F. KAUFMAN.

MACHINE FOR MAKING PAPER WRAPPERS.

APPLICATION FILED FEB. 23, 1909.

973,202.

Patented Oct. 18, 1910.

3 SHEETS—SHEET 1.

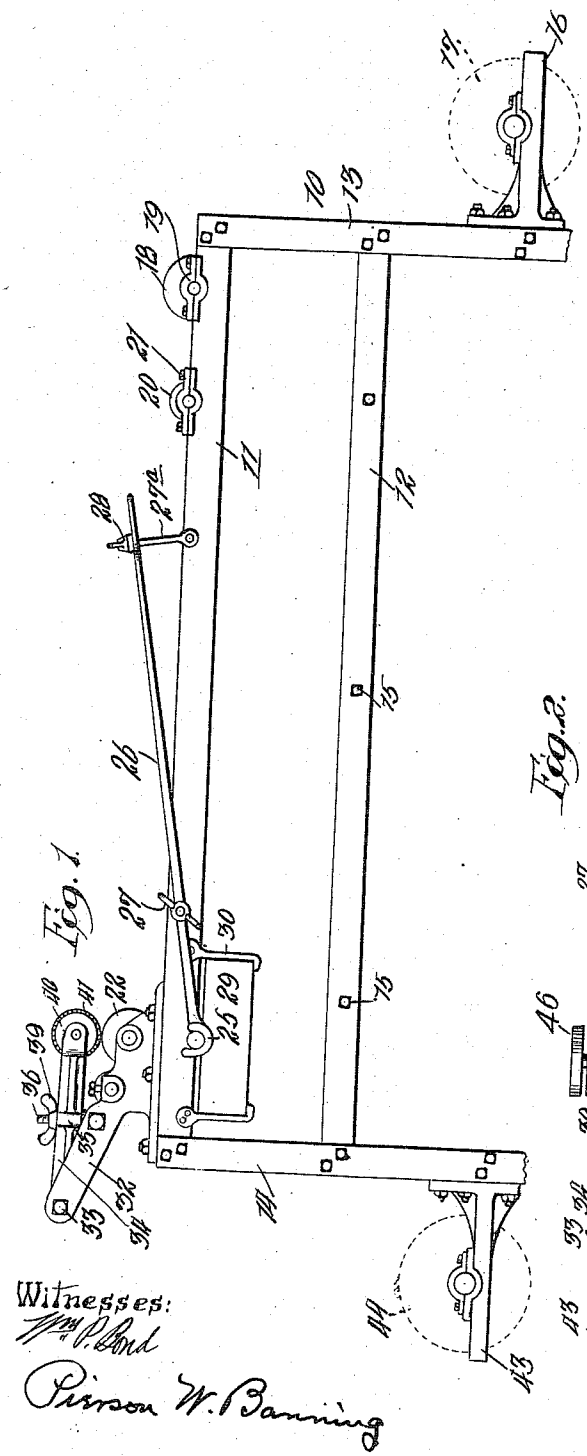

Fig. 1.

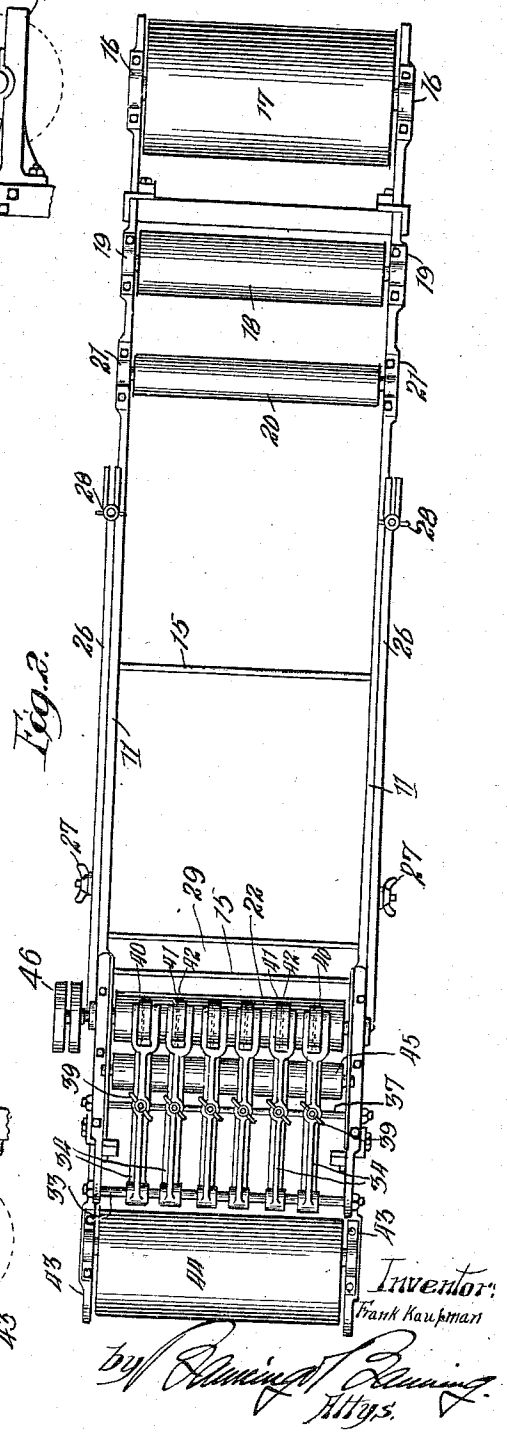

Fig. 2.

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3 SHEETS—SHEET 2.

Fig. 3.

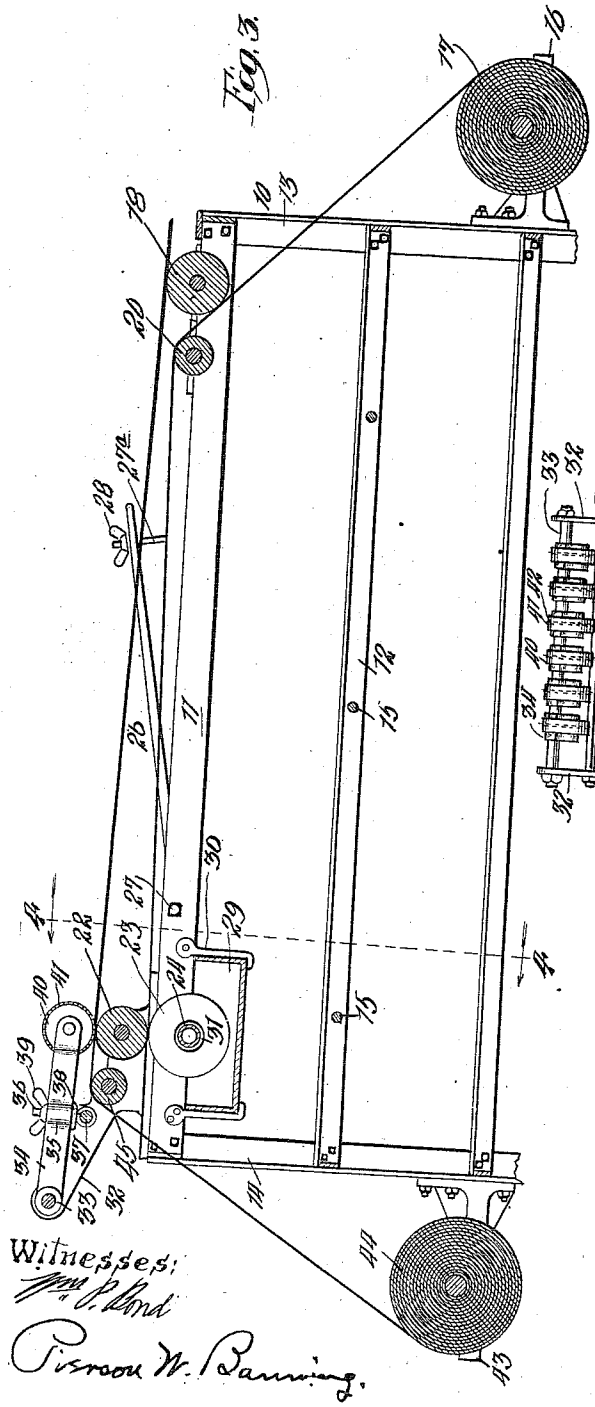
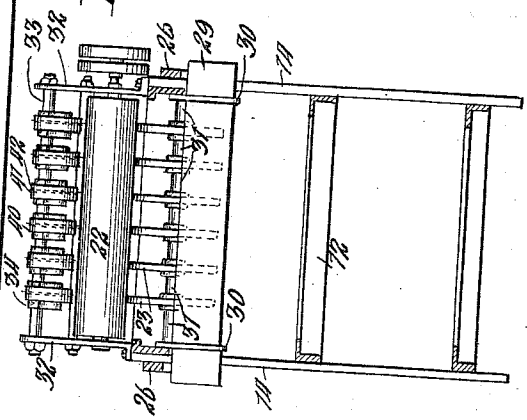


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

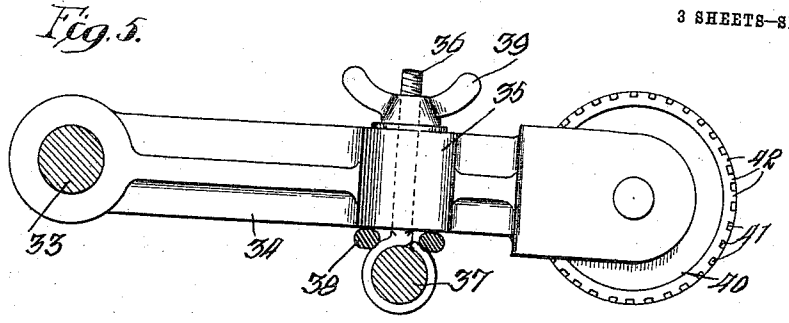


Fig. 6.

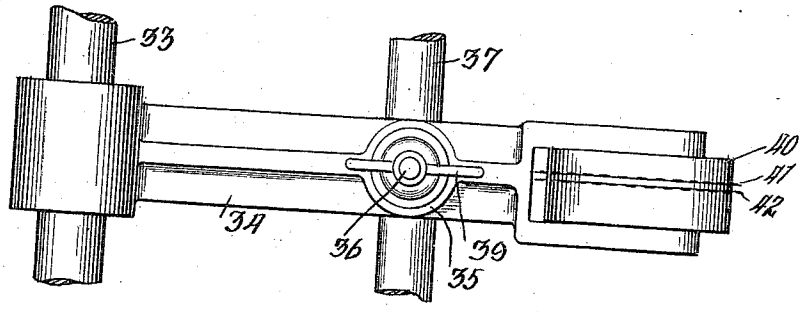


Fig. 7.

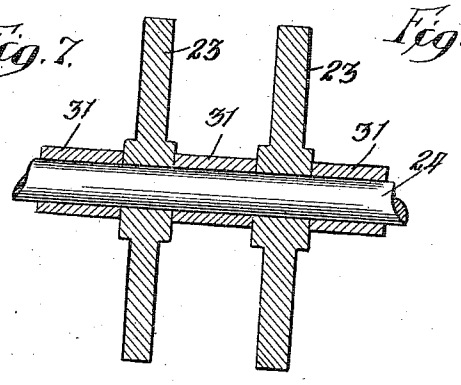


Fig. 8.

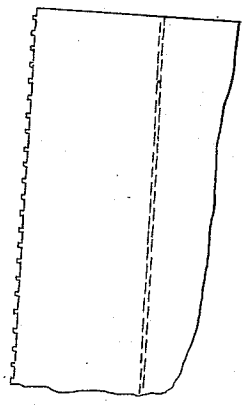
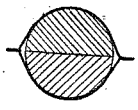


Fig. 9.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR MAKING PAPER WRAPPERS.

973,202. Specification of Letters Patent. Patented Oct. 18, 1910.

Application filed February 23, 1909. Serial No. 479,617.

To all whom it may concern:

Be it known that I, FRANK KAUFMAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Making Paper Wrappers, of which the following is a specification.

The object of the present invention is to construct a machine capable of producing a wrapper for molding, brass tubing, and other similar products, which wrapper consists of a series of sheaths formed from two continuous strips of paper separated from one another by a perforated line.

Another object is to so construct this perforated line that, in tearing the sections away from one another, the tear will follow the line of perforation and not extend into the body portion of the sheath, and at the same time the line of perforation will be of sufficient strength so as not to be torn during handling in the course of shipment.

Further objects will appear from a detailed description of the invention, which consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of the machine; Fig. 2 a plan view; Fig. 3 a longitudinal section; Fig. 4 a cross section, taken on line 4—4 of Fig. 3, looking in the direction of the arrow; Fig. 5 a detail of one of the perforating wheels and its carrying arm; Fig. 6 a plan view of the same; Fig. 7 a cross section of the pasting wheels, showing the spacing collar interposed between two of the wheels; Fig. 8 a detail, showing a portion of the completed wrapper; and Fig. 9 a detail in cross section, showing a piece of molding inclosed in the wrapper.

The machine is mounted upon a framework 10 consisting of a top rail 11, side rails 12, front posts 13, and rear posts 14, the side rails having, at suitable intervals, cross bars 15 located therein. Attached to the forward posts 13 are brackets 16 carrying a roll of paper 17. The paper, as it is unwound from the roll, passes under an idler 18 located in suitable journals 19 upon the top rail of the frame, also passing over an idler 20 held by suitable journals 21, likewise located on the top rail of the frame. The paper then travels rearwardly and passes between a compression roller 22 and pasting disks 23. The pasting disks revolve loosely upon a fixed shaft 24, said shaft extending beyond the side walls of the top rail 11 and resting in a socket 25 of a lever 26, which lever is pivoted at a point 27 and is of tapered formation to give it a spring action. The lever is forked at its forward end; and extending through the forked end is a rod 27^a which receives a thumb nut 28, and by screwing down this thumb nut the socketed end is thrown upward, thus holding the pasting disks 23 in close and firm contact against the compression roller 22. The pasting disks 23 are adapted to have their lower ends revolve in a paste box 29, which is held in position by hangers 30 attached to the top rail of the frame, one of the hangers being fixed and the other adapted to be swung loose. As it is, of course, necessary that the sheaths of the wrapper be of varying dimensions, the pasting disks must be adjusted so as to paste any number of strips desired across the width of the paper. This is done by interposing between the pasting disks a loose collar 31. When it is desired to make a wrapper having a sheath of larger dimension, the disks and collars are removed from the shaft, and a collar of greater length is interposed between the disks, thus spacing the disks farther apart.

The compression roller 22 is mounted in a framework 32 located at the rear end and upon the upper surface of the top rail. On the rear end of this frame, and extending crosswise thereof, is a rod 33 which carries a mounting for the perforating wheel, these perforating wheels resting on top of the compression roller 22 at a point in alinement with the pasting disks 23. The mounting for the perforating wheels consists of a forwardly extending arm 34, forked at its forward end and having an enlarged portion 35 in its center; and extending through the enlarged portion is a screw-threaded rod 36 flattened at its lower end, and the flattened portion is bent to encircle a rod 37 extending crosswise of the frame 32. Interposed between the base of the arm 34 and the lower portion of the rod 36 is a rubber ring or washer 38, and the upper screw-threaded end of the rod 36 is adapted to receive a thumb nut 39. It will thus be seen that by adjusting the thumb nut 39 a tension will be placed upon the rubber

washer 38, making a frictional contact and preventing the arm 34 from sidewise movement, the looped end of the rod 36 preventing lateral movement. When it is desired to move the arm back and forth along the rod 36 to conform with the position of the pasting disks, it can be easily done by loosening the thumb nut 39.

Carried between the forked ends of the arm 34 is a perforating roller 40 having thereon two sets of perforating knives 41—42, the knives being arranged in staggered relation to one another so as to produce a double row of perforations, also in staggered relation to one another, by which arrangement of perforations, the sheaths, when torn apart, will tear along this line and not extend with the body portion of the sheath, as would likely be the case with a single line of perforations.

Located upon the rear post 14 of the framework is a bracket 43 adapted to carry a roll of paper 44, and the paper from this roll is fed over an idler 45 journaled in the side wall of the frame 32 and lying in a position behind the compression roller 22. The paper from the roll 17 and from the roll 44 are thus united on the top surface of the compression roller 22. The paper from the roll 17, having already passed between the pasting disks 23 and the compression roller 22, will have upon its upper surface a strip of paste which will serve to adhere the two separate strips of paper when they are brought together upon the top of the compression roller, and at the same time the knives of the perforating rollers will operate to form a line of perforations along the paper on the line where the paste has been applied. It will be understood that, as the paper is fed forward by the compression roller, the frictional contact of the paper with the pasting disks and the perforating rollers will serve to rotate both sets of rollers, the peripheries of the perforating rollers serving as a means for bringing the two sections of paper into firm contact and adhering them together.

Extending from the shaft upon which the compression roller 22 is mounted is a fast and loose pulley connection 46, to which power can be applied, making the compression roller serve as a feed roller for feeding the two sections of paper forward in the desired position. The paper, after passing between the perforating knives, can be passed over the top of the idler 18, if desired, and thence down to a roller suitably located upon the front post 13 of the frame and wound up.

The operation will be generally understood from the foregoing description, but briefly is as follows: A roll of paper is inserted upon the brackets on either end of the frame and their ends brought forward to the upper portion of the compression roller 22. Power is then applied to the shaft carrying the compression roller and the two strips of paper are carried forward thereby. One of the strips of paper passes between a set of pasting disks and the under side of the compression roller, thus applying a layer of paste to the surface of the paper; and when this paper reaches the top part of the compression roller it adheres itself to the other section of the paper, and at the same time the perforating wheel will act to form perforations between the sheath sections, along the line where the paste has been applied.

When it is desired to remove the pasting disks 23 for the purpose of adjustment, the swinging hangers 30 are swung outward and the paste box 29 removed. The thumb screws 28 are then loosened, allowing the lever 26 to swing downwardly, thus lowering the shaft 24 into position where it can be readily removed from the hangers 30.

Whenever it becomes necessary to remove any of the perforating knives from contact with the compression rollers, in order to secure proper adjustment, the same will be accomplished by taking the thumb nut 39 entirely off from the stem 36 and throwing the arm 34 backward, thus carrying the roller 40 out of engagement with the compression roller.

What I claim as new and desire to secure by Letters Patent is:

1. In a machine for making paper wrappers, the combination of a supporting frame, a compression roller mounted on said frame, a set of pasting disks adapted to have their peripheries contact the periphery of the compression roller, means for applying paste to the pasting disks, a set of rollers carrying perforating knives, the knife-edges adapted to contact the periphery of the compression roller, means for feeding a strip of paper between the pasting disks and the compression roller, and means for feeding a second strip of paper to unite with the strip of paper having the paste thereon, the two strips of paper uniting at the point where the perforating knives contact the periphery of the compression roller, substantially as described.

2. In a machine for making paper wrappers, the combination of a supporting frame, a set of pasting disks, a shaft upon which the disks are mounted, levers supporting said shaft, a compression roller in engagement with said disks, a receptacle for paste, in which the disks revolve, a set of rollers carrying perforating knives, the knives contacting the periphery of the compression roller, means for feeding a strip of paper between the pasting disks and the compression roller, and means for feeding a second strip of paper to unite with the strip of

paper having the paste thereon, the two strips of paper uniting at the point where the perforating knives contact the periphery of the compression roller, substantially as described.

3. In a machine for making paper wrappers, the combination of a supporting frame, a compression roller mounted in said frame, a set of pasting disks located beneath the compression roller, a shaft upon which said disks are mounted, the peripheries of the pasting disks contacting the periphery of the compression roller, means for applying paste to the pasting disks, a series of rollers located above the compression roller and carrying perforating knives, the compression roller serving to keep a strip of paper in firm engagement with the pasting disks and serving as a backing for the perforating knives, substantially as described.

4. In a machine for making paper wrappers, the combination of a supporting frame, a compression roller mounted upon said frame, a power driven shaft upon which said roller is mounted, a set of pasting disks located beneath the compression roller and adapted to have their peripheries contact the periphery of the compression roller, means for applying paste to the pasting disks, a series of rollers carrying perforating knives carried by an arm attached to a rod fixed to the supporting frame, the edges of the knives contacting the periphery of the compression roller, means for feeding a strip of paper between the pasting disks and the compression roller, and means for feeding a strip of paper between the compression roller and the roller carrying the perforating knives, the two strips of paper joining at the point where the perforating knives contact the compression roller, substantially as described.

5. In a machine for making paper wrappers, the combination of a supporting frame, a compression roller mounted upon said frame, a power driven shaft upon which said roller is mounted, a set of pasting disks adapted to contact the compression roller, means for applying paste to the pasting disks, a series of rollers carrying perforating knives, arms attached to a rod fixed to the main frame, upon which said rollers are mounted, the compression roller serving as a backing for the knives, means for adjusting longitudinally the pasting disks and the rollers carrying the perforating knives, means for feeding a strip of paper between the pasting disks and the compression roller, and means for feeding a strip of paper between the compression roller and the rollers carrying the perforating knives, the peripheries of the rollers carrying the perforating knives acting in conjunction with the compression roller to adhere the two strips of paper together, substantially as described.

6. In a machine for making paper wrappers, the combination of a supporting frame, a compression roller mounted upon said frame, a power driven shaft upon which said roller is mounted, a set of pasting disks located beneath the compression roller and in contact therewith, means for applying paste to the pasting disks, a series of rollers located above and in alinement with the pasting disks, each roller carrying companion sets of perforating knives arranged in staggered relation to one another, arms attached to a rod fixed to the main frame, upon which said rollers are mounted, the compression roller serving as a backing for the knives, means for longitudinally adjusting the pasting disks and the rollers carrying the perforating knives, means for feeding a strip of paper between the pasting disks and the compression roller, and means for feeding a strip of paper between the compression roller and the roller carrying the perforating knives, the peripheries of the rollers carrying the perforating knives acting in conjunction with the compression roller to adhere the two strips of paper together, substantially as described.

7. In a machine for making paper wrappers, the combination of a pasting roller, a perforating roller, and a power driven roller interposed between the pasting roller and perforating roller in contact therewith and serving to rotate the same, said power driven roller serving to feed a strip of paper passing partially therearound, and a strip of paper passing thereacross, the first mentioned strip of paper receiving paste from the pasting roller, the two strips of paper meeting at the point where the perforating roller contacts the power driven roller, substantially as described.

8. In a machine for making paper wrappers, the combination of a supporting frame, a set of pasting disks, a fixed shaft upon which said disks are mounted, loose collars upon said shaft, serving to separate said disks from one another, the disks being capable of removal from the shaft, to permit of the interposition of collars of various lengths for spacing the disks various distances upon the shaft, means for applying paste to said disks, a set of perforating knives, a compression roller between the pasting disks and knives, means for feeding a strip of paper over the pasting disks, the perforating knives coöperating with the compression roller to serve as a means for joining a second strip of paper to the strip of paper having paste applied thereto, substantially as described.

9. In a machine for making paper wrappers, the combination of a supporting frame, a set of pasting disks, means for applying paste to said disks, a compression roller above said disks, means for feeding a strip

of paper between the pasting disks and the compression roller, rollers carrying perforating knives in engagement with the compression roller, the two rollers coöperating to join a second strip of paper to the paper having the paste applied thereto, an arm for securing said perforating knife rollers, a hub upon the rear end of the arm, an enlarged portion in the center of the arm, a stem screw-threaded at its upper end and extending through said enlarged portion, the lower end of the stem being flattened and bent to encircle a rod, a rubber washer interposed between the base of the arm and the bent end of the stem, and a thumb screw secured upon the upper screw-threaded end of the stem, substantially as described.

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Witnesses:
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