

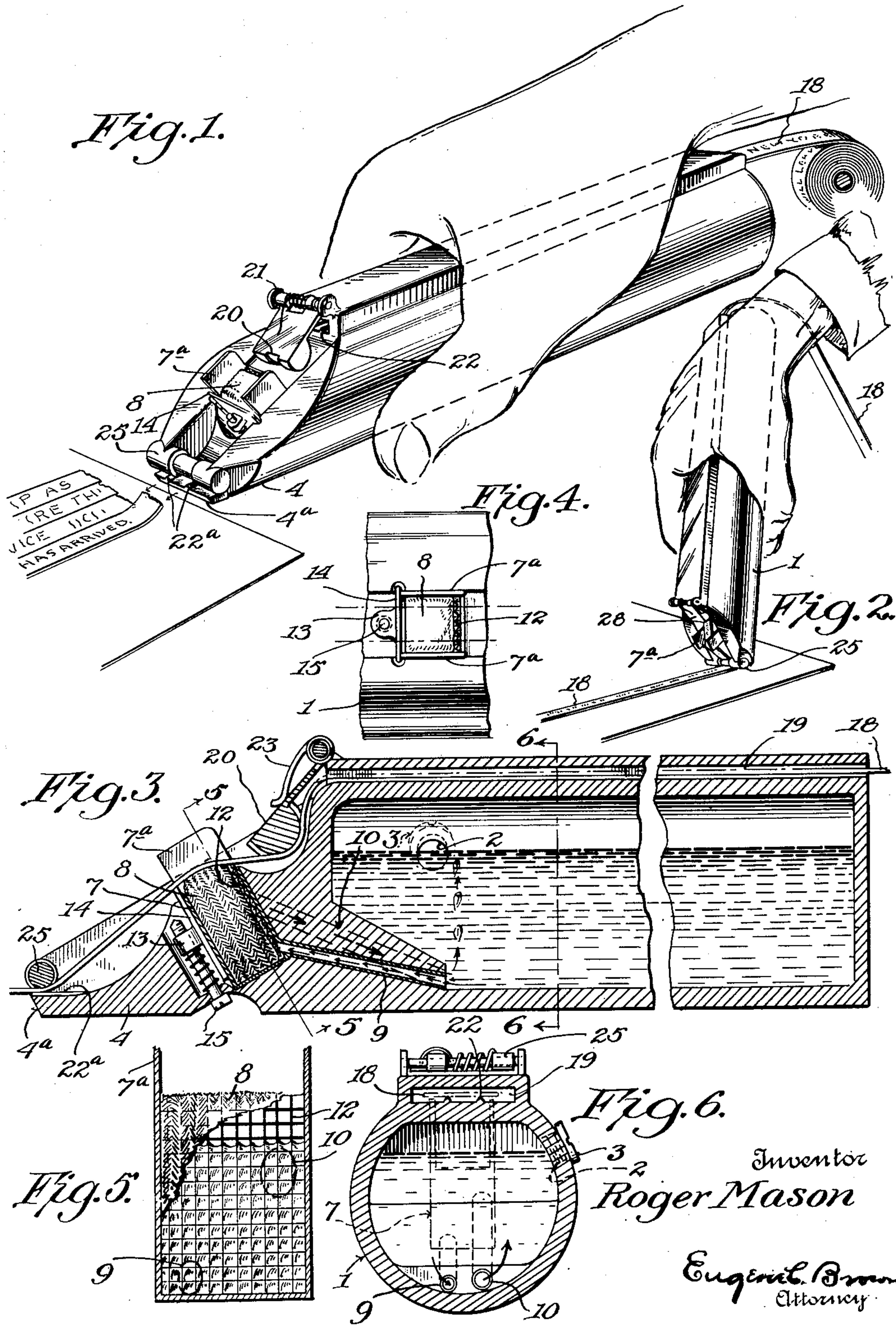
Oct. 4, 1927.

1,644,262

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GUMMED TAPE AFFIXING DEVICE

Filed March 3, 1924



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GUMMED-TAPE-AFFIXING DEVICE.

Application filed March 3, 1924. Serial No. 696,623.

This invention relates to a device for moistening a gummed strip of paper and applying it to a backing sheet.

Various devices or tools for affixing gummed strips have been proposed and some of them have been tried but in so far as I am aware none of them have been able to supply the proper amount of moisture and in an even or uniform manner; and no provision has been made for accurately regulating or adjusting the amount of a moisture supplied.

The main purpose of my invention is to provide a moistening and affixing tool in which the gummed tape is guided over a wick located in a box or chamber separate from the water supply reservoir, and is maintained at the proper degree of saturation by automatic means controlled by the rate at which the moisture is withdrawn by the passing tape, the flow from the reservoir being cut off when the desired amount of liquid is in the wick chamber. I further provide means for varying the amount of contact engagement between the passing tape, and the wick or moisture supplying medium, and also for withdrawing any excess of moisture from the outgoing strip.

In the following detailed description I shall refer to the accompanying drawing, in which—

Figure 1 is a perspective view showing a tool or device embodying my invention;

Fig. 2 is a perspective view showing one manner of applying a gummed tape to a backing sheet;

Fig. 3 is a longitudinal sectional view of the device;

Fig. 4 is a fragmentary top plan view of that portion containing the wick box or chamber;

Figs. 5 and 6 are transverse sectional views on the lines 5—5 and 6—6 respectively of Fig. 3.

My tape moistening and affixing device comprises a closed hollow body portion 1, forming a water reservoir, having a filling opening 2, closed by a cap or screw 3, and of a suitable size and configuration to be grasped in the hand of the operator. The forward end of the body portion is elongated to form a guiding nose member 4 and is provided with a well or recess to receive the wick box 7 which contains the felt wick or other moisture carrying medium 8. The

wick box is connected to the reservoir by means of two or more tubes. In the design shown two tubes 9 and 10 form water and air supply channels respectively, the latter being preferably of larger diameter than the other. These tubes may be of metal inserted or embedded in the material of the body or they may be holes drilled through the material. The tube or channel 9 connects the bottom of the wick chamber with the lower side of the main reservoir when the parts are in operative position, while the air channel 10 extends upwardly at a greater angle so that its upper free end is raised considerably above the outer end of the water channel. The water, therefore, will naturally flow through the lower channel, since it is heavier than the air and furthermore, the mouth of the air channel 10 connects with the upper portion of the wick chamber where the wick dries out sooner and hence this channel is exposed to the air while the lower channel is still filled with water. As water is drawn by the capillary action of the wick through the water tube 9, its volume is replaced by a corresponding amount of air passing into the reservoir through the air tube 10. This continues until the wick is saturated and a film of water extends across the mouth of the air tube 10, thus sealing the tube to the passage of air. By supplying both an air channel and a water channel connecting the water reservoir with the wick chamber, and having the mouth of the air channel above the mouth of the water channel, I have provided a structure which automatically operates to supply water intermittently to the wick.

As previously stated, the accurate regulation of the water supplied to the wick is of primary importance. This is impossible when the wick dips directly into the main reservoir and also when the moistener consists of a revoluble wheel or drum which is partially submerged in a water pan. In my device water can only pass through the supply channel 9 when air is permitted to enter through the air inlet channel 10. It is evident that the air tube or channel will be sealed as soon as the water in the wick covers the mouth of the tube 10 in the wall of the wick box or chamber 7. Whenever the water line extends this high in the wick box, there is danger that the film of water forming the seal over the mouth of the air tube 10 may

develop into a drop of water in the tube itself, not readily removable, closing the passage to air. I have overcome this difficulty by inserting a wire-gauze liner 12 between the wick and the inner side of the wick box so that this gauze or reticulated sheet forms a screen across the mouths of the tubes 9 and 10. Now as the water is drawn upwardly by capillary action through the wick (this action perhaps also being enhanced along the inner side wall of the wick box by small interstices formed by the fine meshes of the wire gauze screen), the meshes of the screen become covered by a film of water which is sufficient to form a closure across the mouth of tube 10, as indicated in Fig. 5, thereby shutting off the entrance of air and preventing any further flow of water through the water supply tube 9. In this manner I assist the forming of the water seal, prevent any excess of water content in the upper portion of the wick, and effectually prevent the forming of a mass of water in the tube 10 which might stop its proper functioning. The instant the degree of saturation of the wick has diminished to an extent which is not sufficient to maintain the film of water across the mouth of the tube 10, air will be drawn into the reservoir, allowing a corresponding quantity of water to pass through the tube 9, which will be taken up by the wick and the process described will be repeated.

It is desirable to accurately regulate the amount of wick surface engaged by the tape and for this purpose I provide an adjustable gauge plate 14 which bears against the lower side of the tape and determines the arc of contact between the tape and wick. The amount of contact may be varied by adjusting the height of the plate by means of the screw 15, which is threaded in the lug 13. The upper edge of the plate 14 also serves as a dam to remove any surplus of water that adheres to the tape. The lateral walls of the wick box are provided with extensions or wings 7^a which serve as guides for the tape. They also prevent the escape of any water from the wick box in case the device is laid upon its side when not in use, not only enclosing the wick but also serving to hold a drop of water that may accumulate at the lower edge of the wick in the angle between the wick and the wing by surface tension. This minor function is important however as it avoids any danger of wetting of the desk or papers when the apparatus is laid down on its side.

The gummed tape 18, which may unwind from a reel or be received directly from a telegraph message printer, is threaded through a channel 19, which may be formed in the upper side of the body of the device, and passed under a tension shoe 20, pivotally held between the ears 21 and lightly

pressed against the tape by a spring 23. After passing over the wick 8 and the dam 14, the tape emerges through the slot between the end 4^a of the nose member and the nose-rod 25 carried thereby. The bottom of the channel 19 is provided with ridges 22 to reduce the friction on the tape. The upper side of the nose piece is likewise provided with ridges 22^a to hold the moistened tape out of contact with the wall of the nose.

The lower side of the tension shoe 20 is centrally grooved, as is also the nose rod 25, to prevent any smearing of the printed characters upon the upper ungummed side of the tape since the ink may not be dry or the characters may be printed in copying ink.

The operation of apparatus will be apparent from the above description and the drawings. If for instance the gummed tape bears a printed telegraph message, the forward end of the tape as it emerges from the nose of the apparatus is pressed against a blank telegraph message sheet preferably by means of a small presser plate mounted on a thimble placed on the left forefinger and the moistening and tape feeding device is moved across the sheet with the right hand. The tape may be pressed down by the nose of the moistening device as indicated in Fig. 2. As the right hand edge of the sheet is reached the tape is severed and the process is repeated until the full message has been affixed to the blank sheet, each section of the tape forming a line of the message.

I claim:—

1. A gummed tape moistener, comprising a hollow body portion constituting a handle and a water container or reservoir, a wick holder or chamber, and separate water and air passages connecting said wick chamber with said reservoir, said water passage entering said chamber below said air passage.

2. A gummed tape moistener, comprising a hollow body portion constituting a handle and a water container or reservoir, a wick holder or chamber, separate water and air passages connecting said wick chamber with said reservoir, a wick or absorbent member located in said chamber, and means for guiding a tape across and in contact with the exposed end of said wick.

3. In a gummed tape moistener as set forth in claim 2, a plate adjustable with respect to said wick for varying the area of contact between the wick and the tape.

4. In a gummed tape moistener as set forth in claim 2, a plate adjustable with respect to said wick for varying the area of contact between the wick and the tape, said wick holder having upstanding wings disposed upon either side of the wick.

5. A gummed tape moistener, comprising a hollow handle portion containing a water reservoir, a wick holder and a wick of ab-

sorbent material therein, tubular channels connecting said wick holder and said reservoir and constituting air and water passages respectively, and a reticulated screen interposed between said wick and the wall of said wick holder and extending across the openings leading into said channels.

6. A gummed tape moistener comprising a hollow body portion constituting a handle and a water container or reservoir, a wick holder or chamber and an absorbent wick located therein, communicating means for water and air respectively between said wick

holder and said reservoir, said body portion having a passage for guiding a tape across said wick, said passage being formed with ridges or projections to maintain the tape out of contact with the walls of the passage.

7. In a device as set forth in claim 6, an adjustable dam for engaging the tape as it leaves the wick.

In testimony whereof I affix my signature.

ROGER MASON.