiliary tie bars. If the machine is big and high enough, it is possible for the operator to pass under said organs in order to control and load the pile, but if the machine works middle-sized sheets or is of a low construction, the above mentioned organs are a great hindrance.

The feature of the present invention is an arrangement of the separating devices at the extremity of bearing means extending only in feeding direction and able to slide in said direction in order to adjust the separating devices with regard to the size of the blanks.

The annexed drawing, showing a preferred embodiment of a stacker according to the present invention, shows how the adopted disposition authorizes free access to the rear part of the pile.

Fig. 1 is an axial cross-section of said embodiment in the direction of feeding. In the stacker shown, the feeding means are integral with the separating means.

Fig. 2 is a corresponding plane view but separating and transporting mechanisms occupying another position than in Fig. 1, the size of sheets to be fed being not the same.

The shown feeder is made of a frame which lateral parts are joined together by a strong beam 2 placed over the edge by which sheets are leaving the pile, of whatever size they may be. Two bars 3 and 4 can slide in said beam and in the transporting direction of the overlapping sheets such as 5, 6, 7 of Fig. 2. Said sheets are drawn out of the pile 8 of a relatively small size (Fig. 2). In case of Fig. 1, said sheets are drawn out of pile 8' of a relatively big size occupying a width nearly equal to the length of beam 2.

To the back ends of bars 3 and 4 is placed a casing 9 containing a part of mechanisms controlling the separator 10 and the feeding organs 11. The said mechanisms are driven by a flexible shaft 12 driven by a shaft 13 over which are running feeding bands 14.

By means of a hand-wheel 15 acting on a rack 16 of bar 4, the bars 3 and 4 together with casing 9, and all organs depending of, can be moved or be stopped in any position by means of a lever 17 permitting to immobilize it.

A comparison with Figs. 1 and 2 shows that once the casing 9 is in position for the work of separating and feeding means, near the back edge of the pile, it is easy to approach as well the back side as the two lateral sides of said pile whatever may be the size of the sheets. Surveillance of the described organs and loading of the pile are greatly facilitated.

Fig. 2 shows further the disposition of abutments 18 ensuring the registering of the rear edges of the pile. Said abutments are supported by means of a transverse bar 19 also fixed at the end of supporting bars 3 and 4 by means of casing 9. Said abutments can slide in a transverse direction, in order to adapt their positions to the length of the sheets to be fed.

The free ends of bars 3 and 4, on feeding side, support idlers 20 disposed on arms 21 and intended to ensure a correct feeding of sheets to the front registering marks. For this purpose the idlers are pressing on the back part of the blanks during feeding. Just when the blanks come against the said marks, it is necessary to set free the back edge that usually needs a corresponding adjustment of the idlers in accordance with each size. According to present invention, the idlers are displaced by means of the bars 3 and 4, i. e. come automatically in a good position when displacing said bars in order to adapt the position of casing 9 to the size of the blanks.

Instead of two bars 3 and 4, it is possible to foresee more than two or only a single bearing organ. The means for displacing or immobilizing said bars could also differ from that is described and the flexible shaft be replaced by an universal joint or by any means permitting a displacement of driven parts. Finally it is not necessary to join the separating and feeding means in a same casing, the feeder being not necessarily of a stacker type.

What I claim is:

1. In an automatic blank feeder having support means, the combination of a frame including a stationary transversely arranged girder-like member located so as to overlie in spaced relation the front of a stack of blanks to be fed,

at least one rod extending slidably in the feeding direction through said member substantially perpendicularly to the axis thereof, a casing attached to the rear extremity of said rod and blank separating devices carried by said casing and slidable with it and said rod relative to said member to allow adjustment of the separating devices according to the size of blanks to be fed.

2. In an automatic blank feeder having support means, the combination of a frame including a stationary transversely arranged girder-like member located so as to overlie in spaced relation the front of a stack of blanks to be fed, a plurality of rods slidably extending in the feeding direction through said member substantially perpendicularly to the axis thereof, a casing attached to the rear extremities of said rods, blank separating and feeding devices carried by said casing and manual means for moving said rods relative to said member to permit adjustment of the said separating and feeding devices according to the size of blanks to be fed.

3. In an automatic blank feeder having support means, the combination of a frame including a stationary transversely arranged girder-like member located so as to overlie in spaced relation the front of a stack of blanks to be fed. at least one rod extending slidably in the feeding direction through said member substantially perpendicularly to the axis thereof, a casing attached to the rear extremity of said rod, blank separating and feeding devices carried by said casing, a transverse bar carried by said casing and a rear pile stop slidably carried on said transverse bar.

4. In an automatic blank feeder having support means, the combination of a frame including a stationary transversely arranged girder-like member located so as to overlie in spaced relation the front of a stack of blanks to be fed, at least one rod extending slidably in the feeding direction through said member substantially perpendicularly to the axis thereof, a casing attached to the rear extremity of said rod and blank separating devices carried by said casing and slidable with it and said rod relative to said member to allow adjustment of the separating devices according to the size of blanks to be fed and means carried by the front end of said rod for ensuring a correct feed of the blanks to front registering marks.

5. In an automatic blank feeder having support means, the combination of a frame including a stationary transversely arranged girder-like member located so as to overlie in spaced relation the front of a stack of blanks to be fed, a plurality of rods slidably extending in the feeding direction through said member substantially perpendicularly to the axis thereof, a casing attached to the rear extremities of said rods, blank separating and feeding devices carried by said casing and manual means for moving said rods relative to said member to permit adjustment of the said separating and feeding devices according to the size of blanks to be fed, arms carried by the front ends of said rods and idler rolls in said arms for engaging the rear ends of the blanks being fed.

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