

No. 755,869.

PATENTED MAR. 29, 1904.

G. R. HANNAN & J. C. RODEHAVER.

STRING CUTTER.

APPLICATION FILED DEC. 13, 1902.

NO MODEL.

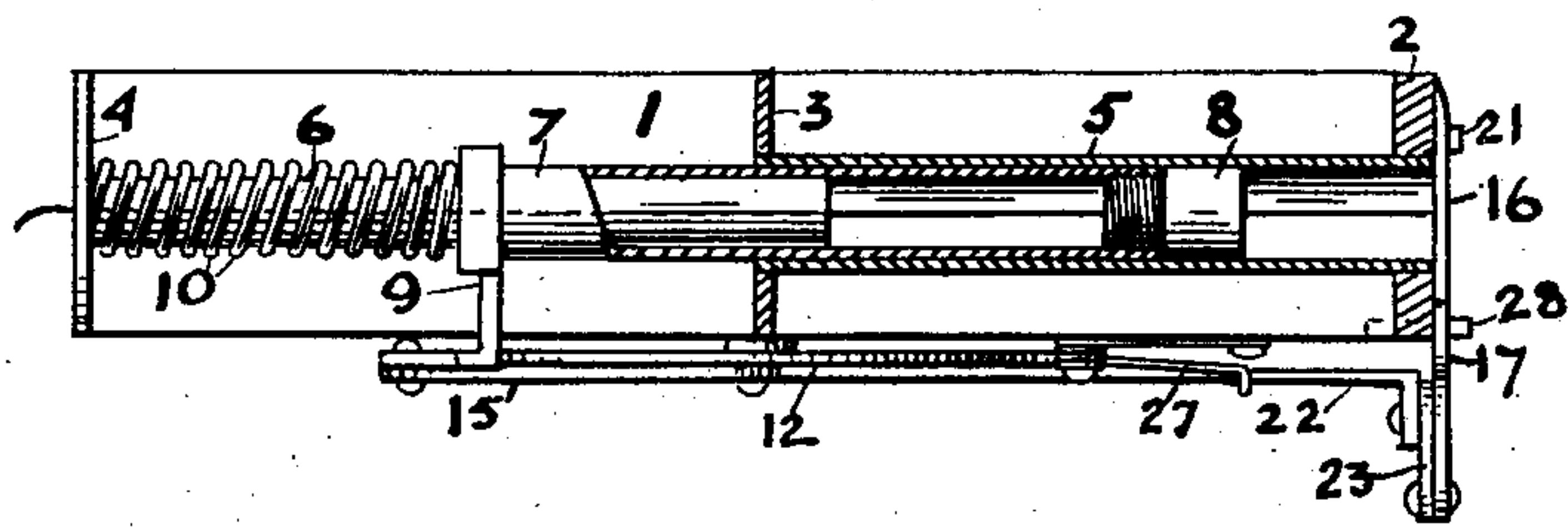


FIG. 1

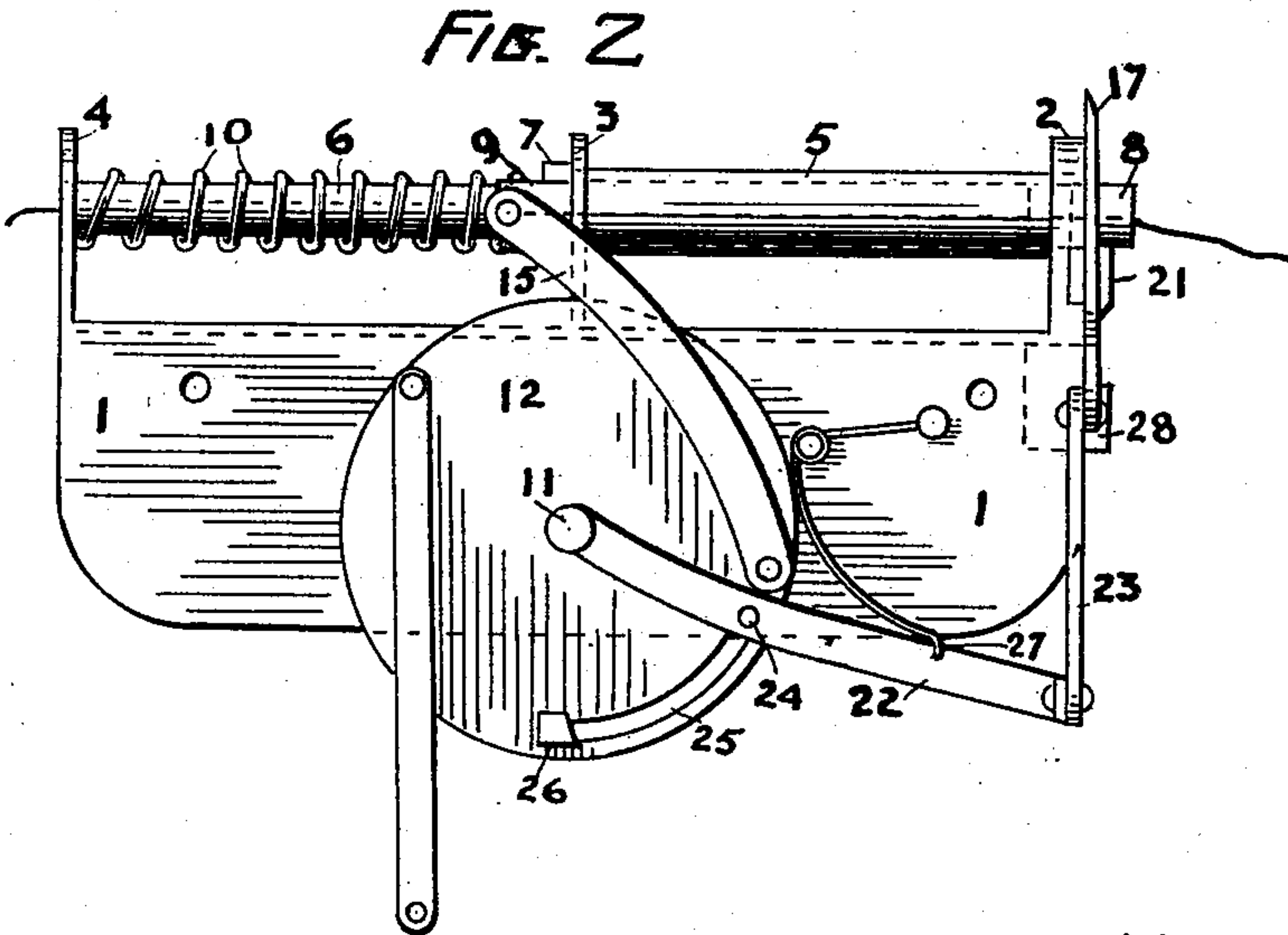


FIG. 2

FIG. 3

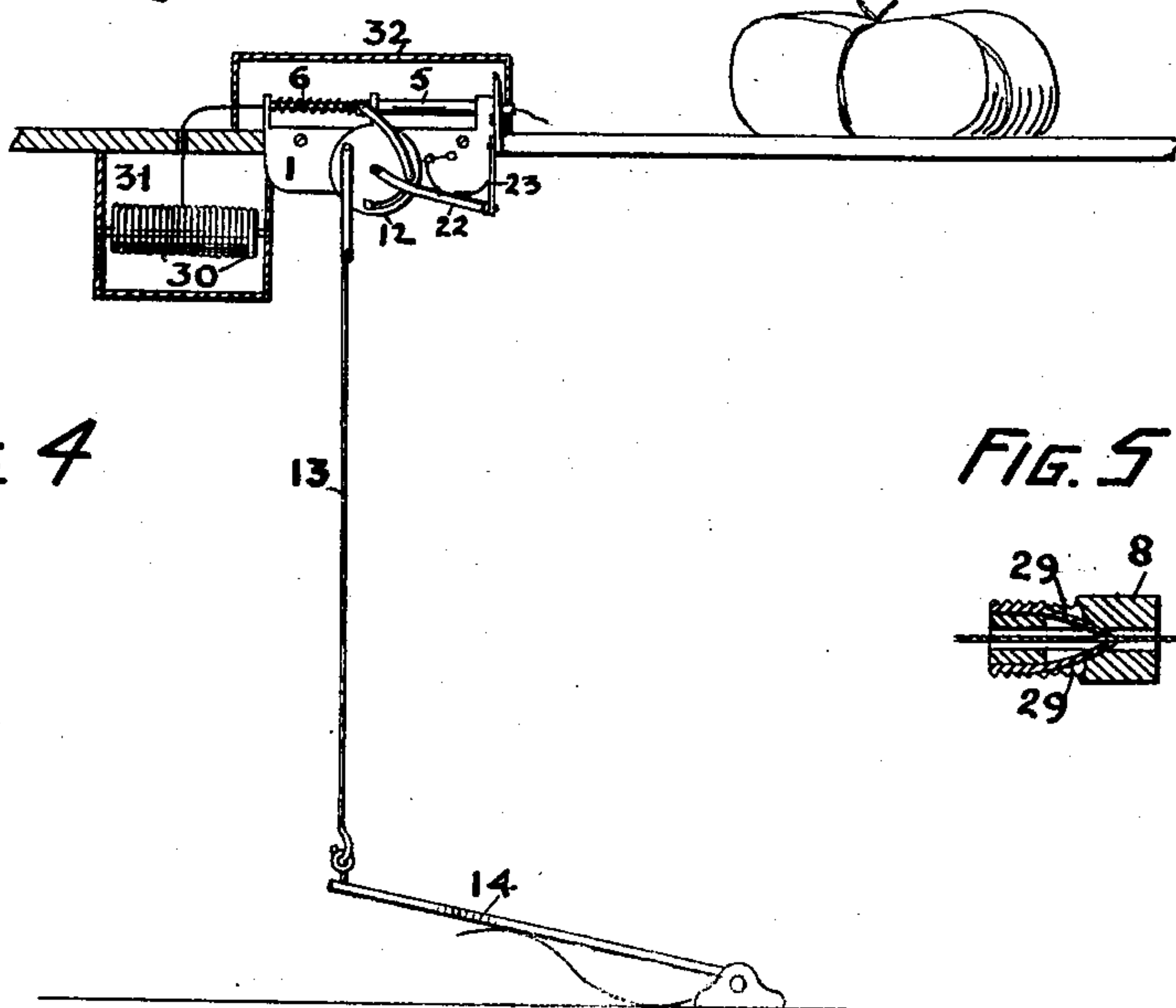
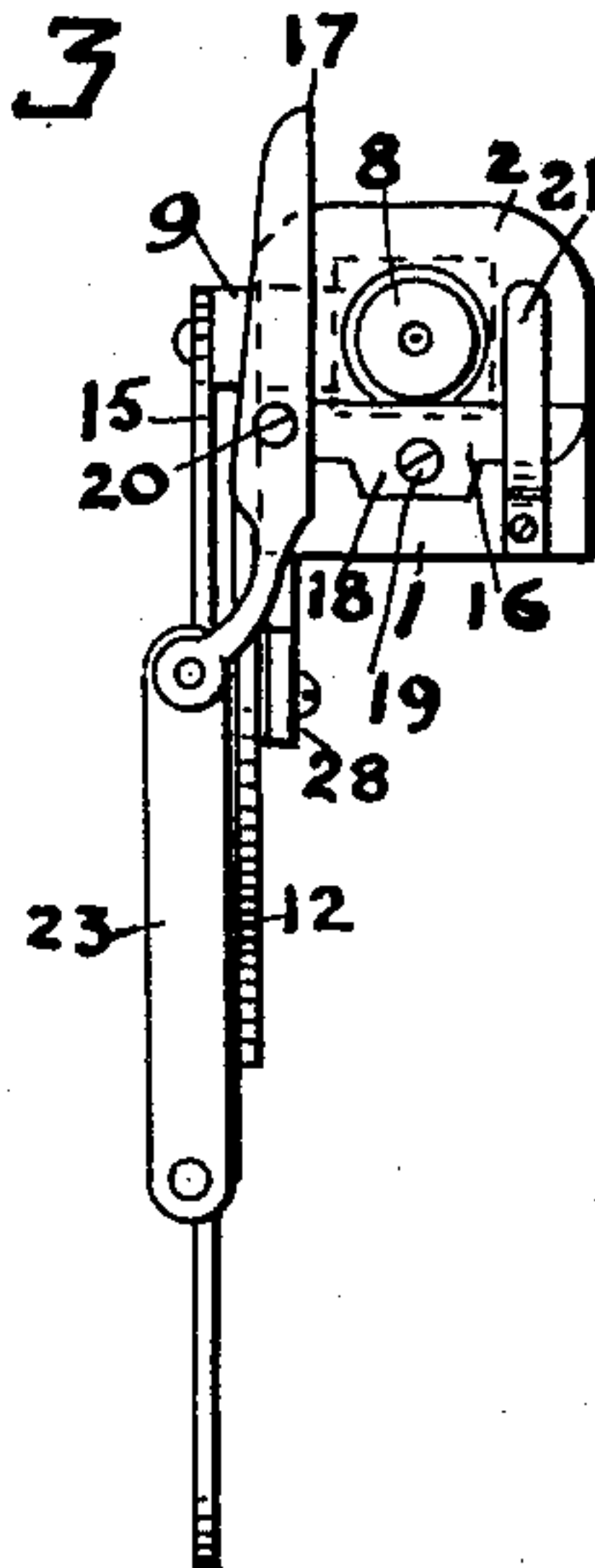
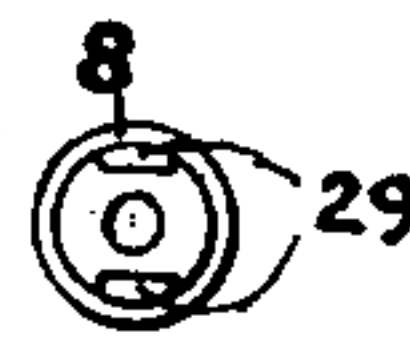
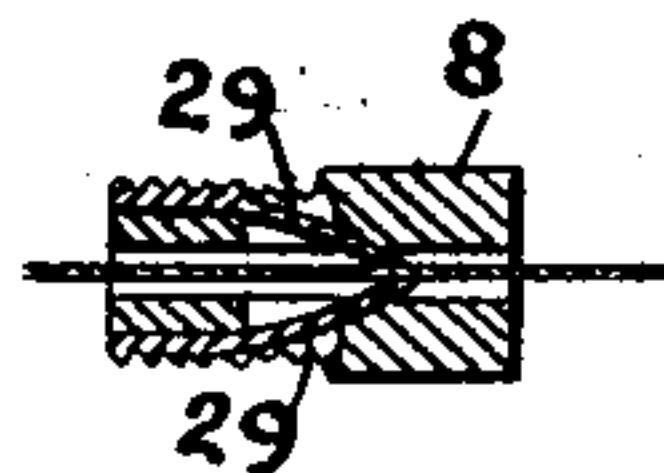


FIG. 4

FIG. 5

FIG. 6



WITNESSES:

Leon Boillot
T. J. Blakeman

INVENTORS:

George R. Hannan
Jesse C. Rodehaver
by A. H. St. Marie atty

UNITED STATES PATENT OFFICE.

GEORGE R. HANNAN AND JESSE C. RODEHAVER, OF SAN FRANCISCO,
CALIFORNIA.

STRING-CUTTER.

SPECIFICATION forming part of Letters Patent No. 755,869, dated March 29, 1904.

Application filed December 13, 1902. Serial No. 135,138. (No model.)

To all whom it may concern:

Be it known that we, GEORGE R. HANNAN and JESSE C. RODEHAVER, citizens of the United States, and residents of the city and county of San Francisco, in the State of California, have invented a new and useful String-Cutter, of which the following is a specification.

With the centralization of business the wrapping of packages and bundles in the large department-stores, laundries, and other places becomes a very important matter, and as it is necessary to tie them with cords or strings of variant lengths it is desirable that some means be provided for cutting the string and holding the end of the uncut portion in convenient position to be readily grasped for tying the next bundle. In some places the wrapper is provided with an assistant to hand him the string and to cut it off as each bundle is being tied. To avoid this additional labor and yet not consume the time of the wrapper, first in reaching for the string and then picking up, using, and laying down a pair of shears or scissors and sometimes searching for them besides, we have invented a string-cutter which can be operated by other means than the hands, as the foot, and which will hold the string close at hand, cut it off at a sufficient length for the bundle being wrapped, and keep the uncut end in a convenient position to be grasped for the next bundle.

Our invention consists in the improved construction and novel arrangement of parts of a string-cutter, as hereinafter set forth and claimed.

The accompanying drawings form a part of this specification and illustrate the invention.

Figure 1 is a top plan view, partly in section, of one form of string-cutter embodying our invention, the parts being shown in the position they occupy when the string is being severed. Fig. 2 is a side elevation of the same, showing the parts in their normal position. Fig. 3 is an end elevation. The means for operating the device are omitted in each of these views. Fig. 4 is a view of the apparatus complete and in position upon a counter. Figs. 5 and 6 are sectional and end views, re-

spectively, of the gripper for holding the string.

In practicing our invention we provide a base 1, which may be a plate or casting of any suitable size and shape and is secured to the edge of the counter or other support, where it will be within convenient reach of the wrapper. The base is preferably made L-shaped, so as to rest firmly upon its support, and is provided with three standards 2, 3, and 4, one at each end and one substantially at the middle. The upper ends of these standards are perforated in a line with each other, and a sleeve or tube 5 and hollow rod 6 are secured therein. The tube 5 is secured at its ends in the forward and central standards 2 and 3, and the rod 6 is secured at its rear end in the rear standard 4 and has its forward end projecting into the rear end of the said tube. The rod is so much smaller than the interior diameter of the tube that a hollow plunger 7 can be mounted within the tube and be reciprocated back and forth upon the forward end of the rod. The forward end of this plunger normally stands even with the end of the tube and is provided with a gripper 8, and the rear end is provided with an arm 9, which normally rests against the rear face of the middle standard 3 and limits the forward movement of the plunger. A spring 10 surrounds the rod 6 and forces the plunger 7 forward by resting with its ends against the rear standard 4 and the arm 9, respectively.

Rotatably mounted upon one side of the base 1, as by a pivot 11, is a circular plate or disk 12, to which an oscillatory motion may be applied in any suitable manner—for instance, by a strap or rod 13 and a treadle 14. A link 15 is pivotally secured to the plate 12 at one end and to the arm 9 at the other, the end of the arm being preferably bent at an angle to afford a broad and substantial bearing for the connecting end of the link. The forward end of the link 15 is located substantially diametrically opposite the pivotal point of the treadle-strap 13, so that when the plate 12 is rotated by the depression of the treadle 14 the link will be forced longitudinally to the rear, which will carry the plunger 7 against

the pressure of the spring 10, and thereby withdraw the forward end of the plunger and its gripper 8 the desired distance from the cutting apparatus. As soon as the pressure
 5 is removed from the treadle the spring on the rod 6 will expand and force the parts back into their normal positions ready for the next operation.

The cutting apparatus consists of a fixed and
 10 a movable blade 16 and 17, respectively. As shown, the fixed blade 16 is provided with a perforated lug 18, by means of which it can be removably secured in front of the forward
 15 face of the cutter is made substantially even with the outer end of this tube, so that when the movable blade 17 is operated it will have a good broad bearing-surface to cause it to move in a direct line past the other blade with-
 20 out the liability of its slipping over the cord or string without cutting it. The movable blade is pivoted at one side of the end of the tube, as at 20, and its free end is confined or pressed against the other blade by means of a guide
 25 21, which will also assist in preventing its slipping over the cord without cutting it. The movable blade 17 is operated by the oscillation of the disk 12 through the agency of a lever 22, mounted on the pivot 11 at one end
 30 and connected with this blade at the other end by a connector 23. The intermediate portion of the lever is provided with a stud or pin 24, which projects through a segmental slot 25 near the periphery of the disk. An
 35 abutment 26 may be secured upon the side of the disk at the lower end of the slot 25 in position to engage with the lever and assist in forcing it upward when the disk is rotated. The slot is of such a length that when the parts are
 40 standing in their normal position or at rest the stud will occupy the upper end of the slot; but when the disk has been rotated sufficiently to move the plunger 7 backward nearly the desired distance the lower end of the slot will en-
 45 gage with the stud and force the free end of the lever upward, and with it the connector and the outer end of the movable blade. By the time this blade has been forced past the fixed blade and severed the string the plunger will have
 50 been forced back to the desired limit of its movement and a portion of the string equal to the length of said movement will have been drawn through the gripper 8 and will be lying between the gripper and the cutter, ready to
 55 be pushed out of the end of the tube 5 as soon as the cutter has been operated, and the parts resume their normal positions. A spring 27 is provided on the side of the base and ar-
 60 ranged to bear against the top of the lever 22 to force it downward, and thereby keep the blades 16 and 17 normally open or apart. A stop 28 may also be provided at the forward end of the base to engage with the outer end or shank of the movable blade and prevent it
 65 from being carried so far as to place it on a

dead-center with the connector 23, which would interfere with its subsequent operation when the treadle is depressed.

The gripper 8 is preferably made remov-
 able, as by being screwed into the forward end
 of the plunger 7, so that it can be taken off
 when the machine is being threaded. It is
 provided with jaws 29, which permit the string
 being freely drawn out between them in one
 direction, but prevent its being drawn in the
 opposite direction. We have shown these
 jaws as made of thin strips of spring metal,
 which are set at an angle in the walls of the
 gripper, so as to extend toward each other
 even to being in actual contact near the for-
 ward end of the gripper-body. This con-
 struction will admit of the cord or string be-
 ing introduced from the rear end of the body
 and drawn out at the front end, but will pre-
 vent its return.

The cord or string being used with our im-
 proved cutter may be wound upon a spool, as
 30, and held in any suitable receiver, as 31, at
 or near the rear end of the cutter.

A suitable cover or shield 32 (shown only in
 section in Fig. 4) is provided for covering the
 operating mechanism and preventing its com-
 ing in contact with and soiling any articles
 being wrapped and also preventing other ob-
 jects coming in contact with and catching upon
 or breaking said mechanism.

In using our string-cutter it is secured in the
 desired position upon the edge of the wrap-
 ping-counter or other support, as by means of
 screws through the base, and the cord or string
 is passed through the hollow rod from the
 rear and through the plunger and gripper, the
 gripper being preferably removed until the
 string has been passed through it, when it can
 be returned to its normal position with a por-
 tion of the string projecting therefrom. When
 it is desired to tie a bundle, the wrapper takes
 hold of the projecting end of the string and
 draws it out as far as necessary to encircle his
 bundle and when about to tie the last knot
 presses down the treadle with his foot. This
 will retract the plunger and cause the grip-
 per to slide freely over the cord, which is be-
 ing held taut by the operator, and will also op-
 erate the cutting mechanism. As soon as the
 string has been severed and the treadle re-
 leased the parts are instantly restored to their
 normal position, with a short piece of string
 projecting from the forward end of the grip-
 per in convenient position to be grasped by
 the wrapper and drawn out when another bun-
 dle is to be tied. As the gripper projects
 from the tube a short distance, this will cause
 the string to hang away from the front stand-
 ard of the base, and thereby enable the wrap-
 per to grasp it more readily. Our invention,
 it will be observed, leaves the operator free
 to use his two hands to tie with and obviates
 the necessity of removing either hand from the
 bundle in the operation of wrapping or tying.

From the foregoing it is evident that by the use of our invention bundles and packages can be wrapped as quickly and as economically by one person as they can be with two with the ordinary scissors or other means of cutting the cord. As the cutter is simple in its construction and operation and the parts are made strong and durable, the machine is rendered positive in its action and not liable to get out of order.

Although we have shown what we consider the most desirable manner of constructing our string-cutter, it is manifest that there may be changes and alterations in the same from what we have shown, and we reserve the right to make all such changes and variations as will come within the scope of our invention.

What we claim, and desire to secure by Letters Patent of the United States, is—

1. In a string-cutter, a reciprocatory member, a cutter, and means for imparting movement to the reciprocatory member, and operating the cutter only when the member is in its retracted position, said means including a disk having a pivotal connection with said reciprocatory member and cutter.

2. In a string-cutter, a reciprocatory member, a cutter at a distance in advance of said member, a disk having a pivotal connection with said reciprocatory member and cutter, and means for operating the disk.

3. In a string-cutter, a support, a cutter, a plunger upon the support, a disk operatively associated with the plunger and cutter for simultaneously operating them, and a treadle connected with the disk.

4. In a string-cutter, a support, a guideway upon the support, a cutter at the forward end of the support, a plunger in the guideway, an oscillatory disk on the side of the support, connecting means between the disk and plunger, a connection between the disk and cutter, and means associated with the connecting means for the disk and cutter, for operating the latter when the disk is oscillated.

5. In a string-cutter, a support, a guideway upon the support, a cutter at the forward end of the support, a plunger in the guideway, an oscillatory disk on the side of the support, connecting means between the disk and plunger, a connection between the disk and cutter, and a treadle operatively associated with the connecting means for the disk and cutter, for operating the latter when the disk is oscillated.

6. In a string-cutter, a tube, a reciprocatory member therein, a gripper carried by said reciprocatory member and provided with oppositely-arranged inclined spring-jaws, the front ends of which approach each other and engage with the string and prevent its movement except in one direction, said reciprocatory member and gripper being entirely inclosed by said tube and a cutter at a distance

from said gripper when the member is in its retracted position, substantially as described.

7. In a string-cutter, a reciprocatory member, the front end of which is provided with a gripper having a screw-threaded connection therewith, said gripper being arranged to engage with the string and preventing its movement except in one direction, and a cutter at a distance in front of said means when the member is in its retracted position, substantially as described.

8. In a string-cutter, a hollow reciprocatory member, a gripper having a screw-threaded portion removably secured in the forward end thereof, and a cutter at a distance in front of said gripper when the member is in its retracted position, substantially as described.

9. In a string-cutter, a hollow plunger, a hollow tubular support having a continuous uninterrupted inner surface for forming a guideway for the plunger, means for reciprocating the plunger through said support, and a cutter at a distance from the forward end of the plunger when in its retracted position, substantially as described.

10. In a string-cutter, a tubular guideway, a hollow reciprocatory plunger slidably mounted therein and inclosed thereby, a cutter at the forward end of the tube, and means for moving the forward end of the plunger through said tube and away from said cutter, substantially as described.

11. In a string-cutter, a tube, a spring-actuated plunger therein and inclosed thereby, the forward end of which is provided with a gripper, a cutter at the forward end of the tube, and means for withdrawing the gripper to a distance from the cutter, substantially as described.

12. In a string-cutter, a tube, a hollow rod projecting into the rear end thereof, a hollow plunger in the tube, the rear end of which fits upon the rod, a spring on the rod in engagement with the plunger, a cutter at the forward end of the tube, and means for reciprocating the plunger to withdraw its forward end to the rear of the cutter, substantially as described.

13. In a string-cutter, a support provided with three standards, a tube mounted upon two of said standards and a hollow rod secured to the other standard with its forward end projecting into the rear end of the tube, a hollow plunger in the tube, the rear end of which fits upon the rod, a spring on the rod between the rear standard and the rear end of the plunger, a cutter at the forward end of the tube, and means for simultaneously withdrawing the plunger and operating the cutter, substantially as described.

14. In a string-cutter, a support, a tubular guideway mounted thereon having a cutter at its forward end, a reciprocatory plunger in the tube and surrounded thereby, a disk on

the support connected with the plunger and the cutter, and means for oscillating the disk, substantially as described.

15. In a string-cutter, a support, a tube 5 mounted thereon having a cutter at its forward end, a spring-impelled hollow plunger in the tube, an oscillatory disk on the side of the support, a link connected with the disk and with the rear end of the plunger, and a lever mounted 10 at the center of the disk at one end and connected with the cutter at the other, and means for engaging with the intermediate portion of the lever for operating the cutter when the disk is oscillated, substantially as de- 15 scribed.

16. In a string-cutter, a support, a cutter, a hollow plunger movable toward and from the cutter, an oscillatory disk on the support and provided with a segmental slot, a link con- 20 nected with the disk and with the rear end of the plunger, a lever mounted at the center of the disk at one end and connected with the cutter at the other, and a pin on the intermediate portion for engaging with one end of the slot 25 and actuating the cutter by the time the plunger reaches the limit of its rearward movement, substantially as described.

17. In a string-cutter, a support, a cutter, a hollow spring-impelled plunger, the rear end 30 of which is provided with a bent arm, an oscillatory disk, a link connected therewith and with the bent portion of the arm, a spring-pressed lever, a connection from the free end thereof to the cutter, and means on the disk 35 for engaging with the intermediate portion of the lever to actuate the cutter, substantially as described.

18. In a string-cutter, a support, a cutter, a spring-impelled plunger, an oscillatory disk connected with the plunger and with the cut- 40 ter for simultaneously operating them, and a treadle operatively connected with the disk, substantially as described.

19. In a string-cutter, a support, a cutter thereon comprising a stationary and a pivoted 45 blade, a guide for holding said blades against each other when in operative relation to each other, and a member movable toward and from the cutter, said member being at its farthest point from the cutter when the cutter is op- 50 erating, substantially as described.

20. In a string-cutter, a support, a cutter thereon comprising a stationary and a pivoted blade, a guide at the free end of the pivoted 55 blade for holding it against the stationary blade, and a reciprocatory member movable toward and from said cutter, substantially as described.

21. In a string-cutter, a support, a tube thereon, a cutter at the forward end of the 60 tube comprising a stationary and a pivoted blade, a guide at the free end of the pivoted blade for holding it against the stationary blade the stationary blade being flush with the end of the tube and provided with a perforated 65 lug, a screw through the lug, and a reciprocatory member movable toward and from the cutter, substantially as described.

GEO. R. HANNAN. [L. S.]
JESSE C. RODEHAVER. [L. S.]

Witnesses:

A. H. STE. MARIE,
CHAS. T. STANLEY.