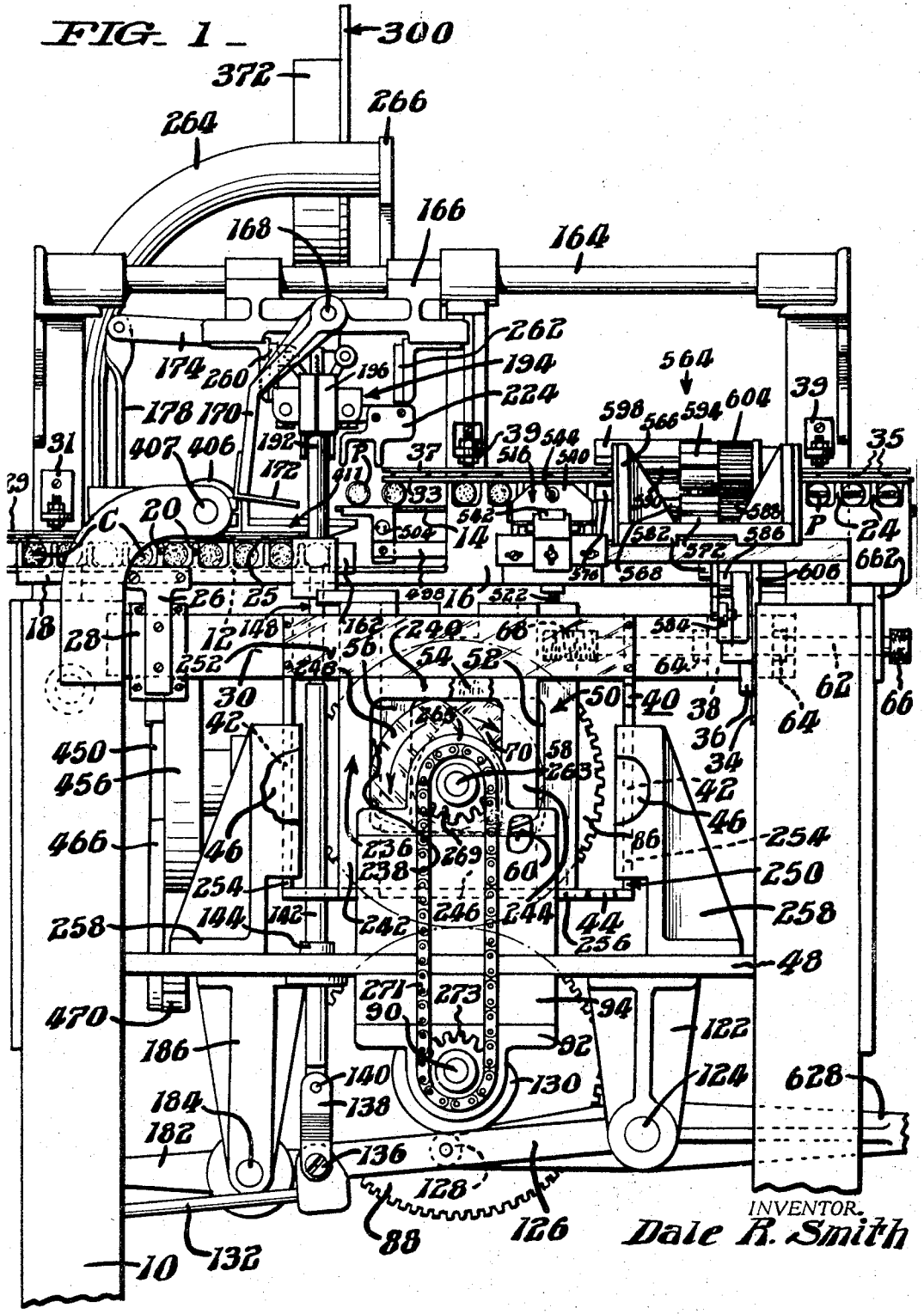
July 1, 1969 D. R. SMITH 3,452,516

CIGAR OVERWRAPPING AND BANDING MACHINE

Original Filed July 26, 1965 Sheet 1 of 9

FIG. 1



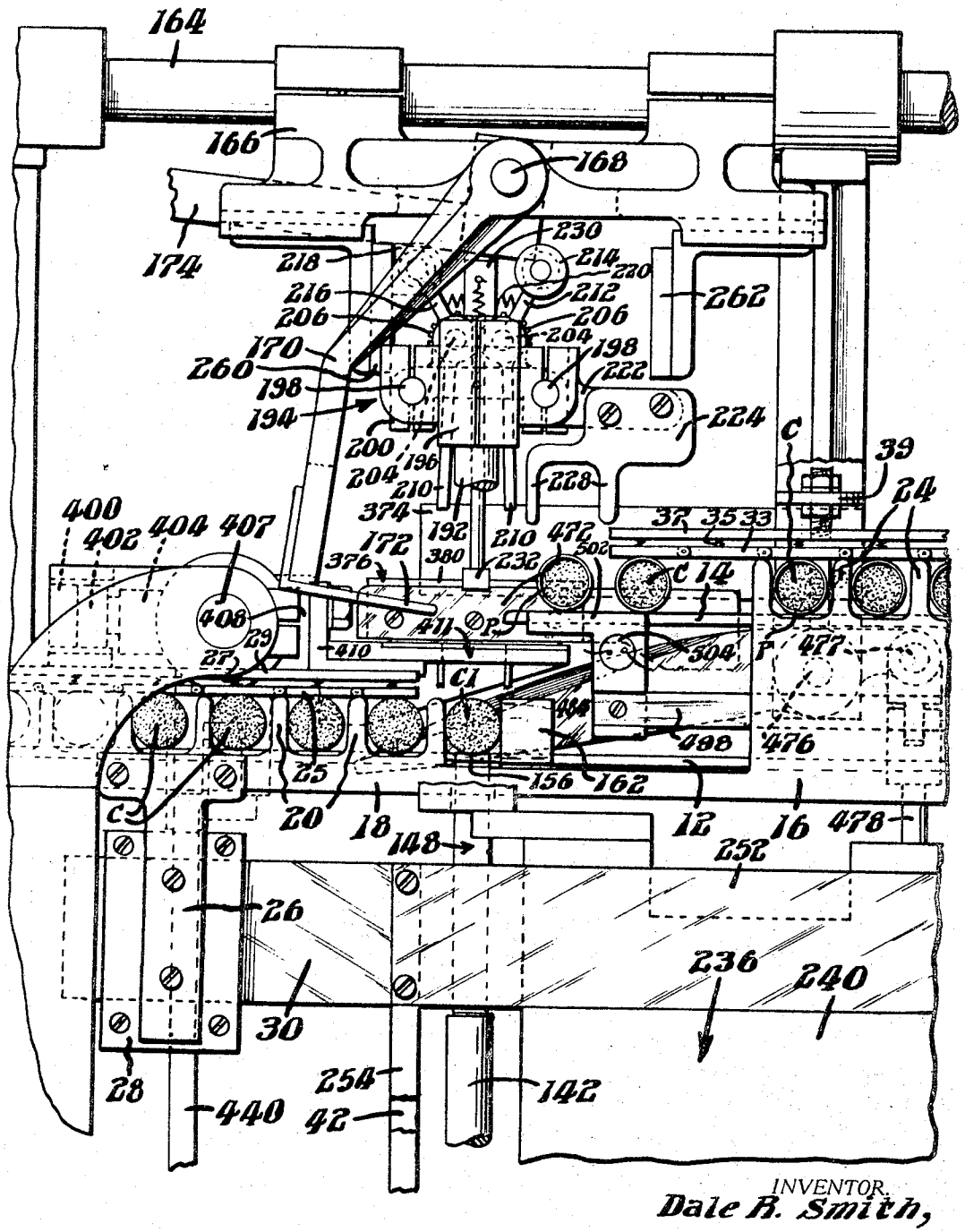
INVENTOR.
Dale R. Smith

July 1, 1969 D. R. SMITH 3,452,516

CIGAR OVERWRAPPING AND BANDING MACHINE

Original Filed July 26, 1965 Sheet 2 of 9

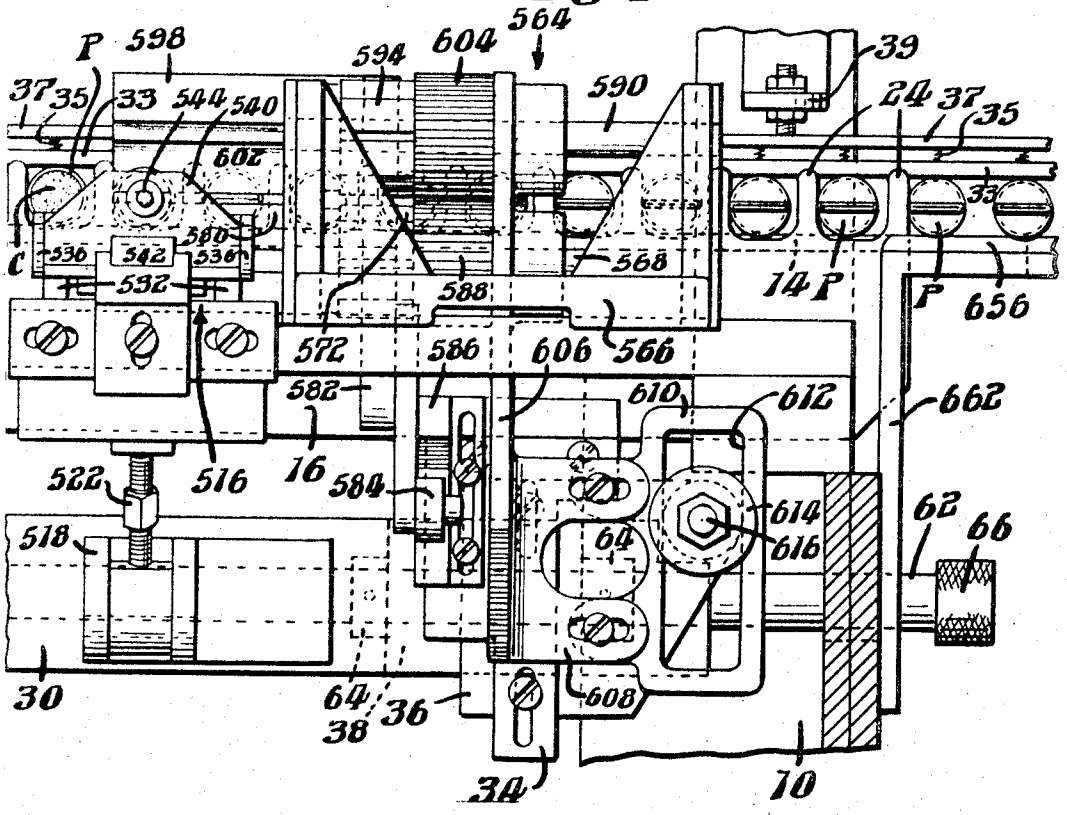
FIG. 2



INVENTOR.
Dale R. Smith,

CIGAR OVERWRAPPING AND BANDING MACHINE

FIG. 3



INVENTOR.
Dale R. Smith,

FIG. 4.

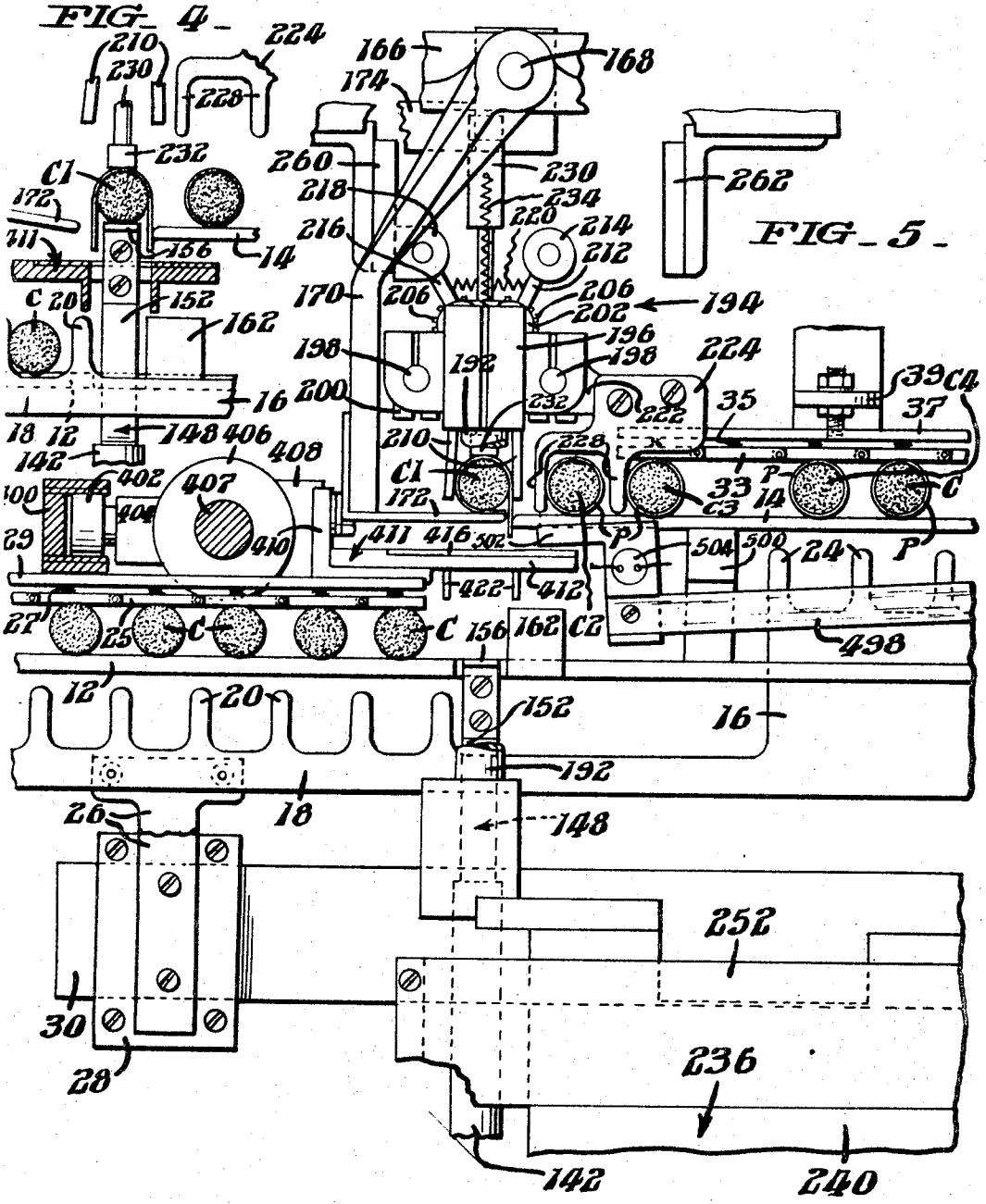


FIG. 5.

INVENTOR.
Dale R. Smith,

July 1, 1969 D. R. SMITH 3,452,516

CIGAR OVERWRAPPING AND BANDING MACHINE

Original Filed July 26, 1965 Sheet 5 of 9

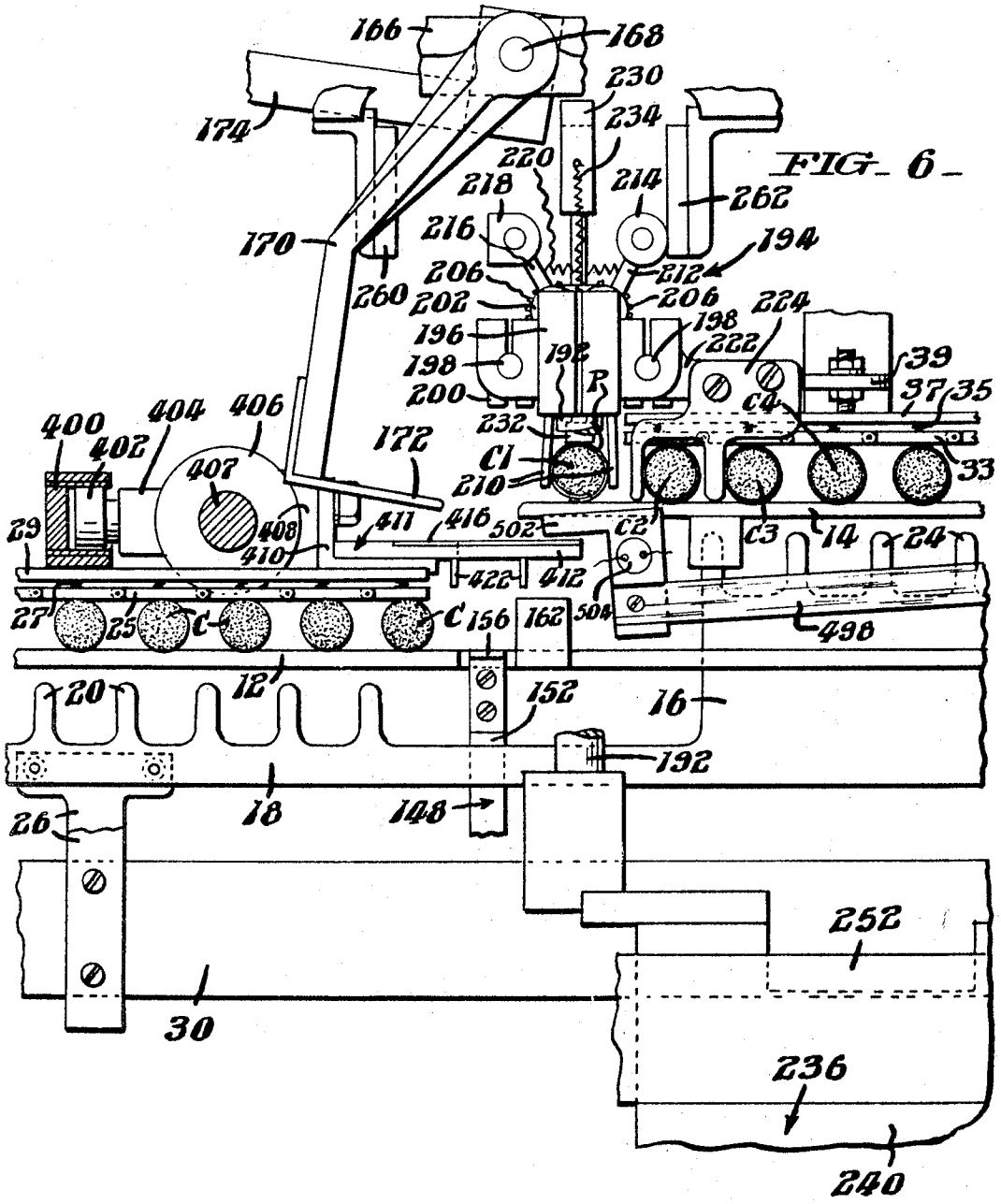


FIG. 6

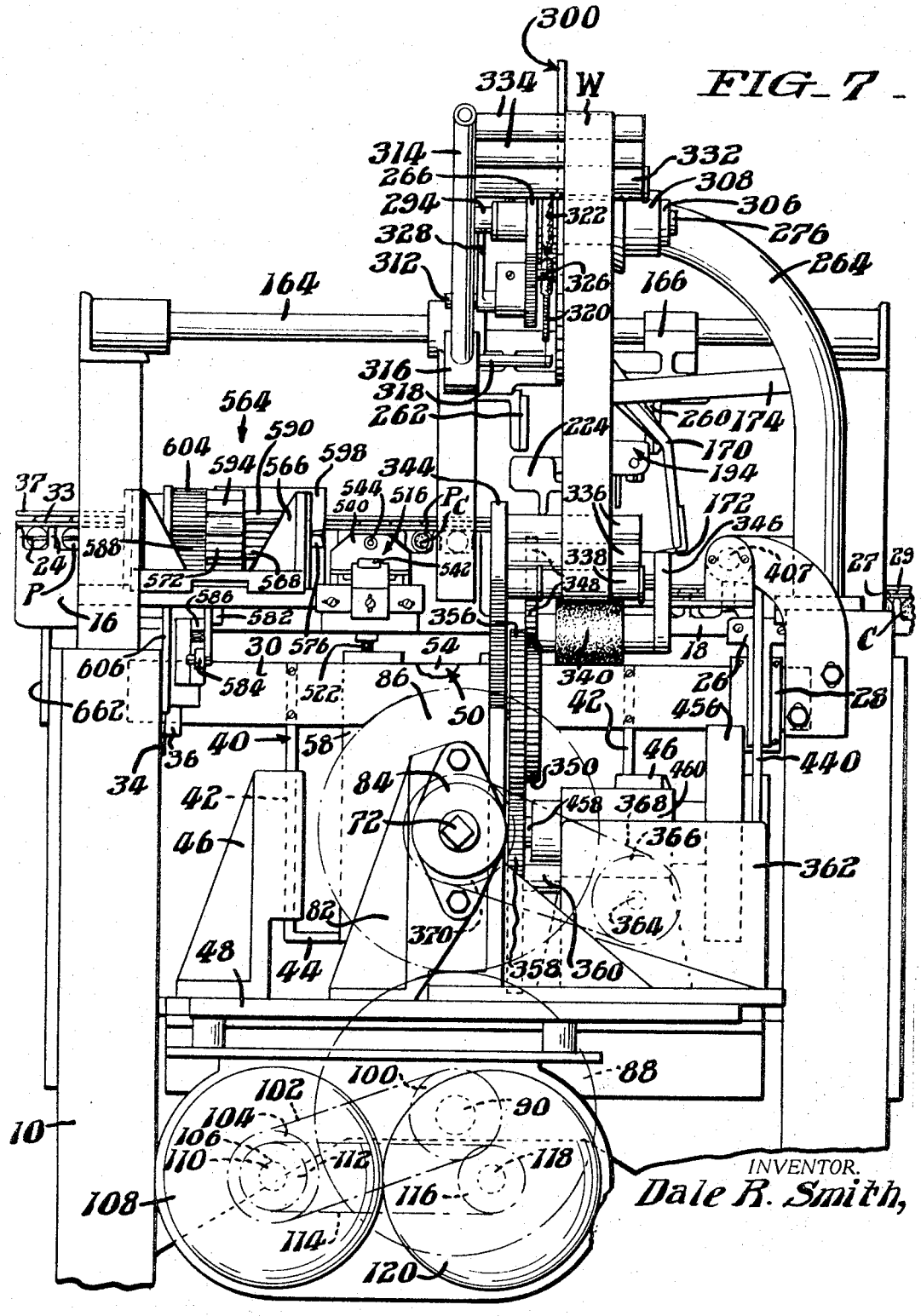
INVENTOR.
Dale R. Smith,

July 1, 1969 D. R. SMITH 3,452,516

CIGAR OVERWRAPPING AND BANDING MACHINE

Original Filed July 26, 1965 Sheet 6 of 9

FIG. 7



INVENTOR.
Dale R. Smith,

July 1, 1969 D. R. SMITH 3,452,516

CIGAR OVERWRAPPING AND BANDING MACHINE

Original Filed July 26, 1965 Sheet 7 of 9

FIG_8_

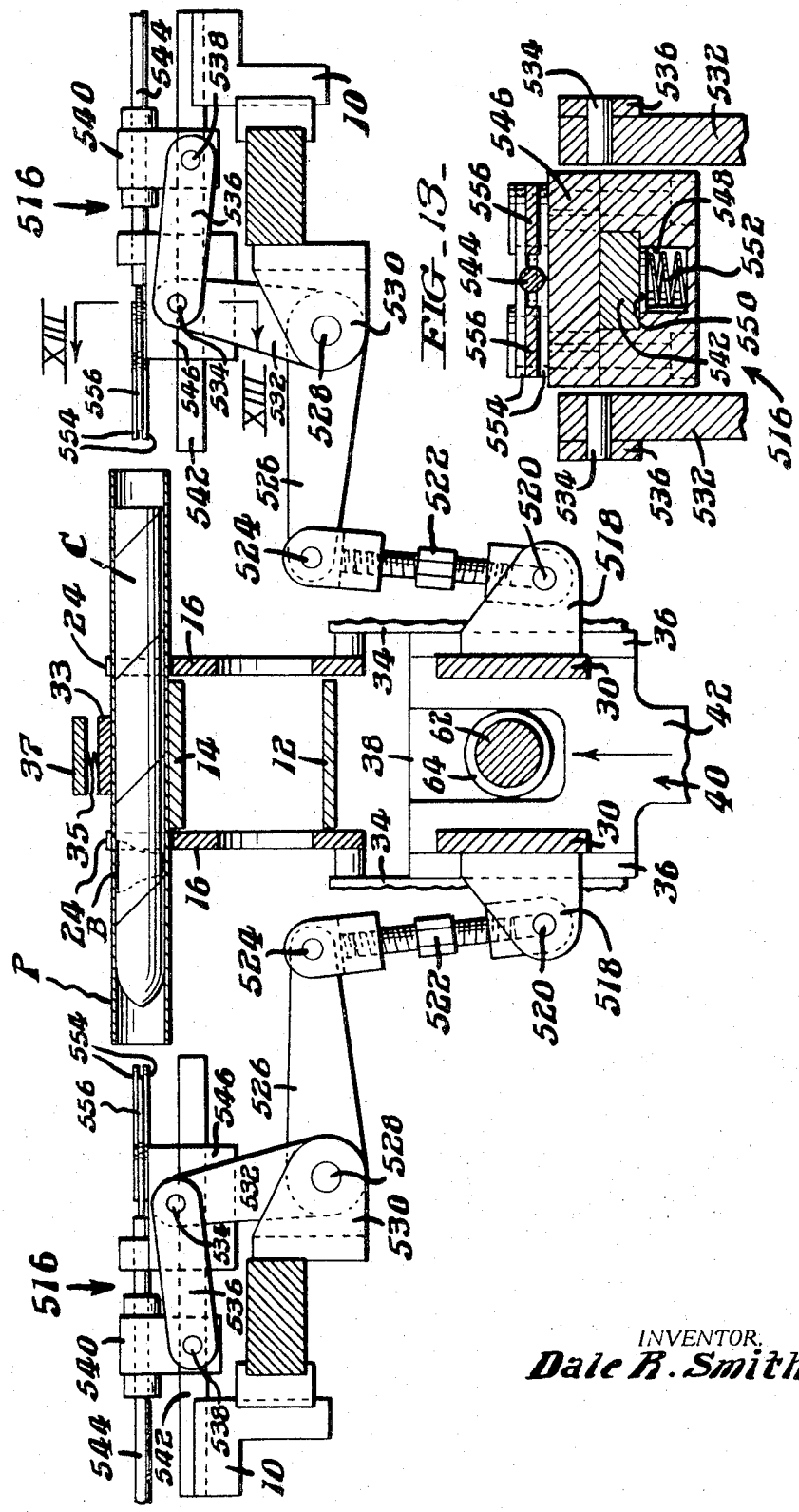
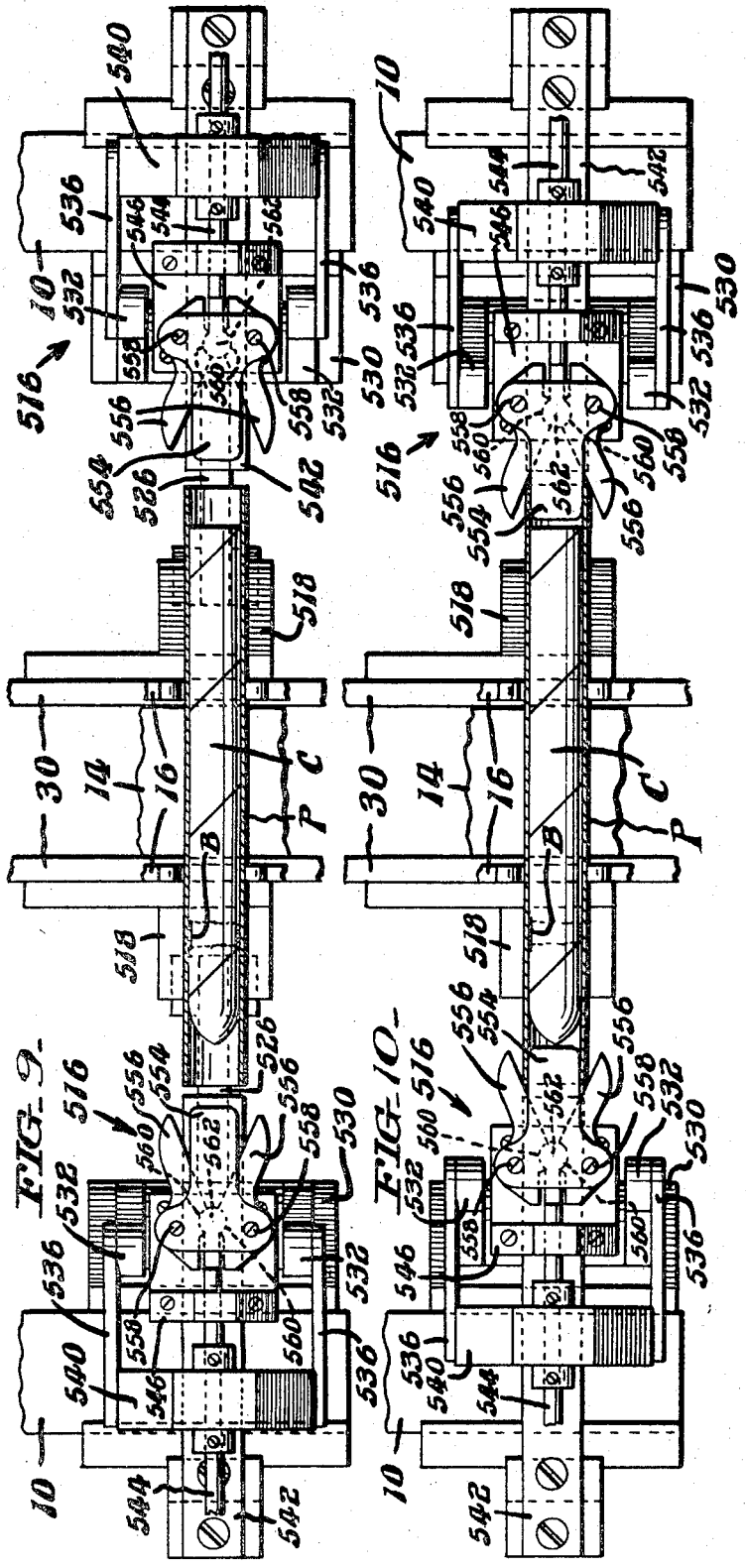


FIG_13_

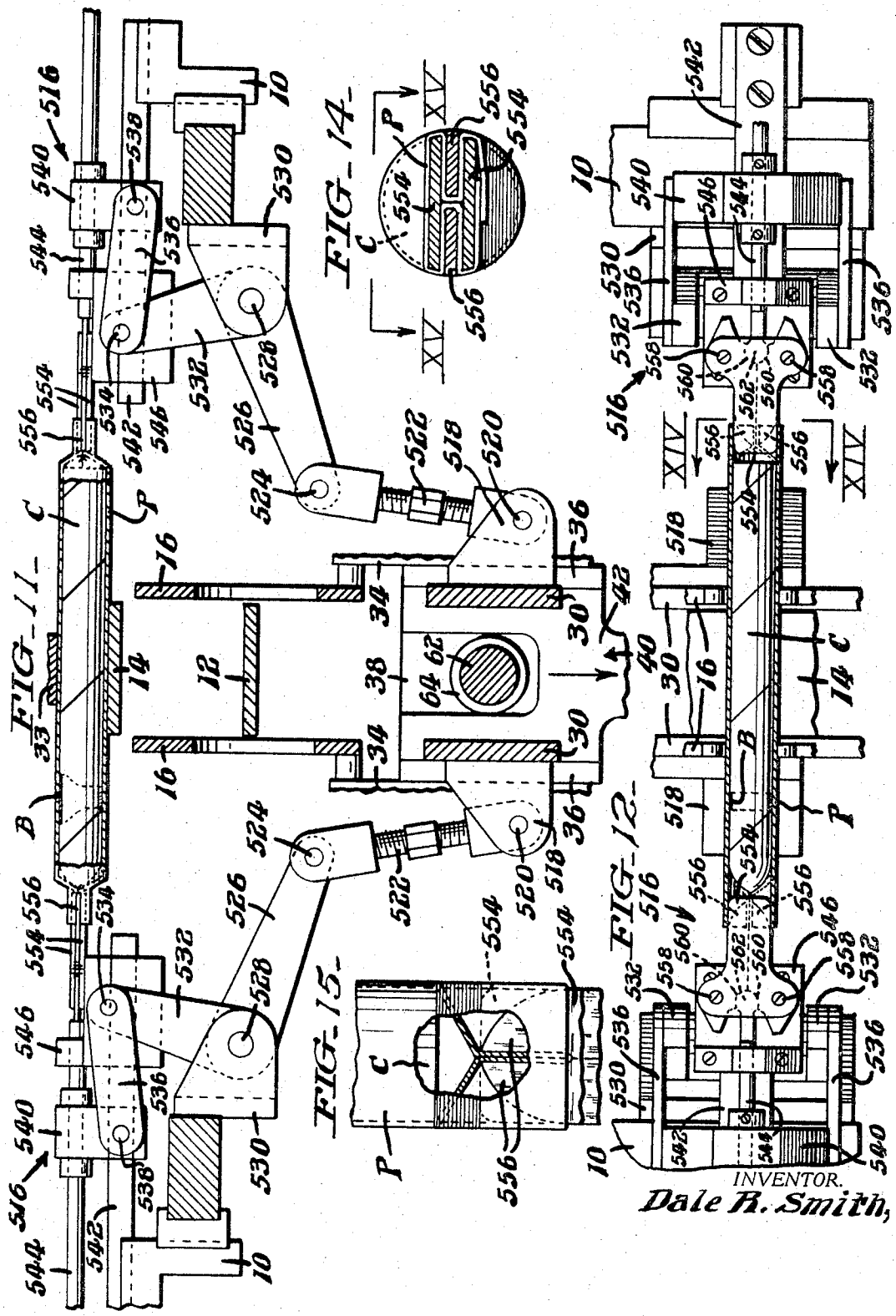
INVENTOR.
Dale R. Smith,


FIG. 9
FIG. 10
INVENTOR.
Dale R. Smith,

July 1, 1969 D. R. SMITH 3,452,516

CIGAR OVERWRAPPING AND BANDING MACHINE

Original Filed July 26, 1965 Sheet 9 of 9



United States Patent Office 3,452,516
Patented July 1, 1969

3,452,516

CIGAR OVERWRAPPING AND BANDING MACHINE

Dale R. Smith, York, Pa., assignor to York Production Engineering Co., Inc., Windsor, Pa., a corporation of Pennsylvania

Original application July 26, 1965, Ser. No. 474,754, now Patent No. 3,411,616, dated Nov. 19, 1968. Divided and this application Oct. 4, 1967, Ser. No. 706,728
Int. Cl. B65b *11/00*
U.S. Cl. 53—378 1 Claim

ABSTRACT OF THE DISCLOSURE

In a cigar overwrapping and banding machine, automatic means are provided for folding the open ends of the wrapper which, before folding, extend beyond the two ends of the cigar.

This application is a division of application Ser. No. 474,754, filed July 26, 1965, by Dale R. Smith, entitled "Cigar Overwrapping and Banding Machine," now U.S. Patent 3,411,616, issued Nov. 19, 1968.

The present invention relates generally to improvements in machines for wrapping cigars and particularly to improvements in a cigar overwrapping and banding machine.

More particularly, the present invention relates to the provision of automatic means for folding the open ends of a cellophane (or similar) wrapper which before folding extend beyond the two ends of the cigar. The folding means are applied to an automatic cigar wrapping machine having means for advancing the cigars over an infeed platform, successively elevating the cigars one at a time from the infeed platform to the higher level of a discharge platform, and advancing the cigars over the discharge platform in spaced relation to each other. The over-wrapping machine includes means for positioning the cigars at a wrapping station, severing wrappers from a cellophane supply roll, folding the cellophane wrapper back about the cigar, and sealing the same. As indicated hereinbefore, the particular means claimed in the present divisional application are automatic means for folding the open ends of the wrappers.

In the drawings:

FIGURE 1 is a front elevation of the cigar overwrapping and banding machine, showing the machine at the end of a cigar advancing cycle;

FIGURE 2 shows an area of FIGURE 1 to an enlarged scale;

FIGURE 3 shows an area of FIGURE 1 to an enlarged scale, but with the end sealing unit in retracted position;

FIGURE 4 is a view showing a cigar with a wrapper draped thereover and elevated from the position shown in FIGURES 1 and 2;

FIGURE 5 is a view showing one side of the wrapper being folded under the cigar;

FIGURE 6 is a view showing the other side of the wrapper being folded under the cigar;

FIGURE 7 is a rear elevation of the machine;

FIGURE 8 is a section showing mechanisms for effecting end folds, the mechanisms being in retracted position;

FIGURE 9 is a plan view of the mechanisms shown in FIGURE 8;

FIGURE 10 is similar to FIGURE 9, but shows the folding mechanisms fully advanced;

FIGURE 11 is similar to FIGURE 8, but shows the folding mechanisms in the process of making the folds;

FIGURE 12 is a plan view of the mechanisms shown in FIGURE 11;

FIGURE 13 is an enlarged section on line XXXII—XXXII in FIGURE 8;

FIGURE 14 is an enlarged section on line XXXIII—XXXIII in FIGURE 12;

FIGURE 15 is a fragmentary plan view, indicated by line XXXIV—XXXIV in FIGURE 14;

As previously indicated, the present application is a division of parent application Ser. No. 474,754, filed July 26, 1965, now U.S. Patent 3,411,616, issued Nov. 19, 1968. The parent application describes a machine for wrapping cigars and includes means for advancing the cigars in a steady stream over an infeed platform, then successively elevating the cigars one at a time from the infeed platform to the higher level of a discharge platform, and advancing the cigars in a steady stream over the discharge platform. Wrapping of the cigar begins at the elevator position. Means for feeding a web of cellophane (or similar material) to the wrapping position are described and claimed in another divisional application, Ser. No. 706,727, filed Oct. 4, 1967. The present divisional application describes and claims means for folding the ends of the wrappers.

Referring particularly to FIGURES 1, 3, 7 and 8 to 11, the machine is provided with a pair of end-fold mechanisms, generally designated **516**, located respectively on opposite sides of the discharge platform. Each of the mechanisms comprises a bracket **518** affixed to one of the plate members **30** of the frame **40**. Pivoted, as at **520**, is one end of a link **522**. The opposite end of the link is pivoted, as at **524**, to one end of an arm **526**. The other end of the arm is pivoted, as at **528**, to a bearing **530** affixed to the frame **10**. Extending upwardly from the pin **528** are a pair of laterally spaced arms **532**. Pivoted to the upper end of each arm **532**, as at **534**, is a link **536**. The opposite end of the link is pivoted, as at **538**, to a block **540**. The block **540** is slidably fitted over a support bar **542** carried by the frame **10** and carries a rod **544**. The support bar also has slidably fitted thereover a split block **546**. The block is provided with a blind bore **548** which accommodates a felt brake pad **550** overlying a compression spring **552**. The block mounts a pair of stationary folding blades **554** and a pair of movable folding blades **556**, the movable blades being pivoted, as at **558**. The movable blades are provided with arcuate recesses **560** which form a socket for the reception of the head of rod **544**, designated **562**.

During the first one-quarter cycle, while the racks **16** are moving downwardly from the position of FIGURES 1, 2 and 4 to that of FIGURE 5, the link **522** is pulled downwardly by the frame **40**. This rocks arm **526**, pivot **528** and arms **532**, pulling links **536** toward the cigar at the end-fold station. This causes the block **540** to slide along the bar **542** toward the block **546**. The head **562** of the rod **544** causes the blades **556** to pivot about the pins **558**. Thus the inner ends of the blades are spread apart, as shown in FIGURE 9. Block **546** moves from the position of FIGURE 9 to that of FIGURE 10, whereupon the blades **554** are projected into the end of the wrapper extending beyond the end of the cigar, and the blades **556** straddle the end of the wrapper. During the second one-quarter cycle, the folding mechanism is idle. During the third one-quarter cycle, the link **522** is raised by the frame **40**. This rocks arms **526**, pivot **528** and arms **532** back to their initial positions. Links **536**, block **540** and rod **544** are pushed back to their initial positions. Blades **556** pivot and close making the end-fold shown in FIGURES 14 and 15. After some lost motion, while the blades **556** are closing to make the end-fold, the block **546** is pulled back to its initial position by the head of the rod **544**. The

blades remain closed. During the fourth one-quarter cycle, the folding mechanism is idle.

What is claimed is:

1. In a cigar overwrapping and banding machine, mechanism for folding the open end of a wrapper extending about a cigar comprising a member mounted for reciprocable movement axially of the cigar, brake means constantly opposing movement of said member axially of the cigar, a pair of relatively fixed folding blades mounted upon said member, a pair of relatively movable folding blades mounted upon said member and disposed between said relatively fixed folding blades, and means for actuating said member and relatively movable blades, said actuating means being operable for separating said relatively movable folding blades and then extending said member and blades as a unit against the effort of said brake means for inserting said relatively fixed blades into the end of said wrapper and for placing said relatively movable folding blades in straddling relation to the end of said wrappers, and for bringing said relatively movable folding blades together again to tuck the opposite side areas of said wrapper between said relatively fixed folding blades to effect an end-fold and then, after forming said end-fold, retracting said member and blades as a unit against the effort of said brake means.

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WAYNE A. MORSE, JR., *Primary Examiner.*

U.S. Cl. X.R.

53—371; 93—84