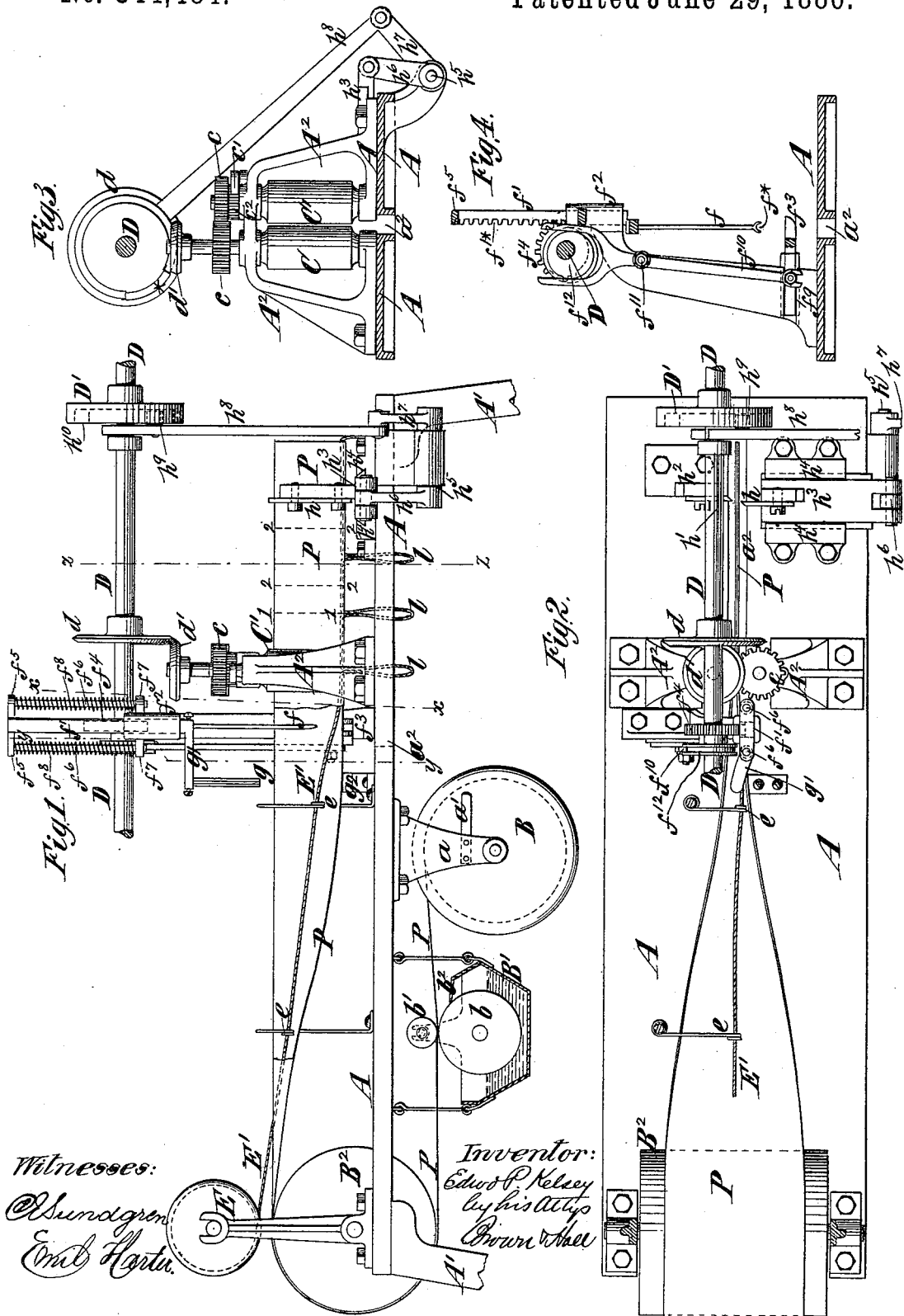


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METHOD OF MAKING AND STRINGING MERCHANDISE, &c., TAGS.

No. 344,484.

Patented June 29, 1886.

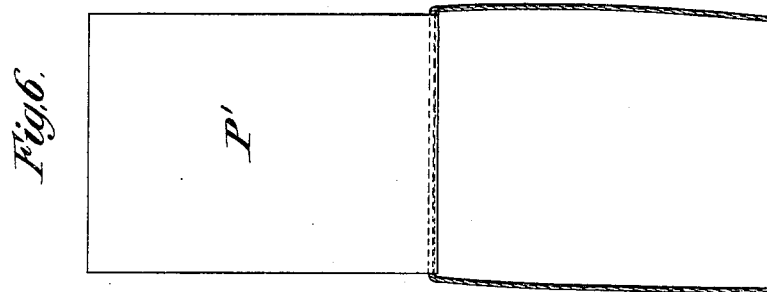
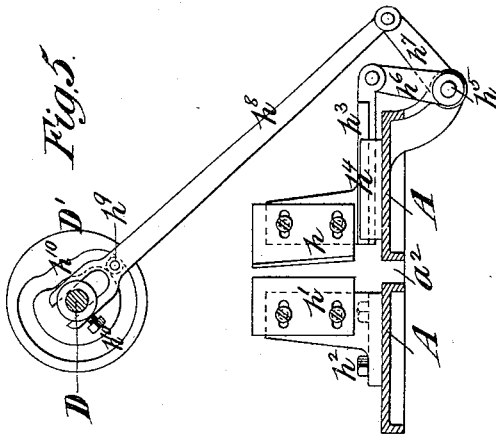
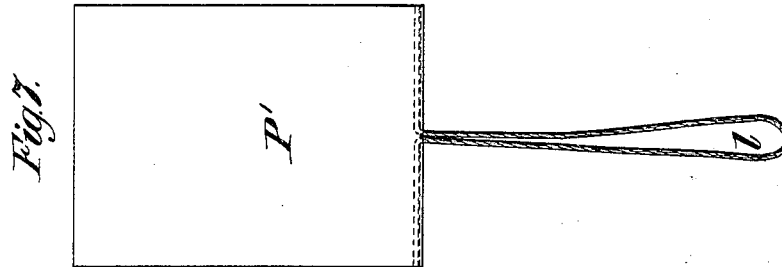


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No. 344,484.

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EDWARD P. KELSEY, OF JERSEY CITY, NEW JERSEY.

METHOD OF MAKING AND STRINGING MERCHANDISE, &c., TAGS.

SPECIFICATION forming part of Letters Patent No. 344,484, dated June 29, 1886.

Application filed August 3, 1885. Serial No. 173,342. (No model.)

To all whom it may concern:

Be it known that I, EDWARD P. KELSEY, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in the Method of Making and Stringing Merchandise and Shipping Tags, of which the following is a specification.

Although my invention is more particularly applicable to the making of tags from Manila or other strong paper, which are provided with strings of cord made of fibrous material, it may be employed in making tags from cloth or cloth combined with paper, and which are strung with wire or other suitable material.

In making tags according to my invention I prefer to employ a piece of paper or other material which is of sufficient width to make, when folded at the center and cemented or pasted together, a tag of the desired size and of double thickness, from one end of which the string projects; but the invention may be employed in making tags from a piece only slightly larger than the completed tag, and having a folded portion only sufficient to confine the string when folded over and cemented to the body.

In carrying out my invention I make the tags from paper or other material in the form of a continuous strip the width of which is about double the length which the completed tag is to have. This strip I perforate at intervals in its length and at about the center of its width, and I then pass through these perforations loops of cord or other stringing material, which is preferably supplied in continuous length, and portions of which remain on the side of the strip from which the loops are passed through the perforations. The strip is then folded along the line of perforation or at about the middle of its width, and the two thicknesses thus formed are cemented together and to the interposed cord or string, and the strip is afterward cut through at the perforations or between the perforations, so as to form separate tags.

In carrying out my invention any suitable machine may be employed for performing the several steps of the method or process hereinabove described. I have in the accompanying drawings shown one form of a machine adapted to the purpose.

In the drawings, Figure 1 is a side elevation

of the machine. Fig. 2 is a plan thereof. Fig. 3 is a sectional view upon the plane of the dotted line *x x*, Fig. 1. Fig. 4 is a sectional view upon the plane of the dotted line *y y*, Fig. 1. Fig. 5 is a sectional view upon the plane of the dotted line *z z*, Fig. 1. Fig. 6 represents a tag which may be formed by cutting the folded strip at the points of perforation, and Fig. 7 represents a tag which may be formed by cutting the folded strip at points intermediate between the perforations.

In all the figures of the drawings similar letters of reference designate corresponding parts.

A designates a table or bed, which is supported on suitable legs or standards, A', and B designates a reel or drum, from which the paper in the form of a continuous strip is taken. This reel or drum B is supported by hangers *a* depending from the bed A, and the spring *a'*, bearing upon the side of the reel or drum, forms a brake, which opposes sufficient resistance to the rotation of the reel or drum to prevent the paper being drawn therefrom too rapidly.

B' designates a trough or box, which is suspended below the bed or table, and in which is a roller, *b*, which rotates in paste or other adhesive substance contained in the box. Above this roller *b* is a pressure-roller, *b'*, and *b''* designates a scraper or blade, which bears upon the roller *b* and limits the quantity of adhesive substance taken up by it.

The strip P of paper or other material is taken from the drum or reel B between the rollers *b b'*, and is thence carried around a reversing drum or roller, B², at the end of the table A. The paste or other adhesive substance is applied to the under side of the strip P, and as the strip is carried around the roller B² and above the top of the table A the pasted or adhesive side thereof comes uppermost.

C C' designate a pair of feed and pressure rollers having vertical axes, and arranged close together upon the top of the bed or table A. Their lower journals are supported in suitable bearings upon the bed or table, and their upper journals are supported in a bracket or bridge piece, A², upon the table. The rollers C C' are geared together by wheels *c*, so as to rotate in unison, and as the strip P is carried

between these rollers it is folded double, and by the pressure of the rollers the two thicknesses thus obtained are cemented firmly together. These rollers and the other mechanism hereinafter described may be driven by any suitable mechanism. I have here represented for this purpose a shaft, D, which extends lengthwise of the machine, and has upon it a bevel-wheel, d , driving onto a bevel-wheel, d' , upon the top of the shaft of the roller C. The wheel d has a portion only, *, of its circumference operative, and when this portion bears against the wheel d' the rollers will be rotated, but when the mutilated or cut-away portion comes opposite the wheel d' the rollers will not be operative; hence it will be seen that a step-by-step forward or progressive motion is given to the strip P. The reverse rotation of the rollers is prevented by a pawl, c' , engaging a ratchet-wheel, c , on the roller C'.

E designates a reel or drum, from which the cord E' or other string material for the tags is taken. The cord is conducted through suitable eyes, e , so that when it comes to a point situated a distance equal to the width of the finished tag behind the rollers C C' it will be opposite the longitudinal center of the strip.

I have here represented a needle or implement, f , having a vertical movement through the strip, said movement being of sufficient length to carry the cord downward through the perforations in the strip P in the form of loop l , as shown in Fig. 1.

I have here represented the needle f as fixed in a vertically-moving needle-bar, f' , which is fitted to reciprocate in the guide f^2 , and the lower end of the needle is slightly bifurcated or forked, as shown at f^* in Fig. 4, so as to catch and hold the cord E' and carry it through the strip P.

In order to perforate the strip before the needle is passed through it, I have represented a punch, g , which is attached to an arm, g' , projecting laterally from the needle-bar f' , and which should be located behind the needle at a distance therefrom equal to the width of the completed tag. The strip P passes over a fixed die, g^2 , arranged below the strip, and the punch g operates in connection with the die g^2 to punch a hole in the strip for the subsequent passage of the needle f .

In order to prevent the needle f and cord from tearing the paper or other strip, P, when it is advanced downward to carry the cord E' through the same in the form of a loop, l , I have here represented a movable die, f^3 , which is under the strip P, and has a reciprocating movement in a direction transverse to the line of travel of the strip. The end of this die f^3 is forked, as shown in Figs. 1 and 4, so that after the loop has been carried downward through it the die may withdraw itself laterally from out the way of the loop and permit the latter to move directly forward at the next forward travel of the strip.

In order that the loops may occupy their

depending position continually after they are once passed through the strip, I have shown the bed A as formed with a longitudinal slot, a^2 , extending from its right-hand end in Fig. 1 forward to a point beyond the needle f .

The mechanism for operating the needle f and punch g may be of any suitable character. For this purpose I have here represented a pinion, f^4 , upon the shaft D, which engages with the rack f'^* , formed upon the needle-bar f' . This pinion is mutilated, or has teeth around a portion only of its circumference, and the teeth are so arranged relatively to the operative portion * of the wheel d on the shaft D that they only act to move the needle-bar and needle downward after the strip has received its forward movement by the action of the rollers C C'.

At the top of the needle-bar f' , I have represented a cross-head, f^5 , from which rods f^6 project downward, and are fitted to slide in guides f^7 on the needle-bar guide f^2 .

Upon the rods f^6 are spiral springs f^8 . When the needle-bar f' is moved downward by the action of the pinion f^4 , the springs f^8 are put under tension, and as soon as the pinion passes out of gear with the rack on the needle-bar f' , these springs act to instantly raise the needle and the punch from the strip P, leaving the loop l just formed depending below the strip.

The transversely-movable die f^3 may be operated by any suitable mechanism. I have here represented the die as fitted to a horizontal slideway, f^9 , and as operated by a lever, f^{10} , which is fulcrumed at f^{11} , and the upper end of which is forked or bifurcated to embrace the cam f^{12} upon the shaft D. This cam should be so timed relatively to the mutilated pinion f^4 on the shaft D, that it will have advanced the die f^3 under the strip before the needle f reaches the strip in its downward movement, and will withdraw the die from below the strip before the forward progressive movement of the strip commences.

For cutting the folded strip transversely I have represented a laterally-reciprocating knife, h , which operates in connection with a fixed blade, h' , arranged on the opposite side of the strip. The blade h' is fixed to a stock-piece or support, h^2 , bolted to the table A, and the knife h is fixed to a slide, h^3 , which is arranged to reciprocate transversely to the line of the strip in the slideway h^4 on the table A. The mechanism for operating this knife may be of any suitable character.

I have here represented a rock-shaft, h^5 , having arms h^6 h^7 , the arm h^6 being connected with the slide h^3 , and the arm h^7 being operated by the rod h^8 , which has upon it a roller, h^9 , fitting a groove, h^{10} , in the cam D' on the shaft D, as best shown in Fig. 5. This cam D' should be so timed relatively to the feed and pressure rollers C C' that it will actuate the knife to cut off a tag from the strip while the strip is stationary, and between the time of operation of the rollers.

I have represented in Figs. 6 and 7 tags P', which may be formed by cutting the folded strip in different places. If the strip is cut at the perforations where the loops *l* are passed through, as indicated by the dotted lines 1 1 in Fig. 1, and then the cord is cut at the bight of the loop, tags will be produced of the form shown in Fig. 6, the cord extending entirely across in the fold of the tag and having its ends projecting from opposite edges of the tag. If the strip be cut at a point midway between the perforations and loops, as indicated by the dotted lines 2 2 in Fig. 1, then tags will be produced of the form shown in Fig. 7, with the loop depending from the center of the tag, and the loop may be left integral, as shown in Fig. 7, or may be cut at the bight to form separate string ends. The knife-blades *h h'* should be arranged at such distance behind the feed and pressure rollers that the points where it is desired to cut the strip will be brought opposite the blades by each movement of the strip.

What I claim as my invention and desire to secure by Letters Patent, is—

1. The improvement in the method of making and stringing tags, consisting in taking the paper or other material in the form of a continuous strip, and the cord or other stringing material also in continuous length, in perforating the strip at intervals in its length and passing loops of the cord or other stringing material through such perforations, in then folding the strip along the line of perforations and cementing together and to the cord or other stringing material the two thicknesses thus obtained, and in finally cutting transversely the folded strip and the cord or stringing material to form tags, substantially as herein described.

2. The improvement in the method of making and stringing tags, consisting in taking the paper or other material in the form of a continuous strip, and perforating it at inter-

vals along the center of its width, in then passing through the perforations loops of cord or other stringing material, portions of which remain on the side of the strip, from which the loops are passed through the strip, in then folding the strip along the central line of the perforations and cementing together and to the cord or stringing material the two thicknesses thus obtained, and in finally cutting the folded strip transversely to form tags, substantially as herein described.

3. The improvement in the method of making and stringing tags, consisting in taking the paper or other material in the form of a continuous strip, in perforating the strip at intervals in its length and passing through the perforations loops of cord or other stringing material, portions of which remain on the side of the strip from which the loops are passed through the strip, in then folding the strip on the line of perforations and cementing together and to the cord or stringing material the two thicknesses thus obtained, and in finally cutting the folded strip transversely between the loops to form tags, each provided with a loop, substantially as herein described.

4. The improvement in the method of making and stringing tags, consisting in taking the paper or other material in the form of a continuous strip, in applying adhesive substance to one face thereof, in perforating the strip at intervals in its length and passing through the perforations loops of cord or other stringing material, portions of which remain on the adhesive face of the strip, in then folding the strip lengthwise and pressing together the two thicknesses thus obtained and the cord or stringing material, and in finally cutting the folded strip transversely to form tags, substantially as herein described.

EDWARD P. KELSEY.

Witnesses:

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