

F. SCHANZMEYER.
INSULATOR PIN MACHINE.
APPLICATION FILED OCT. 26, 1907.

994,607.

Patented June 6, 1911.

3 SHEETS—SHEET 1.

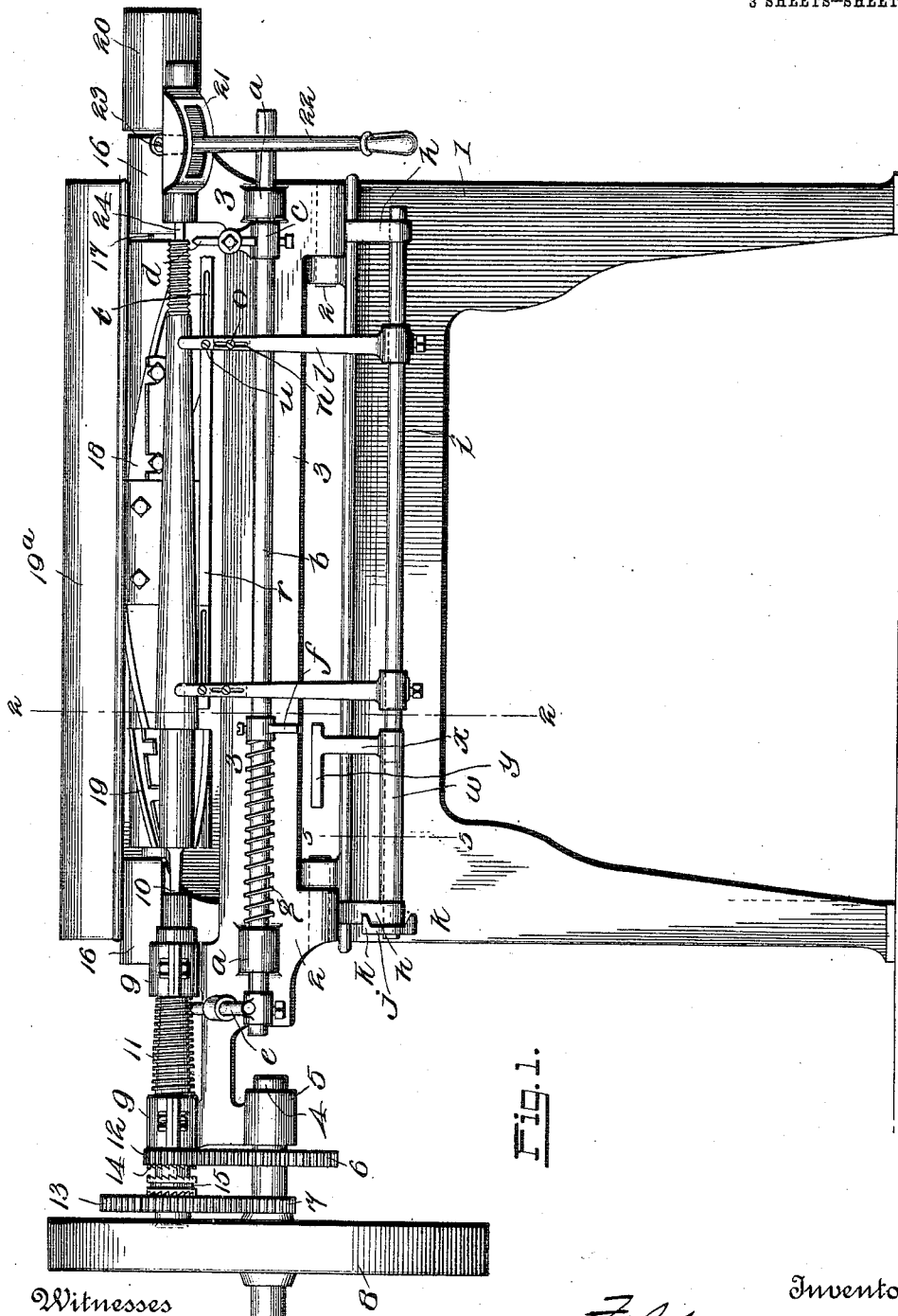


Fig. 1.

Witnesses
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J. H. Kinsler

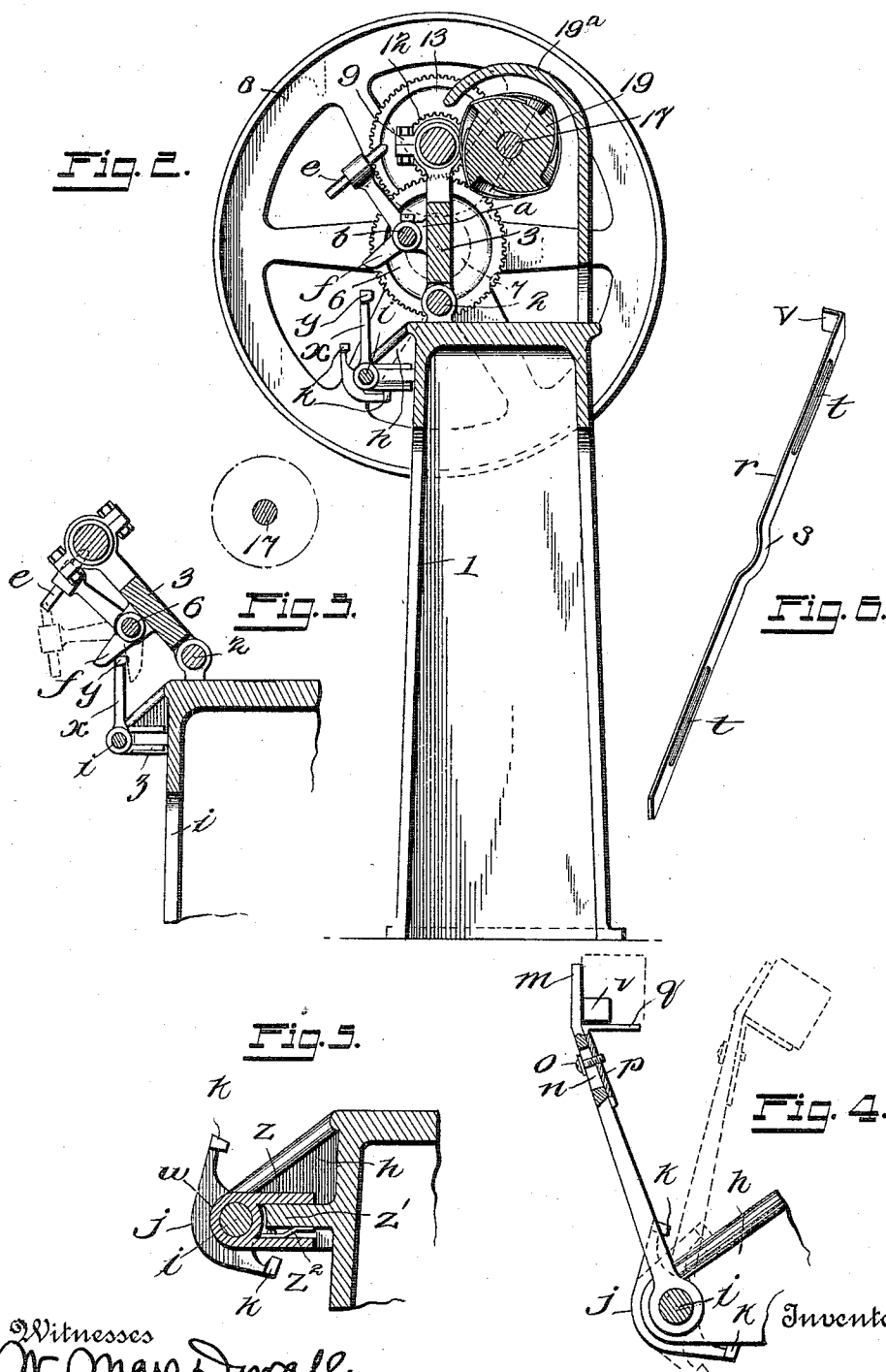
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3 SHEETS-SHEET 2.



Witnesses
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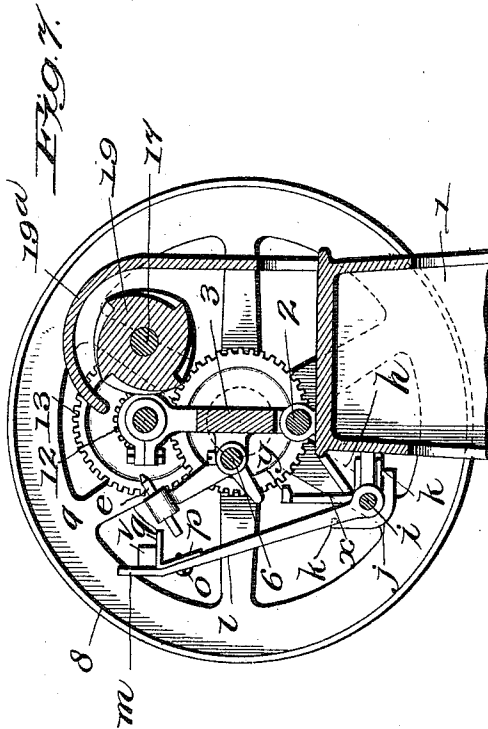
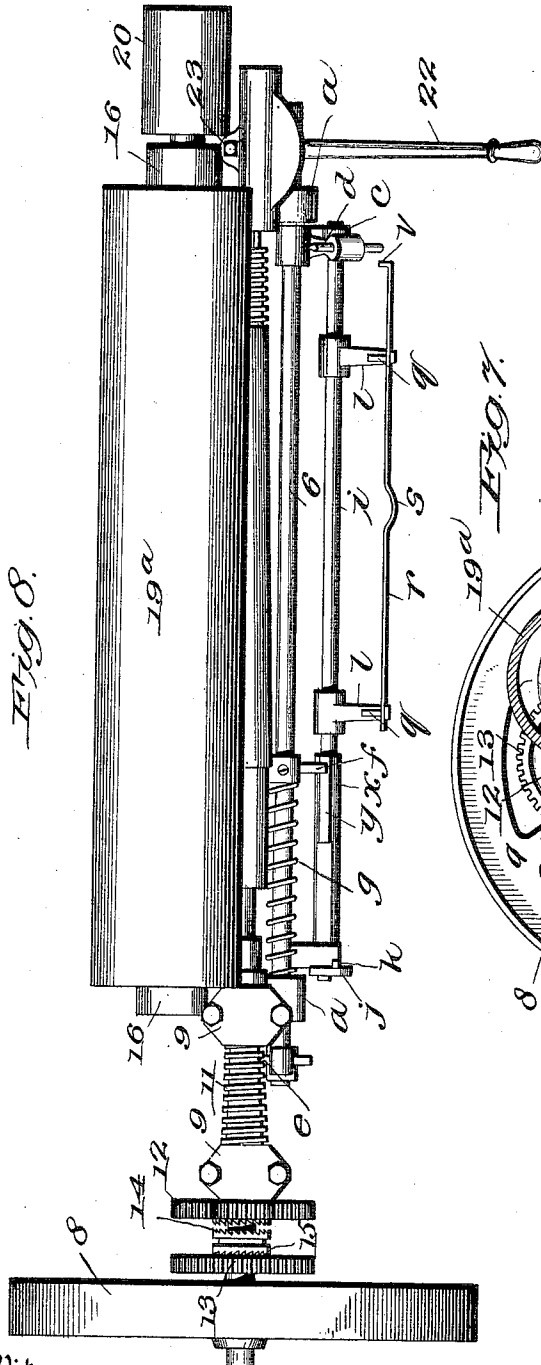
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3 SHEETS—SHEET 3.



Witnesses
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UNITED STATES PATENT OFFICE.

FRANZISKUS SCHANZMEYER, OF META, MISSOURI.

INSULATOR-PIN MACHINE.

994,607.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANZISKUS SCHANZMEYER, a citizen of the United States, residing at Meta, in the county of Osage and State of Missouri, have invented certain new and useful Improvements in Insulator-Pin Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in machines for manufacturing insulator pins from blanks, in which the blanks are first turned to the desired shape, and are then immediately afterward threaded in substantially the same operation.

The primary object of the present invention is to improve upon machines of this general character in such manner that the operation of turning and threading the pins is made practically a simultaneous one, whereby labor is saved, the output of pins increased, and the articles therefore produced at a lesser expense than heretofore, and without any deterioration in the workmanship.

To accomplish the object designed the invention broadly resides in the provision of mechanism for throwing the threader into operation without the employment of a separate threading lever as heretofore, and which mechanism is also designed to return the threader parts to their initial position at the end of the cutting stroke.

The invention further consists in means associated with the cutting mechanism to feed the blanks thereto for centering; and the construction and combination of parts more fully hereinafter described and particularly pointed out in the claims.

Referring to the accompanying drawings forming a part of this specification in which like numerals and letters designate the same parts in all the views:—Figure 1 is a front elevation of an insulator pin machine with the present invention applied thereto. Fig. 2 is a transverse sectional view on the line 2—2 of Fig. 1 looking toward the left. Fig. 3 is a fragmentary detail view in section, showing the swinging frame when thrown into operative position with the threading rod, the portion in dotted lines showing the position of the guide pin and controlling lug when the threader has finished its stroke. Fig. 4 is a fragmentary view partly in section showing the blank carrier frame when

in its normal position ready to feed a blank to the centering means, and showing in dotted lines the position of the parts when the blank is disposed in proper relation with the chuck rod and centering pin. Fig. 5 is a local section on the line 5—5 of Fig. 1, showing the means for allowing a limited play to the sleeve supporting the tracer controlling slide. Fig. 6 is a perspective view of an adjustable strap forming a part of the feeding frame. Fig. 7 is a sectional elevational view of the machine, and Fig. 8 a plan view thereof.

1 designates a pedestal support having pivoted thereto at 2, a swinging frame 3. This swinging frame carries at one end a spindle 4 mounted in the bearing 5, and carrying the large and small gear wheels 6 and 7 and a drive wheel 8. This same frame 3 also carries the journal bearings 9, in which is mounted the chuck spindle 10 containing between the journals 9 the guiding screw 11 tapering to conform with the taper of the thread to be cut on the insulator pin. This chuck spindle 10 is provided with an idle gear wheel 12 meshing with the gear wheel 6, and, also, carries another idle gear wheel 13 of greater diameter than the gear wheel 12, which wheel 13 meshes with the gear wheel 7. The gears 12 and 13 are provided on their inside faces with clutch members 14; and interposed between these clutch members 14 is a double-faced clutch splined to slide longitudinally of the spindle 10, and grooved to be operated by any suitable lever. This clutch mechanism is for the usual purpose of changing the speed of rotation of the spindle 10.

16 designates a pair of journal bearings carried by the frame 1 of the machine at opposite ends, in which bearings is journaled a shaft 17 carrying the cutter heads 18 and 19 having suitable blades thereon to shape the blank with the proper taper and cut-away head. These cutter heads may be provided with a cover 19^a. One end of the shaft 17 is provided with a pulley 20 for driving the cutters. On the swinging frame is also mounted a casing 21, through which an operating lever 22 is passed, said lever being pivoted to the swinging frame 3, as at 23, and being suitably connected with the centering pin 24, disposed in alinement with the jaw of the chuck.

a designates a pair of bearings likewise carried by the frame 3, and in these bearings is journaled an oscillating threader rod b,

longitudinally movable, and carrying at one end an adjustable tool support *c*, containing an adjustable cutter or threading implement *d*. Similarly the other end of the rod *b* is provided with a suitable supported tracer pin *e* adapted to engage the screw 11. This threader rod *b* is also provided with an adjustably supported finger *f*; and interposed between the head of this finger and one of the bearings *a* is a coiled spring *g* encircling the said rod. Supported on the main frame 1, by suitable hangers *h*, is a shaft *i*, capable of oscillating in its bearings. At one end of this shaft, adjacent one of the hangers *h*, is an angular shaped stop *j*, provided at its ends with inwardly-projecting lugs *k* adapted to abut against the adjacent hanger *h* and limit the oscillation of said rod *i* in both directions. This rod *i* is provided with a carrier frame for feeding the blanks to the centering means, which consists of a pair of arms *l* adjustably mounted on the shaft *i*. These arms, at their upper ends, are bent at an angle to form the portions *m*, Fig. 4, which are disposed in a substantially vertical plane when the arms are in their normal inclined position for receiving a blank. These arms are also provided with longitudinal slots, as at *n*, to receive set screws *o*, and engaging angle plates *p*, bent at their upper edges to form the supports disposed at substantially right angles to the portions *m* of the arms.

r designates a transverse strap, shown in detail in Fig. 6, which strap may be provided with a centrally bent portion *s* to form an operating grip. This rod is adjustable transversely of the arms *l* by means of the slots *t* coöperating with set screws *u* in the arms *l*. This strap *r* is provided at one end with a bent portion *v* to hold the end of the blank in an adjusted position to one side of and in registering relation with the centering pin.

w is a sleeve loosely mounted on the rod *i* and provided with a projecting L-shaped arm *x*, the upper arm *y* of which is disposed substantially in a horizontal plane and coöperates as a slide or guide for the finger *f*, on the threading rod *b*. This sleeve *w*, shown more clearly in Fig. 5, is provided with the channeled projection *z* fitting over the projection *z'* formed on the frame 1 of the machine. The channel in the projection *z* is of greater depth than the solid projection *z'*, to allow of an oscillatory movement of the said sleeve, arm *k* and guide *y*; but interposed between the projection *z'* and the lower side of the said channel is any suitable spring, illustrated diagrammatically, as at *z''*, and which holds the upper surface of the channel against the said projection *z'*, and thereby tends to hold the sleeve from turning on its axis.

In operation, the strap *r*, on the carrier

frame connecting the arms *l*, is adjusted longitudinally until its bent end *v* occupies a position to one side of and substantially opposite the engaging end of the centering pin 24, carried by the pivoted frame 3; the arms being then in the position shown in full lines in Fig. 4, and the frame 3, being in the position shown in Fig. 3. With the left hand, the carrier frame is then grasped at the portion *s* on the strap *r* and swung on its pivot *i*, until it comes into the position shown in dotted lines, Fig. 4; when the axis of the blank will register with the axis of the centering pin 24. With the right hand the lever 22 is moved to the left, while the frame 3 remains in its inclined position, and then the centering pin is forced into engagement with the end of the blank. The lever 22 is next raised upwardly, swinging the frame 3, on its pivot toward the cutter head, as shown in Fig. 2, and thereby bringing the blank into engagement with the cutters, whereupon it is turned to the desired shape. The arms *l* and carrier frame are thrown back to their normal position by the edges of the revolving blank coming into contact with said arms. As soon as the desired shape has been attained, the operating lever 22 is thrown downwardly, swinging the frame 3 outwardly on its pivot until the finger *f* engages the guide *y*, as seen in Fig. 3. After the said finger *f*, strikes the said guide *y*, any further movement of the frame 3 on its pivot causes the said finger to turn its pivot *b*, in an opposite direction, and to thereby cause the tracer *e* to be thrown into engagement with the grooves 11, as will be clear from Figs. 1 and 3. Since the pivoting threading rod *b* is turned on its pivot by this action, it carries the threading tool *d* into engagement with the newly cut blank. This engagement of the tracer will also cause the threading rod *b* to be fed to the left, as seen in Fig. 1, and the threading tool *d* to cut the threads on the revolving blank immediately upon swinging said blank away from the rotating cutter. When the finger *f* reaches the end of the guide *y*, the spring *g* disengages the tracer from the threads 11. But just before the finger *f* reaches the end of said guide *y*, the lever 22 is released, and since the threading implement *d* is then still bearing on the completed pin, it will push the said pin out, and make the machine ready for a new blank to be inserted. Immediately after the finger *f* has reached the end of the guide *y*, it will drop down to the position shown in dotted lines in Fig. 3, and a new blank having been inserted, the operation may be repeated. In raising the lever 22 to throw the frame 3 forward toward the cutter heads the finger *f* engages the under or opposite side of the slide *y*. But this slide is swung on its pivot by compressing

the spring ε^2 until the finger escapes and rests above the same again, in its normal position. From the foregoing, it will be observed, therefore, that with the single lever 22 the machine is controlled without the necessity of an additional lever for throwing the threading mechanism into operation; thereby leaving the left hand free to operate the carrier frame.

It is evident that details of construction may be changed in my invention without departing from the spirit thereof, and therefore I do not wish to be understood as limiting myself to the exact structure disclosed.

What I claim is:—

1. In an insulating pin machine, the combination of a main frame; a rotating cutter; a pivoted frame provided with centering means for the work adapted to swing to and from said cutter; a work blank carrier frame pivoted to the main frame adapted to deliver the work to the centering means and provided with longitudinally adjustable means for governing the longitudinal position of the work with relation to the centering means in its delivery, and a lever for operating said centering means, substantially as described.

2. In an insulating pin machine, the combination of a main frame; a rotating shaping cutter mounted therein; a swinging work center frame adapted to be manually operated also mounted in said frame and adapted to move toward and from said shaping cutter; thread cutting means comprising a plurality of parts carried by said center frame; and means by which the swinging of the work center frame from the shaping cutter causes some of the said thread cutting parts to engage, and the movement of said frame in the opposite direction causes said parts to disengage each other and work simultaneously, substantially as described.

3. In an insulating pin machine, the combination of a rotating shaping cutter; a swinging frame provided with a work center adapted to move toward and from said cutter; a guiding screw carried by said frame; a tracer pin adapted to engage said screw; a cutter carried by said frame; and means adapted to be operated upon swinging said frame for engaging said tracer pin with said screw, substantially as described.

4. In an insulating pin machine, the combination of a rotating shaping cutter; a swinging work center frame adapted to be manually moved toward said cutter; a guiding screw carried by said frame; a tracer pin adapted to engage said screw carried by said frame; a cutter controlled by said tracer carried by said frame; and automatic means comprising a finger operated by the swing-

ing of said frame away from said rotating cutter and simultaneously engaging said tracer pin with said screw, substantially as described.

5. In an insulating pin machine, the combination of means for shaping work blanks, including rotating cutters and a centering means for said blanks, means for automatically causing the blanks to be threaded after they have been disengaged from said cutters; and a pivoted carrier for delivering blanks to said centering means, provided with a slotted longitudinally adjustable bar for causing said blanks to register with said centering means, substantially as described.

6. In an insulating pin machine, the combination of a main frame; an oscillating threading rod; a tracer; a thread cutter and a controlling finger all on said rod; a guide with which said finger coöperates; a sleeve to which said guide is attached; channeled projections on the sleeve; a guide lug on said frame entering the channel between said projections; and a rod passing through said sleeve, substantially as described.

7. In an insulating pin machine, an oscillating guide means consisting of an L-shaped bar; a sleeve provided with channeled projections rigid with said bar; a guide lug between said projections; a spring between one of said projections and said lug; and a rod passing through said sleeve, substantially as described.

8. The combination with a support, a swinging frame thereon, mechanism on said swinging frame for rotating the work; a pivoted lever on said frame; a longitudinally-movable and oscillating threader bar journaled on said frame and provided with a tracer and a cutting implement; a finger on said threader bar; an oscillating carrier frame rod on said support; means for limiting the oscillation of said carrier frame rod, a carrier frame on said rod; and a spring-controlled sleeve on said carrier frame rod provided with a guide arm coöperating with said finger, substantially as described.

9. The combination with a rotary shaping cutter and a manually operated swinging work center carrying frame of thread cutting means so arranged that the swinging of the frame toward and from the shaping cutter respectively disengages and reengages portions of the thread cutting instrumentalities with each other and with the work simultaneously.

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

FRANZISKUS SCHANZMEYER.

Witnesses:

HENRY SCHANZMEYER,
HERMAN H. STROP.