Jan. 19, 1926. 1,570,355

J. O. LAMOUREUX

STAMP CANCELING MACHINE

Filed May 23, 1922

Fig. 1.

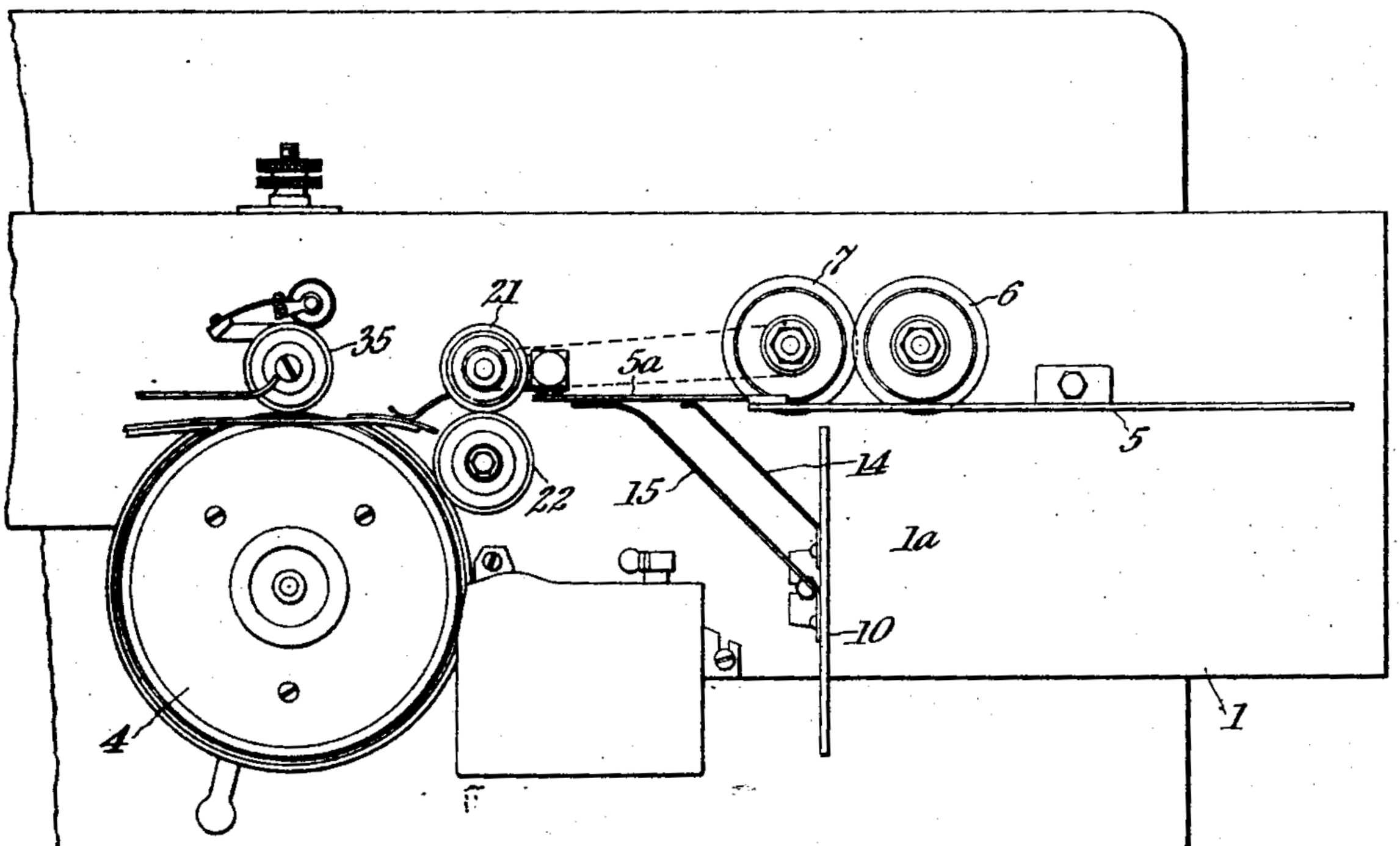
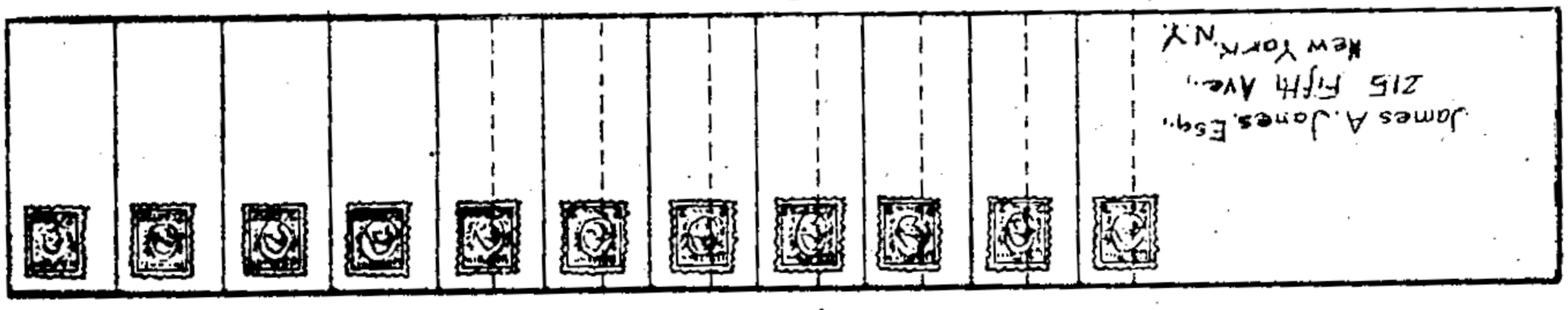


Fig. 2.



Inventor:

Joseph O. Lamoureux,

by Byron, Townsend & Brickenstein

Attorneys.

Patented Jan. 19, 1926. 1,570,355

UNITED STATES PATENT OFFICE.

JOSEPH OMER LAMOUREUX, OF MONTREAL, QUEBEC, CANADA.

STAMP-CANCELING MACHINE.

Application filed May 23, 1922. Serial No. 563,147.

To all whom it may concern:

Be it known that I, JOSEPH OMER LAMOUREUX, subject of the King of Great Britain, residing at Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Stamp-Canceling Machines, of which the following is a specification.

This invention relates to stamp-canceling machines.

In my application Ser. No. 520,632 filed Dec. 7, 1921 I have described a stamp-canceling machine of substantially universal application.

The operation of said machine is such that each letter is presented to a canceling device in a definite predetermined relation.

While, as has been pointed out in said application, uniformity in the canceling operation is highly desirable, it may be found advantageous under certain conditions to sacrifice uniformity to speed.

It is the principal object of this invention to provide a stamp-canceling machine which operates to present to the printing device the letters continuously in overlapping relation so that merely the stamp-bearing portions of the letters come into contact with the printing device.

For a full understanding of the principle of operation on which the invention is based, reference is made to the accompanying drawings in which

Fig. 1 is a more or less diagrammatic representation in plan view of an arrangement for carrying out the invention.

Fig. 2 is an elevational representation of the relation in which the letters are passing the printing or canceling roller.

While in reality I propose to use the machine disclosed in my said application by simply changing various details, I prefer to describe the invention for the sake of simplicity in its simplest aspect and independently of mechanism which does not form essentially a part of the specific invention.

In the drawings 4 represents a printing disk the peripheral surface of which bears printing elements and 35 is the usual impression roller.

The letters to be canceled are delivered upon a table constituted by the portion 1^a of the platform 1. Lengthwise of the platform extends a partition 5 against which the letters come to rest. For reasons which presently appear the letters are delivered in stacks upon a chute (not shown) so that the weight or rather a considerable part of the weight of the stack presses each letter as it reaches the foot of the stack firmly toward the partition 5.

On the far side of the partition are disposed friction rollers 6 and 7 projecting slightly through suitable openings beyond the front face of the partition. The pressure exerted by a stack or a relatively large number of letters upon the lowermost letter produces a sufficient frictional contact between the rollers 6 and 7 and the letter so that normally, while the rollers revolve, each letter which comes in contact with the rollers is rapidly moved away from the stack toward the printing disk. It should be noted at the very outset that normally only one letter can be moved at one time. The friction between the lowermost letter and the second letter is ordinarily distributed over the whole contact area and therefore not sufficient to cause movement of the second letter simultaneously with the first one. The following letters are still less affected by the action of the rollers 6 and 7.

Between the rollers 6, 7 and the printing disk 4 is mounted a pair of rollers 21 and 22 which may be considered in the present application as simple transfer rollers. The most usual size of the envelopes is about six inches while the larger ones are about nine inches long. I dispose the rollers 21, 22 so that the line interconnecting their centers is slightly less than six inches from the plate 10 and about three inches from the line of contact between compression roller 35 and printing disk 4.

It is understood that I do not limit myself to certain distances. The distance between plate 10 and rollers 21, 22 is at any rate made approximately equal to but preferably slightly smaller than the length of the letters of smaller size to be handled and the distance between the compression roller 35 and the plate 10 is made preferably slightly smaller than the length of the larger standard size envelopes to be handled.

The extension 5^a of the partition 5 extends into close proximity to rollers 21, 22 and spring fingers 14 and 15 mounted upon the plate 10 bear against the extension 5^a to guide the letters on their way to the rollers 21, 22.

By suitable gearing the shafts of the printing disk and all the rollers may be suitably

interconnected to be driven from the same power shaft.

In accordance with the idea of the invention, the rollers 6 and 7 are given a materially greater peripheral speed than the rollers 21, 22 and disk 4, the speed ratio being preferably 2:1.

The operation is as follows:

As previously stated, the letters are dispatched one by one and would arrive in succession at the printing disk to be successively printed. By the arrangement described, however, the letters reach the printing disk in overlapping relation.

The first letter is given a definite speed v, by the rollers 6 and 7. The distance s between the plate 10 to the rollers 21, 22 is therefore covered in the time

$$t_1 = \frac{s_1}{v_1}.$$

From the rollers 21, 22 toward the disk 4 the letter travels at the speed v_2. The distance s_2 is therefore covered in the time

$$t_2 = \frac{s_2}{v_2}.$$

While the first letter travels from rollers 21, 22 toward disk 4 at the rate

$$s_2 = v_2 t_2,$$

the second letter travels from plate 10 toward rollers 21, 22 at the rate

$$s_1 = v_1 t_1.$$

The ratio of travel of the two letters is therefore

$$\frac{s_2}{v_1} = \frac{v_2 t_2}{v_1 t_1}.$$

Since $v_2 < v_1$, and preferably $\frac{1}{2} v_1$, the second letter gains on the first in proportion.

The greater the excess of peripheral speed of rollers 6 and 7 is over the peripheral speed of rollers 21, 22 and disk 4, the greater will be the overlap. The speed of the letters from plate 10 to rollers 21, 22 depends also in a certain measure upon the frictional contact between the letter and the rollers 6, 7. By increasing the pressure, as by increasing the stack of letters or by increasing pressure in any other way, the slip will be correspondingly reduced and the speed increased and vice versa, as is well understood.

By determining the speed ratio and the pressure, as mentioned, the extent of overlap may be adjusted to a nicety within relatively wide limits. By varying the pressure, it is thus possible to vary the overlap where such variation is desired, without making any other changes.

For the cancelation of the larger size envelopes the rollers 21, 22 are adjusted to let them pass without retarding them. This may be done by releasing the spring tension by which the rollers are usually held against each other, or in any other way. The speed of the letters will then be changed only when they reach the compression roller and disk 4.

It is understood, that instead of a single pair of rollers 21, 22, two or more pairs may be provided so that different adjustments may be made. It is also obvious that more than two rollers, 6 and 7, may be provided.

I have found, however, that the adjustments above indicated have given perfect satisfaction.

The significance of the arrangement is obvious. The printing disk may have a continuous printing surface or printing dies in close juxtaposition along its periphery. As previously stated, the overlapping relation of the letters at the printing disk may be so determined that substantially only the stamps or at all events a predetermined portion of the envelopes appear in front of the printing disk, the other parts of the letters being covered. Thus, while the printing disk actually prints a continuous mark, each letter bears only a mark covering the stamp or so much, in general, as is intended to be printed, while the remaining portion of the envelope remains undisturbed.

In the foregoing only so much of the structure has been disclosed as is necessary to explain the principle of operation. In practice various auxiliary detail is employed, for instance for removing the printed envelopes or other mail matter from the disk to a suitable receptacle or for effecting a reliable cancelation or for assuring separation of the envelopes from each other at the beginning of the feeding movement, etc. Such detail has been fully described in my said application and does not specifically affect the fundamental principle of operation on which the present invention is based. In fact, as previously suggested, in practice the organization of the stamp-canceling machine described in my prior application may be easily changed by a few small changes obvious to the expert to convert it into a machine for carrying out the purposes of the present invention.

I claim:

1. A stamp-canceling machine, comprising a rotary stamp-canceling mechanism, means for driving the rotary mechanism at a definite peripheral speed, transfer rollers in advance of the rotary mechanism, means for driving the transfer rollers at substantially the same peripheral speed as the rotary mechanism, feed rollers in advance of the transfer rollers and means for driving the feed rollers at a peripheral speed materially in excess of the speed of the transfer rollers and rotary mechanism.

2. A stamp-canceling machine, comprising a rotary stamp-canceling mechanism, means for driving the rotary mechanism at a defi-

nite peripheral speed, transfer rollers in advance of the rotary mechanism, means for driving the transfer rollers at substantially the same peripheral speed as the rotary mechanism, feed rollers in advance of the transfer rollers and means for driving the feed rollers at a peripheral speed materially in excess of the speed of the transfer rollers and rotary mechanism, the feed path between the feed rollers and the transfer rollers having approximately the length of the shorter pieces to be canceled and the length of the feed path between the feed rollers and the rotary mechanism having approximately the length of the longer pieces to be canceled.

3. Stamp-canceling machine according to claim 1 in which the transfer rollers are positioned on opposite sides of the feed path and press on opposite sides of the pieces to be canceled.

4. Stamp-canceling machine, comprising a canceling mechanism and means for feeding pieces to be canceled into the sphere of action of the canceling mechanism in a definite overlapping relation, said means including a table having a vertical partition defining a guide for the pieces, rollers projecting through the partition at different points in the direction of length thereof but in proximity to each other, a plate on that side of the partition at which the rollers project, substantially at right angle to the partition, said plate being disposed to position the pieces against the projecting part of the rollers, means on the plate co-operating with the partition for guiding the pieces on their way to the canceling means, a pair of rollers between the said rollers and the canceling mechanism adjacent to the end of the partition, said rollers being disposed on opposite sides of the path defined by the partition and adapted to bear on opposite sides of the pieces and means for rotating the rollers, the arrangement being such that the first mentioned rollers have a peripheral speed materially greater than the said pair of rollers.

In testimony whereof, I affix my signature.

JOSEPH OMER LAMOUREUX.