

E. N. GILFILLAN, DEC'D.
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MACHINE FOR FORMING COVERS FOR CIGARS.
APPLICATION FILED DEC. 27, 1910.

1,039,046.

Patented Sept. 17, 1912.

4 SHEETS—SHEET 1.

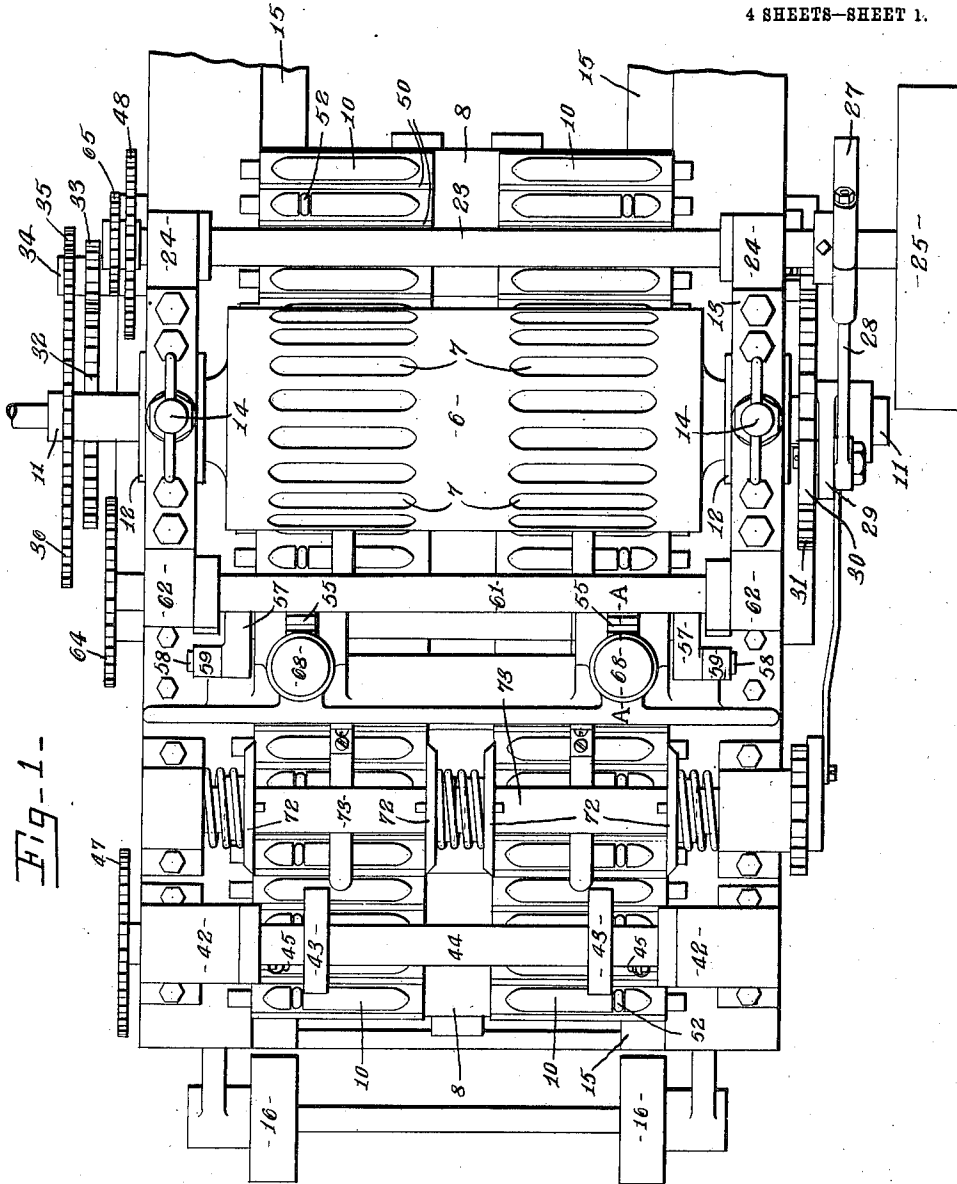


Fig. 1-

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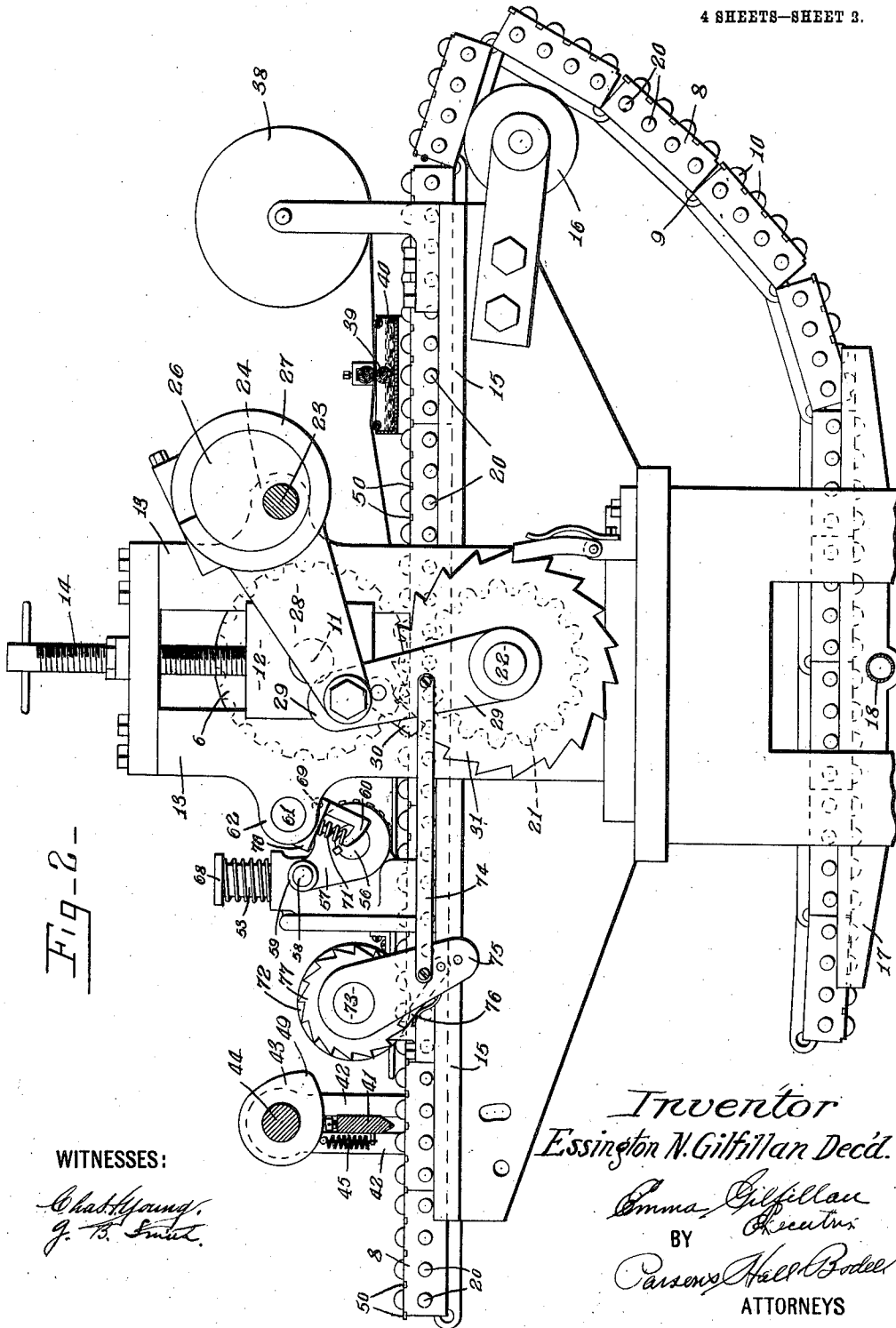


Fig. 2-

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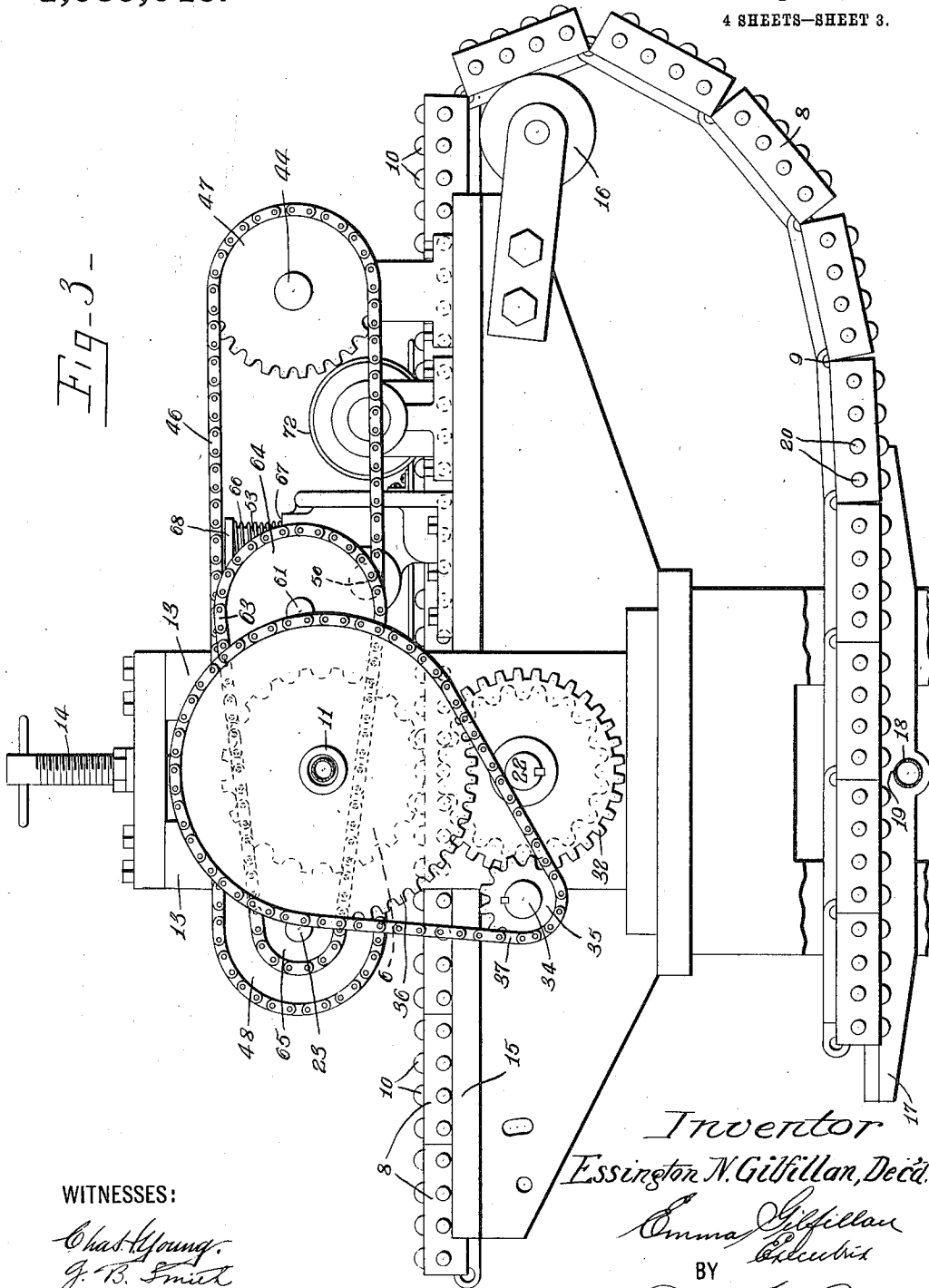
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Fig-4-

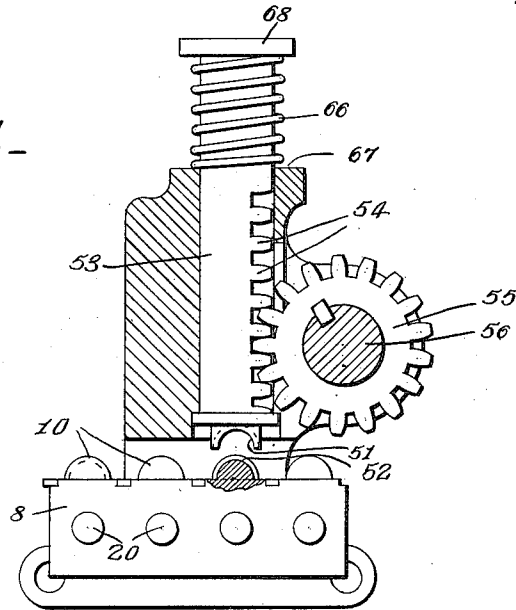


Fig-6-

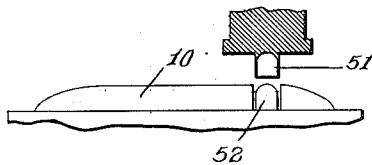


Fig-7-

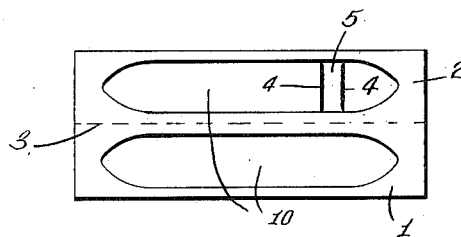
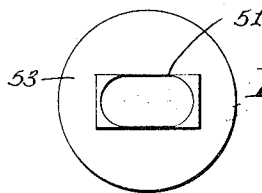


Fig-5-



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UNITED STATES PATENT OFFICE.

ESSINGTON N. GILFILLAN, DECEASED, LATE OF SKANEATELES, NEW YORK, BY EMMA GILFILLAN, EXECUTRIX, OF SKANEATELES, NEW YORK, ASSIGNOR OF FIFTY-ONE ONE-HUNDREDTHS TO JOHN HUNTER, OF FULTON, NEW YORK.

MACHINE FOR FORMING COVERS FOR CIGARS.

1,039,046.

Specification of Letters Patent.

Patented Sept. 17, 1912.

Application filed December 27, 1910. Serial No. 599,389.

To all whom it may concern:

Be it known that ESSINGTON N. GILFILLAN, deceased, late of Skaneateles, in the county of Onondaga and State of New York, did invent a certain new and useful Machine for Forming Covers for Cigars, of which the following is a specification.

This invention has for its object the production of a machine for forming cases or covers for articles such as cigars in order to protect the cigars when being carried in the pocket, such cases or covers being formed in a strip of indefinite length and wound upon a reel so that any desired number may be torn from the strip for the purpose of incasing a predetermined number of cigars, and it consists in the combinations and constructions hereinafter set forth and claimed.

In describing this invention reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

Figure 1 is a plan of one form of this invention. Figs. 2 and 3 are opposite side elevations, parts being removed. Fig. 4 is a section on line "A—A," Fig. 1, parts being omitted. Fig. 5 is a face view of one of the band cutting knives. Fig. 6 is a fragmentary view, partly in section, of the band cutting means. Fig. 7 is a view of one form of article struck by this machine.

This machine is particularly applicable for forming the cases or protectors shown in Patent No. 961,692 dated June 14, 1910. A single case is illustrated in Fig. 7, consisting of two sections 1, 2 foldable along a line of perforations 3 into position to inclose the cigar, the section 2 being cut along transverse parallel lines 4, 4 forming a band 5 for encircling the cigar and holding the same. In the event, several cigars are to be incased, a strip will be torn off consisting of halves foldably connected together, each half consisting of several sections 1 and 2.

The machine comprises, generally, a pair of intermittently actuated coacting die carriers, one advancing relatively to the other, means for supplying a strip of material, as paper, between the die carriers, the forms struck or molded by the dies remaining on the advancing carrier, means for coacting with the advancing die carrier during the intermittent stoppings of the carriers for operating on forms struck or molded by the dies out of

the strip of paper and remaining on the advancing carrier, all of the foregoing parts being supported by a suitable frame which may be of any desirable form, size and construction.

Preferably the die carriers comprise respectively a rotary drum 6 here shown as having two series of peripheral dies 7, and an endless belt composed of die blocks 8 hinged together at 9 and having two rows of dies 10 complementary to the dies 7. The drum 6 is mounted on axles 11 journaled in bearing blocks 12 adjustable vertically in guides 13, forming part of the frame of the machine, such adjustment being effected by screws 14 coacting with the bearing blocks. Usually the drum 6 is hollow for receiving a heating medium as steam which is conducted to and from the drum through the axles 11 which are formed hollow.

The belt composed of the die blocks 8 is movable over a flat table 15 forming part of the frame of the machine, and the portion of the belt on the table is arranged substantially tangent to the drum 6 so that the dies 7 and 10 mesh with each other after the manner of two gears or of a sprocket wheel and chain, and such belt rides over rollers 16, located at opposite ends of the table 15. The section of the belt running below the table passes along tracks 17, Figs. 2 and 3, and over a heating device 18 to which gas is conducted, such device consisting of a pipe having jets 19 directed toward the faces of the blocks 8.

The die blocks or sections 8 are provided with teeth or studs 20 which coact with gears 21 mounted on a shaft 22 journaled in the frame and extending transversely thereof. The shaft 22 is intermittently actuated from the main shaft 23 by suitable power-transmitting connections. As here illustrated the main shaft 23 is journaled in bearings 24 projecting from the guides 13, and a suitable driving pulley 25 is mounted thereon. An eccentric cam 26 is also mounted on the shaft which works in a strap or ring 27 carried at one end of a link 28, the other end of which is pivoted to a lever 29 loosely mounted on the shaft 22. Said lever 29 carries a pawl 30 which coacts with a ratchet wheel 31 fixed on the shaft 22. Obviously rotation of the shaft 23 will cause the shaft 22 to be intermittently actuated.

The drum 6 is driven from the shaft 22 by a gear 32 mounted on the shaft 22 and meshing with an intermediary gear 33 mounted on a shaft 34 journaled in the frame and carrying a sprocket wheel 35 connected to a sprocket wheel 36 on the axle 11 of the drum 6 by a chain 37.

The material, as paper, from which the cases or protectors are made is supplied from a reel 38 supported at one end of the machine, the paper feeding in strips between the die carriers so that a strip of cases or protectors of indefinite length can be formed. The paper is moistened so as to be pliable by a roll 39 rotating in the receptacle 40 containing water, the roll 39 engaging with the strips of paper. The forms struck by the dies are dried in shape by the heat of the die carriers.

The lines of perforations between the sections or forms of the case are formed by a suitable tool as a reciprocating punch 41 movable in guides 42 rising from the table 15 and actuated during the intermittent stoppings of the carrier blocks 8, by cams 43 mounted on a shaft 44 journaled in the upper ends of the guides 42. The cams move the punch downwardly against the action of springs 45 which return the punch 41 to its starting position. The shaft 44 is actuated from the main shaft 23 in any suitable manner, it being here shown as connected to the main shaft 23 by a belt or sprocket chain 46 running over sprocket wheels 47 and 48, mounted respectively on said shafts 23 and 44.

The power-transmitting connections between the shafts 23, 44 are such that the high points 49 of the cams 43 depress the punch 41 during the intermittent stoppings of the carrier blocks 8. The punch 41 coacts with beds 50 of soft metal provided on the face of each block of the die carrier between the dies 10 thereof.

The band 5 of the case or protector is formed by a knife 51, Figs. 5 and 6 for each row of dies, the knives being arranged to cut parallel incisions transversely of one half of each single case, and the faces 52 of the dies of the carrier blocks 8 coöperating with the knives, are depressed below the surface of the major part of such dies and are formed convex in lateral and longitudinal directions, as shown in Fig. 6, in order to turn in the edges of the band so that such band can be taken hold of and pulled into the position to hold a cigar in the section 2. As but one half of each case or protector is formed with such band 5 alternate dies 10 only of the die blocks are provided with the band forming molds 52 and the operations of the knives are so timed that the knives coact only with alternate dies 10, that is the knives operate once during two stoppings of the belt.

Each of the knives 51 is carried by a plunger 53, Fig. 4, having a toothed rack 54 associated therewith and with which meshes a gear 55 mounted on the shaft 56. This shaft 56 is provided with crank arms 57, Fig. 2, at its ends and each crank arm 57 is provided with an eccentric pin 58 having a roller 59 thereon. Each crank arm 57 is depressed in order to depress the plunger by means of a cam 60 mounted on each end of the rotating shaft 61 journaled in lugs 62 projecting from the guides 13 and connected to the main shaft 23 by a belt or chain 63 running over sprocket wheels 64 and 65 mounted respectively on the shafts 61 and 23. As the shaft 61 rotates, the cams engaging the rollers 59 on the crank arms 57, rock the shaft 56 and the gears 55 meshing with the racks 54, thereby depressing the plungers 53 against the springs 66. The springs 66 encircle the plungers and are interposed between the upper face of the guides 67 for the plungers and the heads 68 at the upper ends of the plungers. The cams 60 are pivoted at 69 to supports 70 Fig. 2, on the shaft 61 and springs 71 are interposed between the cams and the supports 70 to normally resist pivotal movement of the cams 60 but to allow the cams to yield and pass by the eccentric pins 58 and rollers 59 thereon, when the plungers 53 are depressed to their fullest extent. The edges of the two strips are trimmed off after being molded by two pairs of rotating disk knives 72 mounted on a shaft 73 journaled in the frame and located between the punch 41 and said knife 51 and coacting with the upper face of the die blocks 8. The shaft 73 is actuated by a link 74 connecting the lever 29 and a similar lever 75 loosely mounted on the shaft 73 and carrying a pawl 76 coacting with a ratchet wheel 77 mounted on the shaft 73.

What I claim is:—

1. In a machine of the class described, a pair of intermittently actuated coacting die carriers, one carrier advancing relatively to the other, the die carriers being adapted to receive between them a strip of material and the material remaining on one of the die carriers after passing between the dies, a tool for operating on the molded strip remaining on one of the die carriers, such tool operating during the intermittent stoppings of the die carriers, the dies on the carrier on which the molded strip remains, serving as a bed with which such tool coacts, and means for intermittently actuating the die carriers and the tool, substantially as and for the purpose described.

2. In a machine of the class described, a pair of intermittently actuated coacting die carriers having dies which intermesh to mold a strip of material passing between the die carriers, one of the die carriers advancing relatively to the other and such ma-

terial remaining on the advancing die carrier after being molded by the dies, means for punching a line of perforations between the forms struck by the dies of the carriers, the dies of the advancing carrier serving as a bed for the punching means and such punching means operating during intermittent stoppings of the carriers, and means for intermittently actuating the carriers and for actuating the punching means, substantially as and for the purpose specified.

3. In a machine of the class described, a frame formed with a table, a pair of intermittently actuated coacting die carriers, one comprising a rotary drum supported by the frame above the table and having its periphery formed with dies, and the other carrier comprising a series of die blocks linked together forming an endless belt, a portion of the carrier passing over the table beneath the drum substantially tangent thereto, the die blocks being formed with dies complementary to those of the drum, and the carriers being adapted to receive between their engaging dies a strip of material and to feed such material, and the forms struck or molded by the dies remaining on the die blocks, a tool arranged above the table and above the die blocks carrying the molded forms, the tool being movable toward and from the die block carrier during intermittent stoppings of the die carriers, for operating on the forms remaining on the die blocks, the die blocks serving as a bed co-operating with the tool, and actuating means for the carriers and the tool, substantially as and for the purpose set forth.

4. In a machine of the class described, a pair of intermittently actuated coacting die carriers adapted to receive between them a strip of material, and the forms struck by the dies remaining on one of the die carriers after the formation thereof, and adjacent forms being designed to be brought together to form a single article, and a band cutter operating once during every two stoppings of the advancing carrier and coacting with alternate dies of the die block on which the forms remain after being molded, for cutting a band on one-half of each portion of the form which with another portion of such form completes an article, substantially as and for the purpose described.

5. In a machine of the class described, a pair of intermittently actuated coacting die carriers adapted to receive between them a strip of material, and the forms struck by the dies remaining on one of the die carriers after the formation thereof, adjacent dies of the carrier on which the forms remain being adapted to mold forms which

when brought together complete single articles, punching means and band cutting means operating on the forms remaining on said die carrier and coacting with the same during intermittent stoppings of the die carriers, and the band cutting means operating during every two stoppings of the carriers in order to coact with the alternate forms on the dies, substantially as and for the purpose specified.

6. In a machine of the class described, a frame formed with a table, a pair of coacting die carriers, one comprising a rotary drum journaled in the frame above the table and having its periphery formed with dies and the other carrier comprising a series of die blocks linked together forming an endless belt, the die blocks being provided with dies complementary to those of the drum and a portion of the die block carriers passing over the table substantially tangent to the drum and the dies of the carriers meshing with each other, and the die carriers being adapted to receive between their meshing portions a strip of material to be operated on and to feed said strip, the forms struck by the dies remaining on the die block carrier, a punch supported by the frame and coacting with the die blocks on the table for cutting a line of perforations between each of the forms of the molded strip and operating during the intermittent stoppings of the carriers, band cutting means supported by the frame above the table and coacting with the die blocks on the table for cutting a band in alternate forms of the molded strip on the die blocks, the band cutting means being operable once during two stoppings of the carrier, a main driving shaft journaled in the frame and power-transmitting connections between such shaft and the carriers, the punching means and the band cutting means, such connections being arranged to intermittently actuate the die carriers, and to operate the punch during the stoppings of the die carriers and to operate the band cutting means once during two stoppings of the carriers, substantially as and for the purpose described.

In testimony whereof, I have hereunto signed my name in the presence of two attesting witnesses, at Skaneateles, in the county of Onondaga, and State of New York, this 13th day of December 1910.

EMMA GILFILLAN,
Executrix of the estate of Essington N. Gilfillan, deceased.

Witnesses:

WM. J. SHOTWELL,
JOHN C. STEPHENSON.