

(No Model.)

5 Sheets—Sheet 1.

H. INMAN.
BOX COVERING MACHINE.

No. 585,820.

Patented July 6, 1897.

Fig. 1.

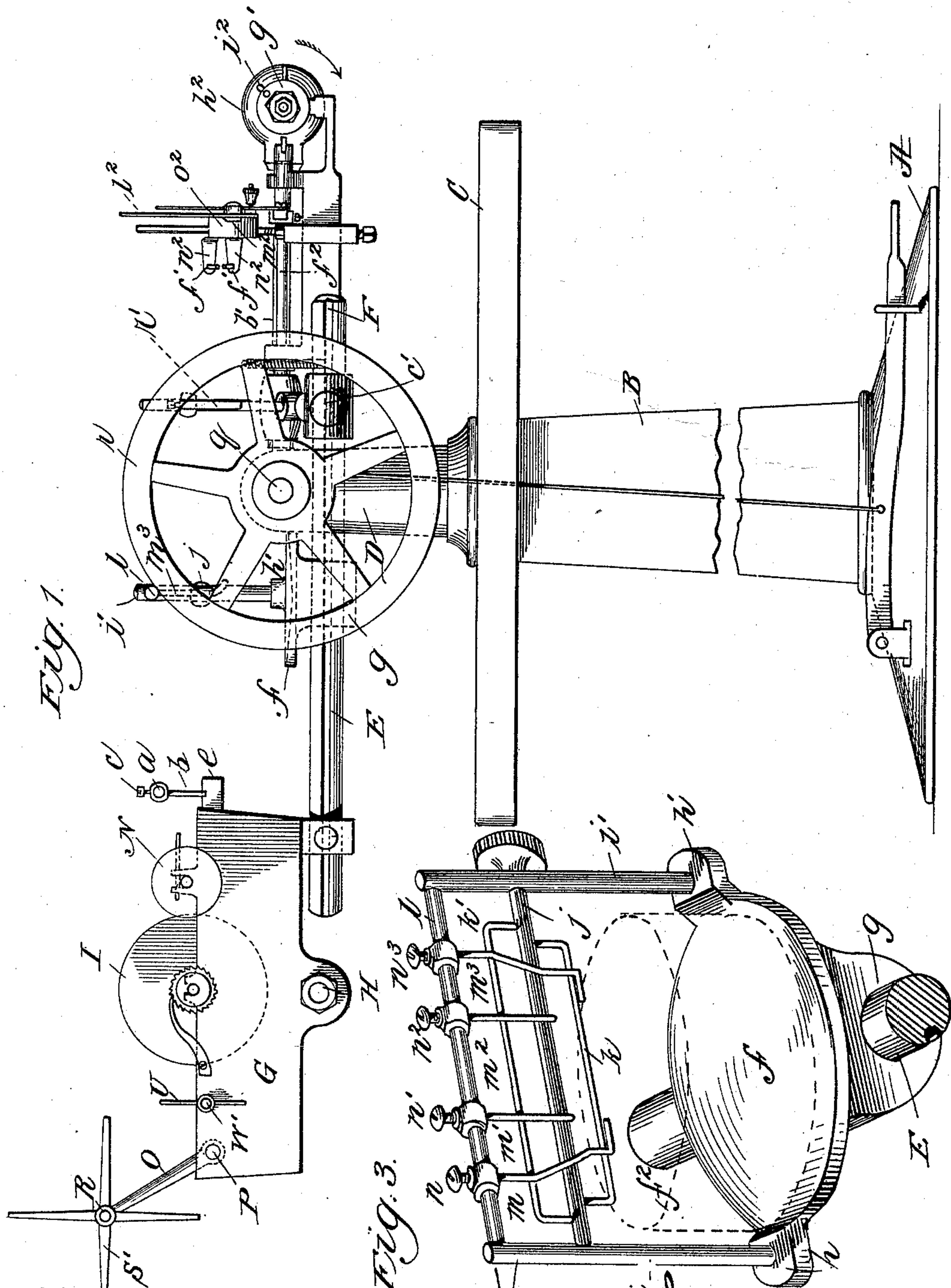


Fig. 3.

Witnesses
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Horace Inman Inventor
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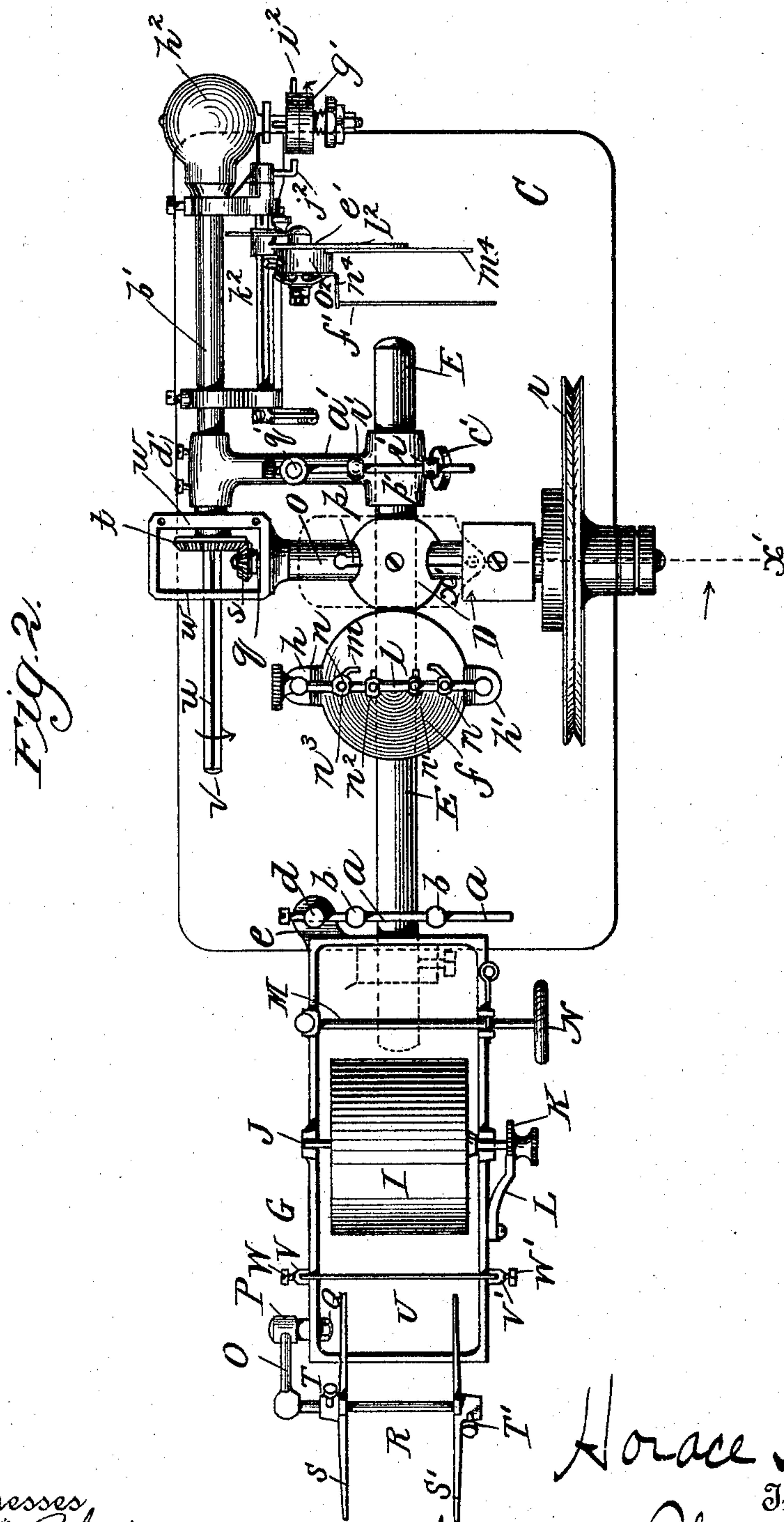
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5 Sheets—Sheet 2.

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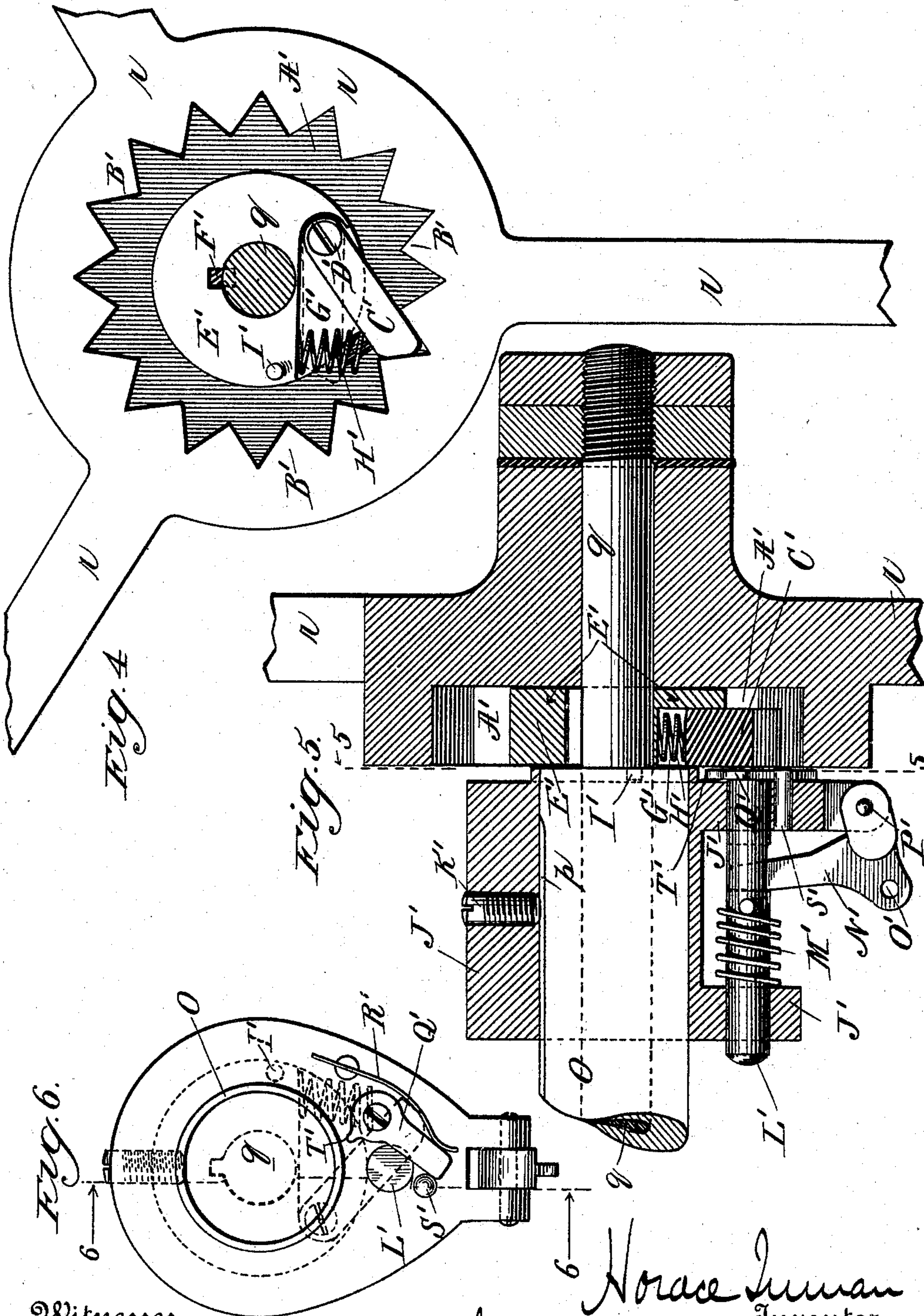
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5 Sheets—Sheet 3.

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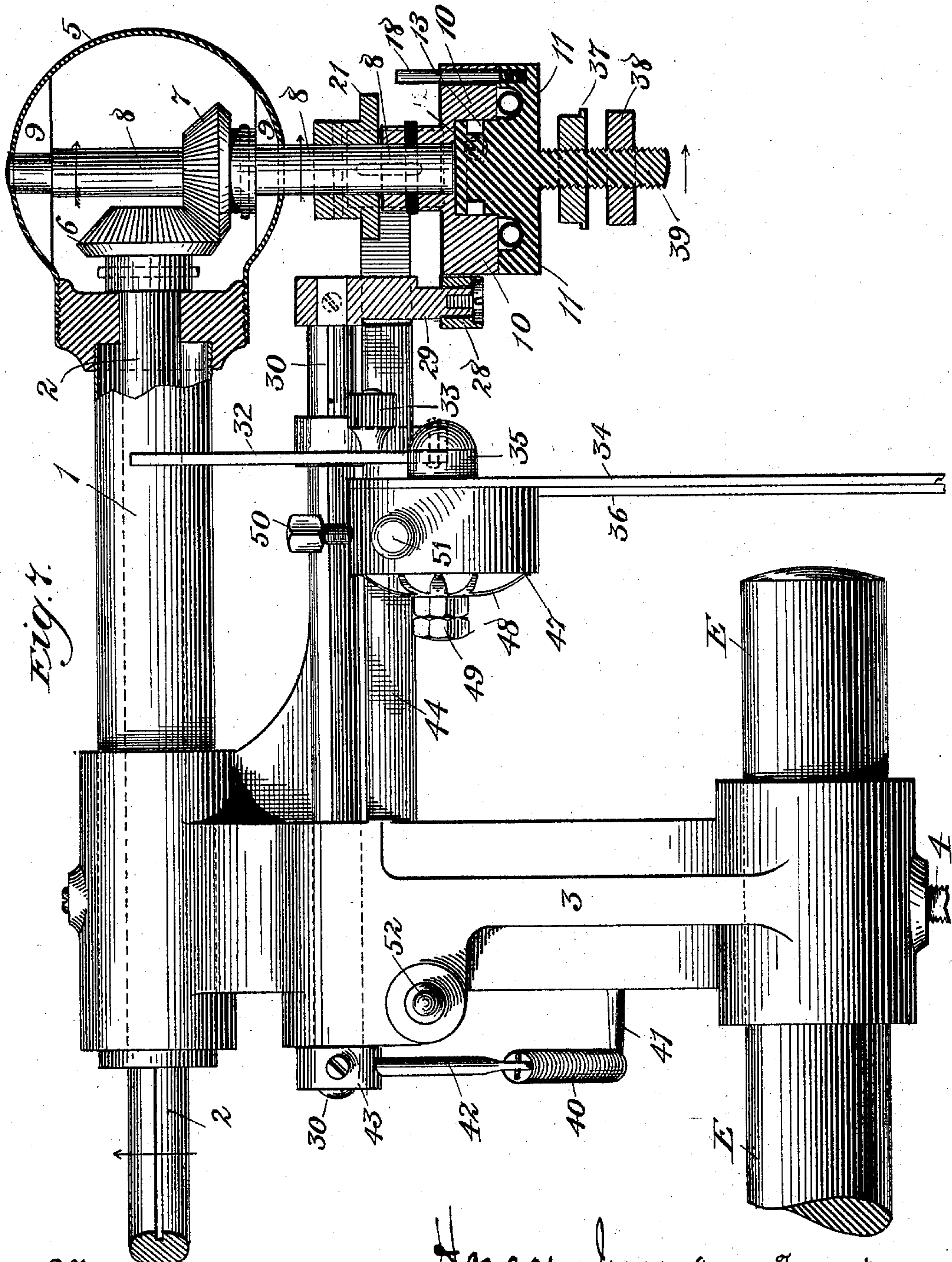
(No Model.)

5 Sheets—Sheet 4.

H. INMAN.
BOX COVERING MACHINE.

No. 585,820.

Patented July 6, 1897.



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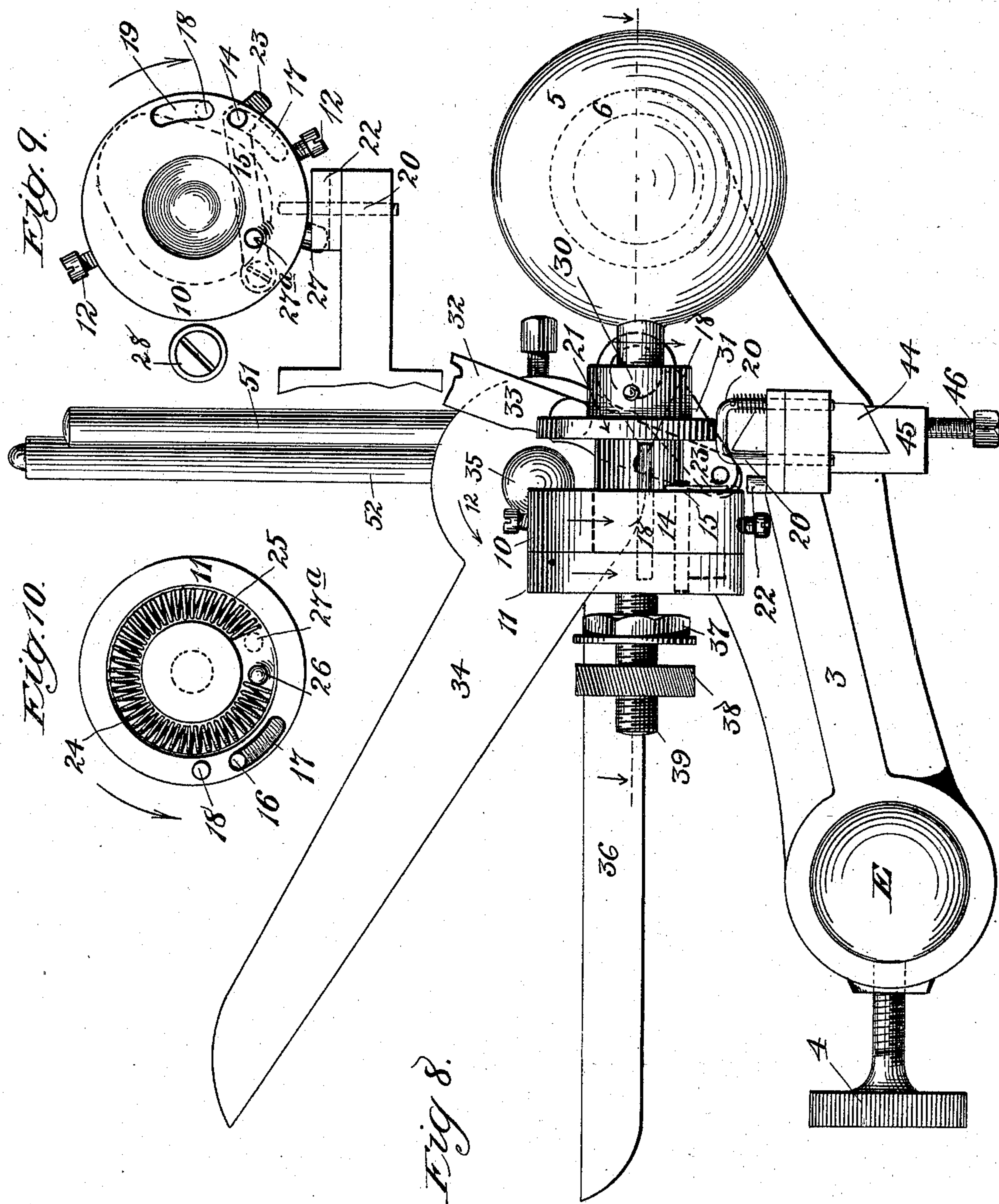
(No Model.)

5 Sheets—Sheet 5

H. INMAN.
BOX COVERING MACHINE.

No. 585,820.

Patented July 6, 1897.



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UNITED STATES PATENT OFFICE.

HORACE INMAN, OF AMSTERDAM, NEW YORK.

BOX-COVERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 585,820, dated July 6, 1897.

Application filed December 11, 1896. Serial No. 615,257. (No model.)

To all whom it may concern:

Be it known that I, HORACE INMAN, a citizen of the United States, and a resident of Amsterdam, in the county of Montgomery and State of New York, have invented certain new and useful Improvements in Box-Covering Machines, of which the following is a specification.

My invention relates to improvements in box-covering machines. The general construction and operation of such apparatus and the work performed by them in the manufacture of paper boxes are now so well understood that the following description may be limited to an exposition of the specific construction embodied in my invention, it being understood, however, that it is applicable to machines for applying a single strip of covering-paper to boxes, or more than one strip, as may be desired.

Figure 1 illustrates an elevation of the machine. Fig. 2 illustrates a plan thereof. Fig. 3 illustrates a detail of certain of the paper-guiding devices. Fig. 4 illustrates a detail of the stop-motion devices as applied to the driving-wheel. Fig. 5 illustrates a longitudinal view, mostly in section, of the parts shown in Fig. 4, with the addition of the stop-pin mechanism actuated by foot-treadle. It is taken on the line 6 6 of Fig. 6. Fig. 6 illustrates an elevation of the parts shown in Fig. 5, taken on the line 5 5 in that figure. Fig. 7 illustrates a plan view, partly in section, of the preferred construction of the box-form-rotating and paper-cutting devices. Fig. 8 illustrates an end view in elevation of the parts shown in Fig. 7. Fig. 9 illustrates a detail in elevation of certain parts of the box-form-rotating devices. Fig. 10 illustrates an elevation of certain other parts of the box-form-rotating devices.

A is the base of the machine. B is the standard thereof. C is the platen or table. All these parts are preferably made of cast-iron. Above the platen extends a tubular post D, which is bored horizontally near its upper end to receive a rod or bar E. This rod is grooved longitudinally on one side, as at F, (see Fig. 1,) and a spline or feather in the upper part of the post engages with this groove, so that rotation of the rod E is pre-

vented, and yet it may have longitudinal movement through the post. A set-screw is preferably employed to fasten the rod at any desired position.

G is a glue-tank, preferably double-bottomed, so that steam may be introduced at H for warming the adhesive material.

I is the glue-roller, which is journaled upon a shaft J and so located as to revolve in the adhesive material within the tank. It is or may be provided with a ratchet K and pawl L to prevent backward movement.

M is a scraper which may be adjustable and of any desired construction, preferably, however, the kind in which two parallel bars separated by a short space are adapted to rotation in their bearings—as, for instance, by the hand-wheel N—so that the paper which passes between them may be caused to rub with greater or less force against one or the other, dependent upon their relative position. This form of scraper is now well known and does not require further description.

O is an arm pivoted to a stud P on the side of the glue-tank, and the position of this stud may be changed by loosening the nut Q on the inside of the glue-tank to give the arm O a horizontal or vertical or an intermediate position, so that the location of the reels of paper which are supported upon a shaft R, which is fastened in the end of the arm O, may be changed relative to the roller I.

S S' are two flanges, which may be solid or made in the form of bars, as seen clearly in Fig. 1, and which confine the paper laterally. They are adjustable on the rod R by means of the set-nuts T T'.

U is a cross-rod or stiff wire the ends of which are bent downwardly and pass through studs V and V' on the sides of the glue-tank. The rod is fastened at any desired height by means of set-screws W W', so that any desired adjustment and tension of the paper may be acquired, for it will be understood that as the paper rolls off from the reel or reels located upon the shaft R the lower the cross-rod U is the sharper the deflection of the paper will be, thus increasing its tension, and also that it will have greater bearing upon or come in contact with a larger area of the glue-roller I.

a is a cross-rod upon which are located guiding-fingers *b*, which project downwardly (see Fig. 1) and act as guides for the paper by impinging upon the edges thereof. These
5 fingers are movable upon the bar *a* and may be clamped in any desired position by small set-nuts *c*. The bar is supported at one end only upon a stud *d*, which rests upon a lug *e*, cast or otherwise formed upon the glue-tank,
10 so that the paper can be swung under it quickly in preparing the machine for work.

f is a small plate or table adapted to support a pan *f*² or other receptacle to catch any adhesive material that may be squeezed out
15 from between the papers. This plate has a hub *g* upon its under side, which is bored so that it may slide upon the rod *E*. This part of the apparatus is best seen in Fig. 3. At each side of the plate *f* are two ears or lugs
20 *h h'*, upon which are supported two uprights *i i'*, upon which in turn are supported a cross-rod *j*, having on opposite sides links *k k'*, respectively, and *l* is a cross-bar which connects the upper ends of the uprights *i i'*, and
25 upon this cross-bar are a series of guiding-fingers *m m' m² m³*. They are all supported upon small hubs, as shown, in which are threaded set-screws *n n' n'' n³*. These devices are used when two or more strips of pa-
30 per are employed to cover the boxes, the guiding-fingers being properly located and manipulated to impinge upon the edges of the several strips of paper and to guide them all, as set forth in the reissued United States Let-
35 ters Patent granted to Horace Inman the 13th day of February, 1883, No. 10,286, to which I refer for a detailed description. It is not essential, however, that the paper-guiding mechanism should be of this particular char-
40 acter, nor is it essential when a single strip of paper only is used that guiding devices of any kind should be employed. The form illustrated, however, has been found effective and valuable and is therefore illustrated
45 in connection with this machine.

o is a tubular sleeve grooved on one side, as shown at *p*. It passes through a rounded knob or upper end of the post *D*, above the longitudinal rod or shaft *E*, and has within
50 it a shaft *q*, upon one end of which is loosely mounted a belt-wheel *r* and on the other end a beveled gear *s*, which meshes into another beveled gear *t*, which is mounted upon a longitudinal shaft *u*. This shaft is grooved, as
55 at *v*, and a feather on the inside of the hub of the beveled gear *t* engages with this groove, so as to have a spline effect to compel the rod *u* to turn with the pinion and yet allow the former to be moved longitudinally through
60 the pinion. The parts are contained within a yoke *w* on the end of the sleeve *o* and are retained in position by it partly.

a' (see Fig. 2) is an arm having a hub at both ends, as shown. One of them embraces
65 the longitudinal rod *E* and the other embraces the hollow rod *b'*, and set-nuts *c'* and *d' d'*, respectively, clamp these parts in their

desired position and yet permit longitudinal movement or adjustment of them, as the ne-
cessities of the work require. Thus the ma-
chine as a whole, and also the relation of its
70 several parts to each other, can be adjusted, as desired, to accomplish the best results in consideration of the character of the paper or adhesive material being used and the kind
75 of work produced. Upon the hollow rod *b'* are mounted the cutters *e'*, paper-guiding fingers *f'*, and box-form support *g'*, which is actuated by suitable mechanism contained within the terminal portion *h''* of the rod *b'*.
80 These cutting-off devices may be of any desired construction. I therefore, excepting as specifically claimed, do not limit myself in regard to them. I shall, however, here-
85 inafter describe a special construction of cut-off mechanism which I prefer to use in connection with this machine and claim the same as part of the improvements protected by this patent.

Referring to Fig. 2, *f'* are paper-guiding
90 fingers set upon elastic spring-supports or brackets *n⁴*, which are suitably fastened to a sort of hub *o²*, and the paper on its way to the cutters passes between and is supported
95 by them, so that when it is cut off by the action of the shears the remaining end is supported by the lower finger, and if the severed end should stick to the swinging blade of the shears, by reason of its becoming more
100 or less smeared with adhesive material and be carried upwardly by the blade when it rises, the paper will then immediately strike against the upper bar and be stripped off or
105 pulled away from the swinging blade, and yet, owing to the elasticity of these supporting devices, they will readily yield somewhat to the pull of the paper, thus avoiding tearing of it should the strain be considerable.

p' is a cross-rod supported upon an upright
110 *q'*, which is fastened in the arm *a'* at any desired height, and upon it are paper-guiding fingers *r' r'*, which may be the same as the fingers *b*, already described.

Referring to the parts shown more particularly in Figs. 4, 5, and 6, they illustrate de-
115 vices whereby to a certain extent the operator is not in control of the machine—that is to say, after he starts the machine by pressure upon the pedal it continues to run irre-
120 spective of anything he may do until the box upon the box-form has made one complete revolution and should be completely covered with the covering or covering and trimming papers, with the result that not only are the
125 operators compelled to be active in their work of rubbing down and edging over the covering-papers, but also there is no possibility of there being slack in the covering-papers, which is likely to occur to the detriment of the work where the machine can be
130 stopped and started at any moment by the operator. The parts that effect this purpose are as follows: The driving-wheel *r* has a recess *A'* in its hub, the peripheral surface of

which is provided with a series of ratchet-like teeth B', in the recesses between which works a pawl C', which is pivoted, as at D', to an annular block E', which is keyed, as at F', to the shaft *q*. The pawl C' works in a recess G' made in the block E', and a spring H' normally throws the pawl outwardly into engagement with the teeth B'. I' is a pin which projects beyond the surface of the block E'. J' is a block or forging fastened by a set-screw K' upon the exterior of the sleeve O, and it supports a pin L', which is normally thrust to the right by a spring M', but which can be forced rearwardly by a bell-crank N', which connects at O' with the treadle. The bell-crank is pivoted at P' to a lug projecting downwardly from the block J'. Q' is a swinging latch actuated by a spring R', which when the pin L' is retracted swings across its retracted end, as seen in Fig. 6, in which figure it is shown as in the act of passing across or onto the end of the pin L', and becomes locked against outward movement by entering a groove cut in the side of a projecting pin S'. The operation of this part of the apparatus will be now recited, since it will be more easily comprehended if given in immediate connection with the description of the parts. It is as follows:

The belt or driving wheel *r*, as stated, is loose upon the shaft *q*, and when the pin L' is in its inward position it engages with the pawl C' and lifts the same out of the recess between the teeth B' in the hub of the driving-wheel, so that its movement is not conveyed to the shaft *q*. Now therefore to start the machine the operator presses upon the pedal, which, through the instrumentality of the bell-crank N', retracts the pin L'. The spring H' then immediately projects the pawl C', which instantly engages with one or the other of the recesses between the teeth B', and thereupon the rotary movement of the belt-wheel *r* is conveyed to the shaft *q* and the apparatus starts. Simultaneously with the withdrawal of the pin L' of the pedal the latch Q', actuated by its spring R', passes across the retracted end of the pin L', so that it cannot again return into the path of the pawl C'. Consequently whatever the operator may do will have no effect upon the movement of the machine. The shaft *q* will continue to revolve whether or not the pedal be pressed upon. During the revolution of the parts, however, the pin I', which is fastened to but projects beyond the face of the block E', is brought around until it engages with a projecting thumb T', which forms part of the latch Q'. As soon as this takes place that latch is forced outwardly against the action of its spring R', and thereupon the pin L' is released and it immediately springs forwardly into the path of the pawl C', which, however, at this stage of the movements has passed beyond that pin, so that it completes its revolution before it comes in contact with the pin L', whereupon the impact of that pin against

it lifts it from engagement with the ratchet, and as soon as that engagement is broken the shaft *q* stops, and consequently the entire machine stops, although the wheel *r* continues to revolve.

Referring now to the special construction of the devices illustrated in Figs. 7, 8, 9, and 10—i. e., those relative to the paper-cutting and box-form-rotating instrumentalities—they may be made, as before stated, in any preferred form. One desirable construction is shown in Figs. 1 and 2. My preferred construction, however, is shown in Figs. 7 to 10. The advantages which this form has over all others is that it is simple, short in space, and its construction allows the cutter-blade to act nearer the box-form, so that when desired the covering-paper can be cut practically at the very corner of even a small box; also, the two parts of the box-form head or rotating mechanism are actuated under this construction by a spiral spring, which is better than a plate-spring. I also apply a roller to the knife-actuating arm or lever, which reduces friction, and under this construction the box-form is clamped between two nuts on a spindle, thereby permitting a slight lateral adjustment of the box-form, which is sometimes very convenient and also makes the change of box-forms simple and easy.

The reasons for the above-stated advantages in the construction shown in Figs. 7 and 10, as compared to those in Figs. 1 and 2, are that the cutter-actuating and box-form-revolving mechanism in Figs. 1 and 2 is supported upon two brackets attached to the sleeve *b'*, whereas in the form shown in Figs. 7 to 10 these parts are all supported upon an arm 3, which is supported directly from the main bar E of the machine. Thus the cutters may be moved close up to the box-forms, since there is no supporting-arm in the way, and likewise the number of parts is greatly reduced, so that the assembling of the machine and the adjustment of its parts are materially aided.

Referring to the stated drawings, Figs. 7, 8, 9, and 10, I will give the parts numerals as the means of reference instead of letters, so as to avoid confusion of the other figures.

1 is the sleeve of the driving-shaft, which corresponds to the letter *b* in the other drawings. 2 illustrates the driving-shaft, which corresponds to the letter *u*. 3 is an arm fastened by set-screw 4 to the main supporting shaft or bar E of the machine. All of the operative parts in this construction are supported upon the arm E. 5 is a globular brass casing which incloses the driving mechanism for the box-form, which comprises a miter-gear 6, which meshes into another miter-gear 7, which is fast upon the cross-shaft 8. This cross-shaft is journaled in two bearings 9 9 in each side of the globular extremity 5, and the lower arc of the miter-gears run in oil which is placed within the globular casing, so that it is not only a protection against ac-

cident arising from these miter-gears, but also serves as an oil-cup for the mechanism contained within it. Upon the shaft 8 are arranged the two parts of the "box-form clutch mechanism," so called by me. One part 10 is fast to the shaft and the other part 11 has a central extension which enters a central cavity in the part 10, as shown. (For the purpose of making this part of the drawings more clear, since they are necessarily somewhat complicated, I cross-hatch the part 10 with light section-lines and the part 11 with heavy section-lines.) The part 11 is held to the part 10 by screws 12 12, (see Fig. 9,) which pass through the walls of the part 10 and enter an annular groove 13 in the part 11. (See Fig. 7.) The part 10 is provided with a pin 14, which is fastened to a spring 15 and which extends through the part 10 from side to side, projecting beyond it, as shown in Fig. 8, and enters a hole 16, which is made at one end of a slot 17 in the part 11, so that when the parts are in their normal position the spring 15 holds the pin 14 in the hole 16 in the part 11. Consequently the two halves of the clutch are locked together. When, however, the spring is retracted, carrying the pin 14 backwardly with it, then its end again passes through the slot 17, thus giving slight movement to the two parts of the clutch relative to one another, and for the purpose of securing the proper movement of one portion of the clutch relative to the other the part 11 has a pin 18 rigidly attached to it, which passes through a slot 19, made entirely through the part 10. (See Fig. 7.) The end of the pin 18 (see Fig. 8) projects laterally beyond the side of the part 10, so that in the revolution of these parts (which is indicated by the arrows upon Fig. 8) it comes in contact with a vertically-sliding stop 20, made in the form of a staple and with which engages a cam 21, fast on the shaft 8. 22 is an inclined surface made upon a suitable part of the machine, with which the extremity 23 of the spring 15 engages at the proper time.

The operation is as follows: When the pin 18 comes against the staple 20, the revolution of the piece 11 is arrested, and during the time it is at rest the pin 14 (which has just previously been withdrawn by the engagement of the extended end of the spring 15 against the inclined surface 22) is traveling through the slot 17 in the part 11. The result of the above action is that for a brief period the box-form which is attached to the part 11 does not revolve, nor does the paper travel through the machine, and the adjustment and "timing" of the parts is such that during this brief period of rest the cutters are operated by the mechanism already described and the covering-papers cut off square—that is, at right angles. Meanwhile, however, the cam 21, which is fast upon the shaft 8 and of course under continuous revolution, engages with the upper or other suitable part of the sliding stop 20 and depresses

it until it attains a plane so low as not to further engage with the pin 18, whereupon the spring 24, which is housed in an interior recess between the two parts 10 and 11, as shown in Fig. 10, and which abuts at its two ends against stops 27^a 26 upon the said parts, respectively, immediately acts upon the movable part 11, returning it again to its normal position, and the pin 14 likewise immediately returns to its normal position, since the terminal 23 of the spring 15, which carries it, has by this time passed beyond the deflecting-surface 22. Thus all of the parts referred to again assume their initial position ready for a repetition of the operation, which is continued in a manner now well understood, the covered box being removed from the box-form and an uncovered box-blank applied thereto. By these instrumentalities I secure a peculiarly valuable result which has never been attained before, so far as I am aware—that is to say, the parts all operating automatically and with exact positiveness I am enabled by proper adjustment of the parts to cause the severed end of the covering paper or papers to come at a corner of the box, which is a desirable feature, because when the paper terminates at a corner the seam or joint is hardly discernible, even with careful scrutiny. In all other machines known to me the lost motion is such as to vary the place of severing the paper, so that it terminates approximately only at the corners of the box, and if removed therefrom by any considerable space the joint is practically as noticeable and objectionable as though it occurred in the middle of a side.

I will here state the operation of the devices just above described for the sake of convenience: The shaft 8 being positively driven by the gearing shown, the part 10 makes continuous revolution with it, and by reason of the engagement of the pin 14 with the hole 16 the two parts necessarily travel together. When, however, the extremity 23 of the spring 15 comes in contact with the deflecting-surface 22 on the frame of the machine, the spring 15 is withdrawn, carrying the pin 14 with it, and immediately thereafter the laterally-projecting end of the pin 18 strikes the stop 20, so that the end of the pin 14, which has been sufficiently withdrawn, traverses the slot 17 in the part 11, as indicated by dotted lines in Fig. 9. During the same time the pin 18 traverses the slot 19 in the part 10, and it is at this time that the cutting-blades operate and sever the covering-papers, as will be explained, and in order to bring the parts back again to their normal position a spring 24 is located in an annular recess 25 in the part 11, which abuts at one end against a stud or pin 26 in the part 11 and against another pin 27^a in the part 10.

The instrumentalities which actuate the cutters are as follows: 27 is a thumb or stud-like projection extending radially from the periphery of the part 10, which in its revolu-

tion comes in contact with a roller 28, which is set on the end of an arm 29, which is keyed to a shaft 30, which carries by a suitable arm 31 a connecting-rod 32, which engages by a thumb-nut or other suitable device 33 with the movable blade 34 of the shears, which is pivoted at a center 35. The fixed blade of the shears 36 is set low down, so as to be as close to the box as possible. The box-form is fastened by means of a set-nut 37 and milled thumb-nut 38 upon a threaded spindle 39, which is attached to the part 11. A spring 40, one end of which is made fast to a suitable support such as an arm 41, which may be attached to the bracket 3, and the other end fastened to a lever-arm 42, which is fast by means of a hub 43 upon the shaft 30 of the knives. 44 is a slideway upon which a slide 45, which carries the cutters, is adjusted in any desired position by means of a set-screw 46. The cutting-blades are adapted to any desired elevation by being provided with a hub 47 and spider-spring 48 for friction, which is set up or loosened by set-nuts 49. A set-screw 50, passing through the hub, engages with a vertically-arranged rod 51, upon which the cutting devices slide. 52 is another vertical rod for supporting the paper-guiding devices already described.

It will be seen that the construction of the parts above described and as shown in Figs. 7, 8, 9, and 10 is much more compact and simple than that shown in the other figures and also that by reason of supporting all of the parts from the single arm 3 there is nothing at the outer end which interferes with the cutters being brought up quite close to the box-form. Consequently I can so adjust my machine as to sever the paper practically at the corner of a box not larger than one and one-half inches at its largest dimension. This is a great desideratum. And in addition to this feature the other advantages before referred to obtain.

The operation of the apparatus will be readily understood from the foregoing description, since such machinery in its general features is now well understood—that is to say, the reel or reels of paper are placed upon the shaft R at the left hand of the machine, the flange S' being removed for the purpose, and it will be especially observed that, owing to the shaft R being supported at one end only—i. e., by the arm O—the application of the coils of paper can be easily and speedily made to the machine, because all that is necessary is to remove the flange S'. If two or more strips of paper are to be applied, I prefer to employ a dividing disk or flange between the several coils or reels of the paper. This is not essential, however. The paper passes from the reel or reels under the bar U, which is adjusted vertically as the necessities of the work require; thence over the glue-roll I, which applies the paste to one side only of the paper, the glue-roll being caused to revolve by the pull of the paper over and upon it; thence

in contact with the scraper; thence through the guides *b b*, whereby the paper is brought into proper alinement; thence through the guiding and superposing fingers *m m' m'' m³*, whereby the two papers are caused to be overlapped one upon the other; thence over the bar *p'*, upon which the several papers are united, becoming one by reason of the adhesive material upon their under sides; thence between the flexible supporting and guiding fingers *f f'*; thence through the shears or cutter, and so on to the revoluble or rotary box-form, and the stringing of the paper through the machine is facilitated, because in every case where it engages with guide-rods or the like they are supported at one end only, leaving the other end open, so to speak, so that the paper, or papers, is simply passed around such unsupported end, thus greatly facilitating the operation of putting the papers on the machine.

The apparatus, if driven by steam, is belted in any suitable manner, by reason of the belt-wheel *r*, which actuates the parts in a manner well known. If power be not employed, the machine, with proper modifications, may be operated by hand by manually turning the box upon its rotating form, in a manner well understood.

I call particular attention to the fact that this machine is peculiarly simple and durable in construction, that all its parts are adjustable relative to one another, and are all mounted upon the longitudinal rod E, so that whatever the extension or retraction of the machine may be—in other words, whether extended to its utmost length or shortened up to its shortest dimension—all of the parts maintain their proper longitudinal alinement, which is a matter of great consequence in apparatus of this character, and that the machine may be extended or closed up either as a whole or at one end or the other, as required, by simply loosening the set-screws and pulling or shifting the parts along upon the central rod E and rod *u* to the desired position, and that the other advantages already referred to are likewise realized.

I furthermore especially refer to an advantageous feature in this machine which has never, so far as I understand, been heretofore embodied—that is to say, after the machine has once been started it will invariably complete a revolution of the box-form, irrespective of any act on the part of the operator. Consequently the machine compels the operator to diligently attend to the business, because the paper will be wrapped about the box by the machine, and it must be properly manipulated at that time, and, furthermore, the paper is under the same tension from start to finish, no slack paper at the corners, which results in bubbles, wrinkles, and laps, is possible, which is incident to the use of all forms of prior machines, and, furthermore, the construction and timing of the parts is such that as the revolution of the box ap-

proaches its termination the momentary delay above referred to in connection with the box-form clutch takes place, during which the paper is severed, and thereafter the machine
 5 still further operates for a brief period, revolving the box-form somewhat further, so that the lap end of the severed paper can be rubbed down properly before the driving-clutch operates to definitely stop the mechanism.
 10 anism.

I do not limit myself to the details of construction described and shown, because it will be evident to those who are familiar with this art that alterations may be made therein
 15 without departing from the essence of the invention.

I do not herein claim, broadly, the combination, in a box-covering machine, of an intermittently-rotating box-form, mounted on a
 20 continuously-rotating shaft, with a device on the shaft for actuating a cut-off, and means actuated by the rotation of the shaft for unlocking and locking the box-form to it. I do, however, claim the special construction, arrangement, and coactive operation of the instrumentalities for effecting the said results,
 25 as specified in the claims thereof.

I claim—

1. In a box-covering machine, the combination of a single pillar or standard, a longitudinally-extending rod mounted thereon, upon
 30 which the several operative parts are supported, and driving mechanism mounted on the top of said pillar, for the purposes set forth.
 35 forth.

2. In a box-covering machine, the combination of a single pillar or standard, a longitudinally-extending rod mounted thereon and movable relative thereto, upon which the several
 40 coöperative parts are supported, and driving mechanism mounted on the top of the pillar, for the purposes set forth.

3. In a box-covering machine, the combination of a single pillar or standard, a longitudinally-extending rod mounted thereon, a
 45 glue-pan, paper-guiding and paper-cutting devices, all mounted upon said rod and adjustable thereon, a revolving box-form and driving mechanism mounted on the top of
 50 said pillar transversely of said rod, for the purposes set forth.

4. In a box-covering machine, the combination of a single pillar or standard, a longitudinally-extending rod mounted thereon, a
 55 glue-pan and paper-guiding devices mounted on said rod, a laterally-extending arm supported upon said rod which carries paper-cutting mechanism, and a rotary box-form, for the purposes set forth.

5. In a box-covering machine, the combination of a suitable standard or base, a longitudinally-extending rod mounted thereon, a
 60 glue-pan and paper-cutting devices mounted on said rod, a laterally-extending arm supported upon said rod, a rotary shaft supported upon the outer end of said arm, cutting mechanism and a box-form actuated by said shaft,
 65 and a cross driving-shaft which actuates said first-named shaft, for the purposes set forth.

6. In a box-covering machine, the combination of a suitable standard or base, a longitudinally-extending rod mounted thereon, a
 70 glue-pan and paper-guiding devices mounted upon said rod, a laterally-extending arm supported upon said rod, a rotary shaft adjustably supported on the outer end of the arm,
 75 cutting devices and a box-form actuated by said shaft, and a cross driving-shaft which actuates said first-named shaft, for the purposes set forth.
 80

7. In a box-covering machine, two independent, elastic, supporting devices for the paper, located adjacent to the cutting mechanism, one above and one below the paper,
 85 and adapted to yield under its pressure, for the purposes set forth.

8. In a box-covering machine, driving mechanism comprising a belt-wheel loosely mounted upon a shaft, the hub of which is provided with a circular series of teeth, a pawl
 90 connected to the shaft and adapted to engage with said teeth, a movable pin located adjacent to said hub and adapted to throw the pawl into and out of said series of teeth, a
 95 latch to hold said pin in its retracted position, and a pin on the shaft to trip the latch, for the purposes set forth.

9. In a box-covering machine, the combination of a driving-wheel, the hub whereof is provided with a circular series of teeth or projections, a spring-actuated pawl upon the
 100 shaft adapted to engage said teeth, a sliding pin located adjacent to the said pawl and adapted to throw it into and out of engagement with the said teeth, a latch to hold the pin
 105 in its retracted position, and another pin upon the shaft adapted to trip the latch, the whole being so arranged that the mechanism is automatic and beyond the control of the operator,
 110 for the purposes set forth.

10. In a box-covering machine, a chuck for the box-form, comprising two parts movably connected together by a pin mounted on a
 115 spring which is attached to one of the parts, and which passes transversely through it and engages with an opening in the other part, a stationary device which engages with the
 120 spring upon the revolution of the clutch and automatically retracts it, means whereby the parts then have limited rotary movement relative to each other, and other means to return the parts to their primary position, for the purposes set forth.

11. In a box-covering machine, a counter-shaft for the support of the box-form, a two-
 125 part clutch on said counter-shaft, one part rigid therewith, and the other movable, a spring attached to the rigid part, a pin carried by the spring which passes transversely through the rigid part and engages with an
 130 opening in the movable part, another pin carried by the clutch which engages with a mov-

able stop on the frame, a cam carried by the
counter-shaft, which in the revolution of the
machine depresses said movable stop, and
means to automatically return the parts to
5 their primary position, for the purposes set
forth.

Signed at New York, in the county of New

York and State of New York, this 3d day of
December, A. D. 1896.

HORACE INMAN.

Witnesses:

PHILLIPS ABBOTT,

WALTER H. CRITTENDEN.