

No. 763,148.

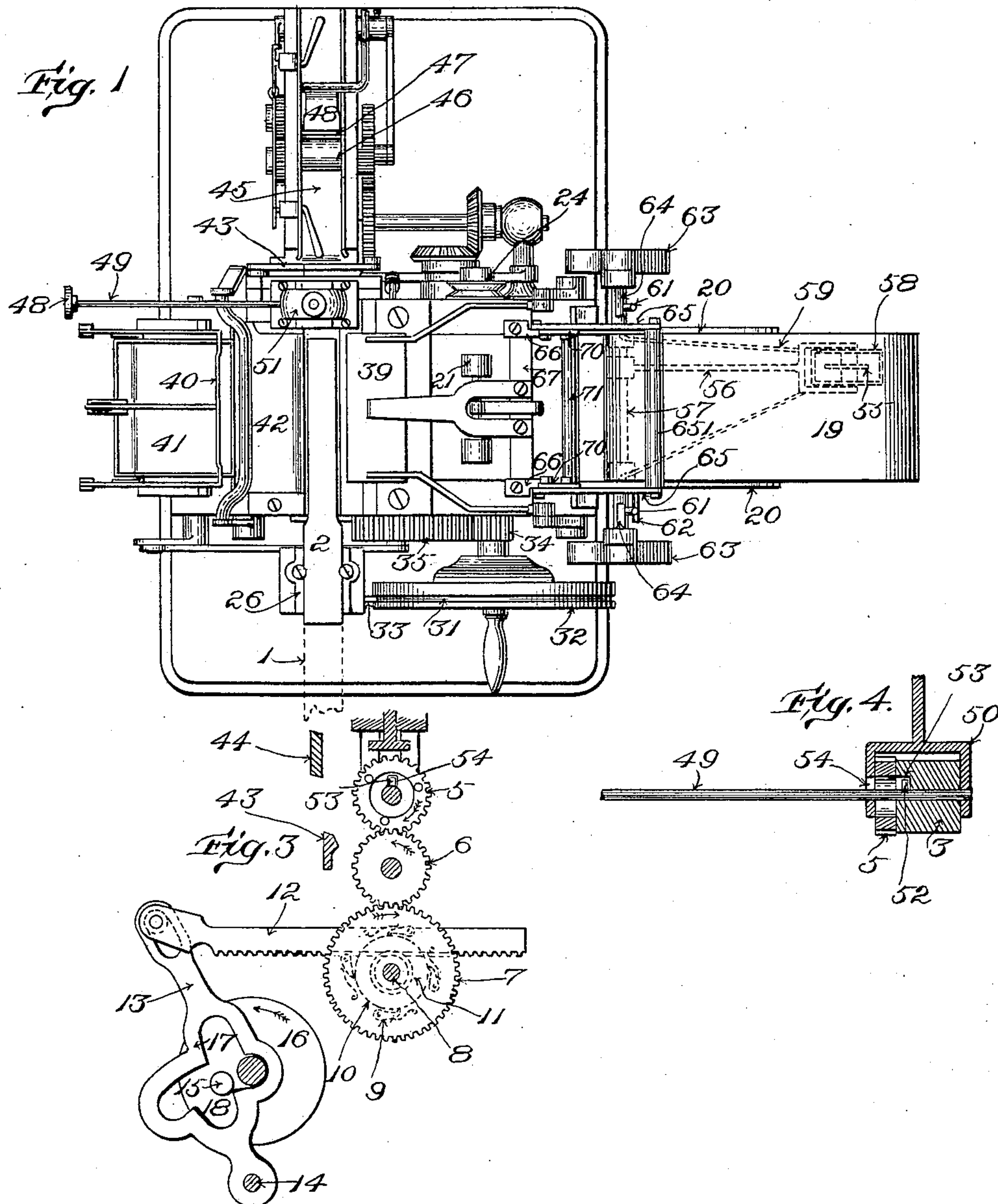
PATENTED JUNE 21, 1904.

V. P. BUCK.
STRAP COVERING MACHINE.

APPLICATION FILED APR. 5, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

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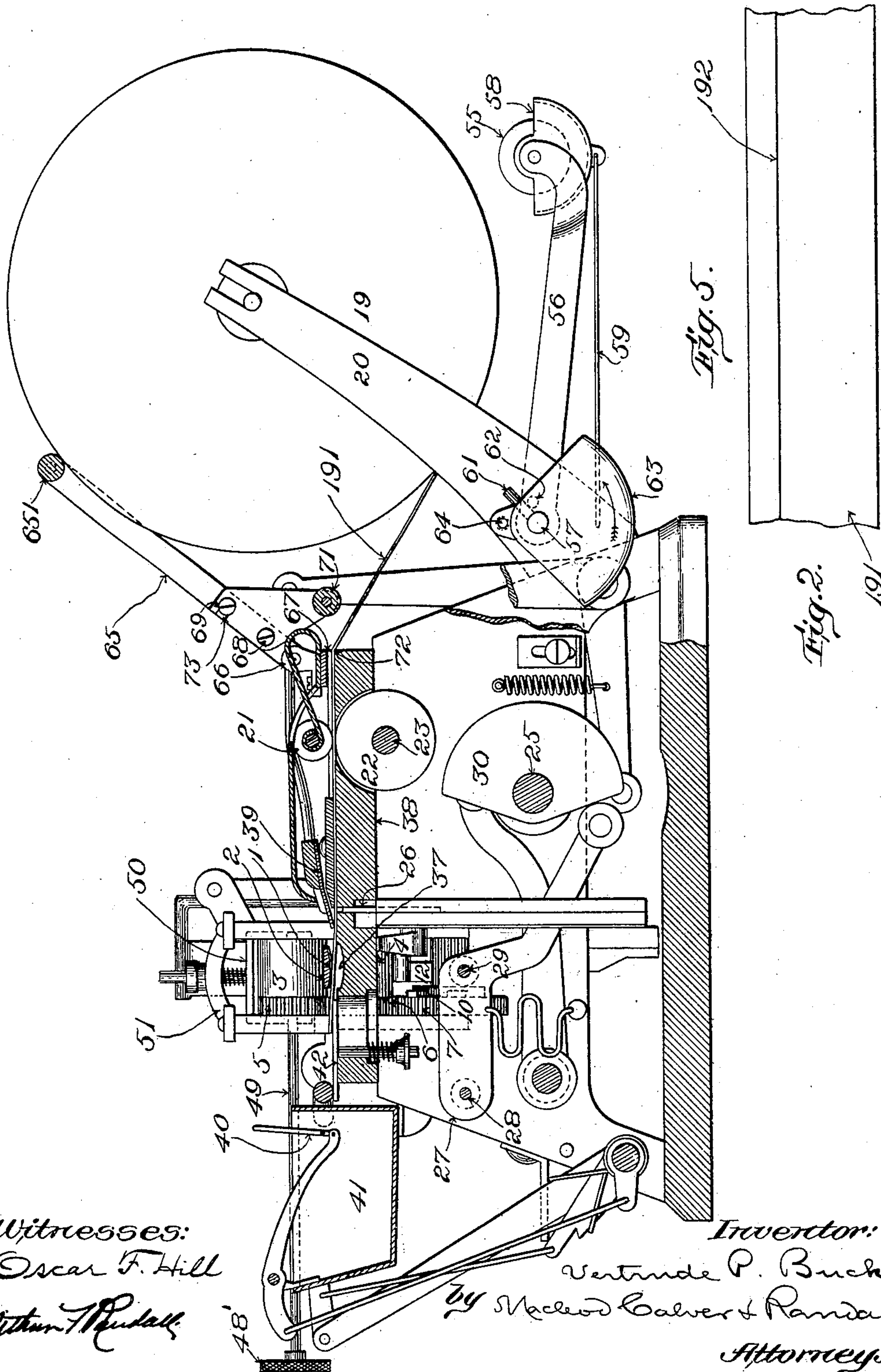
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UNITED STATES PATENT OFFICE.

VERTRUDE P. BUCK, OF AUBURN, MAINE.

STRAP-COVERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 763,148, dated June 21, 1904.

Application filed April 5, 1902. Serial No. 101,601. (No model.)

To all whom it may concern:

Be it known that I, VERTRUDE P. BUCK, a citizen of the United States, residing at Auburn, in the county of Androscoggin, State of Maine, have invented a certain new and useful Improvement in Strap-Covering Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

In the accompanying drawings, Fig. 1 is a plan view of a strap-covering machine embodying my improvements. Fig. 2 is an end elevation, partly in section and upon an enlarged scale, of the machine shown in Fig. 1. Fig. 3 is a detail view of part of the feed mechanism for the strip of webbing. Fig. 4 is a sectional view of the upper feed-roll hereinafter described. Fig. 5 shows a section of the marked paper-strip hereinafter described.

My invention relates to machines for applying protective coverings to the straps which in the manufacture of boots and shoes are attached to the upper, at the back thereof, in well-known manner in the form of a loop, by means of which the boot or shoe is pulled onto the foot.

In the manufacture of boots and shoes it is customary to attach the straps to the upper before the shoe is completed, and the coverings, which are applied to the straps by the machines to which my invention relates, are temporary and have for their purpose to keep the straps from being soiled while the shoe is being completed.

The invention consists in the improvements which are hereinafter described and are more particularly pointed out and defined in the claims at the close of this specification.

In United States Letters Patent No. 594,181, dated November 23, 1897, granted to W. C. Rand, and to which reference may be had, is shown and described a machine for covering straps which in general is the same in construction as the machine to which in the accompanying drawings I have represented my improvements as applied. Hence it is unnecessary to repeat herein a full detailed description of those features of the machine shown in the accompanying drawings which

are also shown and described in said patent. I have also deemed it unnecessary to show all of the minor details of the said machine.

In the machine herein shown the strip or tape of webbing 1, Figs. 1 and 2, from which the straps are made, is drawn from a suitable source of supply (not shown) under a former 2 by means of a pair of feed-rolls 3 and 4, Fig. 2. The roll 3 has fast to it a pinion 5, Figs. 2, 3, and 4, which is in mesh with a pinion 6, Figs. 2 and 3, fast to roll 4, so that both of the rolls 3 and 4 will be driven positively. Pinion 6 of roll 4 is engaged by a gear 7, which is loose on a shaft 8, that is suitably journaled in bearings on the frame of the machine. Upon one side of gear 7 are mounted a number of spring-pressed pawls 9, Fig. 3, which engage a ratchet-wheel 10, fast on shaft 8. Fast on shaft 8 is also a pinion 11, Fig. 3, which meshes with a rack 12, connected at one end with an arm 13, pivoted at 14 on the frame of the machine. Arm 13 is vibrated, with short intervals of rest at the ends of its stroke, by a crank-pin 15, adjustably fastened to one side of a rotating wheel 16. The said crank-pin 15 engages the faces 17 and 18 of arm 13 in operating the latter.

The foregoing mechanism for operating the feed-rolls in the regular working of the machine is as heretofore and forms no part of the invention. Any desired modification of the said mechanism may be made in practice.

By the mechanism just described the strip of webbing 1 is fed intermittently or step by step into the machine, the endwise movement of rack 12 in one direction serving to rotate the feed-rolls and its endwise movement in the opposite direction being idle. Each advance of the strip of webbing corresponds in length with the length of a strap.

The paper strip 191, from which the coverings are made, is drawn, by means of a pair of rolls 21 22, from a roll 19, that is carried by arms 20, projecting from the frame at the back of the machine. Roll 22 is intermittently operated in practice—as, for example, by means substantially the same as in the patent aforesaid—so as to feed forward at each operation thereof a length of paper sufficient to form a cover for a strap.

The former 2 is fast to a carriage 26, which, as heretofore, is mounted to slide horizontally on a vertically-reciprocating slide (not shown) that is mounted in vertical ways on the frame of the machine, the latter slide being connected with a lever 27, fulcrumed at 28 on the frame of the machine and pivotally connected at 29 with the slide referred to. The said lever carries at its rear end a cam-roll which is engaged by a cam 30 on main shaft 25, all being essentially as in prior machines of this class.

The feed-rolls 3 and 4 and the feed-rolls 21 and 22 act at about the same time to feed the webbing 1 along under former 2 (said former being held elevated at that time by cam 30) and to feed the end of the strip of paper crosswise of and into position under the strip of webbing. After the feed-rolls have acted to feed the paper and webbing into position a length of paper sufficient to form a cover is severed from the end of the strip by the reciprocation of a cutter 26, the said cutter being actuated by devices not necessary to be described, and former 2 is lowered by cam 30 into a recess 37, formed in the top face of the bed 38, carrying with it the strip of webbing and that part of the severed piece of paper which is beneath former 2. The lowering of former 2 into recess 37 causes the ends of the severed piece of paper to be lifted up somewhat from bed 38.

The pasting device 40, working in the paste-vat 41, acts in usual manner to apply paste to one of the projecting edges or flaps of the paper, and the two folders 39 and 42 are actuated to complete the covering operation. The strap to which the cover has thus been applied has yet to be severed from the strip of webbing of which it forms part. At the completion of the covering operation the feed-rolls 3 4 are actuated to draw the next portion of the length of the strip of webbing into place under former 2 and to push the just covered length between and past the pair of cutters 43, said cutters being operated in usual manner. As the covered strip of webbing is fed from feed-rolls 3 and 4 it enters a trough 45, the bottom of which is cut away to expose the peripheries of two rotating rolls 46 and 47, Fig. 1. After the covered strap has been severed from the strip of webbing a swinging folding-blade 48, operated as heretofore, descends onto the strap near its middle and forces that part of it to enter between the rollers 46 and 47, which last draw the strap down out of trough 45, folded upon itself near its middle.

So far as described the construction and operation of the machine are essentially the same as those of the machine which is shown and described in the patent above mentioned. The said patent contains a more detailed showing and description of the above-described features than that given here.

The strips of webbing which are used with machines of this character are of woven fabric and in many cases are supplied to the users of the machine in rolls, with the name of the shoe or shoe manufacturer or with any desired inscription or design worked into the fabric at intervals throughout its length during the weaving of the same by means of different-colored threads. Between the inscriptions a transverse line or pair of lines is also worked into the fabric during the weaving of the same, which is intended to indicate to the operator of the machine the points at which the strip is to be severed by the cutters 43 and 44. It is, however, frequently the case that in the continuous web these indicating lines or marks are not always the same distance apart. One feature of my invention consists in means whereby in the operation of a machine of this character as a strap is fed into trough 45 whenever the distance between these marks varies from the extent or length of feed for which the machine is adjusted, so that the indicating-marks are not left in proper position relatively to cutters 43 and 44 at the end of the feed, the operator is enabled to conveniently adjust the strip of webbing backward or forward in the direction of its length, so as to bring the marks into proper position before the severing of the strap from the strip is effected. Thus in order to enable this operation of adjusting the strip as above described to be effected easily, quickly, with great precision, and without liability of injury to the hand of the operator I provide a handle 48', located outside of the support 51 for feed-roll 3 and connected with said feed-roll by means of a spindle 49, part of which latter may also, as shown, serve as the journals for said roll. To this latter end the said spindle is mounted in bearings in a yoke 50, Fig. 4, which is connected in the usual manner with the frame 51, by which it is supported. Spindle 49 is keyed to roll 3 (see Fig. 4) by means of a pin 52, fast to said spindle, which enters a socket 53, provided in roll 3. In order to permit of the assembling and disassembling of said parts, one of the bearings for spindle 49 on yoke 50 is cut away, as at 54, Fig. 4, to form a gate through which pin 52 is passed into socket 53. By means of handle 48' the operator is enabled to instantly adjust the strip of webbing after the feed thereof without stopping the running of the machine at full capacity. When the feed-roll 3 is turned forwardly by means of the said handle, the gears 5, 6, and 7 are rotated in the direction of the arrows in Fig. 3, and the pawls 9 work idly over the teeth of the ratchet-wheel 10, the latter remaining stationary. When the feed-roll 3 is turned backwardly by hand, the gears 5, 6, and 7 are turned in the directions which are the reverse of those indicated by the arrows in Fig. 3, and the pawls 9 by their engagement with the ratchet-wheel

10 cause the said ratchet-wheel and connect-
ed pinion 11 to turn reversely, carrying the
rack 12 and arm 13 backwardly. This re-
verse movement of the feed-roll and gearing
5 and backward movement of the rack 12 and
arm 13 is permitted after the regular feed
movement has occurred, for after the advanc-
ing movement of said arm 13 to occasion the
feed movement has been completed the crank-
10 pin 15 occupies a position in the opening of
the arm 13 which permits the said arm 13
enough play to permit the required adjust-
ment of the webbing to be made.

Customarily the strip of paper 191 is marked
15 along one edge thereof with a line or lines, as
192, Fig. 5, so that when said strip is applied
to the straps the said line or lines will be on
the outside of the coverings and will indicate
the position and relative arrangement of the
20 inscriptions on the straps which are hidden
by the coverings. The said line or lines on
the coverings will indicate to the shoe-oper-
ator which leg or end of the folded strap is
to be outermost when the strap is attached to
25 the shoe, so that the straps of all the shoes
of a lot will be positioned on the shoes alike
and all of the inscriptions will read the same—
that is, from "toe to heel" or from "heel to
toe," as the case may be. The strip of paper
30 191 has the line or lines 192 marked upon it
as it is drawn from the roll by feed-rolls 21
and 22 by means of a printing-roll 55, the jour-
nals of which have their bearings in the end
of an arm 56, which arm at its other end is
35 fast to a rock-bar 57, journaled in arms 20,
which support the paper-roll 19. Printing-
roll 55 is partly immersed within a reservoir
58, holding ink and hung pivotally upon the
journals of roll 55. When not in use, the
40 printing-roll 55 is lowered out of contact with
roll 19, as shown in Fig. 2, and arm 56 is held
in that position by the weight thereof and of
the parts carried thereby. For the purpose
of determining the position of rest of the arm
45 when in inoperative position a pin 61 may be
arranged to project from rock-bar 57 and to
take bearing against a suitable stop consti-
tuted by a lug or pin 62, projecting from one
of the arms 20. In order to cause the roll to
50 bear with yielding pressure against the pe-
riphery of roll 19 when it is desired to pro-
duce the line 192 or other marking upon the
strip of paper 191, one or a pair of weights
63 is hung loosely upon the rock-bar 57. The
55 said weight carries a laterally-projecting pin
64. In Fig. 2 the weight occupies a position in
which pin 64 is out of engagement with pin 61.
When it is desired to mark the paper as it is
drawn off from the roll 19, the weight is swung
60 around the rock-bar 57 by the operator in the
direction indicated by the arrow in Fig. 2
until pin 64 engages with the under side of
pin 61, above referred to, projecting from the
rock-bar 57. This causes the weight 63 to bear
65 the arm 56 upward with yielding force, so as

to hold the printing-roll 55 against paper-roll
19, as will be clear without further description.
By reversely turning the weight 63 back into
position occupied thereby in Fig. 2 the effect
of the weight may again be taken off the arm 70
20 and the printing-roll may be permitted to
assume its retracted and inoperative position.
The paper of roll 19 is wound more or less
tightly, and, as will be clear, near the periph-
ery of a full roll there is very little curvature 75
to the paper compared to what there is near
the center of the roll. It is a fact that the
paper after being wound into a roll very
quickly becomes "set" in the shape which it
assumes while in the form of the roll. While 80
this "curl" or bent shape into which the
paper becomes fixed or set is not objection-
ably marked in the case of the outer part of
a full roll, the bend or curvature of the paper
near the center of the roll is so sharp—that is, 85
it is of such small diameter or radius—that it
becomes objectionable, inasmuch as it inter-
feres with the proper feeding of the paper
through the machine to and under former 2.
Therefore in practice it has heretofore been 90
customary to use only the outer portion of a
roll and to substitute another full roll before
all of the paper was used from the first one,
the paper near the center of the roll being
discarded. To permit of all the paper being 95
used from roll 19, so that there will be no wast-
age, is another object of my invention, which
object I have accomplished by providing be-
tween the feed-rolls or other feeding mechan-
ism for the paper and the paper-roll means. 100
which automatically straightens the paper as
it is fed to the machine. Herein I have shown
said means as comprising a frame made up of
two side bars 65 and a cross bar or roll 651.
The said bars 65 are each pivotally con- 105
nected at their ends to brackets 66 66, fast on
a cross-bar 67, which forms part of the frame
of the machine. The cross bar or roll 651 is
held in contact with the exterior surface of
the paper wound in roll 19 by gravity and 110
moves downward as said roll decreases in di-
ameter. Fastened to each side bar 65 by
means of screws 68 and 69 is a bracket 70,
and by these brackets 70 70 is supported a
movable guide, herein shown as a roll 71, the 115
journals of which have their bearings in said
brackets. While the outer portion of a full
roll is being used by the machine, the contact
of cross-bar 651 with the periphery of roll 19
may, as shown, hold roll 71 out of contact 120
with the strip of paper; but as the outer por-
tion of the roll 19 is used up the consequent
lessening of the diameter of roll 19 allows the
frame of which the cross-bar 65 is part to
move downwardly, thereby shifting the roll 125
71 relatively to a fixed guide, herein shown
as the edge 72 of table 38, between which
and roll 71 the paper is drawn from roll 19
by feed-rolls 21 and 22. Thereby the strip
of paper passing between the roll 71 and 130

said fixed guide is bent more or less sharply over the latter. As roll 19 continues to decrease in size the roll 71 continues to be lowered, and it bends the strip down more and more over the end of table 38. This increases by degrees or fractions thereof the angle between that part of the paper strip on table 38 and that part of the paper strip approaching table 38, and, as will be clear, the roll 19 itself serves as a gage by which this angle is automatically determined. It will be clear without further description that the paper as it is drawn from the roll is straightened by being drawn at an angle over the edge of table 38, which edge coöperates with roll 71 to secure this result. Each bracket is made with a slot 73, through which the screws 69 pass, so that by loosening said screws the brackets may be turned on screws 68 to adjust roll 71 into the desired position upon the swinging frame.

What I claim is—

1. In a machine of the character described, in combination, strip covering and severing mechanism, a pair of strip-feeding rolls; means to drive said rolls and to cause them to intermittently feed the strip into position to be covered and severed; a handle whereby said rolls may be operated by the operator at will during the working of the machine to adjust the strip of webbing forward or backward in the direction of its length; and means connecting said handle with one of the rolls, all organized and arranged whereby by means of the handle said rolls may be operated by hand during the running of the machine to adjust the strip relatively to the severing mechanism.

2. In a machine, of the character described, in combination, strip covering and severing mechanism; a pair of strip-feeding rolls, one of which has one of its journals extended beyond its bearings; means to drive said rolls and to cause them to intermittently feed the strip into position to be covered and severed; and a handpiece near the end of the extended journal, all organized and arranged whereby by means of the handpiece said rolls may be operated by hand to adjust the strip forward and backward in the direction of its length relatively to the severing mechanism during the running of the machine.

3. In a machine of the character described, in combination, strip covering and severing mechanism; a pair of strip-feeding rolls; means to drive said rolls and to cause them to intermittently feed the strip into position to be covered and severed, a spindle extending through and connected with one of said rolls, a support in which said spindle is journaled; and a handpiece at the outer end of the spindle; all organized and arranged whereby by means of the handpiece said rolls may be op-

erated by hand to adjust the strip forward and backward in the direction of its length relatively to the severing mechanism during the running of the machine.

4. In a machine of the character described, in combination, strip covering and severing mechanism; a pair of strip-feeding rolls; means to drive said rolls and to cause them to intermittently feed the strip into position to be covered and severed; a spindle extending into one of said rolls; a projection on said spindle; a socket in the roll into which extends the projection on the spindle; a support for said spindle, and a gate in the support for the passage therethrough of the projection on the spindle.

5. In a machine of the character described, in combination, means for feeding a strip of paper into position to be applied to the strap-strip, means for supporting a supply-roll of paper; a fixed guide and a movable guide between which the paper is drawn from the roll by said paper-feeding means; and means to automatically move the movable guide as the paper is drawn from the roll so as to increase the deflection of the paper between said guides as the roll is reduced in size by use, substantially as described.

6. In a machine of the character described, in combination, means for feeding a strip of paper into position to be applied to the strap-strip; means for supporting a supply-roll of paper; a fixed guide and a movable guide between which the paper is drawn from the roll by said paper-feeding means; and a pivoted frame on which the movable guide is mounted, adapted to rest on the paper-roll and to move the movable guide as the paper is drawn from the roll so as to increase the deflection of the paper between said guides as the roll is reduced in size by use, substantially as described.

7. In a machine of the character described, in combination, means for feeding a strip of paper from a supply-roll on which said strip is wound, a straightener to take the curvature out of said paper as it unwinds and advances from said supply-roll, and means for increasing the straightening effect in proportion as the said supply-roll decreases in diameter.

8. In a machine of the character described, in combination, means for feeding a strip of paper from a supply-roll on which the same is wound, and means for taking the curvature or bend out of said strip as it advances from the supply-roll automatically controlled by the size of the supply-roll itself, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

VERTRUDE P. BUCK.

Witnesses:

CHAS. F. RANDALL,
WILLIAM A. COPELAND.