

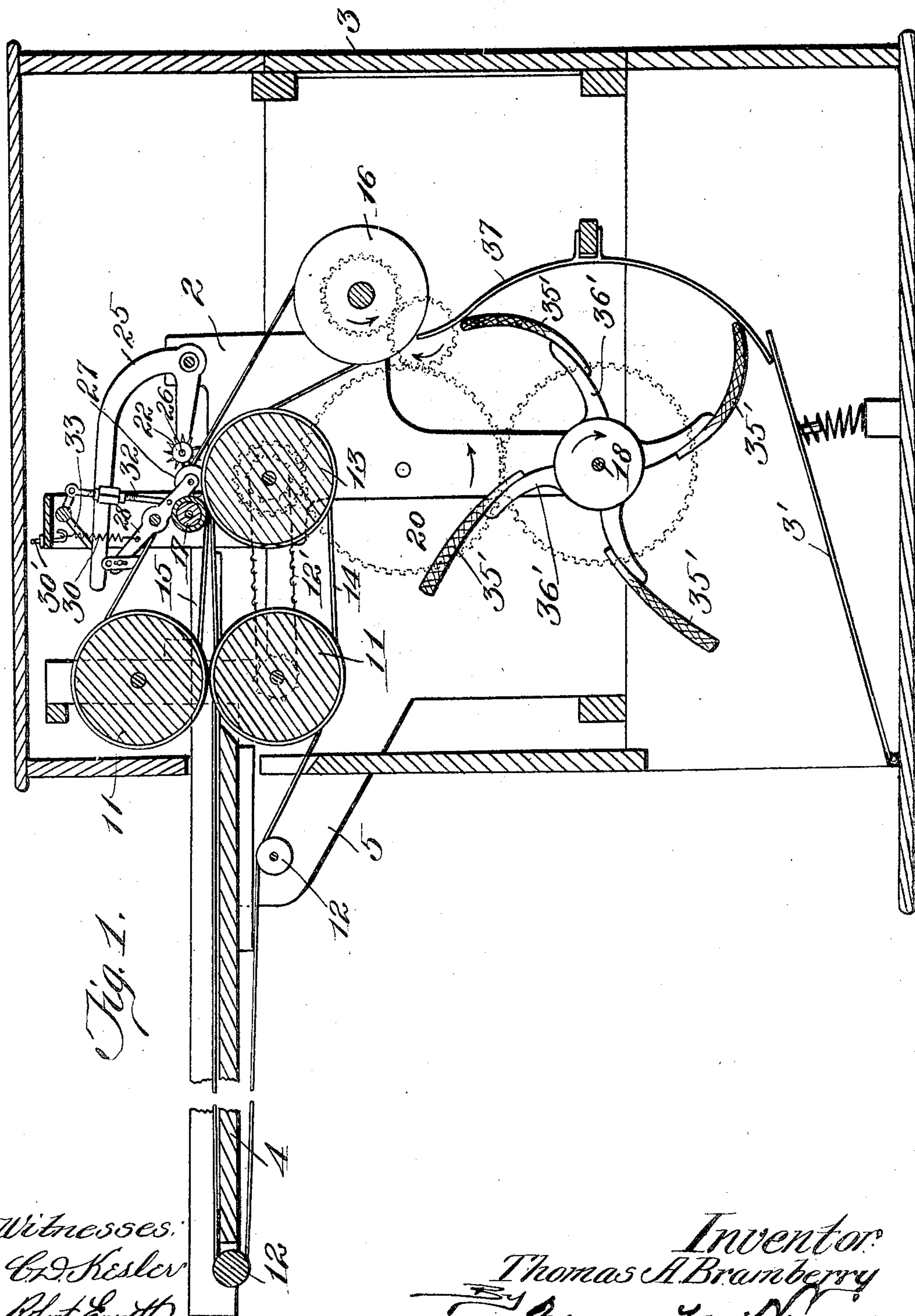
No. 807,716.

PATENTED DEC. 19, 1905.

T. A. BRAMBERRY.
CANCELING AND COUNTING APPARATUS.

APPLICATION FILED NOV. 18, 1904.

3 SHEETS—SHEET 1.



Witnesses:
C. D. Kesler
Robert Smith,

Inventor:
Thomas A. Bramberry
James L. Noring.
Atty.

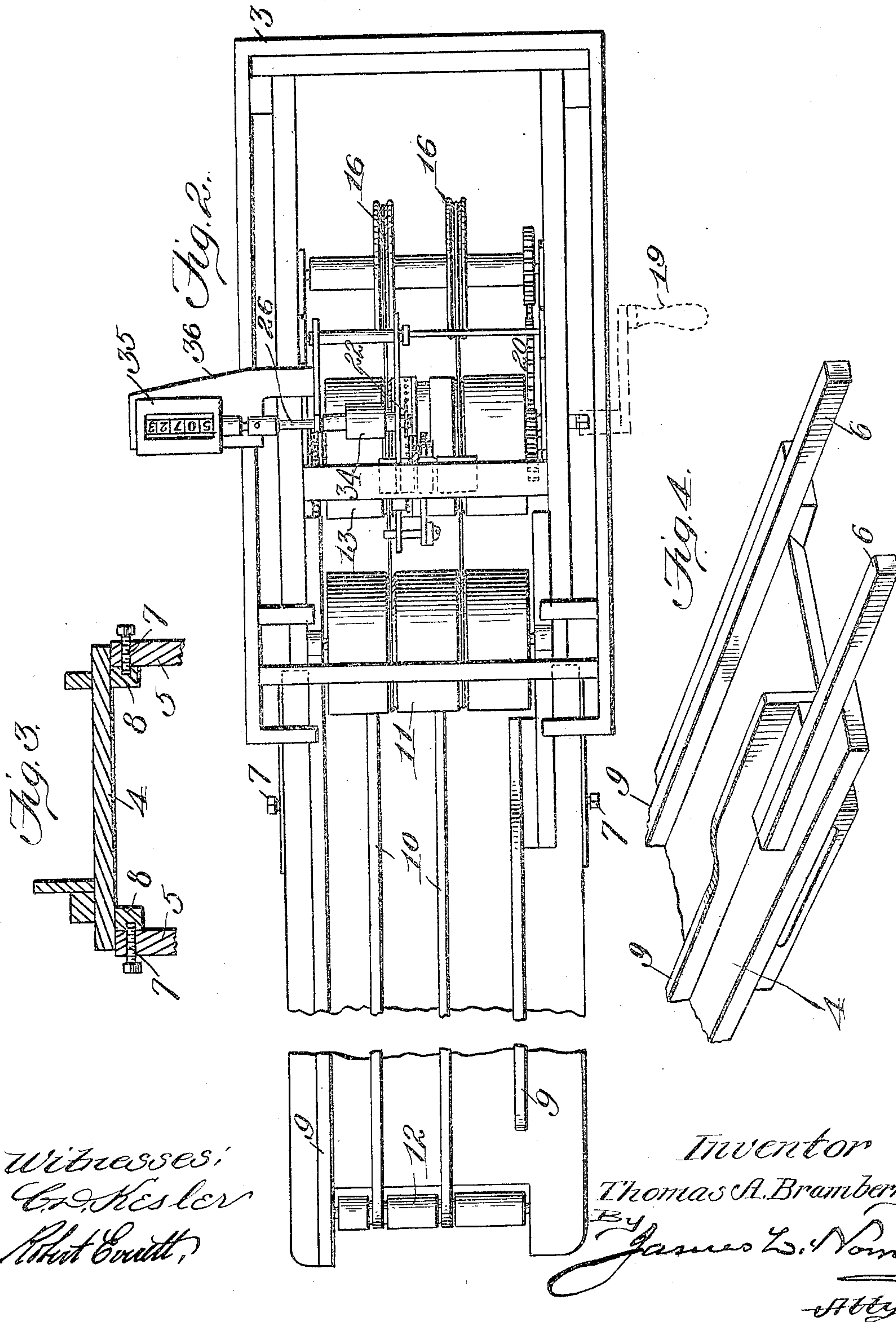
No. 807,716.

PATENTED DEC. 19, 1905.

T. A. BRAMBERRY.
CANCELING AND COUNTING APPARATUS.

APPLICATION FILED NOV. 18, 1904.

3 SHEETS—SHEET 2.



Witnesses:
C. D. Hesler
Robert Smith,

Inventor
Thomas A. Bramberry
By James L. Young
Atty.

No. 807,716.

PATENTED DEC. 19, 1905.

T. A. BRAMBERRY.
CANCELING AND COUNTING APPARATUS.

APPLICATION FILED NOV. 18, 1904.

3 SHEETS—SHEET 3.

Fig. 5.

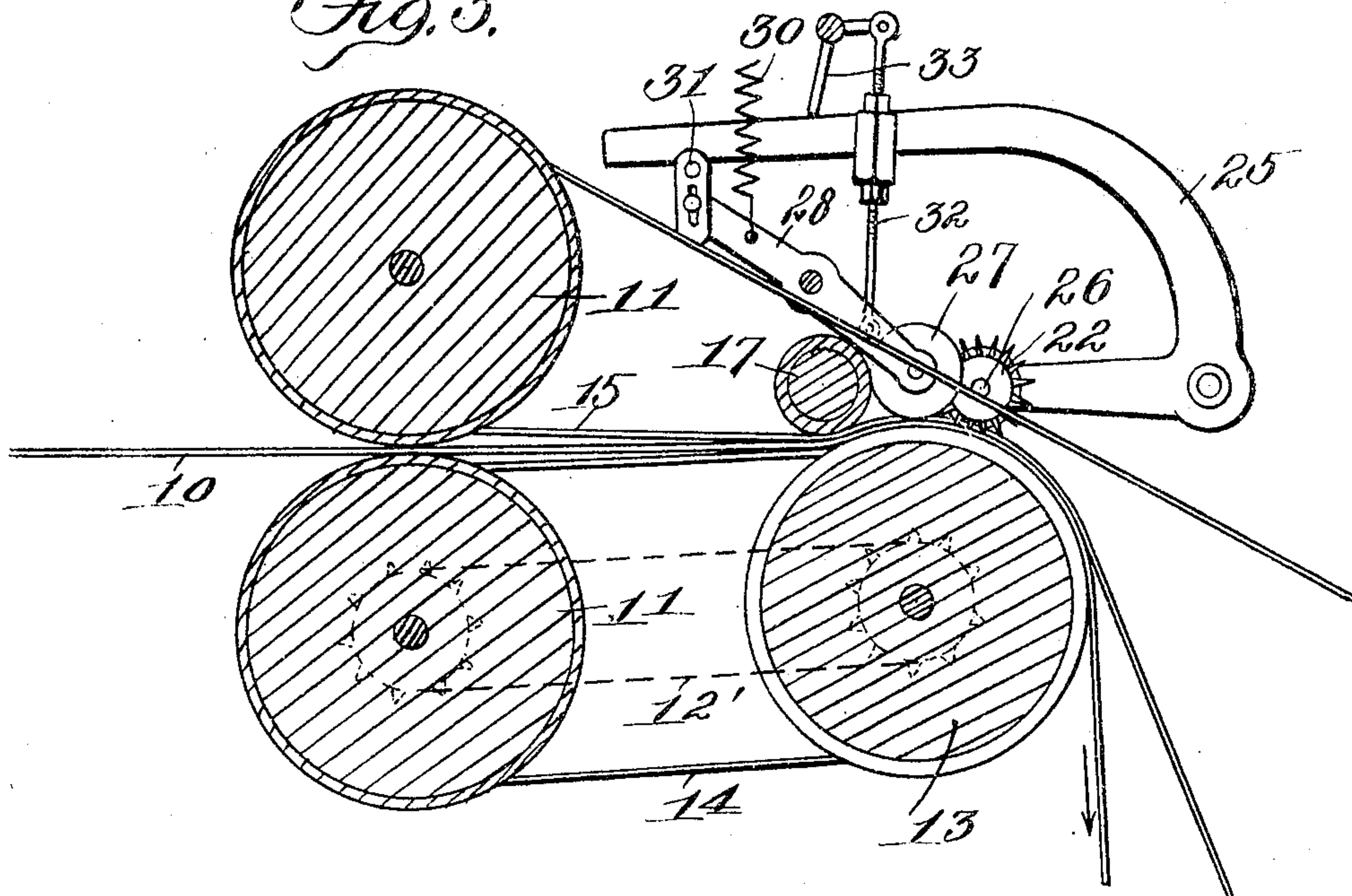


Fig. 6.

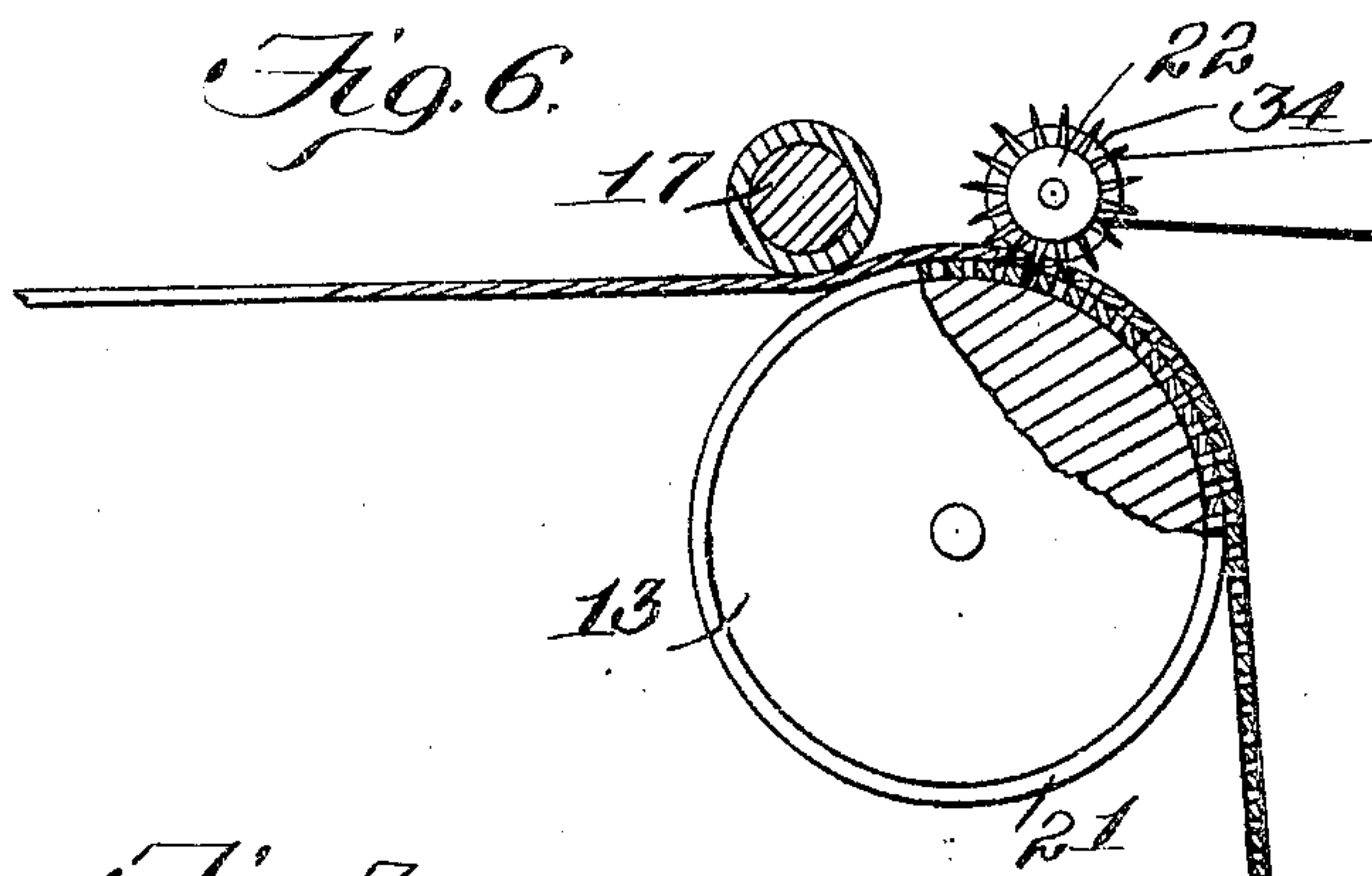
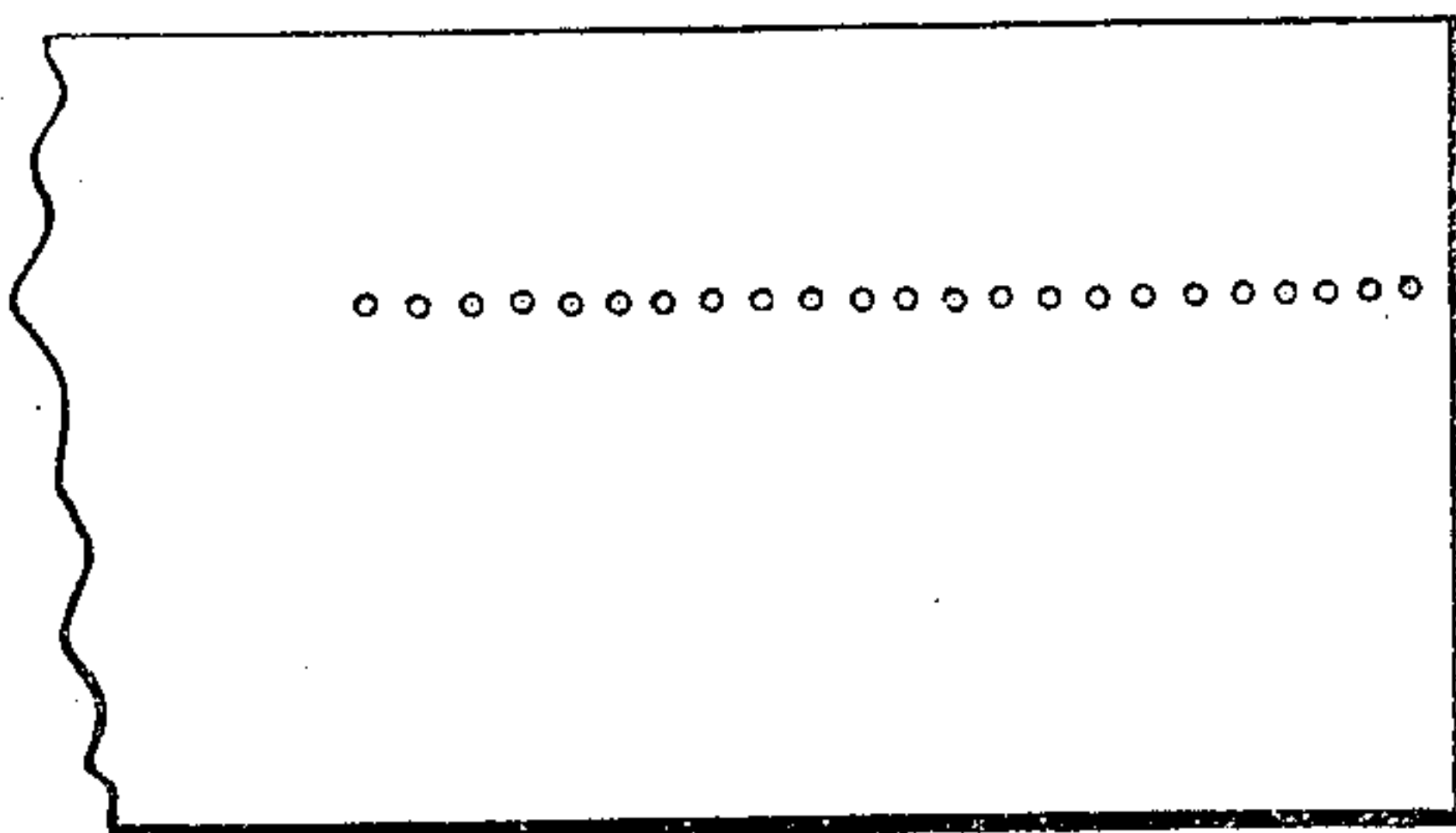


Fig. 7.



Witnesses:
C. E. Kesler
H. E. Court?

Inventor
Thomas A. Bramberry
By James L. Norris.
Atty.

UNITED STATES PATENT OFFICE.

THOMAS A. BRAMBERRY, OF PORTSMOUTH, VIRGINIA, ASSIGNOR OF ONE-
THIRD TO CHARLES P. DENBY, OF NORFOLK, VIRGINIA.

CANCELING AND COUNTING APPARATUS.

No. 807,716.

Specification of Letters Patent.

Patented Dec. 19, 1905.

Application filed November 18, 1904. Serial No. 233,305.

To all whom it may concern:

Be it known that I, THOMAS A. BRAMBERRY, a citizen of the United States, residing at Portsmouth, in the county of Norfolk and State of Virginia, have invented new and useful Improvements in Canceling and Counting Apparatus, of which the following is a specification.

This invention relates to a canceling and counting apparatus.

The apparatus may be employed for a variety of purposes; but I have found it particularly advantageous for the cancellation of railroad-mileage coupons and the counting of the same.

The apparatus is simple in construction and effective in operation. It will rapidly cancel coupons and secure an absolutely proper and accurate count of the coupons thus canceled.

In the drawings accompanying and forming a part of this specification I have illustrated one simple and convenient adaptation involving my invention, which I will fully set forth in the following description; but I do not limit myself to the disclosure thus made, for certain variations may be adopted within the scope of my claims.

In the drawings, Figure 1 is a sectional side elevation of an apparatus involving my invention. Fig. 2 is a top plan view of the same. Fig. 3 is a transverse section of a table and certain adjacent parts. Fig. 4 is a detail in perspective of the inner portion of said table. Fig. 5 is an enlarged sectional detail of the canceling means and certain cooperating parts. Fig. 6 is a similar view of the two cooperating canceling devices, showing the manner in which they operate to cancel the coupons. Fig. 7 is a detail view showing the character of the cancellation.

Like characters refer to like parts throughout the several figures.

The canceling mechanism may be supported in any desirable way—for example, by a frame, which I will designate in a general way by 2 and which in practice may be of any suitable character. To protect the operating parts of the machine from the bad effects of dirt, I mount the frame 2 in a housing or boxing, as 3, of any desirable character, the canceled coupons, in strip form, being directed into the bottom of the boxing to be removed therefrom at desired intervals through an opening in the front of the boxing or housing. The details just set forth,

however, are immaterial, as are others hereinafter set forth, for they may be radically changed to suit individual tastes or particular requirements. Associated with the boxing is a table or shelf, as 4, horizontally disposed and adapted to extend into the casing through an opening in the front upper side thereof. On the outside of the casing or boxing 3 and just below the opening mentioned is a pair of brackets 5, upon the upper side of which the table or shelf 4 rests. From the inner end of the table the arms 6, arranged in parallelism, extend, said arms being adapted to be sustained by the framing 2 within the casing or boxing 3, whereby the table or shelf 4 will be rigidly upheld. To further strengthen the table, I may provide the screws 7, tapped through the brackets 5 and adapted to engage in longitudinal channels formed in the outer sides of the ribs 8, depending from the table 4. By reason of the manner in which the screws cooperate with the ribs the table is longitudinally adjustable, and this longitudinal adjustment may be utilized to tension an endless carrier, consisting in the present case of a plurality of tapes cooperating with said table, or by running the screws out of the channels in the ribs 8 the table can be dismantled.

Upon the upper side of the table 4 and arranged in parallelism longitudinally thereof are guides 9, between which the connected mileage-coupons are fed forward, the guides being in the form of elongated strips suitably fastened to the upper side of the table. One of the arms 6, to which reference has hereinbefore been made, constitutes, in effect, a continuation of one of the guides 9. The distance separating the guides 9 agrees with the width of the mileage-coupon slips, said slips being placed between the guides and being advanced along the table toward the canceling and counting mechanism. As the side edges of the slips are in contact with the opposite faces of the guides or strips 9, no lateral motion of the said slips can take place, so that the slips are fed squarely to the canceling and counting mechanisms. To positively advance the slips made up of connected mileage-coupons to the canceling and counting mechanism, recourse may be had to a feed device consisting in the present instance of a plurality of endless tapes 10, the upper runs of which are adapted to traverse the upper side of the table 4. It

will be apparent that the slips of connected mileage-coupons are placed on the tapes 10 and between the guides 9, so that on the movement of the tapes the slips will be conveyed into the boxing or casing 3, the inner ends of the two tapes 10 passing around the lower of two vertically-alined rollers 11, carried by the frame 2, which rollers travel in contact and are faced with rubber or some such equivalent material in order to take hold of the ticket as it leaves the table 4 and forcibly move it to the canceling and counting mechanism. The tapes 10 also pass over guide-rollers 12, suitably supported between the brackets 5. The lower roller 11 is connected by sprocket-gearing (denoted in a general way by 12') with the roller or cylinder 13, substantially horizontally alined with the lower roller 11, tapes, as 14, being passed around said lower roller 11 and the roller 13. The upper runs of the tapes 14 support the slip or ticket after the same emerges from the feed-rolls 11, while tapes, as 15, passing around said upper roller and also around a roller 16 prevent the upward displacement of the leading or forward end of the slip. The several rollers are preferably peripherally grooved to receive the tapes. The roller 16 is mounted slightly below the roller or cylinder 13, and the tapes 15, which traverse said roller 16, travel between their ends in contact with the roller 13 and also with the roller 17, the periphery of which is contiguous to the periphery of the roller 15.

It will be apparent from the description just made that the machine involves two peripherally-grooved rollers, one in advance of the other, tapes passing around and fitted in the grooves of said rollers, two other peripherally-grooved rollers, tapes passing around and fitted in the grooves of the two other rollers, and means for pressing the latter series of tapes into the peripheral grooves of the said advanced roller to grip or pinch a strip of coupons between the second series of tapes and advanced roller, whereby the coupons thus gripped or pinched can be effectually canceled or, as is done in the present case, by perforating them. The first-mentioned rollers are the lower roller 11 and the roller 13, and it will be seen that the upper roller 11 and the roller 16 are in different vertical planes, so that their tapes are brought into effective position to be pressed into the grooves of the rollers 13 by the small roller 17.

The main shaft of the apparatus is denoted by 18. It is provided with a suitable operating device, such as a hand-crank 19. Between the shaft 18 and the shafts of the rollers 13 and 16 is interposed a gear-train, designated in a general way by 20, whereby when the hand-crank is turned in the proper direction the several rollers and feed device coöperative therewith will be operated.

The canceling means in the present case

consists of two coöperating devices, one consisting of a perforated band or ring, as 21, mounted on the roller 13, and the other consisting of a wheel 22, having a plurality of peripheral teeth spaced apart a distance equaling that between the perforations of the circular strip 21 and the pins of the wheel 22 being adapted to enter the perforations on the band or circular strip 21 during the canceling action. The spacing, therefore, between the pins and perforations is uniform and agrees with the width, whatever it may be, of the mileage-coupons. When the wheel 22 is in working relation with the band 21, the sharpened teeth or pointed pins of said wheel will be caused to enter the perforations of the band, so that as the roller 13, which carries said band, rotates the wheel 22 will be caused to rotate. When, therefore, a slip of connected mileage-coupons is fed between the wheel 22 and band 21 during the motion of the roller 13, the pins on the wheel will be caused to successively pass through the coupons and into the perforations of the band in order to cancel the coupons as the slip is advanced. The toothed wheel is given a step-by-step rotation, a coupon being canceled or perforated on each step, and, as will hereinafter appear, there coöperates with said toothed wheel a register, the latter being operated on each step, so that I secure an accurate count of the tickets canceled. It will be understood that the rotation of the wheel 22 is caused by the rotation of the roller 13, by reason of the engagement of the perforated band 21 with the wheel, the roller of course being operated by hand. When the apparatus is not being employed for the cancellation and counting of mileage-coupons, the wheel 22 should be out of mesh with the perforated band 21, as in case the two parts were in mesh the wheel 22 will be caused to turn upon the movement of the hand-crank 19, either accidentally or otherwise, and I will hereinafter describe a means for throwing the toothed wheel into working relation with the band. The toothed wheel is carried between the side members of a substantially elbow-shaped frame 25, mounted at its angle for oscillation upon the frame 2. The wheel 22 is rotatively supported between the parallel short arms or branches of the side members of the rocking or oscillating frame 25, it being represented as carried by a shaft 26, supported by said frame 25.

Arranged in the path of the advancing mileage-coupon slips is a roller 27, supported by a rock-lever 28, fulcrumed between its ends on the framing of the machine. The disk or wheel 27 normally fits into a peripheral groove in the roller 13. To what might be considered the upper branch of the rock-lever 28 is connected a spring 30 of the pull type, also connected with the framing 2, and the purpose of which is to hold the wheel or disk 27

solidly against the bottom of the groove in which it normally fits. Upon the upper end of the rock-lever 28 is a lateral projection or pin 31, which fits under the free end of a forward extension on one of the side parts of the rocking frame 25, in order to hold the toothed wheel 26 out of working relation with the perforated band 21 when slips or equivalent means are not being fed through the machine.

To the lower branch of the rock-lever 28 a link 32 is illustrated as jointed, said link extending upward from said lever and being likewise connected to one arm of an angle-lever 33, the free end of the other arm of said lever being contiguous to the upper side of the forward extension of the rocking frame 25. When, therefore, the wheel or disk 27 is thrust upward, a corresponding motion will be imparted to the link 32, so that the angle-lever by pressing upon said extension of the frame 25 can depress the lower portion of said frame in order to cause a tooth or pin of the wheel 22 to enter a perforation and pass through a coupon. To prevent the penetration of the teeth of the wheel 22 too far into the perforation of the band 21, the shaft 26 is provided with a roller 34 to engage the periphery of the roller 13 when the wheel and band are in proper relation. The disk or wheel 27, it will be remembered, is in the path of the slips, the parts being so related that the wheel 27 will be elevated when the leading coupon reaches a place where it should be perforated. The wheels 22 and 27 are of course laterally separated.

It will be assumed that a slip of coupons has been placed on the table 4 between the guide-strips 9 and on the tapes 10. The hand-crank 19 will then be turned in order to cause the advance of the slip by the tapes, the latter and the several feed-rollers hereinbefore described being turned by reason of their connections with the shaft 18. When the slip reaches the rollers 11, it will be gripped therebetween and advanced forward in a positive manner between the working runs of the tapes 14 and 15, the tape 14 aiding the rollers 11 in feeding the slip toward the wheel 27. When the forward end of the slip strikes the wheel 27, said wheel will be elevated to cause the depression of the wheel 22 and the penetration of the first coupon by a tooth of the wheel 22, the tooth entering a perforation in the band 21. On the continued motion of the hand-crank the slip will be further fed, and the toothed wheel, as hereinbefore described, will be rotated, so that the several coupons of the slip will be perforated in sequence. The instant that the tail or rear end of the slip passes out of contact with the wheel 27 the latter will be lowered by the action of the spring 30, so that the wheel 22 will be returned to its ineffective position through the intermediate parts—that is to say, the pin 31 will impart an upward thrust to the for-

ward extension of the frame 25, so as to lift the wheel 22 out of mesh with the band 21. Should the wheel 22 remain in mesh with the band 21, the shaft 26, which carries said wheel 22 and with which the registering mechanism is also connected, might be accidentally turned, causing the operation of the registering mechanism when not necessary, and therefore an inaccurate count, so that therefore I throw the canceling devices out of working relation the instant that a slip has had all its coupons canceled and maintain this relation until it becomes necessary to again cancel a slip.

The register may be of any suitable kind, the one indicated being denoted in a general way by 35 and it being supported outside the housing 3 by a bracket, as 36. The shaft 26 is connected with the registering mechanism, so that each time a step motion is given to the shaft the register 35 will be caused to operate. Being outside of the casing the register 35 may be readily viewed at any time to take a record of the same. After the forward portion of the slip has been punched it descends below the roller 13 and is brought in the range of action of the pads 35', of felt or other suitable equivalent material, connected to the spokes or arms of the spider 36', fastened to the shaft 18. As the shaft rotates the pads 35' will be caused to revolve and will strike the free portion of the slip, so as to sweep the same against and then down the inner surface of the plate 37 of segmental form, suitably fastened between the sides of the casing 3. The pads 35' in connection with the plate assure that the slip of coupons will be guided against the yieldable inclined false bottom 3' of the casing 3 and will preclude possibility of the slip curling, as in case it did it might become entangled in the other parts of the apparatus.

If desired, the link 32 may consist of sections connected by a turnbuckle or right and left threaded nut to provide for adjusting. To also provide for adjustment, the pin 31 may be adjustably associated with the carrying rock-lever 28. To properly tension the spring 30, which is connected with said rock-lever 28, the upper end thereof may be connected with a screw 30', tapped through the framework.

I have stated that I do not limit myself to the disclosure made by the foregoing description and the drawings accompanying the same, for radical variations may be adopted within the scope of my claims without departing from the spirit of my invention. For example, it is not essential that the machine should be operated by hand, for it may be operated by power, which may be a spring-motor, electric motor, or some equivalent device.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. An apparatus of the class described involving canceling mechanism consisting of a movably-mounted, perforated band and a ro-

tative, toothed member, the latter arranged for movement by its teeth entering the perforations of the band on the movement of the latter.

5 2. In an apparatus of the class described, the combination of canceling mechanism comprising a movably-mounted, perforated band and a rotative toothed member arranged for movement by the entrance of its teeth into
10 the perforations of the band on the movement of the latter to cancel an object, and means for normally holding the toothed member out of working relation with the band and arranged for engagement by the object to be
15 perforated to put said toothed member into working relation with the band.

3. In an apparatus of the class described, canceling mechanism involving a rotative roller provided, on its periphery, with a perforated band, and a rotative toothed wheel arranged to be rotated by the roller when the teeth thereof enter the perforations, said teeth and band cooperating to cancel an article, a housing for inclosing the canceling mechanism, a shaft carrying said rotative wheel and extending outside of the housing, and a register connected with the shaft, outside of the housing.

4. An apparatus involving two parts cooperative to cancel an object, one perforated and the other toothed, the teeth of the toothed member being adapted to engage in the perforations of the perforated member to secure such cancellation, and by said engagement to
30 operate the toothed member, and means for positively operating the perforated member.

5. An apparatus involving two parts cooperative to cancel an object, one perforated and the other toothed, the teeth of the toothed
40 member being adapted to engage in the perforations of the perforated member to secure such cancellation, and by such engagement to operate said toothed member, means for positively operating the perforated member, and
45 means for positively presenting articles to the canceling mechanism for cancellation thereby.

6. In an apparatus of the class described, canceling mechanism involving a toothed wheel and a perforated band, the perforations
50 of which the teeth of the wheel are adapted to enter to cancel an article, and counting mechanism cooperative with the canceling mechanism.

7. An apparatus of the class described having canceling mechanism involving a toothed wheel and a perforated band, into the perforations of which the teeth of the wheel are adapted to enter to cancel an article.

8. In an apparatus of the class described,
60 canceling mechanism involving a rotative roller provided on its periphery with a perforated band, and a rotative wheel arranged to be rotated by the roller when the teeth thereof enter the perforations, and said teeth and
65 band cooperating to cancel an article.

9. In an apparatus of the class described, canceling mechanism involving a toothed wheel and a perforated band, into the perforations of which the teeth of the wheel are adapted to enter and cancel an article, a counting device connected directly with the toothed wheel, and means for normally holding the toothed wheel out of engagement with the band.

10. In an apparatus of the class described, canceling mechanism involving a toothed wheel and a perforated band, into the perforations of which the teeth of the wheel are adapted to enter to cancel an article, the wheel being normally out of working relation with
80 the band, and means arranged for engagement by an article to be perforated, to put the wheel into working relation with the band.

11. In an apparatus of the class described, canceling mechanism involving a rotative roller provided, on its periphery, with a perforated band, and a rotative wheel arranged to be rotated by the roller when the teeth thereof enter the perforations of the band, said teeth and band cooperating to cancel an
90 article, and the wheel being normally out of working relation with the band, a yielding-mounted member arranged to be operated by an advancing article, and a frame carrying said rotative wheel, the frame being adapted
95 to be actuated by said yielding-mounted member when the latter is shifted by the object to be canceled, to put the wheel into operative relation with the band.

12. In a machine of the class described, a peripherally-grooved roller provided with a perforated band on its periphery, a toothed wheel, the teeth of which are adapted to enter the perforations of the band to perforate an article, means for presenting such article to
105 the band and wheel, a roller and its carrier, the roller normally fitting the groove in said first-mentioned roller and adapted to be moved out of the groove by said article, and means adapted, on the movement of the roller by the
110 article, to put the toothed wheel into working relation with said band.

13. In an apparatus of the class described, a housing, means in the housing for canceling coupons connected together in the form of a slip, counting means for the coupons associated with the canceling means, a curved plate located below the canceling mechanism, in the housing, and means independent of said canceling means, for sweeping the canceled
120 coupons along the curved surface of said plate to prevent curling thereof.

14. In an apparatus of the class described, means for canceling coupons connected together in slip form, counting means for the coupons, associated with the canceling means, a plate arranged in working relation with the canceling means, and a spider provided with pads of suitable material arranged to sweep the slip against said plate.
130

15. In an apparatus of the class described, canceling mechanism involving a rotative roller provided, on its periphery, with a perforated band, and a rotative wheel arranged
5 to be rotated by the roller when the teeth thereof enter the perforations of the band, said teeth and band cooperating to cancel an article, an oscillatory frame carrying the wheel, a spring-actuated member having an
10 antifriction-wheel arranged for operation by the article to be canceled, and means between the spring-actuated member and rocking frame for operating the latter to carry the toothed wheel into working relation with the
15 perforated band when the spring-actuated member is shifted by said article.

16. In an apparatus of the class described, the combination of two peripherally-grooved rollers, one in advance of the other, tapes passing
20 around and fitted in the grooves of said rollers, two other peripherally-grooved rollers, tapes passing around and fitted in the grooves of the two other rollers, means for pressing the second series of tapes into the

peripheral grooves of the said advanced roller 25
to grip a strip of coupons between the second series of tapes and advanced roller, and means for canceling the coupons thus gripped.

17. In an apparatus of the class described, the combination of two peripherally-grooved 30
rollers, one in advance of the other, tapes passing around and fitted in the grooves of said rollers, two other peripherally-grooved rollers arranged in different horizontal planes, tapes passing around and fitted in the grooves 35
of the two other rollers, a roller for pressing the second series of tapes into the peripheral grooves of the advanced roller to grip a strip of coupons therebetween, and means for canceling the coupons thus gripped. 40

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

THOMAS A. BRAMBERRY.

Witnesses:

THOS. H. WRIGHT,
JOSIAH McDAUGH.