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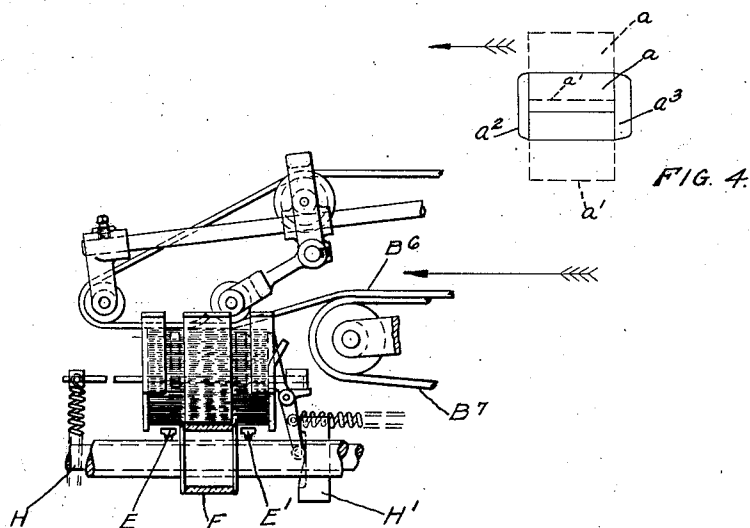
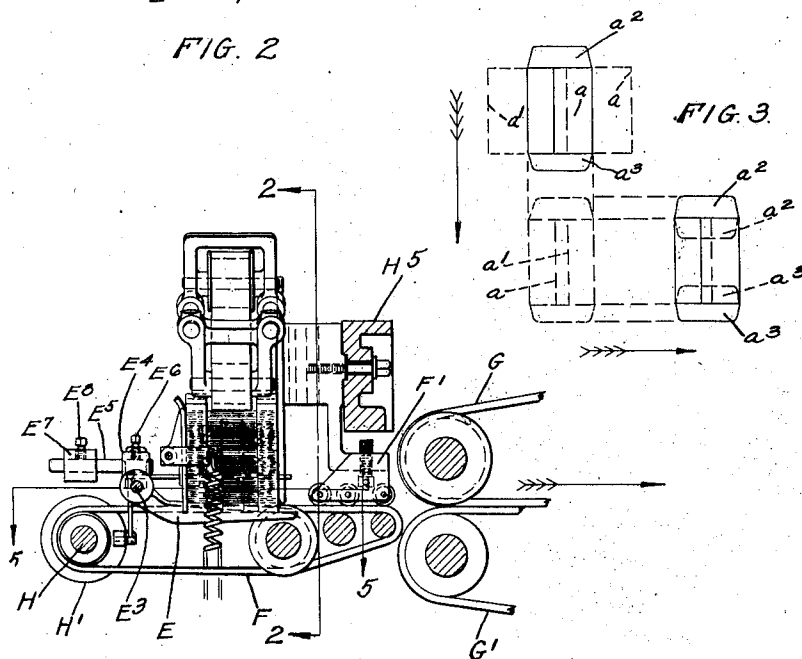
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MACHINE FOR FEEDING BLANKS

Original Filed June 15, 1923

2 Sheets-Sheet 1



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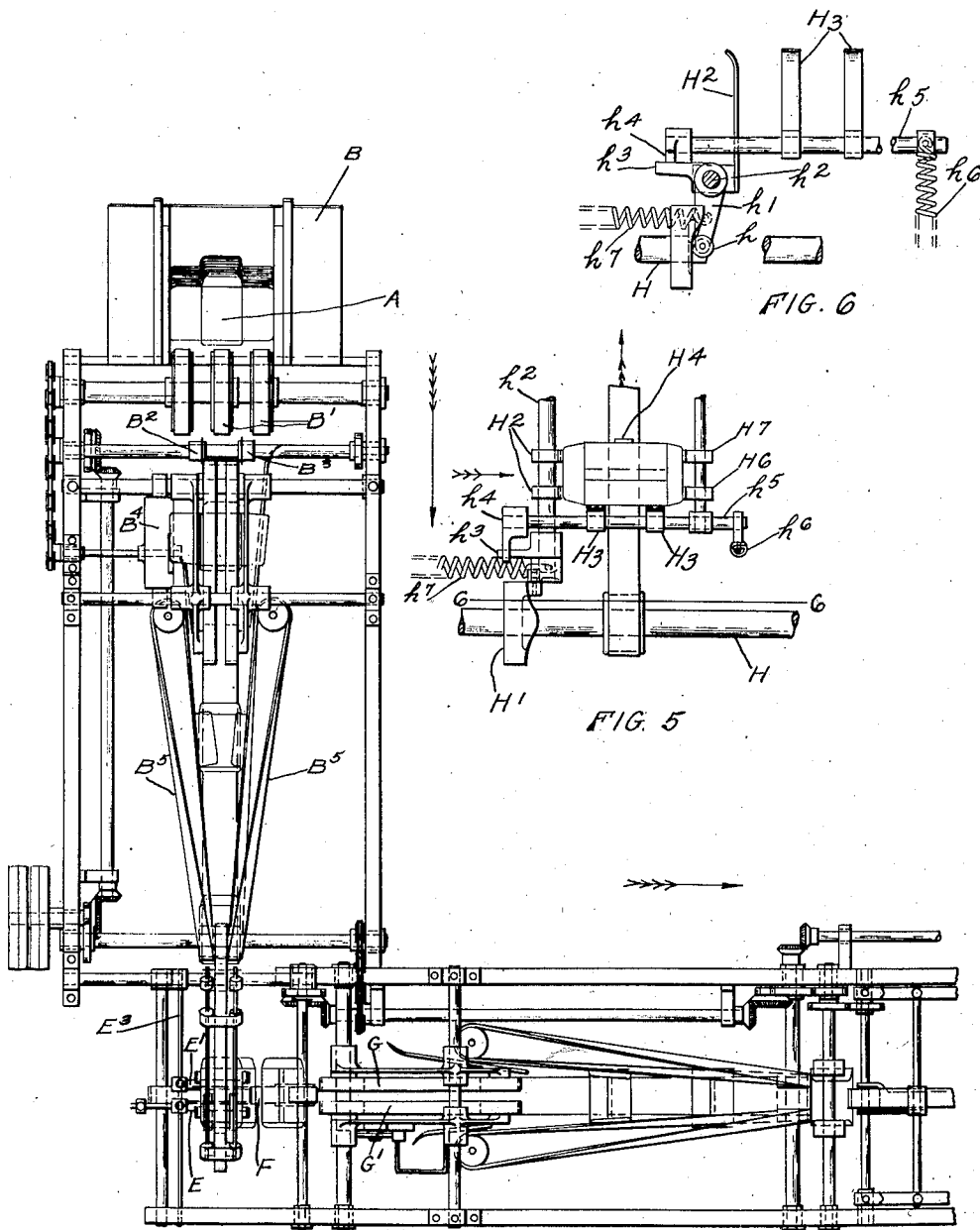


FIG. 7

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MACHINE FOR FEEDING BLANKS.

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The principal object of my invention is to provide a machine for feeding blanks in which the blanks are fed in one direction one by one and then fed one by one in a direction substantially transverse to the first direction and while my invention is especially useful in connection with making envelopes it is also useful for many other purposes.

A feature of my invention is feeding in one direction to one end of a pile of blanks, for example, to the top end, and then feeding transversely from the bottom end and I have illustrated this form although my invention contemplates feeding to the bottom and then transversely from the top.

Another feature of my invention is that the transverse feeding is untimed, that is, the mechanism which starts the blank in the transverse direction is at all times available to act while heretofore such starting mechanism has been available only at intervals and usually has advanced the blank transversely and then has withdrawn to engage the next blank with a consequent lapse of considerable time between the transverse starting of one blank and such starting of the next blank, whereas with my invention one blank may follow another transversely as quickly as desired with the result that the speed of output is tremendously increased.

Another feature is that the transverse feed may be dependent upon the number of blanks in the pile.

Another feature is that the first feed, as distinguished from the transverse feed, may be untimed and I do away with the necessity of squaring up mechanism in connection with the first feed.

Still another feature is means for squaring up the blanks preparatory to the transverse feeding but without delay to such transverse feed.

Other features will be pointed out below.

In the drawings

Figure 1 is a partial elevation of mechanism embodying my invention;

Figure 2 is an end elevation, partly in section, of the same looking in the direction of the arrows 2-2 in Figure 1;

Figures 3 and 4 are diagrammatic views described below;

Figure 5 is a partial plan in the plane of line 5-5 of Figure 1;

Figure 6 is a partial elevation in the plane of line 6-6 of Figure 5; and

Figure 7 is a plan on a smaller scale of a machine for making envelopes and embodying my invention.

I illustrate my invention as embodied in a machine for folding blanks to make envelopes of the general type shown in Patent No. 1,144,506 dated June 29, 1915, the wider flaps being folded and glued by any suitable mechanism such as that in Patent No. 1,096,633 dated May 12, 1914.

The blank A is fed, in the machine shown, from the top of the pile in the hopper B to rolls B' and thence past the scoring rolls B², B³ and past the gluing mechanism B⁴ to the belts B⁵ for folding the flaps *a* and *a'*, the blanks being shown in Figure 4 with the side flaps folded, the dotted lines indicating the position of the side flaps before folding.

The blanks, after folding of the side flaps, are fed one by one between belts B⁶ and B⁷ to form a pile between the rocking members or jiggers hereinafter described, the bottom end of the pile being supported by arms E and E' which form a base for the pile and which are connected together rigidly by rod E³ which may be mounted on the machine, in any suitable way such as by the pivoting shown. Arm E is in one piece with perforated portion E⁴ which receives rod E⁵, the latter being adjustably held by set screw E⁶. A counterweight E⁷ is adjustably held by set screw E⁸ to the rod E⁵ and is so located that it will normally hold up the arms E and E' and consequently hold the lowermost blank out of engagement with feed belt F which runs at a right angle to belts B⁶ and B⁷. When however the desired number of blanks is in the pile or the pressure on the lowermost blank is otherwise sufficient the lowermost blank will press down arms E and E' so that belt F will engage and feed the lowermost blank which will pass transversely under suitable rolls in cage F' and thence be fed by belts G and G' to suitable mechanism for scoring, gluing and folding the smaller or end flaps *a*² and *a*³ shown diagrammatically in Figure 4.

In Figure 3 the blank is shown diagrammatically approaching its position above the arms E and E', in that position, and then passing along its transverse path, the flaps *a*² and *a*³ being shown in full lines to indicate the condition at the start of the transverse feed and being shown dotted to indicate the condition after the folding.

Shaft H carries a pulley for belt F and

also carries cam H' which acts upon roller h carried by arm h' fixed to rock shaft h^2 , to which is fixed finger h^3 which oscillates finger h^4 fixed to shaft h^5 to the other end of which is operatively connected spring h^6 . Spring h^7 holds roller h in engagement with cam H' . Shaft h^2 has fixed connection with jogging or rocking members H^2 and h^5 has fixed connection with jogging or rocking members H^3 . A fixed gage H^4 is suitably held by arch H^5 to control the transverse feed. Fixed members H^6 and H^7 act in opposition to joggers H^2 while gage H^4 acts in opposition to joggers H^3 . The rocking motion of joggers H^2 and H^3 squares up the blanks preparatory to the transverse feed.

I have illustrated the blanks as being one directly above the other to form a pile but the blanks might otherwise form a pile, such, for example, as by overlapping.

The very great practical advantage of my machine is that its speed may be about five times that of any prior machine having a transverse feed and even with this increased speed perfect accuracy is retained.

It is to be understood that, as shown, each blank is fed to the pile in the direction of the longitudinal axis or length of the blank and each blank is fed from the pile in the direction of the width or transverse axis of the blank, this feeding in the direction of the transverse axis of the blank being along the transverse path shown in Figure 3 and indicated by the arrow which points to the right in that figure.

What I claim is:

1. A machine of the character described comprising means for feeding blanks successively in the direction of one axis of the blanks to form a pile; and means for feeding the blanks successively from the pile in the direction of the transverse axis of the blanks.

2. A machine of the character described comprising means for feeding blanks successively in one direction to form a pile; and means for feeding the blanks successively away from the pile in a direction substantially transverse to the first-mentioned direction, the last-mentioned feeding means acting on the pile at the end opposite the end to which the blanks are fed by the first-mentioned feeding means.

3. A machine of the character described comprising means for feeding blanks successively in the direction of one axis of the blanks to form a pile; and untimed means for starting the blanks successively from the pile in the direction of the transverse axis of the blanks.

4. A machine of the character described comprising untimed means for feeding blanks successively in the direction of one axis of the blanks to form a pile; and un-

timed means for starting the blanks successively from the pile in the direction of the transverse axis of the blanks.

5. A machine of the character described comprising means for feeding blanks successively in the direction of one axis of the blanks to form a pile, each blank having a substantial period of rest at the end of said feed; and means for feeding blanks successively from the pile in the direction of the transverse axis of the blanks.

6. A machine of the character described comprising means for feeding blanks successively in the direction of one axis of the blanks to form a pile; and means for feeding the blanks successively from the pile in the direction of the transverse axis of the blanks, the feeding of the last mentioned means being dependent upon the feeding action of the first mentioned means.

7. A machine of the character described comprising means for feeding blanks successively in the direction of one axis of the blanks; means to receive the blanks one after another from the feeding means to form a pile; and means for feeding the blanks from said receiving means in the direction of the transverse axis of the blanks, the feeding action of the second mentioned feeding means being dependent upon the number of blanks in the pile.

8. A machine of the character described comprising means for feeding blanks successively in one direction to form a pile; and means for feeding the blanks successively from the pile in a direction transverse to the first-mentioned direction, the feeding action of the last-mentioned means being dependent upon the pressure on the lowermost blank of the pile.

9. A device of the character described comprising means for feeding blanks in one direction successively; a receptacle to receive the blanks one after another from the feeding means to form a pile; said receptacle having a movable base; and means for feeding the blanks successively from said receptacle in a direction transverse to said first-mentioned direction, said base being movable to permit successive engagement of the blanks with the last-mentioned feeding means.

10. A device of the character described comprising means for feeding blanks in one direction successively; a receptacle to receive the blanks one after another from the feeding means to form a pile; a centrally pivoted member, formed at one side of the pivot to support the pile of blanks and having a counterweighted portion at the other side of the pivot; and means for feeding the blanks successively from said receptacle in a direction transverse to said first-mentioned direction; said counterweighted portion acting to hold the pile out of engagement with the

last-mentioned feeding means until the desired number of blanks are in the receptacle.

11. A machine of the character described comprising means to feed blanks successively in the direction of one axis of the blanks to form a pile; means to square up the blanks in the pile; and means to feed the blanks successively from the pile in the direction of the transverse axis of the blanks.

12. A machine of the character described comprising means to feed blanks successively in one direction to form a pile; members to engage the edges of the blanks in the pile; means to move said members to square up the blanks in the pile; and means to feed the blanks successively from the pile in a direction transverse to the first-mentioned direction.

13. A machine of the character described comprising means to feed blanks successively in one direction; members to engage edges of each blank; means to rock said members to square up the blank; and means to feed the blanks successively in a direction transverse to the first mentioned direction.

14. A machine of the character described comprising means to feed blanks successively in the direction of one axis of the blanks to form a pile; members to engage the edges of the blanks in the pile; means to rock said members to square up the blanks in the pile; and means to feed the blanks successively from the pile in the direction of the transverse axis of the blanks.

15. A machine for acting on blanks each having two flaps extending at a substantially right angle to each other with reference to the body of the blank and comprising means for feeding the blanks successively to form a pile, one of said flaps, during a part of said feeding, extending outwardly with reference to the center of the feeding path; and means for feeding the blanks successively and transversely from the pile, the other of said flaps, during a part of such transverse feeding, extending outwardly with relation to the center of the transverse feeding path.

16. A machine for making envelopes com-

prising means for folding two of the flaps of each blank; means for feeding the blanks from said folding means successively and substantially horizontally and in the direction of one axis of the blanks to form a pile; means for feeding the blanks successively and substantially horizontally from the pile in a direction at substantially a right angle to the first-mentioned direction; and means for folding the other two flaps of each blank after the second-mentioned feeding.

17. A machine for making envelopes comprising means for folding two of the flaps of each blank; means for feeding the blanks successively from said folding means in the direction of one axis of the blanks; untimed means for feeding the blanks successively in a direction at substantially a right angle to the first mentioned direction; and means for folding the other two flaps of each blank after the second-mentioned feeding.

18. A machine for making envelopes comprising means for folding two of the flaps of each blank; means for feeding the blanks from said folding means successively and substantially horizontally and in the direction of one axis of the blanks to form a pile; untimed means for feeding the blanks successively and substantially horizontally from the pile in a direction at substantially a right angle to the first-mentioned direction; and means for folding the other two flaps of each blank after the second-mentioned feeding.

19. A machine for making envelopes comprising means for folding two of the flaps of each blank; means for feeding the blanks from said folding means successively and substantially horizontally and in the direction of one axis of the blanks to form a pile; means for feeding the blanks successively and substantially horizontally from the pile in a direction at substantially a right angle to the first-mentioned direction, the feeding action of the last-mentioned means being dependent upon the pressure on the lowermost blank of the pile; and means for folding the other two flaps of each blank after the second-mentioned feeding.

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