

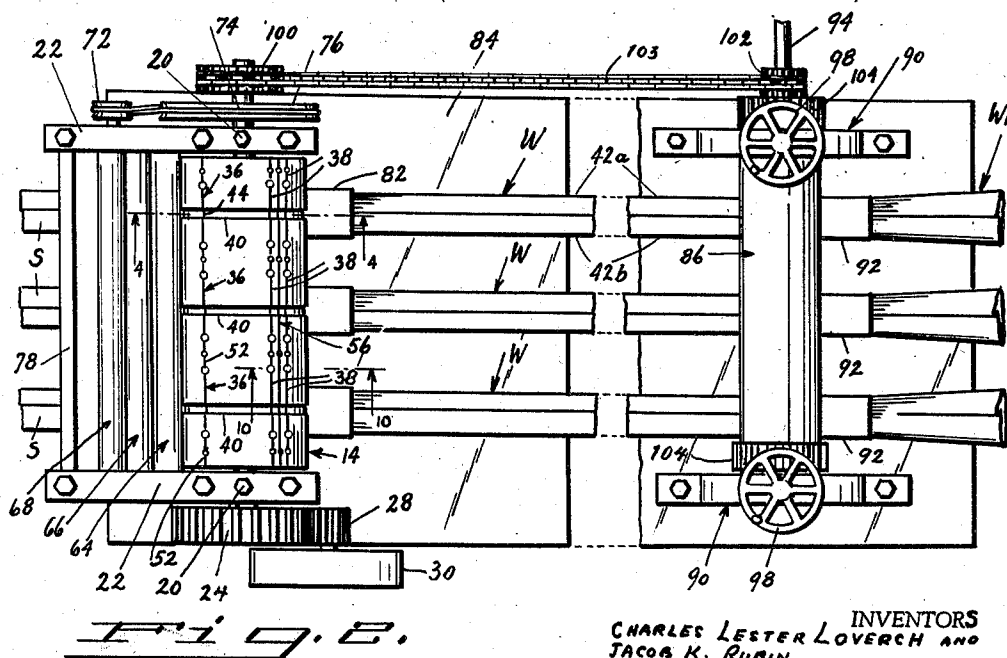
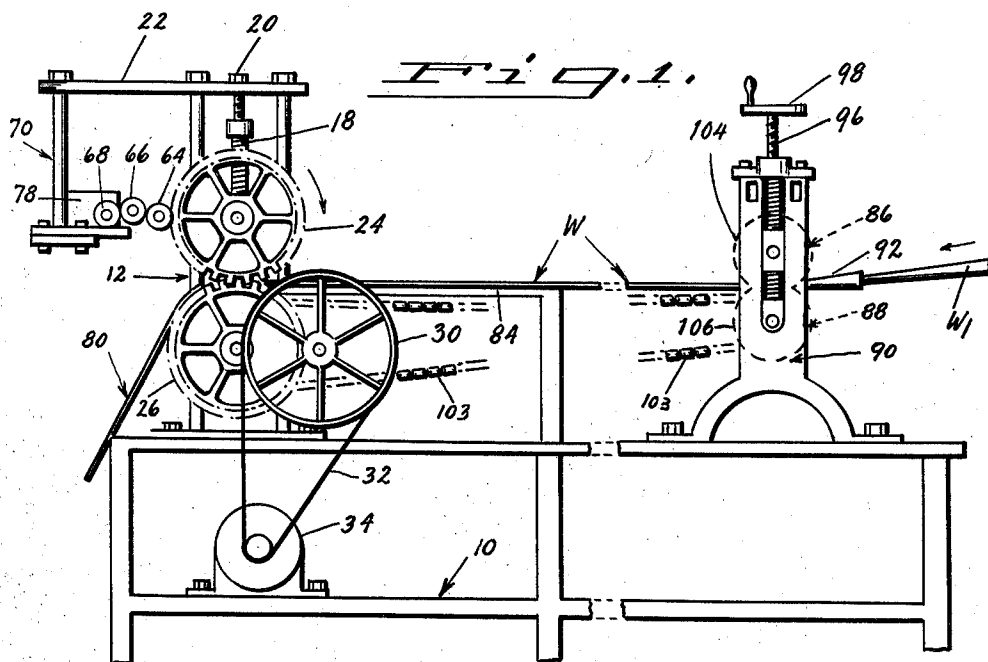
June 23, 1942.

C. L. LOVERCH ET AL
MARKING AND CUTTING MACHINE

2,287,690

Filed March 23, 1942

2 Sheets-Sheet 1



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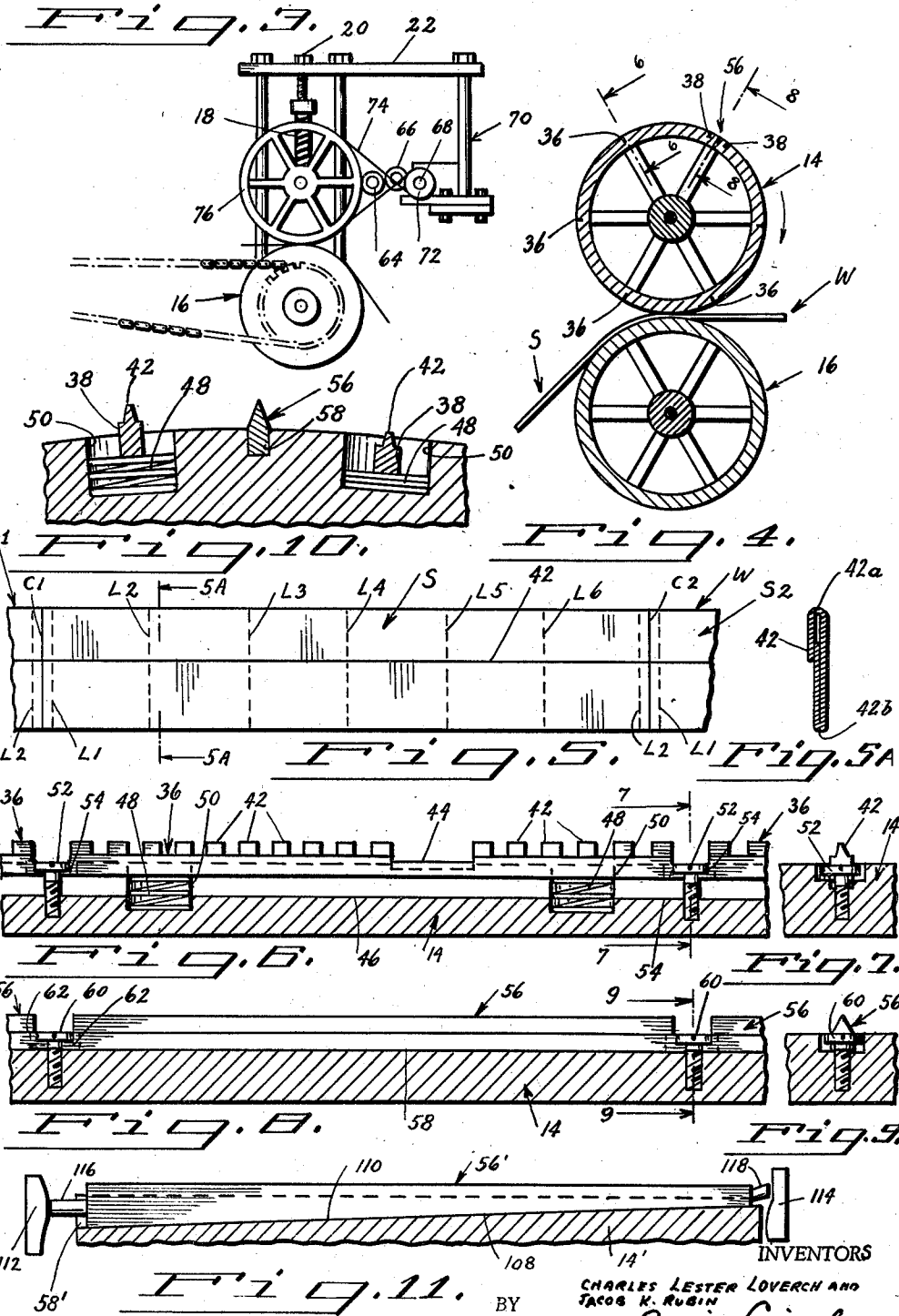
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MARKING AND CUTTING MACHINE

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13 Claims. (Cl. 101-227)

This invention relates to machines for cutting and marking sheet material.

One object of the invention is the provision of a machine for cutting a web of sheet material into a plurality of strips of predetermined length and for simultaneously applying to or printing on said strips, lines or other marks or indicia. In accordance with the preferred embodiment of the invention and pursuant to this object thereof, the web which is to be cut into strips and marked is advanced continuously in a straight line through a station at which the cutting and marking take place whereby as the web is advanced it is marked or printed upon and cut into said strips.

Another object of the invention is to provide in a machine of the above described character means including a roller which operates to progressively move the web through the cutting and marking station and which carries and operates the cutting and marking means in timed relation to the movement of the web through said station.

Another object of the invention is the provision of a machine which is operable to fold progressively a web of sheet material longitudinally thereof and to mark and cut the folded web whereby to divide the latter into strips having the desired marks or prints thereon. While this machine is useful for other purposes it has been used more especially in the manufacture of bandoliers for the purpose of folding a fabric web, for cutting said web into strips, and for providing the strips with marks disposed in spaced lines extending transversely of the strips, said marked lines serving as guides for lines of stitching which are subsequently run through the folded strips for stitching the strips at the opposite ends thereof and at intermediate and transverse lines for forming the pockets of the bandoliers.

The above and other objects, advantages and features of the present invention will be more fully understood from the following description considered with reference to the accompanying illustrative drawings.

In the drawings:

Fig. 1 is a side view in elevation of a machine embodying the present invention;

Fig. 2 is a top plan view of the machine;

Fig. 3 is a view in side elevation of part of the machine at the side thereof opposite to that shown in Fig. 1;

Fig. 4 is a sectional view on the line 4-4 of Fig. 2;

Fig. 5 is a plan view of a section of the folded

material indicating more or less, diagrammatically, the cutting and marking of said material;

Fig. 5A is a sectional view along the line 5A-5A of Fig. 5;

Fig. 6 is a sectional view, on a larger scale, on the line 6-6 of Fig. 4;

Fig. 7 is a sectional view on the line 7-7 of Fig. 6;

Fig. 8 is a sectional view, on a larger scale, on the line 8-8 of Fig. 4;

Fig. 9 is a sectional view on the line 9-9 of Fig. 8;

Fig. 10 is a sectional view, on a larger scale, on the line 10-10 of Fig. 2;

Fig. 11 is a sectional view similar to Fig. 8 showing a modification.

Referring now to the drawings in detail, the machine embodying the present invention comprises a supporting frame 10 on which is mounted a bearing frame for a pair of metal rollers 14 and 16 (Figs. 2 and 4) each journaled at its opposite ends for rotation in suitable bearings carried by frame 12. Roller 14 is spring pressed toward roller 16 by springs 18 which are adjusted by threaded rods 20 mounted in bracket arms 22 forming a part of frame 12. Said rollers have a peripherally continuous bight relation, during the rotation thereof. The rollers 14 and 16 have gears 24 and 26, respectively, fixed thereto for rotating said rollers at the same speed, said gears being in mesh with each other. A driving gear 28 meshes with gear 26 and is driven by a pulley 30 connected by a belt 32 to an electric motor 34.

When rollers 14 and 16 are rotated they draw one or more webs W of sheet material there-through, and in accordance with the present invention the web W is marked or printed upon and is cut into strips of equal length and more specifically, in the present form of the invention, into lengths approximately equal to the circumference of roller 14. Referring to Fig. 5 the manner of marking and cutting the web is illustrated, and it will be seen that the web is marked along transverse lines spaced from each other longitudinally of the web, namely as here shown along lines L1 and L2 adjacent the cut edges C1 and C2 at the opposite ends, respectively, of the strip S cut from said web. Other marking lines L3, L4, L5, L6, and L7 are applied during the operation of roller 14 to the portion of the web constituting said strip S, said lines being, as here shown, spaced equally from each other along the length of the web. The means for thus marking and cutting the web will now be described.

First, with respect to the marking means, the

latter comprises a plurality of marking bars 36 which apply the lines L3 to L6, inclusive, and a pair of marking bars 38 which apply the lines L1 and L2. As illustrated in Fig. 4 said marking bars 36 and 38 are spaced from each other peripherally of roller 14 and extend longitudinally of the roller, i. e., in a direction parallel to the axis of said roller. As here shown, (Fig. 2), there are a plurality of sets of said marking bars, one for each of a plurality of webs W which is fed between the companion rollers 14 and 16. As illustrated in Fig. 2 roller 14 is provided with a plurality of peripheral grooves 40 spaced from each other longitudinally of the roller to accommodate the thickened portion 42 formed on the web when the latter is folded as illustrated in Figs. 5 and 5A.

As all of the bars 36 and 38 are of the same construction, a description of one of the bars 36 will be sufficient, reference in this connection being had to Fig. 6. Each marking bar is formed of a strip of suitable metal, for example, brass, and is provided with a plurality of longitudinally spaced projections 42 so that the lines marked by the bar are dotted or interrupted lines as illustrated in Fig. 5, thus reducing the quantity of marking material applied to the web by the marking bars so that when the lines of stitching are applied, the marking material will be substantially invisible. The intermediate part of each bar is provided with a portion 44 devoid of projections 42, said part 44 of the bar being located at the peripheral groove 40 across which the bar extends. Each bar 36 and 38 is positioned in a slot 46 in roller 14 adjacent the outer periphery thereof and is movable in said slot radially of the roller. The bar is urged outwardly in a radial direction by a pair of springs 48 positioned in holes 50 extending inwardly from the outer surface of roller 14. The outward movement of bar 36 is limited by the screws 52 the heads of which engage the adjacent end portions 54 of the bar. It will be understood that screws 52 permit the inward movement of bar 36 against the pressure of springs 48 and allow a limited outward movement of said bar due to the action of said springs.

As illustrated in Fig. 6, the head of each screw 52 is arranged to engage the adjacent edges of longitudinally adjacent bars 36, when, as described herein, there are a plurality of sets of marking bars. Bars 38 are mounted in the same way as bars 36 but as illustrated in Figs. 2, 4, and 10 are disposed closer to each other than to bars 36 and are disposed at opposite sides of the cutting member 56 so that as the web is cut into strips by said cutting member 56 line L2 is applied to the web in advance of the action of cutting member 56 so that line L1 is applied to the web adjacent the leading end thereof after the strip S1 had previously been cut from the web. More particularly, referring to Fig. 5 it will be observed that line L2 applied to strip S cut from the web W is applied to the web at the portion thereof forming said strip by one of the marking bars 38 just before the cutter member 56 engages the web and cuts the same along the line C2 after which the other marking bar 38 engages the web at the strip forming portion S2 thereof and applies on the latter the line L1. It will be understood that this marking and cutting process is continuous at regular intervals along the length of the web W while the latter is fed between the rollers. It will be understood, also, that while the web passes between the rollers bars

36 act thereon to apply to each strip forming portion the marking lines L3 to L7, inclusive.

The cutter member 56 is held in a groove 58 adjacent the outer peripheral surface of roller 14 by screws 60 the heads of which engage adjacent end portions 62 of longitudinally adjacent cutter members 56 there being as here shown a cutter member 56 for each set of marking bars 38. It will be understood, however, that one cutter member can be utilized instead of a plurality of cutter members 56 in which case the single cutter member will be of sufficient longitudinal extent for cooperation with a plurality of sets of marking members.

As illustrated in Fig. 10 the marking members 38 normally extend outwardly beyond cutter member 56 and, it will be understood that each marking member 36 likewise extends radially outwardly beyond cutter member 56 whereby to permit marking members 36 and 38 to engage the ink-applying roller 64 without engagement of the latter by the cutter member 56 during the rotation of roller 14. Further, it will be understood that as the marking members are brought into engagement with the ink-applying roller 64 the outer surfaces of the projections 42 of the marking members engage said roller resiliently by reason of the pressure of springs 48 and that in passing said ink-applying roller the marking members 36 and 38 are moved inwardly toward the center of the axis of roller 14 against the pressure of the companion springs 48. Ink is applied to the roller 46 by a transfer roller 66 which, in turn has the ink applied thereto by the supply roller 68. Said rollers 64, 66, and 68 are mounted for rotation in an auxiliary frame 70 supported by bracket arms 22. Roller 68 is driven by a pulley 72 rotated by a belt 74 driven by a pulley 76 fixed to the shaft of roller 14 and rotated thereby. The set of rollers 64, 66 and 68 is of the type utilized in printing machines and as usual roller 68 is formed of metal while rollers 64 and 66 are provided with outer layers of resilient material, all as well known in the printing art and, therefore, requiring no further description. Ink may be supplied to roller 68 from the box 78 in which roller 68 operates, or in any other suitable way.

From the above description it will be apparent that during the rotation of rollers 14 and 16 they draw the web W therebetween and that while said web passes between said rollers 14 and 16 it is marked and cut into strips of predetermined lengths, the lengths of the several strips being equal to each other and substantially equal to the circumference of roller 14. It will be understood that marking members 36 and 38 are moved inwardly against the pressure of springs 48 when each of said members is positioned, during the rotation of rollers 14 and 16, at the bight of said rollers, it being noted in this connection, that springs 48 are, of course, much stronger than spring 48 and hold roller 14 firmly against the web W or other work which passes between the two rollers. Further, it will be noted that roller 14 can move upwardly, if such movement is required when the work is engaged by the cutting members 56, such movement, if any, being slight so that gears 24 and 26 always remain in mesh.

Thus, the mounting of marking members 36 and 38 for movement radially of roller 14 not only permits said marking members to engage the ink-applying member 64, but also allows for the engagement of the marking members with

the work without subjecting said marking members to the comparatively high pressure exerted on roller 14 by springs 18. Moreover, in the case of one of the marking members 38, namely the one at the left of the cutter member 56 (viewing Figs. 4 and 10), the normal projection of said marking member outwardly beyond the cutter member 56 enables said marking member to engage the end of the web immediately after the latter is cut by the cutter member 56 and holds the leading end of the web against roller 16 thereby assuring the continuous feed of the web between the rollers, or in other words, preventing any tendency of the web to move out of the feeding action of rollers 14 and 16.

A chute 80 is provided at the delivery end of rollers 14 and 16 for guiding the strips cut from the web W to a receiving receptacle (not shown). As indicated in Fig. 2 guides 82 are provided on table 84, which forms a part of frame 10, for guiding the webs W to the bight between rollers 14 and 16 and to the correct point longitudinally of the roller 14 for engagement in correct relation with the cutter and marking members.

In accordance with the present invention, as indicated above, the present machine is constructed and operates to fold a flat web W1 into folded form of the web W illustrated in Figs. 5 and 5A, the latter being cut into strips of suitable length for making bandoliers. Accordingly, as here shown, the present machine comprises means for folding the web W1 longitudinally thereof into the cross-sectional formation illustrated in Fig. 5A. The means provided for this purpose comprises a pair of calender rolls 86 and 88 journaled for rotation in bearings formed in a frame member 90 mounted on the supporting frame 10. The folding means also includes a folder 92 of any suitable construction, of which many are well-known, through which the flat web W1 passes and which folds the web into the form illustrated in Fig. 5A, the calender rolls 86 and 88 serving to crease the folded side edges 42a and 42b (Fig. 5A). To improve the creasing or ironing effect of the calender rolls, roller 86 is preferably heated and for this purpose is provided with a gas burner (not shown) disposed internally thereof, in a well-known way, and supplied with gas through a supply pipe 94. As heated calender rolls are well-known and do not per se form part of the present invention further description of said rolls is unnecessary. It may be noted, however, that means including a screw-threaded rod 96 operable by a hand wheel 98 are provided at each end of the calender rolls for adjusting the pressure thereof on the folded web while the latter passes therebetween.

Rollers 86 and 88 are driven in timed relation to rollers 14 and 16 preferably at such speed that the feed of the web by the calender rolls is substantially equal to the speed of the web by the rollers 14 and 16. For this purpose roller 16 is connected to and drives roller 88 by means of sprocket wheels 100 and 102 on the shafts of rollers 16 and 88, respectively, said sprocket wheels being connected by a sprocket chain 103. Calender roller 86 is driven from calender roller 88 by the meshing gears 104 and 106 fixed to the shafts of said calender rollers, respectively, there being a set of these gears at each end of the calender.

Thus, in the operation of the machine, one or more flat webs W1 are supplied to the machine and are drawn continuously through the folder

92 by the calender rolls and are ironed by the latter for forming the folded webs W, and the latter are withdrawn from the calender by the rollers 14 and 16 which also operate, as described above, to mark the folded web and to cut the latter into strips S. The machine operates continuously to fold the web and to mark and cut the same all substantially in one operation. It will be understood that after the strips are marked and cut away from the web they are stitched along the lines marked on said strips and that by reason of the accuracy of this machine in locating the marked lines on the strips, the stitching of the strips when conformed to said marked lines is very accurate, this being very important in the manufacture of numerous articles and especially bandoliers in which it is important that the pockets formed between successive lines of stitching be of correct width conforming to military specifications.

In Fig. 11 there is illustrated a modification of the invention. As here shown, provision is made for moving the cutter member 56' radially toward and away from the center of the axis of the roller 14', which corresponds to the roller 14 described above. When cutter member 56' is movable as just described it is possible to mount the marking members in fixed position on roller 14' since by moving the cutter member 56' inwardly and outwardly at the proper times during the rotation of roller 14', said cutter member will clear the ink-applying roller 64 without engaging the latter and can be projected beyond the outer surfaces of the marking members for engaging the web at the bight between the companion rollers. As illustrated, cutter member 56' has a lower inclined edge 108 which engages the inclined upper surface 110 of the groove 58' so that when cutter member 56' is moved longitudinally of said groove it is projected radially outwardly if moved to the right (viewing Fig. 11) and it is projected radially inwardly if moved to the left (viewing Fig. 11). Any suitable means may be provided for thus moving cutter member 56' in timed relation to the rotation of roller 14' as, for example, cams 112 and 114 properly designed as will be readily understood to engage the adjacent ends 116 and 118 of cutter member 56' for effecting the necessary movements of cutter member 56' longitudinally of groove 58'. It will be understood that cams 112 and 114 are stationary and are slidably engaged by the ends 116 and 118, respectively, of said cutter member. Further, it will be understood that cams 112 and 114 are the reverse of each other so that one cam allows the longitudinal movement of the cutter member when the latter is acted upon by the other cam for moving the cutter member in the proper direction longitudinally in the groove 58'.

As indicated above when the cutter member is not movable radially of the roller, the marker members 36 and 38 are movable radially of the roller 14 from projected positions outwardly the cutting edge of cutter member 56 to retracted positions in which the outer surfaces of marker members 36 and 38 lie flush with the outer surface of roller 14, as for example to the position of the right hand marker member 38 shown in Fig. 10. It will be understood that each of the marker members 36 and 38 are moved into the retracted positions at the bight of rollers 14 and 16. When the marker member is not in the form of the narrow bar illustrated herein but is of substantial width, such as for example a printing

plate, such marker member need not be mounted for movement radially of the roller 14 and the outer surface of the printing plate can be positioned a short distance outwardly beyond the outer periphery of roller 14 since the pressure between the rollers 14 and 16 would, in that event, be distributed over a sufficient area of the marking member, in this case the printing plate, to prevent injury to such marker member. It is within the scope of the present invention, however, to mount the marker members for radial movement, as described above, when the latter are wider than the bars 36 and 38 or when the cutter member is radially movable.

While we have shown and described the preferred embodiment of our invention, it will be understood that the latter may be embodied otherwise than as herein disclosed and that various changes in the details of construction and in the arrangement of parts may be made in the present described embodiment. For example, instead of a single cutter member, a plurality of cutter members can be mounted on roller 14 in equal or unequal spaced relation peripherally of the roller so that during the rotation of said roller strips of equal or unequal predetermined lengths are cut from the same web. Thus, for example, two cutter members can be mounted on the roller in peripherally spaced relation either diametrically opposite each other, for cutting two strips of equal length during one revolution of the roller, or at a different peripherally spaced relation, for cutting two strips of unequal length during one revolution of the roller. Further, it will be understood that the machine can cut and mark materials and articles other than sheet materials or articles formed from material. Also, it will be understood that it is possible to utilize certain parts of the machine without others. Accordingly, we do not wish to be limited to the invention as herein shown and described except to the extent which may be required by the scope of the appended claims.

Having thus described our invention, what we claim and desire to secure by Letters Patent is:

1. Apparatus for cutting strips of predetermined lengths from a web of sheet material and for simultaneously marking said strips adjacent the cut edges thereof, said apparatus comprising a pair of rollers mounted for rotation and having a peripherally continuous bight relation during the rotation thereof, means for rotating said rollers, a plurality of narrow elongated bars carried by one of said rollers at its outer periphery and spaced from each other peripherally of said last mentioned roller, said roller which carries said bars having in its peripheral surface a plurality of peripherally spaced longitudinal grooves parallel to the roller axis and said bars being mounted in said grooves, respectively, for movement radially of the roller to positions in which they project beyond said peripheral surface, resilient means for moving said bars to said positions thereof, means positioned adjacent said roller and engageable by said bars in succession, in said positions thereof, during the rotation of said roller for applying a marking substance to said bars, said bars extending longitudinally of the roller carrying the same whereby to apply to said sheet material, when the latter is moved between said rollers in engagement therewith, a plurality of lines spaced from each other in the direction of the feed of said material, and a cutter

carried by said last mentioned roller parallel to the axis thereof and projecting outwardly of said peripheral surface for continually severing from said material a predetermined length of marked material during the feed of the material for said marking thereof, said cutter comprising a bar disposed between two of said marking bars in close relation thereto whereby one of said last mentioned bars is effective both to press the web, adjacent the cut edge thereof, against one of said rollers and to apply said marking material to said web near said cut edge thereof.

2. In a machine for progressively folding a web of sheet material longitudinally thereof and for cutting and marking the folded material, a pair of driven rollers, said rollers having a peripherally continuous bight relation during the rotation thereof, resilient means for holding said rollers resiliently in said relation, means carried by one of said rollers for cutting said folded web into strips of equal length, and means carried by one of said rollers for applying marks to said strips, said marking means comprising a plurality of bars, said roller which carries said bars having in its peripheral surface a plurality of peripherally spaced longitudinal grooves parallel to the roller axis and said bars being mounted in said grooves, respectively, for movements radially of the roller to positions in which they project beyond said peripheral surface, resilient means for moving said bars to said positions thereof, said roller which carries said cutter having a longitudinal groove and said cutter comprising a bar positioned in said last mentioned groove and projecting outwardly thereof whereby the cutting edge of said bar is spaced outwardly of the periphery of said last mentioned roller, said cutting bar having a positive seating engagement in said last mentioned groove whereby inward radial movement of said cutting bar is prevented during the cutting action thereof.

3. Apparatus for cutting and marking sheet material, comprising a pair of rollers between which a web of the sheet material is continuously advanced, said rollers having a peripherally continuous bight relation during the rotation thereof, resilient means for holding said rollers resiliently in said relation, cutting means carried by one of said rollers and operable to engage said web at the bight of the rollers for cutting said web into strips of equal length, and means carried by one of said rollers for applying marking material to said web at spaced portions thereof substantially while said portions are passing through the bight of the rollers, said roller which carries said marking means having a plurality of peripherally spaced grooves therein and said marking means comprising marking bars mounted in said grooves for movement radially of said last mentioned roller, and spring means for resiliently opposing the movement of said bars toward the roller axis.

4. Apparatus for cutting and marking sheet material, comprising a pair of rollers between which a web of the sheet material is continuously advanced, said rollers having a peripherally continuous bight relation during the rotation thereof, resilient means for holding said rollers resiliently in said relation, cutting means carried by one of said rollers and operable to engage said web at the bight of the rollers for cutting said web into strips of equal length, and means carried by said last mentioned roller for applying marking material to said web at spaced portions thereof substantially while said portions

are passing through the bight of the rollers, said last mentioned means comprising a plurality of marking members disposed in spaced relation peripherally of the roller carrying the same and movable radially of the latter from projected positions in which they extend beyond the roller surface to retracted positions in which they lie substantially flush with the roller surface, and means for moving said marking members to said projected positions, respectively, thereof.

5. Apparatus for cutting and marking sheet material, comprising a pair of rollers between which a web of the sheet material is continuously advanced, said rollers having a peripherally continuous bight relation during the rotation thereof, resilient means for holding said rollers resiliently in said relation, cutting means carried by one of said rollers and operable to engage said web at the bight of the rollers for cutting said web into strips of equal length, and marking bars carried by said last mentioned roller for applying marking material to said web at spaced portions thereof substantially while said portions are passing through the bight of the rollers, said roller which carries said bars having in its peripheral surface a plurality of peripherally spaced longitudinal grooves parallel to the roller axis and said bars being mounted in said grooves, respectively, for movement radially of the roller to positions in which they project beyond said peripheral surface, resilient means for moving said bars to said positions thereof, and said cutting means comprising a bar disposed between two of said marking bars in close relation thereto whereby one of said last mentioned bars is effective both to press the web, adjacent the cut edge thereof, against one of said rollers and to apply said marking material to said web near said cut edge thereof.

6. Apparatus for cutting and marking sheet material, comprising a pair of rollers between which a web of the sheet material is continuously advanced, said rollers having a peripherally continuous bight relation during the rotation thereof, resilient means for holding said rollers resiliently in said relation, cutting means carried by one of said rollers and operable to engage said web at the bight of the rollers for cutting said web into strips of equal length, said roller having a longitudinal groove, a cutting bar mounted in said groove and projecting outwardly thereof whereby the cutting edge of said cutting bar is spaced outwardly of the periphery of said roller during the cutting action of said cutting bar, said cutting bar having a positive seating engagement in said groove whereby inward radial movement of said cutting bar is prevented during the cutting action of said cutting bar, a plurality of marking bars carried by said last mentioned roller and spaced from each other peripherally of the roller, and means positioned adjacent said last mentioned roller for applying a marking material to said marking bars during the rotation of the roller, said marking bars extending longitudinally of the roller carrying the same whereby to apply to said sheet material a plurality of marked lines extending transversely of the web and spaced from each other longitudinally of said web, said marking bars being mounted for movement radially of the roller carrying the same, and spring means for resiliently opposing the inward radial movement of said marking bars.

7. Apparatus for marking sheet material which is folded longitudinally thereof with the opposite

longitudinal edge portions thereof in overlapping relation comprising a roller mounted for rotation, said roller having in its peripheral surface a plurality of peripherally spaced grooves, means for rotating said roller, a plurality of narrow elongated bars carried by said roller and mounted in said grooves, respectively, for movement radially of said roller, spring means for pressing said bars to positions in which they project beyond said peripheral surface, means positioned adjacent said roller and engageable by said bars in succession during the rotation of said roller for applying a marking substance to said bars, said bars extending longitudinally of the roller along lines parallel to the axis thereof whereby to apply to said sheet material, when the latter is fed past said roller in engagement therewith, a plurality of lines spaced from each other in the direction of the feed of said material, said bars being movable to retracted positions substantially flush with said peripheral surface of the roller when said bars are in marking engagement with said sheet material, said roller having a peripheral groove and said bars having transverse grooves in alignment with said peripheral groove to accommodate said overlapped portions of said sheet material.

8. Apparatus for marking sheet material comprising a pair of rollers mounted for rotation, and having a peripherally continuous bight relation during the rotation thereof, means for rotating said rollers, a plurality of narrow elongated bars carried by one of said rollers at its outer periphery and spaced from each other peripherally of said last mentioned roller, said roller which carries said bars having in its peripheral surface a plurality of peripherally spaced longitudinal grooves parallel to the roller axis and said bars being mounted in said grooves, respectively, for movement radially of the roller to positions in which they project beyond said peripheral surface, resilient means for moving said bars to said positions thereof, means positioned adjacent said roller and engageable by said bars in succession, in said positions thereof, during the rotation of said roller for applying a marking substance to said bars, said bars extending longitudinally of the roller carrying the same whereby to apply to said sheet material, when the latter is moved between said rollers in engagement therewith, a plurality of lines spaced from each other in the direction of the feed of said material, and a cutter carried by said last mentioned roller parallel to the axis thereof and projecting outwardly of said peripheral surface for continually severing from said material a predetermined length of marked material during the feed of the material for said marking thereof, the cutting edge of said cutter being disposed radially inwardly of the outer edges of said marking bars in said positions thereof and said marking bars being moved inwardly of said cutting edge when said bars are in marking engagement with said sheet material at the bight of said rollers.

9. Apparatus for marking sheet material which is folded longitudinally thereof with the opposite longitudinal edge portions thereof in overlapping relation comprising a pair of rollers mounted for rotation and having a peripheral continuous bight relation to the rotation thereof, means for rotating said rollers, a plurality of bars carried by one of said rollers at its outer periphery and spaced from each other peripherally of said roller, said bars extending longitudinally of the roller

and parallel to its axis whereby to apply to said sheet material, when the latter is fed past said roller in engagement therewith, a plurality of lines spaced from each other in the direction of the feed of said material, said roller which carries said bars having in its peripheral surface a plurality of peripherally spaced longitudinal grooves parallel to the roller axis and said bars being mounted in said grooves, respectively, for movement radially of the roller to positions in which they project beyond said peripheral surface, resilient means for moving said bars to said positions thereof, said bars being movable to retracted positions substantially flush with said peripheral surface when said bars are in marking engagement with said sheet material, said roller which carries said bars having a peripheral groove and said bars having transverse grooves in alignment with said peripheral groove to accommodate said overlapped portions of said sheet material.

10. Apparatus for marking sheet material comprising a pair of rollers mounted for rotation and having a peripherally continuous bight relation during rotation thereof, resilient means for holding said rollers in said relation, means for rotating said rollers, a plurality of bars carried by one of said rollers at its outer periphery and spaced from each other peripherally of said roller, said roller which carries said bars having in its peripheral surface a plurality of peripherally spaced longitudinal grooves parallel to the roller axis and said bars being mounted in said grooves, respectively, for movement radially of the roller to positions in which they project beyond said peripheral surface, resilient means for moving said bars to said positions thereof, said bars extending longitudinally of and parallel to the axis of the roller whereby to apply to said sheet material, when the latter is fed between said rollers in engagement therewith, a plurality of lines spaced from each other in the direction of the feed of said material, and a cutter carried by said last mentioned roller for continually severing from said material a predetermined length of marked material during the feed of the material for said marking thereof, said roller which carries said cutter having a longitudinal groove and said cutter comprising a bar positioned in said last mentioned groove and projecting outwardly thereof whereby the cutting edge of said bar is spaced outwardly of the periphery of said last mentioned roller, said cutting bar having a positive seating engagement in said last mentioned groove whereby inward radial movement of said cutting bar is prevented during the cutting action thereof.

11. In a machine for progressively folding a web of sheet material longitudinally thereof and for cutting and marking the folded material a pair of rollers mounted for rotation and having a peripherally continuous bight relation during the rotation thereof, means for rotating said rollers, a plurality of narrow elongated bars carried by one of said rollers at its outer periphery and spaced from each other peripherally of said last mentioned roller, said roller which carries said bars having in its peripheral surface a plurality of peripherally spaced longitudinal grooves parallel to the roller axis and said bars being mounted in said grooves, respectively, for move-

ment radially of the roller to positions in which they project beyond said peripheral surface, resilient means for moving said bars to said positions thereof, means positioned adjacent said roller and engageable by said bars in succession, in said positions thereof, during the rotation of said roller for applying a marking substance to said bars, said bars extending longitudinally of the roller carrying the same whereby to apply to said sheet material, when the latter is moved between said rollers in engagement therewith, a plurality of lines spaced from each other in the direction of the feed of said material, and a cutter carried by said last mentioned roller parallel to the axis thereof and projecting outwardly of said peripheral surface for continually severing from said material a predetermined length of marked material during the feed of the material for said marking thereof, said roller which carries said cutter having a longitudinal groove and said cutter comprising a bar positioned in said last mentioned groove and projecting outwardly thereof whereby the cutting edge of said bar is spaced outwardly of the periphery of said last mentioned roller, said cutting bar having a positive seating engagement in said last mentioned groove whereby inward radial movement of said cutting bar is prevented during the cutting action thereof.

12. Apparatus of the character described comprising a pair of rollers having a peripherally continuous bight relation during the rotation thereof, spring means for resiliently holding said rollers in said bight relation, marking means carried by one of said rollers, cutting means carried by one of said rollers, one of said means being movable radially of the companion roller from a retracted position to a projected position, and means for supplying marking material to said marking means for application by the latter to material fed between said rollers, said roller which carries said cutter having a longitudinal groove and said cutter comprising a bar positioned in said last mentioned groove and projecting outwardly thereof whereby the cutting edge of said bar is spaced outwardly of the periphery of said last mentioned roller, said cutting bar having a positive seating engagement in said last mentioned groove whereby inward radial movement of said cutting bar is prevented during the cutting action thereof.

13. Apparatus of the character described for marking sheet material comprising a roller mounted for rotation, said roller having a groove therein extending along a line parallel to the roller axis, a marking member carried by said roller at the periphery thereof and mounted in said groove and guided by the walls thereof for movement radially of the roller from a retracted position in which the outer edge of said marking member is substantially flush with the outer surface of the roller to a projected position, in which said outer edge of said marking member is positioned outwardly of said surface and resilient means for moving said marking member to said projected position thereof and for resiliently opposing movement of said marking member to said retracted position thereof.

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