July 17, 1923. 1,461,746

A. E. AUGUSTINE

REMOVABLE DRYING CHAIN MECHANISM FOR ENVELOPE MAKING MACHINES

Filed Feb. 24, 1920 3 Sheets-Sheet 1

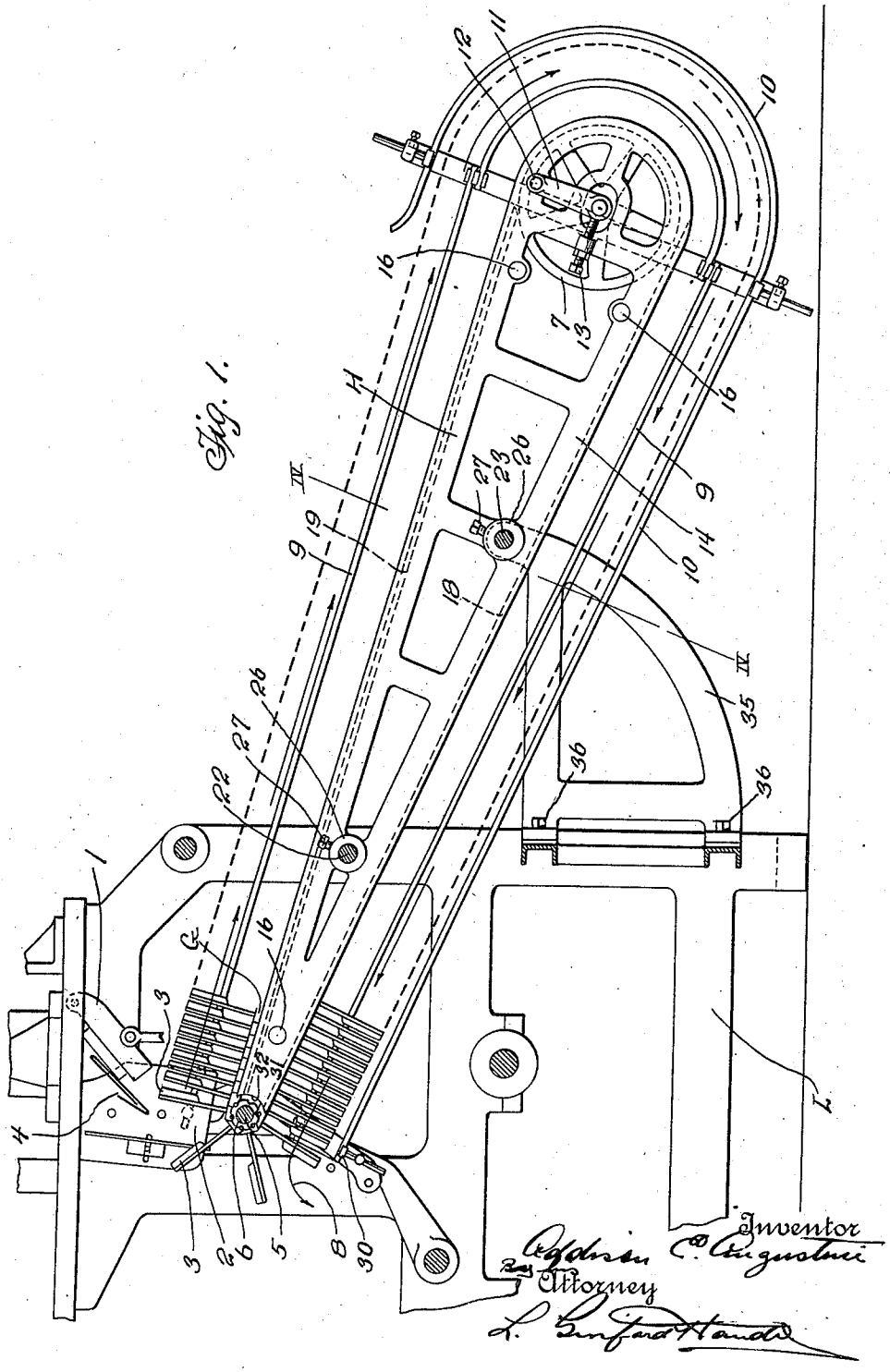


Fig. 1.

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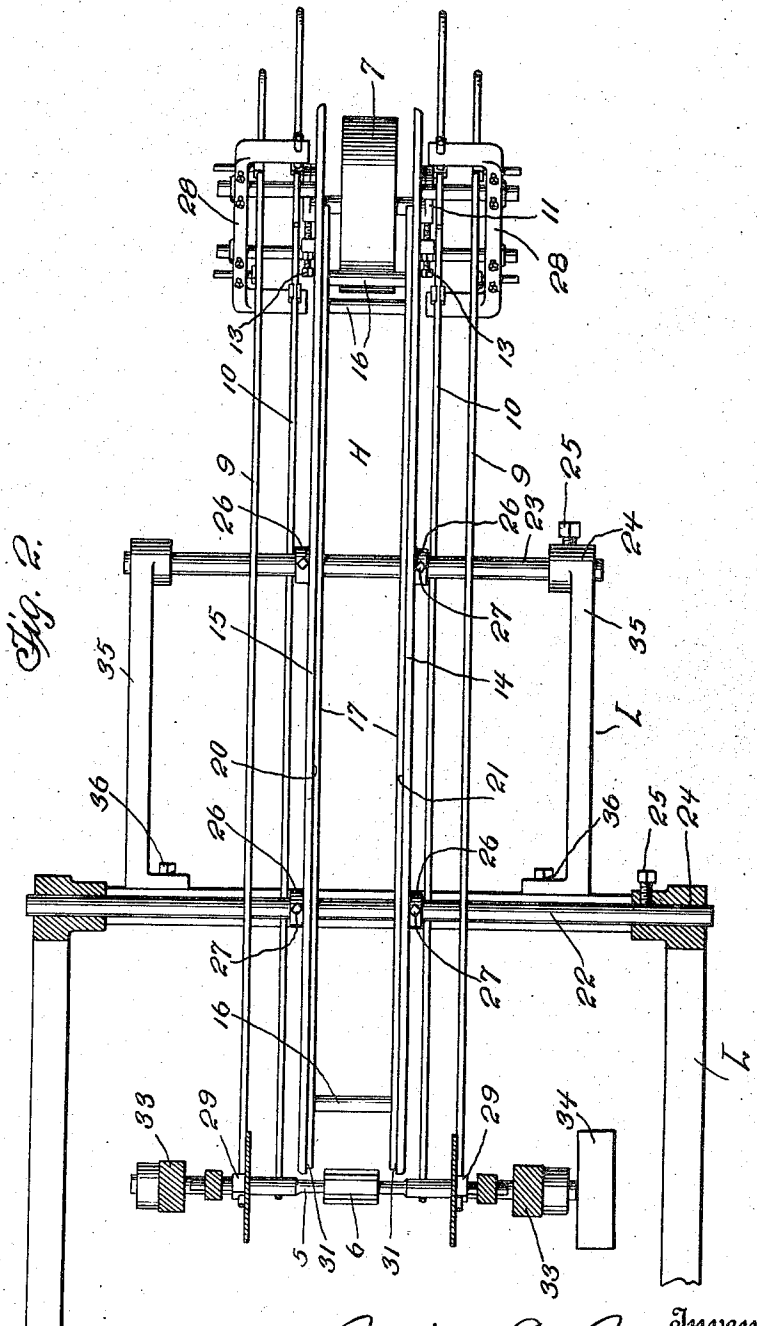
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Fig. 2.




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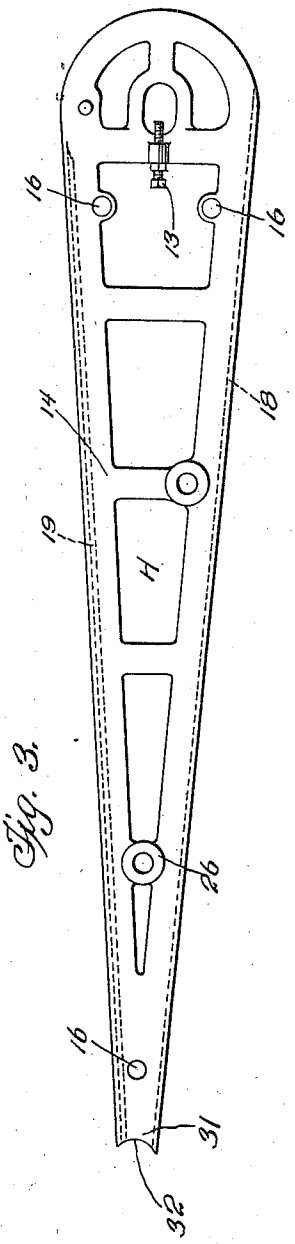



Fig. 3.

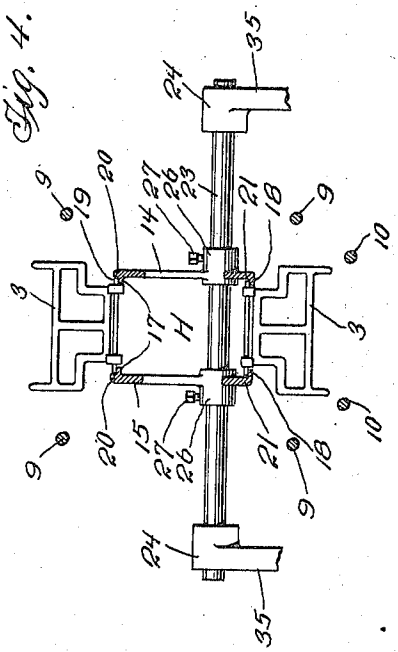



Fig. 4.

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Patented July 17, 1923. 1,461,746

# UNITED STATES PATENT OFFICE.

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## REMOVABLE DRYING-CHAIN MECHANISM FOR ENVELOPE-MAKING MACHINES.

Application filed February 24, 1920. Serial No. 360,966.

*To all whom it may concern:*

Be it known that I, ADDISON E. AUGUSTINE, residing at Hackensack, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Removable Drying-Chain Mechanism for Envelope-Making Machines, of which the following is a specification.

This invention relates to a drying chain mechanism for envelope-making machines, and an object of the invention is to provide a drying chain mechanism in which certain major parts are so constructed and supported as to be capable of being bodily removed from the envelope-making machine without necessity for materially deranging any other feature of the machine.

A more detailed object is to provide a removable drying chain mechanism comprising one or more main frame elements adapted to carry the chain and other parts of the drying mechanism, and to so construct and arrange these frame elements that they are supported by the main frame of the machine in a position to hold the chain in cooperative relation with other elements of the machine and yet be capable of bodily removal without necessity for deranging the adjustment of any of the adjacent elements of the machine.

Other objects and aims of the invention, more or less specific than those referred to above, will be in part obvious and in part pointed out in the course of the following description of the elements, combinations, arrangements of parts and applications of principles, constituting the invention, and the scope of protection contemplated will be indicated in the appended claims.

In the accompanying drawings which are to be taken as a part of this specification, and in which I have shown merely a preferred form of embodiment of the invention:—

Figure 1 is a side elevational view of a drying chain mechanism constructed and arranged in accordance with this invention.

Figure 2 is a top plan view of the mechanism seen in Fig. 1, adjacent portions of the envelope making machine being shown in horizontal section.

Figure 3 is a side elevational view of one of the drying chain frames detached, and

Figure 4 is a transverse sectional view taken substantially upon the plane of line IV of Fig. 1.

Referring to the drawings for describing in detail the structure which is illustrated therein, the reference character L indicates the main frame of the envelope-making machine. A trap discharge device is indicated at 1 by which the folded and newly gummed envelopes are delivered into the spaces, as 2, between the fins 3 of the carrying chain. An envelope, as 4, is illustrated in Fig. 1 as being in the process of delivery from the trap into the chain.

A shaft 5 is shown for driving the chain G. This shaft has a small sprocket 6 thereon about which the links of the chain move so that in rounding the shaft the fins 3, one of which is carried by each link of the chain, spread apart as clearly seen at the upper end of Fig. 1 for receiving the envelopes from the trap.

The chain moves usually with a step by step movement in the direction of the arrows so that the envelopes from the trap 1 are carried downwardly along the upper lead of the chain, around the lower roller 7 and thence upwardly along the lower lead of the chain. Any suitable means may be provided for delivering, or ejecting, the envelopes from the upper end of the lower lead of the chain, as indicated by the arrow 8 at this point.

During the travel of the envelopes along the upper lead of the chain their weight rests upon the links of the chain, and suitable guide rods 9 are provided at opposite sides of the chain for preventing endwise displacement of the envelopes. As the envelopes round the wheel 7, their weight falls away from the chain and on to suitable guide rods 10 which continue parallel with the chain upwardly to a point where the envelopes are ejected, as above mentioned. The guide rods 9 are continued around the wheel 7 and upwardly parallel with the rods 10.

The wheel, or roller 7, is carried by a swinging bracket 11 which is pivotally supported, as at 12, in the frame 8, suitable adjusting screws 13 being provided for moving the wheel 7 to properly tension the chain G.

The frame H consists of two members, as 14 and 15, connected together by cross mem-

bers 16 so that they form a rigid frame. Each of the frame members is provided with suitable ribs 17 along their upper edges for supporting the weight of, and guiding, the upper lead of the chain, and with other ribs 18 along their lower edge for supporting and guiding the lower lead of the chain.

Preferably the chain comprises a plurality of pivot rods 19 for connecting together the several links of the chain, said pivot rods being extended at their opposite ends so as to engage the ribs 17 and 18.

The frame pieces also provide portions, as 20, adjacent the ribs 17, and other portions, as 21, adjacent the ribs 18, for opposing endwise movement of the rods 19. Here it should be noted that except for the presence of the portions 20 and 21 any one of the rods 19 could be readily withdrawn to disengage adjacent chain links from each other. The portions 20 and 21, therefore, extend entirely around the wheel, or roller, 7 so as to prevent accidental endwise movement of the pivot rods while rounding said roller.

By lifting a portion of the chain so that one of the pivot rods 19 comes above the adjacent surface 20, such rod can be easily withdrawn to separate the chain whenever occasion may arise for so doing.

The frame H is supported entirely by a pair of cross supports 22 and 23 carried by the main frame L especially for this purpose and has no connection whatever with the shaft 5.

The cross supports 22 and 23 are preferably in the form of straight cylindrical rods engaging within straight bearings, as 24, in the frame L, and held in position by set screws 25. The frame pieces 14 and 15 have bearing parts 26 thru which the rods extend and are furnished with set screws, or the like, as 27, by means of which to hold the frame H in proper position relative to the sprocket 6.

By loosening the several set screws 25 and 26, the rods 22 and 23 may be readily withdrawn, thus taking away all support for the frame H and leaving said frame to be bodily lifted away from the machine.

Of course the chain G should be separated as above suggested before attempting to remove the frame H.

The guide rods 9 and 10 are supported at their lower ends by suitable bracket members 28 carried by the frame pieces 14 and 15, while their upper ends are slidably received in holders 29 and 30. In this way all of the guide rods readily lift away with the frame H after the supporting rods 22 and 23 have been removed.

In returning the frame to its position, the frame is held so that the extreme upper end portion thereof, as 31, stands adjacent to the shaft 5. Then insert the supporting rods 22 and 23. The rods 9 and 10 may be slipped into the holders 29 and 31 at the same time, or subsequently. After the frame is properly supported, the chain H is drawn into position and connected by reinserting the pivot rod 19.

It is to be particularly noted that the upper end portion 31 of the frame pieces 14 and 15, when in operative position, stand free of the shaft 5 and have no connection therewith. Preferably the ends of the frames are concaved, as at 32, so as to allow portions of the frames to extend a suitable distance circumferentially of the shaft to properly support the chain in its passage to and from the sprocket 6.

The shaft 5 is supported in spaced bearing members 33 carried rigidly mounted upon the frame L and may be driven by any suitable means, as for instance such as is indicated at 34.

Since the supporting shaft 23 is arranged to engage the frame H at a point spaced somewhat from the main portion of the frame L of the machine, this shaft may, if desired, be itself supported by a pair of separately formed brackets 35 which are detachably connected with the main frame, as by means of fastening bolts, or the like, as 36. These brackets, therefore, may be lifted off with the frame H, if desired, or they may be lifted off after the frame H has been removed.

Thus, for instance, when the machine is being packed for shipping no projection from the main frame necessarily appears for forming, or carrying, the drying chain mechanism, and at the same time the drying chain mechanism may be readily and easily connected in operative position when desired.

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

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

1. The combination with the main frame of an envelope making machine having a chain driving roller mounted thereon, of a detachable drying mechanism for the newly gummed envelopes, said drying mechanism comprising a supporting frame, an endless envelope conveying chain adapted to engage and to be driven by said drive roller, the supporting frame having guideways along which said chain travels and by which the chain is guided directly to and away from said drive roller, and said supporting frame extending longitudinally toward said drive roller but terminating short thereof and be-

ing detachable without affecting the drive roller.

2. The combination with the main frame of an envelope making machine having a chain driving roller mounted thereon, of a detachable drying mechanism for the newly gummed envelopes, said drying mechanism comprising a supporting frame, an endless envelope conveying chain adapted to engage and to be driven by said drive roller, the supporting frame having guideways along which said chain travels and by which the chain is guided directly to and away from said drive roller, a pair of rods extending transversely of said supporting frame being received in mating apertures provided to receive them in the main frame and the supporting frame adapted to hold the supporting frame extending longitudinally toward said drive roller but terminating short of the drive roller, and means whereby said rods are removable from said apertures to thereby disconnect the supporting frame from the main frame.

3. The combination with the main frame of an envelope making machine having a chain driving roller mounted thereon and having guide rod supporting means, of a detachable drying mechanism for the newly gummed envelopes, said drying mechanism comprising a supporting frame, an endless envelope conveying chain, and guide rods for retaining the envelopes in position within the conveying chain, the conveying chain being adapted to engage and to be driven by said drive roller, said supporting frame extending longitudinally directly toward said drive roller but having its end nearest said roller terminating short of the roller, the adjacent ends of said guide rods being received in said guide rod supporting means, and means whereby said supporting frame is readily detachable without affecting the drive roller and whereby said guide rods are readily detachable from said guide rod supporting means.

In testimony whereof I affix my signature in the presence of two witnesses.

ADDISON E. AUGUSTINE.

Witnesses:

L. GESSFORD HANDY,

MAY SCHULZ.