

Feb. 17, 1931.

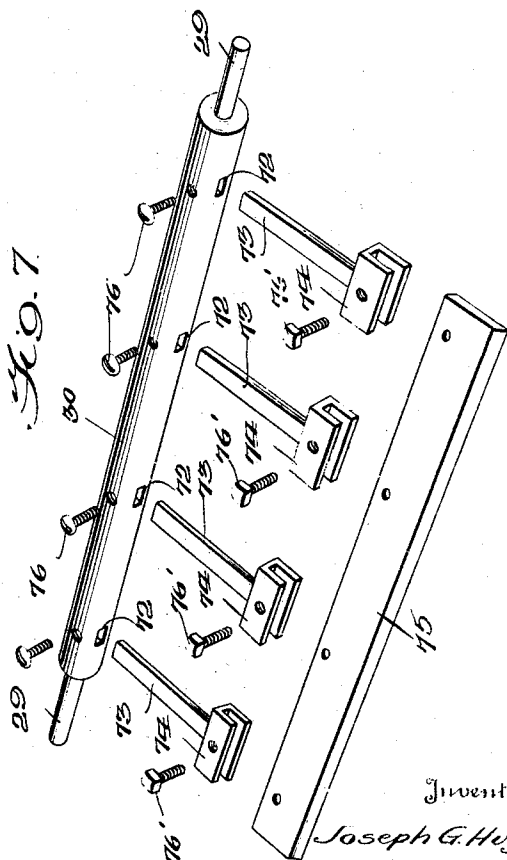
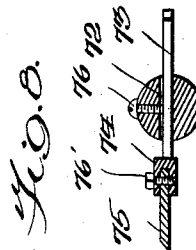
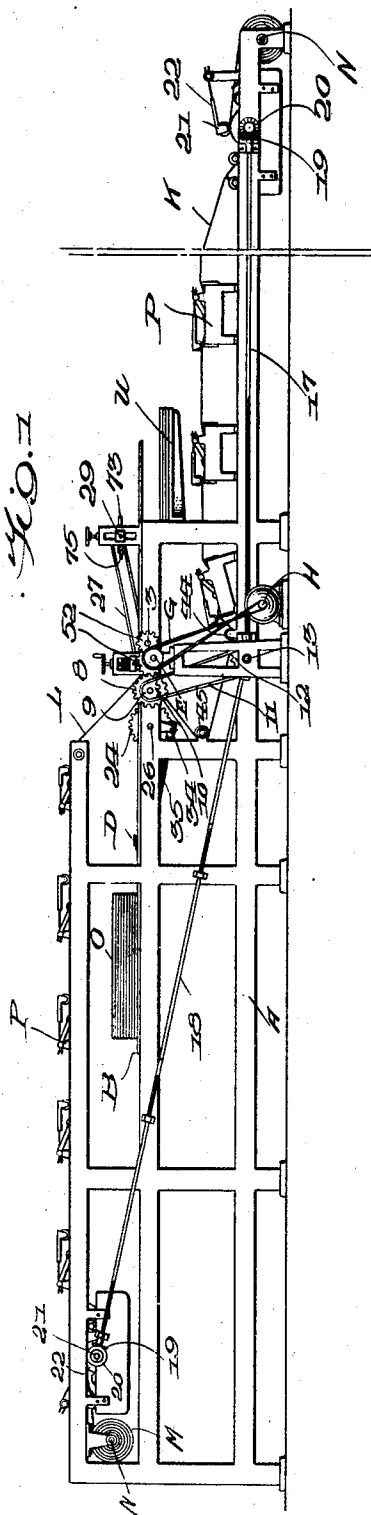
J. G. HUYE

1,792,986

DOUBLE FACE COVERING MACHINE

Filed June 28, 1929

6 Sheets-Sheet 1



Inventor

Joseph G. Huye,

By *Richard E. Babcock*

Attorney

Feb. 17, 1931.

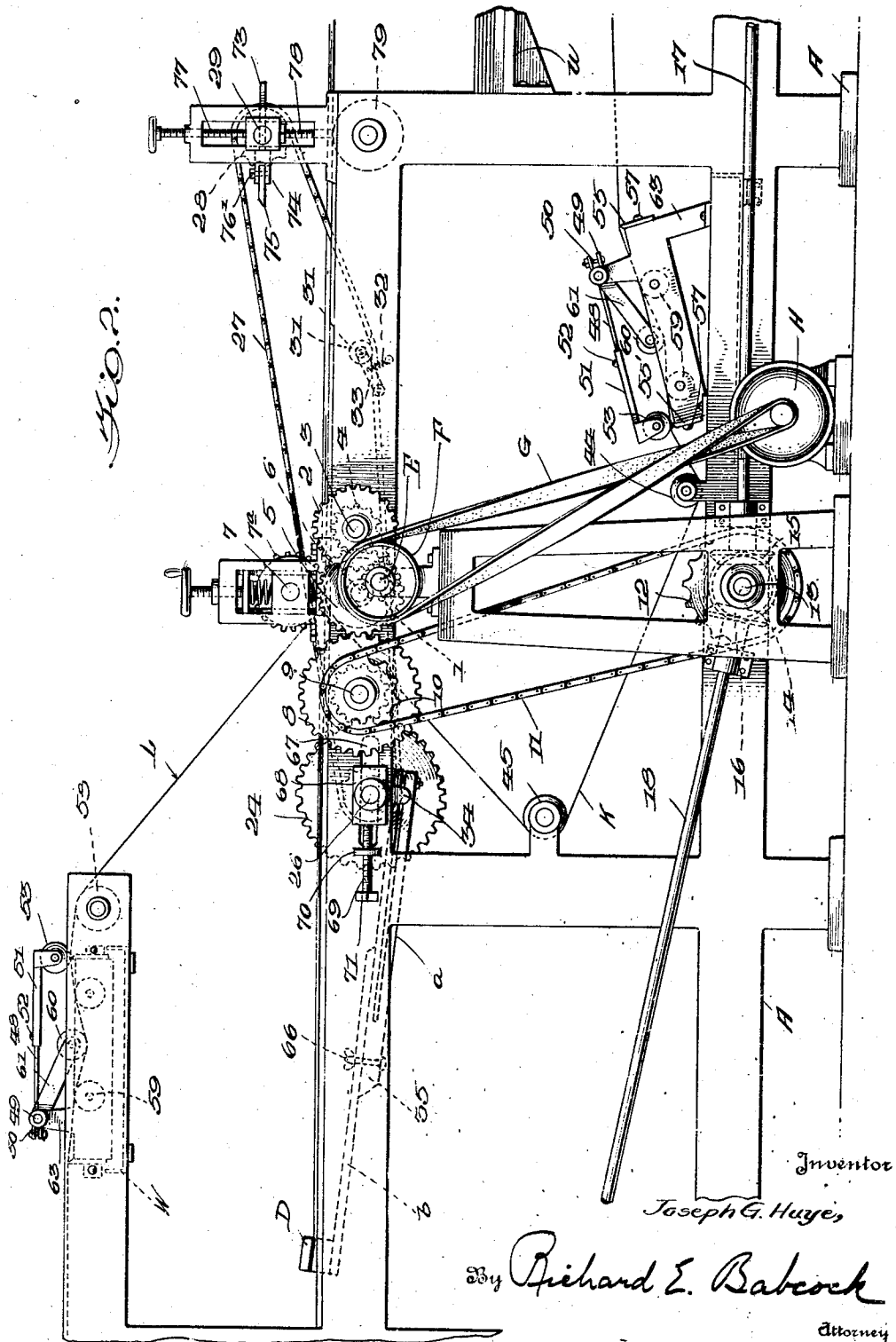
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DOUBLE FACE COVERING MACHINE

Filed June 28, 1929

6 Sheets-Sheet 2



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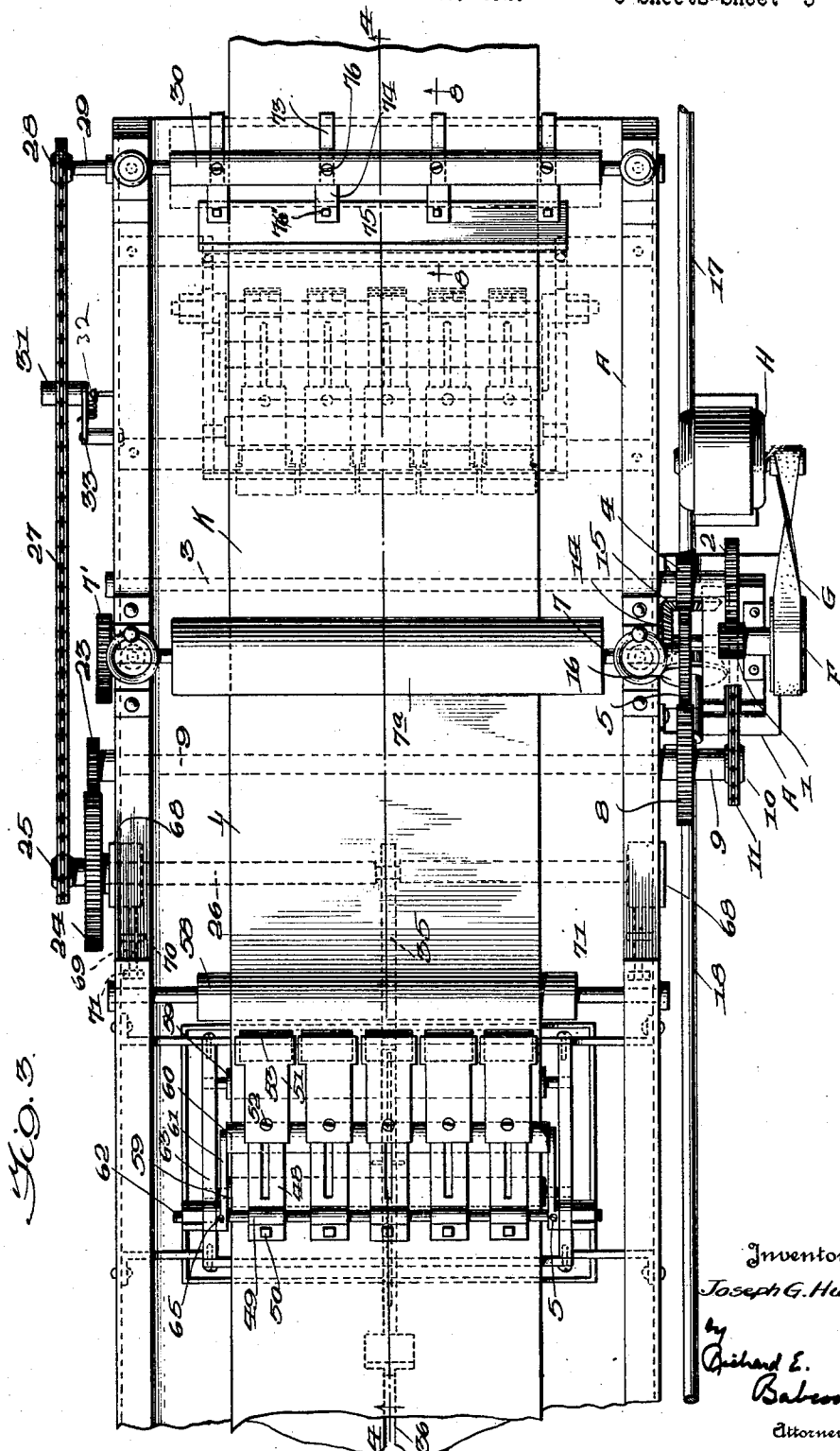
J. G. HUYE

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DOUBLE FACE COVERING MACHINE

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6 Sheets-Sheet 3



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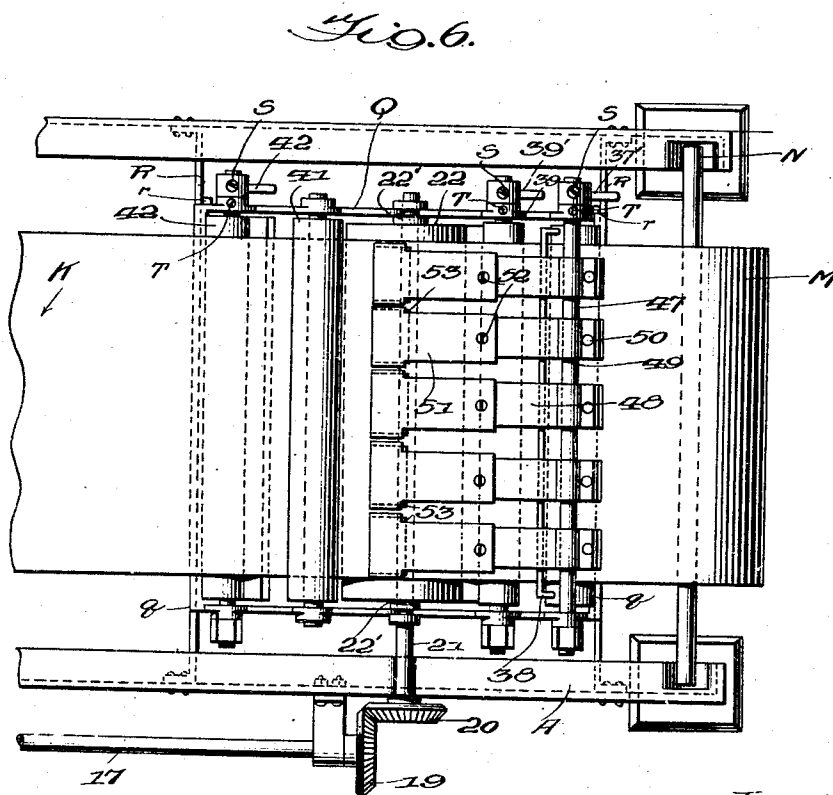
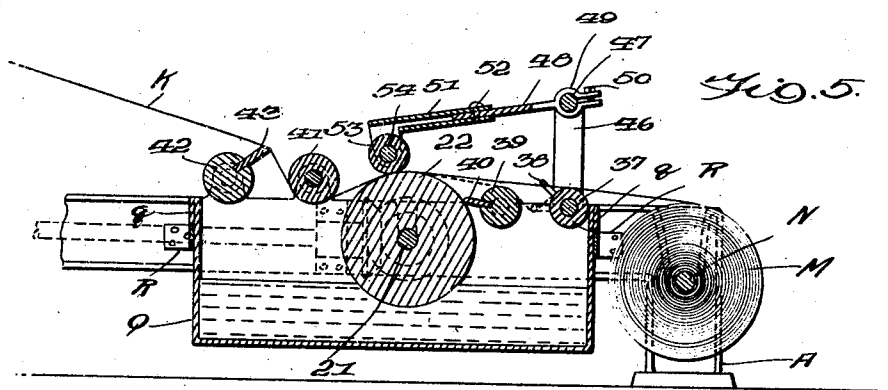
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DOUBLE FACE COVERING MACHINE

Filed June 28, 1929

6 Sheets-Sheet 5



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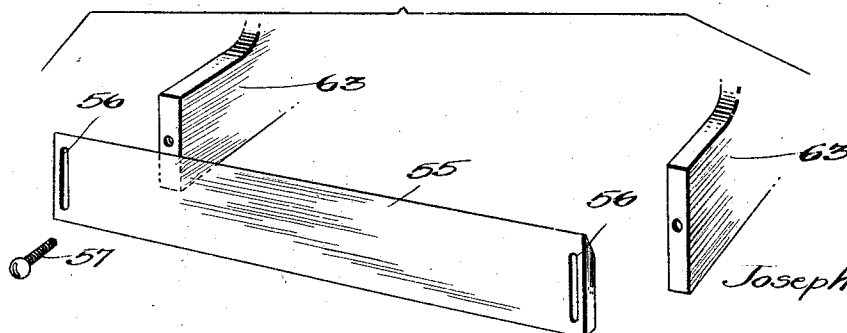
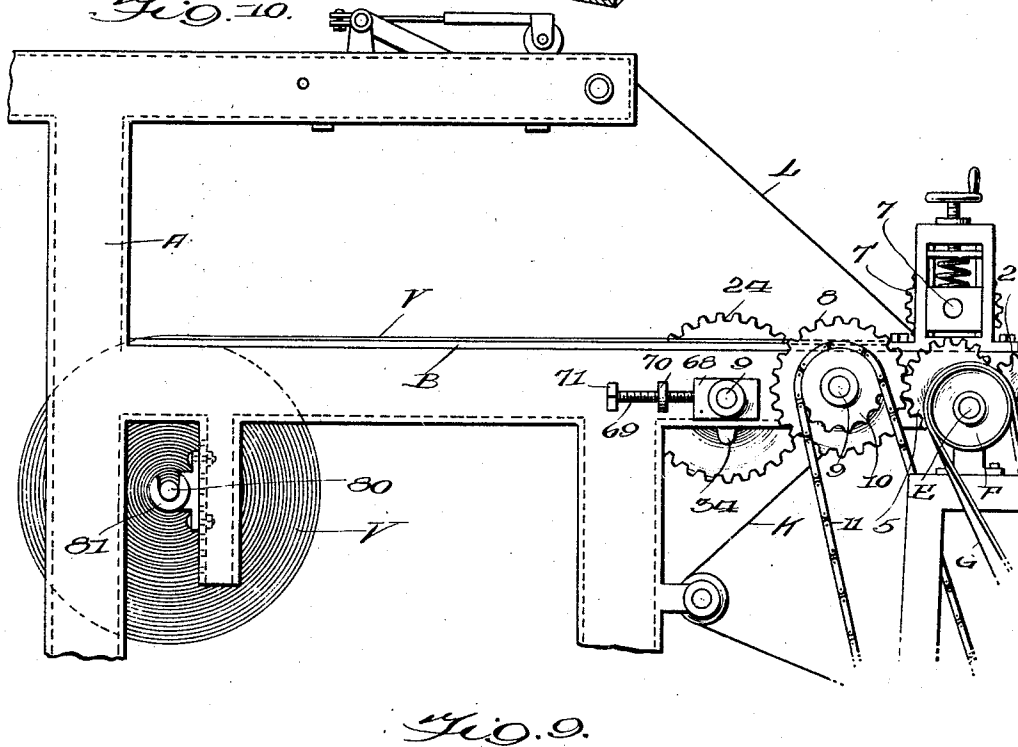
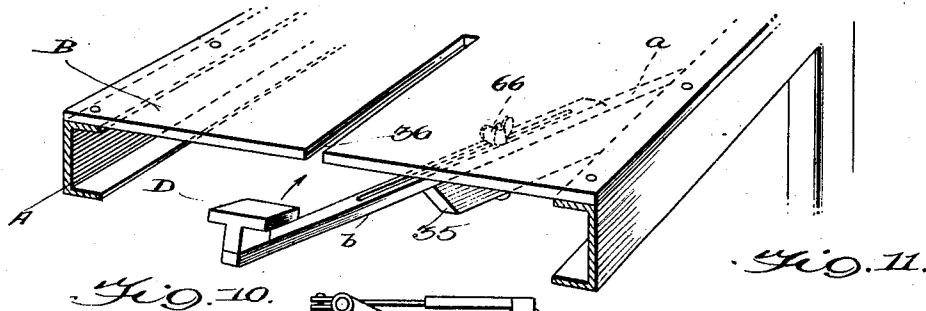
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DOUBLE FACE COVERING MACHINE

Filed June 28, 1929

6 Sheets-Sheet 6



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57
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UNITED STATES PATENT OFFICE

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DOUBLE-FACE COVERING MACHINE

Application filed June 28, 1929. Serial No. 374,482.

This invention relates to double pasting machines; that is to say, to machines for simultaneously pasting outer layers of paper on the upper and lower faces of an intervening sheet layer, which will usually be cardboard, but may, of course, be paper or some other sheet form material.

The primary objects of the invention are to provide means for simultaneously applying the outer layer or covering-paper to the upper and lower faces of the intervening layer; to provide positive means for rotating the paste-applying rolls in direct relation to the speed of rotation of the applying or pressure rolls and for pulling the covering-paper from its supply rolls by said paste rolls in the direction of travel to the pressure rolls, whereby the turning weight of the supply rolls of covering material will be taken off of the seasoning webs of paper, preventing undue and uneven stretching of the latter; to provide means for applying adhesive to the covering layers of paper, controlling the amount of adhesive left on the paper at a plurality of points of its travel and for working the adhesive into the pores of the paper at a plurality of points of its travel as a single continuous operation, all of said steps being interrelated; to provide means for seasoning the paper after the paste has been initially applied thereto and prior to its passage through the pressure rollers; to provide means for varying the length of time of seasoning in accordance with the nature, body composition or characteristics and weight or thickness of the paper; to provide means for controlling the lateral spreading of the adhesive to prevent banding thereof; to provide means for insuring application of adhesive to all portions of the area of the covering sheets, even though some obstruction in the paste pans might prevent the application of adhesive at the paste rolls to some portions of the respective covering sheets; to provide an open machine construction or visible adhesive-applying and paper-covering sheet conditioning machine, whereby the condition of each web of covering paper is visible substantially at all points from the time it leaves its supply roll to the time it passes through

the pressure rollers 6^a and 7^a, so that any imperfection in the condition of the paper is perceptible immediately to the operator; to provide special working or kneading means for working the covering paper and preventing curling of its edges; to provide means collectively working over a large area of the covering paper and holding the paper under tension and friction and so preventing lateral creeping movement out of a direct straight course; to provide braking means for retarding the rate of paper let-off from the supply roll, said brake being adjustable to cause slip between the paper band and the paste-supplying roll to compensate for the slight variations of the stretching properties of various pieces of paper when coated with adhesive and subject to the working of the kneading and stretching rolls, whereby said covering paper in stretched and coated damp condition will arrive at the pressure rolls at substantially the same speed of travel as the speed of rotation of the surface of said pressure rolls, but not faster; to provide in such a machine simple means for driving the cardboard sheet-feeding means and the finished sheet-cutting means whereby the one is controlled by the other.

In this application I show and describe only several embodiments of my invention simply by way of illustration of the practice thereof as by law required. However, I am well aware that my invention is capable of a number of other and different embodiments, and that the various details thereof may be modified in many ways all without departing from my said invention. Therefore, it is my desire and intent that the drawings and description herein are to be considered as merely illustrative and not as exclusive.

Briefly, all covering paper, after being coated with adhesive requires a period in which the moisture of the adhesive can soak into the pores of the paper; or, in other words, to season, before being applied as a covering to pasteboard, otherwise the coating paper will tend to curl away from the cardboard and to crinkle. This period varies in accordance with the composition, nature or characteristics of the paper and its weight or thickness and

the amount of working, kneading or other treatment to which the paper so coated is subjected. Further, when in such coated and damp condition it very easily stretches unevenly into odd shapes when subjected to a greater pull at one point than another, and sticks to anything its coated face contacts with, and so it is very difficult by prior known apparatus to apply even a single large covering sheet to a corresponding sheet of material without having some crinkles or imperfections.

Further, the application of the covering sheet to but one side of the cardboard at a time as heretofore known results in setting up uneven strains and stresses in the cardboard, resulting in twisting and warping the resultant laminated product out of flat condition, whereas by simultaneously applying the covering sheets to both sides of the cardboard in accordance with my present invention both sides of the cardboard are saturated to the same degree, subjected to the same strains, stresses and conditions in drying and dry simultaneously, resulting in producing a flat laminated product in dried condition without need for special pressing or other treatment following such drying or discharge from the apparatus or machine of my invention.

In the accompanying drawings:

Figure 1 represents a side elevation, partially broken away, of a machine embodying my invention;

Figure 2, a side elevation broken away, showing the central portion of the machine;

Figure 3, a top plan view of the parts shown in Fig. 2;

Figure 4, a vertical sectional view on the line 4—4 of Fig. 3, looking in the direction of the arrows;

Figure 5, an enlarged detail longitudinal vertical sectional view through one end portion of the machine;

Figure 6, a top plan view of the parts illustrated in Fig. 5;

Fig. 7, a perspective exploded view of the knife structure;

Figure 8, a sectional view on line 8—8 of Fig. 3;

Figure 9, a perspective detail view of one of the scrapers and adjustable mounting means therefor;

Figure 10, a side view of a part of the machine to illustrate a modification; and

Figure 11, a top plan view, broken away, of Fig. 9.

My invention involves, roughly speaking, five operative groups of elements, viz., the two covering-paper supplying and treating trains, the covering-paper applying and pressure rollers, the cardboard sheet-feeding means, and the mechanism for cutting off lengths of the finished laminated product, all of said groups being connected by suitable

gearing, drive chains and other drive connections, and preferably being driven from a single source of power or main drive shaft.

Referring now in detail to the drawings, A indicates the machine frame, which may be of any suitable form and construction; B, a suitable preferably flat surface work table of any suitable length and width for receiving a stock of cardboard sheets and having a feed registering gauge C cooperating with the feed kicker D in the proper positioning of the individual cardboard sheets during the operation of the machine; E, the main drive shaft mounted in the frame A; F, a belt pulley keyed to the outer end of the shaft E, and driven by a belt G extending about said pulley F and driven by an electric motor H, and I a small gear pinion keyed to the inner end of the main power shaft E.

The pinion 1 meshes with a large gear 2 keyed to shaft 3, a small gear 4 keyed to said shaft 3 meshes with large gear 5 keyed to the adjacent end of the shaft 6 of the lower pressure roll 6^a to turn the latter, and gears 6' and 7', respectively, keyed to the other end portions of pressure roller shafts 6 and 7 and meshing with each other serve to positively drive the upper pressure roller 7^a from the lower pressure roller 6^a. The gear 5 meshes with and drives a large gear wheel 8 keyed to shaft 9, to which is keyed a sprocket wheel 10 driving a sprocket chain 11 passing about and driving a sprocket wheel 12 keyed to a shaft 13 in the central lower portion of the frame A, to which shaft 13 is keyed a bevel gear 14 meshing with bevel gears 15 and 16 respectively keyed to the adjacent end portions of the longitudinally extending shafts 17 and 18 extending in opposite directions to the respective end portions of the frame A, at which points bevel gears 19 are keyed to the respective shafts 17 and 18 and mesh with cooperating bevel gears 20 respectively keyed to the shafts 21 of the respective paste-applying and paper-pulling or feeding rolls 22.

A small pinion 23 is keyed to the other or distant end portion of shaft 9 and is adapted to mesh with any one of a plurality of interchangeable different size gears 24 removably mounted on and keyed to the corresponding end portion of a shaft 26. A sprocket wheel 25 is formed integral with or is relatively immovably carried by each removable gear 24 and drives a sprocket chain 27 which passes about and drives a sprocket wheel 28 keyed to the shaft 29 of the rotary cutter bar 30, and a take-up roller 31 swingably mounted on the frame A by supporting arm 33 and bearing against the sprocket chain 27 and pulled against the same by a tension spring 32 connected to said frame A and to said arm 33 serves to maintain the sprocket chain 27 in taut driving condition, whatever size of gear wheel 24 be employed.

Said shaft 26 is formed with a crank 34

and an adjustable stiff drag link 35 connected thereto and to the kicker D serves to cause reciprocatory feeding movement of the latter lengthwise of the feeding table B in the slot 36 of the latter in time with the cycle of movement of the cutter bar 30 and knife bar 75 carried thereby.

The various gears and drive connections will be so proportioned and so associated as to rotate said paste rolls 22 respectively toward said paper-applying and pressure rollers 6^a and 7^a and at the same speed of rotation as said rollers 6^a and 7^a so as to pull the paper from the respective supply rolls M and feed it toward said paper-applying and pressure rollers 6^a and 7^a at substantially the same rate of speed as the speed of travel of the surface of said rollers 6^a and 7^a, said pulling or feeding action of the paste rolls 22 being subject to modification by a braking means, the paste on the paste rolls 22 permitting a certain amount of slip between the paper and paste rolls 22 respectively, to slow up the rate of feed of the paper by said paste rolls 22 respectively to compensate for slight variations in the stretching properties of various rolls of paper materials so as to maintain the proper timing between speed of travel of the surfaces of paper-applying and pressure rollers 6^a and 7^a and the rate of supply of paper thereto.

The lower covering-paper K and the upper covering-paper L, which papers will usually be of different colors, will be pulled by the respective paste-applying rolls 22 from their respective supply rolls M rolled on shafts N removably rotatably mounted in the frame A, passing therefrom successively over a rockably mounted roll 37, through and under the yoke bar 38 rigidly connected to and spaced from the roll 37, over the rockably mounted scraper roll 39, over the paste-applying and paper-feeding roller 22, under the rotatably mounted roller 41, up over the rockably mounted scraper roll 42 in contact with the scraper blade 43 thereof, through a plurality of successively arranged initial paste-removing, kneading or working and final paste-removing units P to the paper-applying and pressure rollers 6^a and 7^a, the kicker D successively feeding sheets of cardboard O between said lower and upper covering webs of paper K and L as the same enters between said rollers 6^a and 7^a, the upper web of covering-paper L passing over guide roller 58 after leaving its last unit P and prior to reaching the applying and pressure rollers 6^a and 7^a, and the web of lower covering-paper K being passed under guide rollers 44 and 45 and bent back above roller 45 toward the rollers 6^a and 7^a to present its paste-coated surface upward for application to the lower side of the sheets of cardboard O as it passes through between the rollers 6^a and 7^a.

Of course, there may be as many kneading

or working and paste-removing units P for each covering web of paper K and L as required for any given maximum capacity of machine, said units being spaced at regular intervals. For instance, it requires a certain time for the paste to soak into the paper, that is to say, for the paper to become seasoned after being coated with paste and prior to being applied to the cardboard and this period will vary in accordance with the absorbing qualities and weight or thickness of the paper; thus, if it be desired to run the machine at a speed to produce fifty feet of finished covered board per minute, five such units P equidistantly spaced, as illustrated in Fig. 1, will suffice, as arranged giving a distance between each supply roll M and the rollers 6^a and 7^a of approximately twenty-five feet in the path traveled by the paper, the units P being sufficiently close to each other to keep the paper under constant equal tension and to prevent all curling of the edges or fluttering of the paper, so that the paper is allowed a seasoning period of approximately 1/2 a minute between the time paste is applied to it and the time it is applied to the cardboard. Of course, the capacity of the machine may be greatly increased by increasing the rate of speed of the paste rollers 22 and of the paper-applying and pressure rollers 6^a and 7^a, at the same time increasing the distance traveled by the covering-paper webs K and L between the respective paste rollers 22 and said paper-applying and pressure rollers 6^a and 7^a and employing a greater number of units P as may be necessary to maintain proper command of the respective paper webs K and L between said paste rollers 22 and said rollers 6^a and 7^a. The shafts of the rockable rolls 37, 39 and 42 and the rotating hold down and tension roller 41 and the paste roller 22 are all mounted in suitable bearings in or on the respective paste pans Q, which are provided with side flanges q which rest on top of supporting bars R bolted or riveted to the side bars of the frame A and provided with lugs r to engage the end of the pan Q remote from the bevel gear 19 to prevent the pan Q from moving, or being moved, endwise away from gear 19 out of proper alignment and to maintain the bevel gears 19 and 20 in proper co-operative relation.

The upper portions of the ends of the pan Q and the side of the frame A adjacent the bevel gear 19 are vertically slotted to allow the paste roller 22 with its shaft 21 to be lifted from the pan Q to allow the same to be cleaned and to be lowered back in the pan Q into normal operative position, and the roller is formed with end-spacing shoulders 22' concentric with its axis to prevent endwise movement of the paste roller 22 in the pan Q, whereby the gears 19 and 20 will be kept in mesh during normal operative conditions.

A scraper blade 40 is mounted in the

scraper roll 39 and adjustable toward or from the paste roller 22, according to the movement of said roll 39 about its axis to regulate the uniformity and thickness of the coat of adhesive carried around by said paste roll 22 and applied against the opposed face of the web of covering-paper K or L, as the case may be.

Each rockable roll 37, 39 and 42 is provided with an operative handle or short lever arm 37', 39' and 42', each formed with an eye receiving an end portion of its respective shaft, a friction screw S passing through the wall of each said eye and engaging the respective shaft end portion, serving to lock said handles or lever arms to the respective shafts, and friction screws T, turning through the tops of the respective bearings of said shafts 37, 39 and 42 and adapted to engage said shafts serve to lock said shafts, and parts carried thereby, in any positions to which they may be adjusted and, when turned out, permit the adjustment of said shafts and parts carried thereby to any desired positions.

Arms 46, extending up from the respective ends of said paste pan Q, support a stationary fixed rod 47 on which are adjustably mounted a plurality of resilient bifurcated tongues 48 by means of strap clamp portions 49 receiving clamping or tightening screws 50 whereby said bifurcated tongues may be adjusted about said rod 47 and locked in any desired positions of adjustment.

Each tongue 48 receives a telescopic embracing resilient extension 51 having a clamping screw 52 extending through both sides of said extension 51 and received in the bifurcation of its corresponding tongue 48 and operative to lock said extension 51 to said tongue 48 in any position of endwise adjustment.

Each extension 51 has its free end formed with downwardly presented ears between which is mounted on shaft 54 a short pressure roller 53 adapted to bear against the upper face of the paper web K or L and press the latter against the paste roller 22 with greater or less force, according to the adjustment of its tongue 48 about the rod 47, and to engage the paper web at different points with relation to the axis of the paste roller 22, according to the endwise adjustment of the extension 51 on its tongue 48, so that said rollers 53 may be swung upward to inoperative position or be pressed toward the paste roller 22 with more or less force and at various points with relation to the axis of said paste roller 22, thus providing a very delicate and efficient means for controlling the condition of the paper-covering web K or L at its paste roller 22 and the application of paste thereto.

The number of presser rollers 53 will vary according to the width of the covering-paper webs to be operated on; that is to say, according to the operative length of the paste roller

22, five rollers 53 being shown closely adjacent each other in the embodiment illustrated.

By turning the rockable roll 37 so as to depress the paper web K or L by the yoke 38 to have a decided frictional dragging engagement over the curved non-rotating face of roll 37 or faces of non-rotating rolls 37 and 38 as indicated in dotted lines in Fig. 5, the rate of let-off of the paper from its supply roll M may be impeded and controlled over a substantial range, though it is not essential, considering the invention in its broader aspects, that the braking action be applied to the paper web as distinguished from the shaft N or roll M so long as there is provided some very delicate brake or control means functioning to the same end.

From the scrapers 43 the paper K and L passes through their respective series of scraping and working or kneading units P, upper covering-paper L passing from its last unit P over guide roller 58 and from the latter directly between the applying and pressure rollers 6^a and 7^a, lower covering-paper K passing from its last unit P down under guide roller 44, from there on a slant up and around guide roller 45 and from the latter runs upward and back toward the last unit P, so presenting its coating surface upward, and enters between the applying and pressing rollers 6^a and 7^a with its coated surface presented in opposition to the coated surface of web L.

The cardboard feed kicker D driven by crank 34 and drag link 35 serves to feed the sheets of cardboard O between the webs K and L as they pass between said rollers 6^a and 7^a, the movement of the kicker D being adjusted in position by means of the adjustable drag link 35 to suit the particular length of cardboard sheets O, say 32, 34, 36, 38, 40, 42 or 44 inches, as the case may be, and being so timed by means of gear 5, gear 8, shaft 9, gear 23, gear 24 and shaft 26 as to move said cardboard sheets O when properly positioned on the feed table by the operator, toward and between said rollers 6^a and 7^a at regular intervals to be grabbed by said rollers 6^a and 7^a, so that if the cardboard sheets O be of exact uniform size and width and all have perfectly straight edges they may be fed in with their adjacent edges in contact, though as a practical matter to allow for imperfections in sizes and cutting as the sheets of cardboard O are received from the mill an interval of about one-fourth to three-eighths of an inch will be allowed between the adjacent edges of said cardboard sheets O, such allowance obviating risk of the overlapping of the adjacent edges of said cardboard sheets O.

Now by substituting one size of gear 24 for a larger or smaller size of gear 24 while using the same sizes of sprocket wheels 25 and 28 the speed of rotating of the knife bar 30 may be varied to make a rotation for every length

of sheet of cardboard O, so as to cut the laminated product in the interval between each two sheets of cardboard O as covered by the upper and lower covering-paper sheets L and K.

Each scraping and working or kneading unit P comprises an initial scraper blade 55, a pair of lower fixed position rotatably mounted rollers 59, a roller 60 rotatably mounted in a yoke 61 swingably mounted on rod 62 for adjustment toward and between rollers 59, and a final scraper blade 55', and a drip pan W is mounted or supported in any convenient known manner under each unit P to catch the paste or adhesive dripping from the scrapers 55 and 55'.

Each scraper blade 55 and 55' is formed with vertical slots 56 adjacent each end and held in any position of vertical adjustment with respect to the coated face of the covering-paper web K or L by means of screws 57 passing through said slots 56 and into adjacent fixed portions of their unit frame 63, so that by loosening said screws 57 either or both of said scraper blades 55 and 55' may be adjusted as desired toward or from the coated face of said covering-paper K or L to remove more or less of the adhesive therefrom as the condition of the paper at such unit may indicate to be desirable.

In connection with the final scraper blade 55' of each unit a plurality of rollers 53, five being illustrated, are provided, being constructed and mounted on the rod 62 in the same manner as said rollers 53 are mounted on the rod 47 of each paste pan Q as above described and being adjustable in the same ways with relation to the edge of said scraper blade 55'.

Each rod 62 is rigid and immovably non-rotatably mounted in the upper portion of its unit frame 63, which is rigidly secured to the frame A by angle irons and/or cooperating rivets, bolts or other usual securing means.

Set-screws 65 passing through the wall of the upper pivoted ends of the yoke 61 are adapted to engage the rod 62 to hold the yoke 61 and its roller 60 in any position to which they may be adjusted, and said yoke 61 and roller 60 may be swung up to the dotted line position shown in Fig. 4 to facilitate the paper web threading operation, or swung down, for instance, to the solid line position indicated in said Fig. 4, being disposed substantially equidistantly between the rollers 59 and with its lowest point slightly below the highest point of said rollers 59 to depress the paper web between said rollers 59 and put it under tension between said three rollers, subjecting it to a reverse curve movement and at the same time pressing the paper against the rollers 59 to press the paste into the pores of the paper, or the yoke 61 may be swung to depress the paper web K or L to a greater degree between the rollers 59 by the roller 60

subjecting the paper to greater tension and kneading action, or moved to raise the roller 60, so decreasing the tension on, and kneading of, the paper, according as may be indicated as desirable by the condition or appearance of the paper web K or L at any such unit P.

Further, the coated face of the web K or L in passing over and in contact with the faces of the rollers 59 will coat them from end to end with adhesive, the natural tendency of the adhesive coating of said rollers 59 being to spread out in a uniform coating, so that should any dry streaks be permitted from the paste roller 22 due to some obstruction lodging behind the scraper or wiper 40, such dry streaks or uncoated strips will be coated by the adhesive on the rollers 59 in passing successively through the plurality of units P and prior to reaching the applying and pressure rollers 6^a and 7^a.

The drag link 35 comprises a shank *a* having a bifurcated bored end portion to receive the crank 34 and held thereto by a screw 64, and cooperates with a slotted portion *b* clamped to shank *a* by an adjusting clamping screw 66 extending through said slot of *b* and turning into shank *a*, so that the length of shank 35 as a unit, and consequently the initial position of kicker D, may be adjusted to suit any length of cardboard sheets O to be used.

The shaft 26 extends through slots 67 in the sides of the frame A and is mounted in bearings 68 adjustable toward and from shaft 9 and the gear 23 keyed thereto by means of adjusting screws 69 having a ball and socket pushing and pulling connection with the respective bearings 68 and respectively engaging in internally screw threaded bores through lugs 70 rigid, or integral, with frame A and have enlarged squared operating heads 71, all as shown in Fig. 2, so that as one size or diameter gear 24 is substituted by a different diameter gear 24 the shaft 26 with said substitute gear 24 may be moved toward or from the shaft 9 and gear 23 keyed thereto to insure the proper meshing of said gears 23 and 24.

The cutting-off mechanism in the embodiment illustrated comprises the sprocket 28 driving the shaft 29 of cutter bar 30 which is provided with a plurality of equidistantly spaced transverse slots 72 receiving the shanks 73 of knife bar clamps 74 which receive the knife 75, set-screws 76 working through said cutter bar 30 and frictionally engaging said shanks 73 to lock them in any desired position of adjustment radially of said cutter bar 30 and clamping screws 76' working through the jaws of said clamps 74 and extending through the intervening portion of said knife 75 serve to draw the jaws of the respective clamps 74 into tight gripping engagement with the knife 75.

By adjusting the shanks 73 through the cut-

ter bar 30 to increase the distance in a radial direction between the edge of the knife 75 and the axis of said cutter bar 30 I am able to compensate for depletion of the knife material by sharpening and wear and also by materially increasing such radial distance I am able to increase the snap or kicking action of the knife 75 on the pieces as cut off, the cutter bar 30 being adjusted up or down by the adjusting screws 77 and 78 at each end as may be necessary.

A wooden roller 79 rotatably mounted and having its axis in vertical alignment with the axis of the cutter bar 30 serves as a backing for the laminated material while being cut by the knife 75, and I may provide a receiving table U to receive the pieces of finished product as cut off by the knife.

In the modification illustrated in Figs. 10 and 11 the kicker drag link 35 is disconnected from the crank 34 and removed with the kicker D by sliding the latter lengthwise out of the rear end of the slot 36, and instead of the separate cardboard sheets O I mount a large roll of cardboard V, wound about a large core or shaft 80, which may be tubular, in the bearings 81 of frame A below the feed table B and to the rear thereof, and lead the continuous web of cardboard V up over the rear end of feed table B, and along the upper face thereof and between the covering-paper webs K and L as the same pass between the applying and pressure rollers 6^a and 7^a.

By using a roll of cardboard V I can very efficiently and economically handle very light weight cardboard stock, and, by employing tough, strong covering-paper on both sides, can obtain a very strong, stiff, laminated product.

In both embodiments substantially all surface paste or adhesive will be scraped from each of the paper webs K and L as it leaves the final scraper blade 55' of its last unit P, relying on the adhesive that has been worked into and absorbed by the paper, so that as the paper webs K and L pass through the applying and pressure rollers 6^a and 7^a on opposite sides of the cardboard sheets O or cardboard web V they will be tightly pressed against the opposed faces of said cardboard, such pressure squeezing out sufficient adhesive from said webs to make a good, smooth, tight bond with the cardboard, but will avoid the trouble of excess paste being squeezed out at this point and avoid difficulty in the smooth, even application of the covering webs of paper and, further, because of the relatively small amount of adhesive at the point of association, the resultant laminated product will dry very quickly after leaving such point of association and will be almost entirely free of any warping tendency.

Obviously, as to both forms the machine may be employed to cover only one side of the cardboard, in which case only one cover-

ing web K or L will be threaded up, or the machine may be made to handle only a single covering web K or L.

Also, it is obvious that the rollers 53 and their resilient adjustable mounting means are not restricted in use to the machine illustrated, but may be used where applicable in any driven or hand-operated or hand stripper coating machine or device.

The applying and pressure rollers 6^a and 7^a will be mounted in any suitable and usual known manner permitting adjustment of one of said rollers toward the other and preferably yieldably pressed toward the same, as by suitable helical springs, all according to usual practice in mounting similar rollers having the same general functions, as in clothes wringers, for instance, and said rollers 6^a and 7^a will be of rubber, applied to their respective shafts, or of other usual composition stock such as to be yieldable and have a pulling frictional action on the material fed between said rollers, may be of any construction and material to this end, and are merely conventionally illustrated in the drawings.

What I claim is:

A machine for applying a covering web to sheet material comprising a pair of opposed pressure rollers for applying said web to said sheet material and for pushing the resultant laminated product from said rollers, a surface slidably supporting said laminated product as it passes from said rollers, a cutting-off knife mounted for rotation about an axis parallel to said rollers and above said supporting surface, and gearing for driving said rollers, in combination with an intermediate gear continuously meshing with and driven by said gearing, a shaft mounted for adjustment toward and from said intermediate gear and adapted to removably receive for rotation therewith one of a plurality of different sizes of gears each provided with a standard size drive wheel, and means adapted to be driven by said drive wheel for driving said knife.

In testimony whereof, I have signed my name to this specification at Washington, D. C., this 28th day of June, 1929.

JOSEPH G. HUYE.