

No. 747,544.

PATENTED DEC. 22, 1903.

J. F. FROMM.  
PAPER SLITTING DEVICE.  
APPLICATION FILED SEPT. 19, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

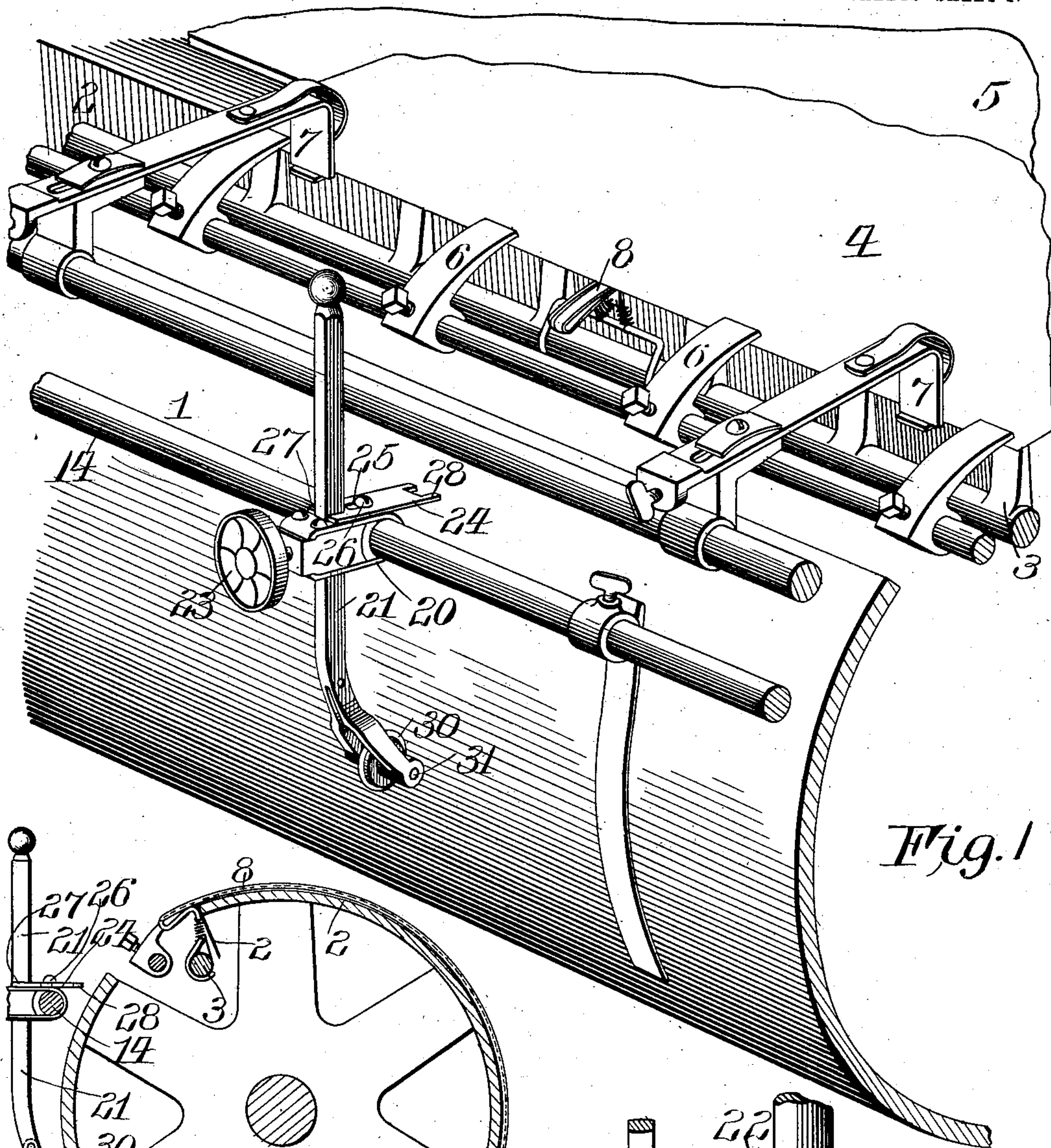


Fig. 1

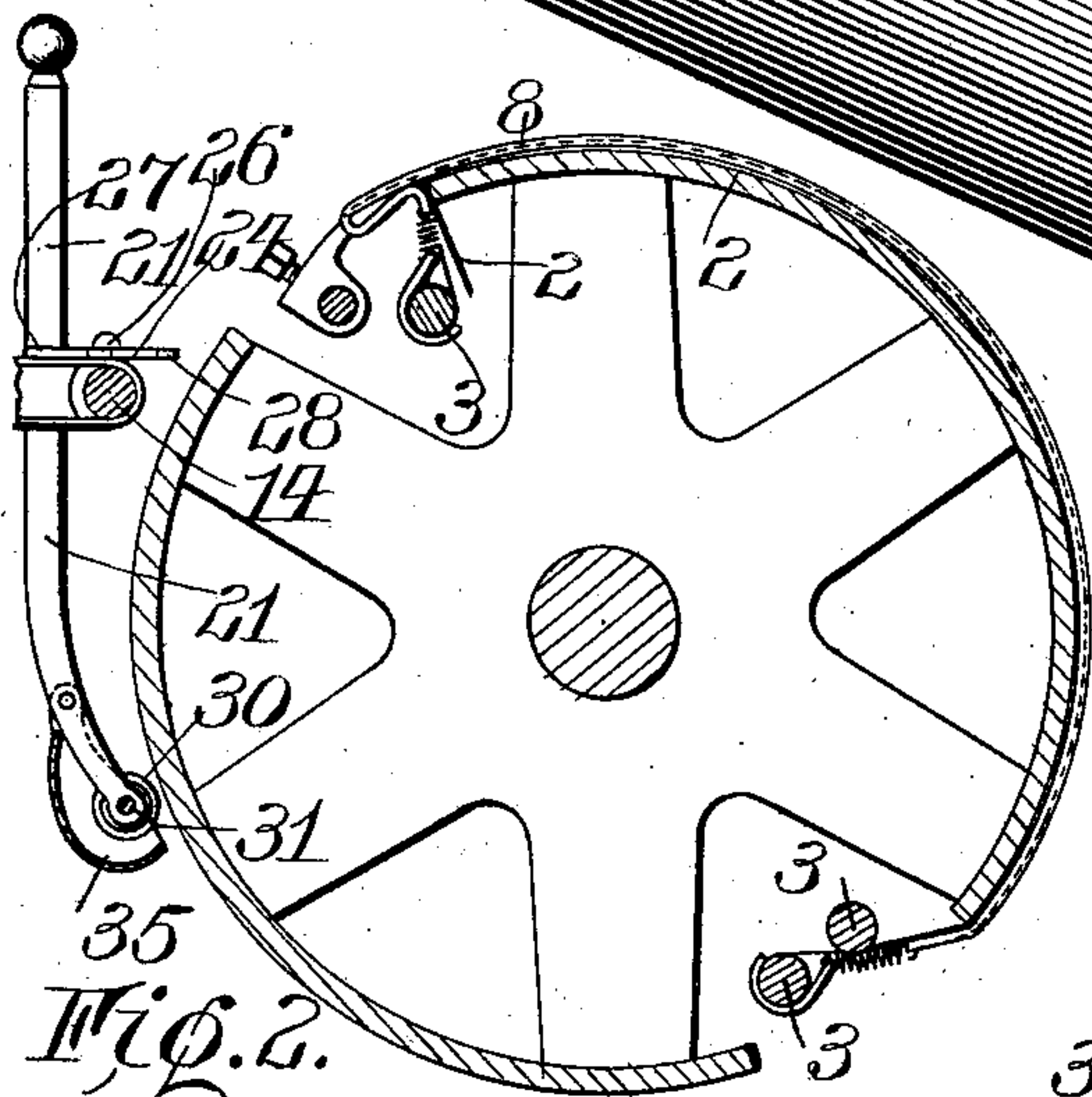


Fig. 2

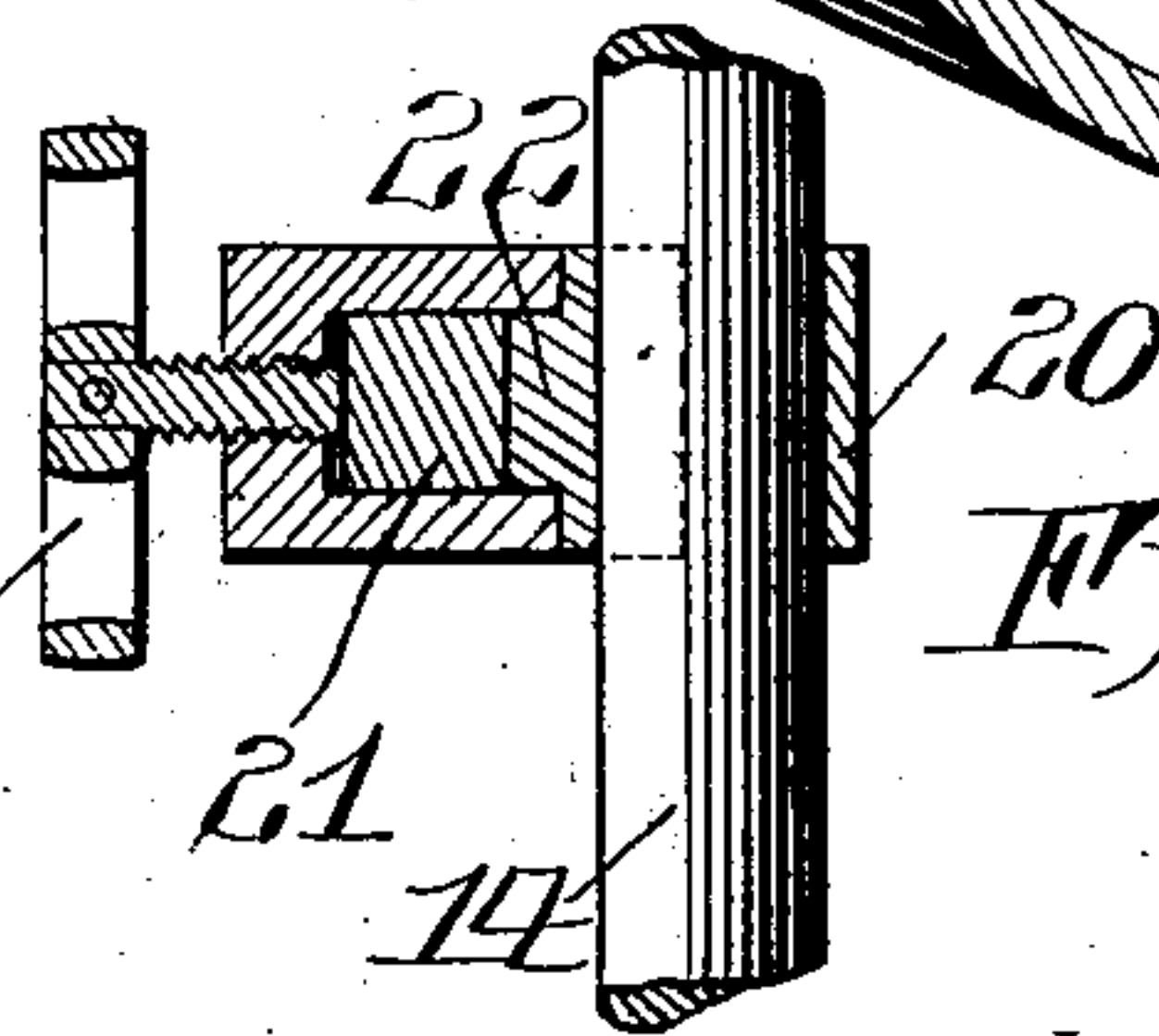


Fig. 6

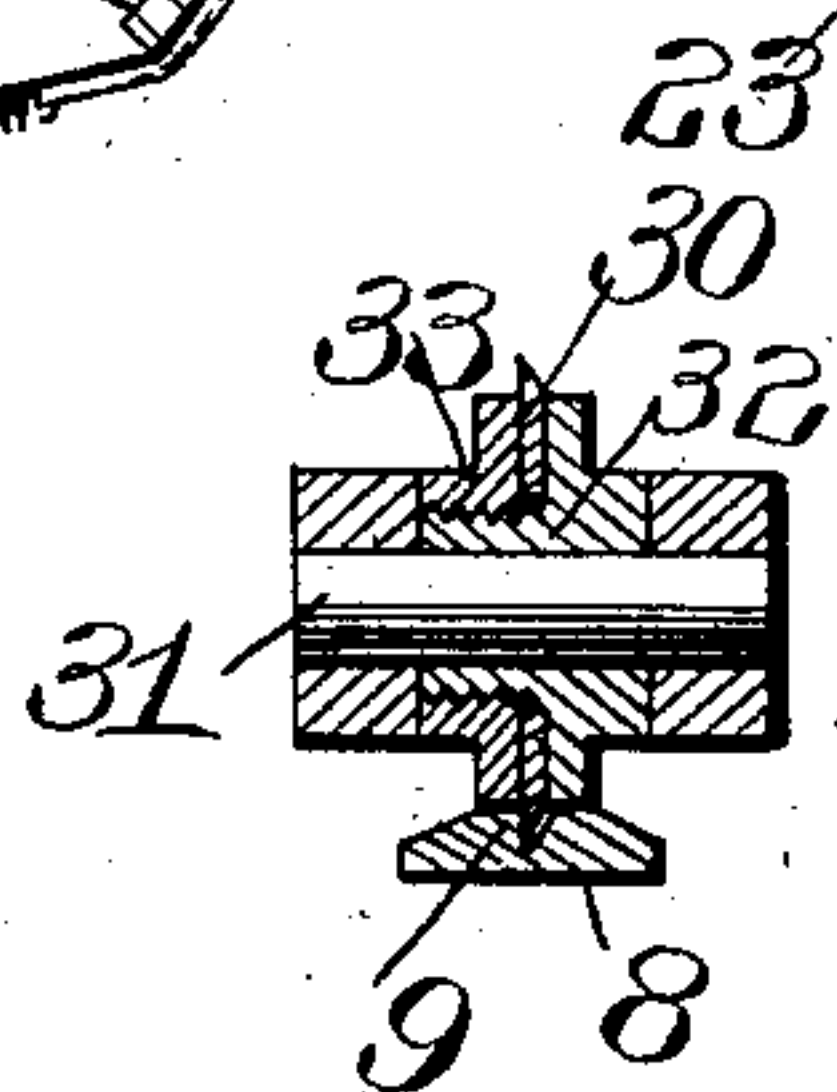


Fig. 5 John Friedrich Fromm  
by Frederick B. Church  
his Attorney

Witnesses

Walter B. Payne  
Willard Rich.



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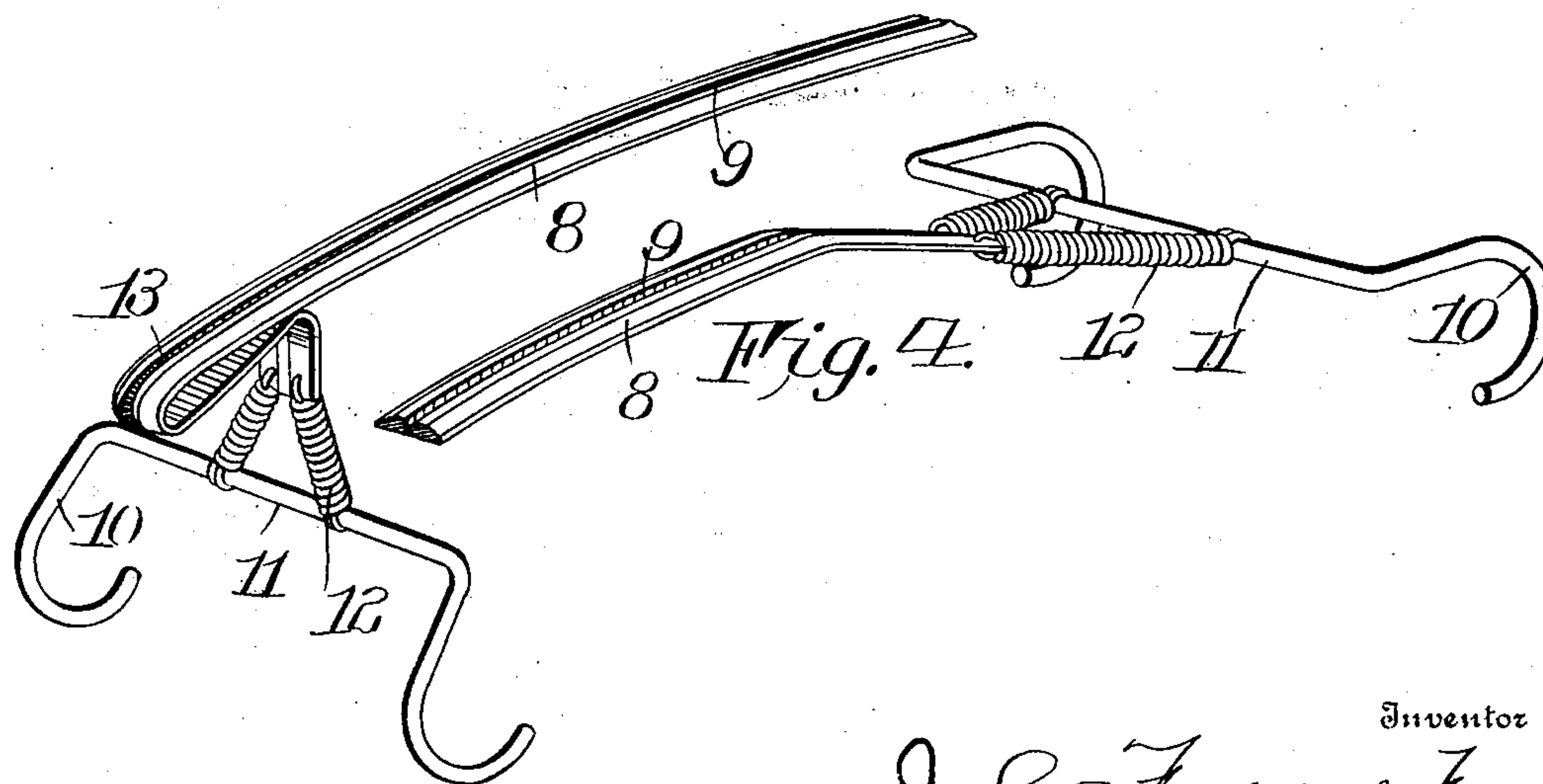
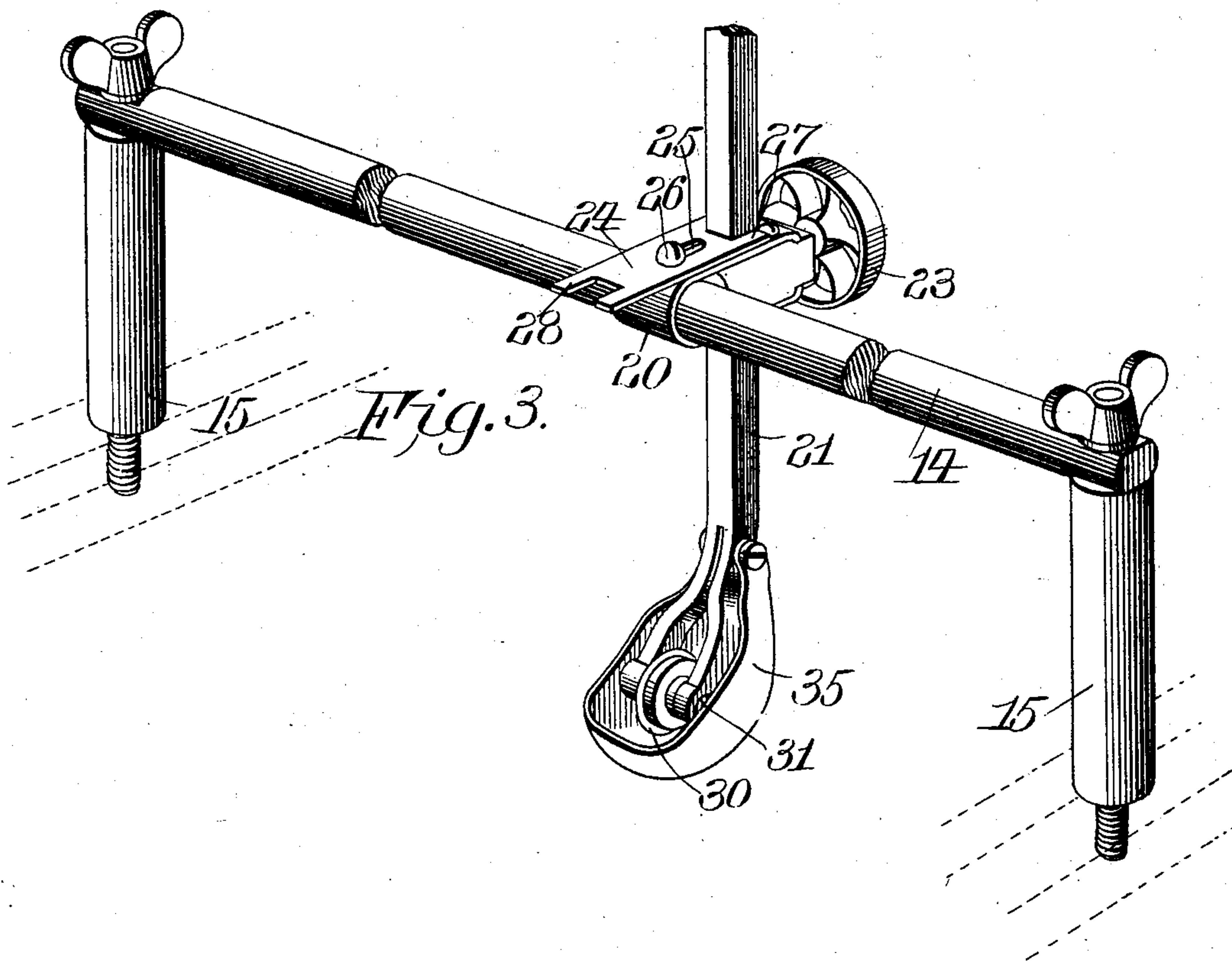
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2 SHEETS—SHEET 2.



Witnesses  
Walter B. Payne.  
Willard Rich.

Inventor  
John Friedrich Fromm  
By Frederick S. Church.  
his Attorney



# UNITED STATES PATENT OFFICE.

JOHN FREDERICK FROMM, OF ROCHESTER, NEW YORK.

## PAPER-SLITTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 747,544, dated December 22, 1903.

Application filed September 19, 1902. Serial No. 124,041. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN FREDERICK FROMM, of Rochester, in the county of Monroe and State of New York, have invented certain  
5 new and useful Improvements in Paper-Slitting Devices; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of  
10 this specification, and to the reference-numerals marked thereon.

My present invention has for its object to provide an improved device for cutting or severing sheets of paper and one which is applicable to cylinder printing-presses in which  
15 the paper to be printed is carried upon a rotary drum or cylinder whereby the sheets may be accurately slit as they are carried by the drum from the feeding-table and delivered in the cut or severed condition after the  
20 printing operation.

To these and other ends the invention consists in certain improvements in construction and combinations of parts, all as will be more  
25 fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings, Figure 1 is a perspective view showing a portion of the printing-cylinder of a rotary printing-press and illustrating the application thereto of a paper-slitting device constructed in accordance with my invention. Fig. 2 is a cross-sectional view of a printing-cylinder. Fig. 3 is a perspective  
35 view of a stationary support, showing the cutter thereon. Fig. 4 is a detail perspective view of the band or ribbon. Fig. 5 is a cross-sectional view of the cutting-knife, showing its coöperation with the band. Fig. 6 is a  
40 horizontal sectional view through the clip or carrier for the knife-support.

Similar reference-numerals in the several figures indicate similar parts.

In illustrating my invention I have shown  
45 it as applied to the usual form of printing-cylinder of a rotary printing-press, such other parts of the latter which have no effect upon the operation of the slitting device being omitted. The surface of the cylinder 1 is  
50 usually divided longitudinally to form two or more segmental surfaces, which are pro-

vided with a covering or blanket 2, secured at its ends by suitable clamps arranged on longitudinally-extending bars 3, arranged within the circumference of the cylinder. 55 The sheets of paper (indicated by 4) are fed separately to the printing-cylinder from the feeding-table 5 against the stops or fingers 7, located above the cylinder, to insure the proper feeding and registering of each sheet 60 with the printing mechanism. They are carried by the cylinder or drum in its rotary movement by means of the usual gripping-fingers 6, which engage the edge of the sheet. 65

Mounted upon the printing-cylinder is a band or ribbon 8, provided throughout its length with a channel, one side of which preferably extends vertically to form a cutting edge 9, with which coöperates the cutter or knife, as will be further described. The band 8 is adapted to extend around the cylinder or such a portion thereof as forms the tympan, which, it will be understood, may be a portion or all of the cylinder, and at its end the band is bent inward slightly and secured by means of fastening devices, those in the present instance being arranged in the form of hooks adapted to engage the bars 3, arranged within the cylinder. In order to permit the band to be easily adjusted and yet securely retain it in proper position, I construct the securing devices as shown in Fig. 4, in which the hooks 10 are arranged at the ends of a bar 11, and at opposite sides of the center of the latter are provided coil-springs 12, having their upper ends converging and attached to the band. As the forward edge of each sheet of paper extends over the edge of the tympan when engaged by the grippers 6, the forward end of the band 8 is extended concentric with the surface of the cylinder, as indicated by 13, so that it forms a support for the overhanging edge of the sheet, so that a perfect slitting of the sheet is insured. 95

Arranged in rear of the printing-cylinder is a stationary support 14, mounted at its ends upon posts or pillars 15, which are attached to the sides of the frame of the printing-press, as illustrated in dotted lines in Fig. 3. This support is preferably cylindrical in cross-section, and mounted thereon is a clip 100



or carrier 20, and extending through the latter is a vertically-adjustable arm 21, engaging in rear of a clamping-block 22 in the clip, and at its rear side said arm is also engaged  
 5 by a clamping-screw 23. By this arrangement it will be seen that the arm may be adjusted vertically in the clip or carrier and the latter be revolved about the support 14 to throw the arm 21 toward or from the printing-cylinder, and the support being uniform  
 10 throughout its length the clip may also be adjusted longitudinally thereon. Also arranged on the carrier is a truing-gage 24, provided with a longitudinal extending slot  
 15 25 to permit its movement relative to the printing-cylinder in a plane extending transversely thereto. The gage is secured to the clip by a screw 26 and is provided at its rear end with fingers or projections 27, engaging  
 20 on opposite sides of the arm 21 and at its opposite end with similar arms 28, adapted to engage on opposite sides of the band 8 for the purpose of assisting the operator in setting the band in a perfectly true line around the  
 25 cylinder, and as its rear end also engages the arm 21 the latter is accurately positioned relatively to the band 8.

Journalled at the lower end of the arm 21 is a rotary cutter or knife 30 mounted upon an  
 30 arbor 31, said knife having its cutting edge extending in the plane of one of its faces, which is adapted to engage against the face or cutting edge 9 of the band 8, whereby as the cylinder is revolved and the sheet of paper 4 is carried past the cutter the latter is  
 35 revolved into contact therewith and by action of the two cutting-edges the sheet is severed by a shearing action during the relative longitudinal movement of the cutter and the support on which the paper is carried. In  
 40 order that the knife may be readily sharpened or replaced when worn or damaged, I mount it upon a sleeve 32, journalled on the arbor and secured in place by a nut 33. As the  
 45 support 14 is arranged a slight distance away from the cylinder, the adjustable arm 21 is curved slightly toward the cylinder at its lower end, and secured to the arm, so as to depend beneath the cutting-knife, is a receptacle 35, adapted to receive the dust caused  
 50 by the slitting action on the paper and prevent it from being carried into other parts of the printing-press.

The device which I have illustrated and  
 55 described consists of few parts, which are simple and capable of being easily applied to a printing-press without interfering in any manner with the operation of other mechanism thereon, and while I have only described  
 60 one of the devices it will be understood that a number of the bands 8 may be applied to a single printing-cylinder and the cutters co-operating therewith all mounted on the one support 14. The sheets of paper being held  
 65 firmly by the grippers are drawn past the cutter one at a time as the cylinder revolves

and are accurately cut upon a true line, thereby obviating the necessity of a further cutting or truing operation.

I claim as my invention—

1. In a paper-slitter, the combination with a movable support adapted to receive a sheet of paper, a band secured to said support having the cutting edge and provided with the end adapted to project beyond the advancing  
 75 edge of the sheet of paper forming a support for the latter, of a knife coöperating with said edge and means for supporting it.

2. In a paper-slitter, the combination with a rotary cylinder provided with a recess and  
 80 gripping-fingers located in the latter and adapted to engage the edge of a sheet of paper, of a band secured to said cylinder having the end extending concentric with the surface of the cylinder and projecting over  
 85 the edge of said recess and provided with a cutting edge, a knife engaging the latter and a support for the knife.

3. In a slitting device, the combination with a support and a band adjustably secured there-  
 90 to and provided with a channel one side of which forms a cutting edge, of a rotary knife, a stationary support therefor, means for adjusting the knife toward and from the support to coöperate with the cutting edge and  
 95 means for moving the first-mentioned support.

4. In a paper-slitter, the combination with a rotary cylinder and a band arranged thereon provided with a channel, of a support, a  
 100 knife secured thereto having a cutting edge extending into the channel.

5. In a paper-slitter, the combination with a rotary cylinder, and a band adjustably secured thereon, provided with a channel, of a  
 105 support, an adjustable carrier thereon, a gage-plate on the carrier coöperating with the band and a knife on the carrier.

6. In a paper-slitter, the combination with a rotary cylinder having a channel and a  
 110 knife extending into the latter, of a dust-receptacle arranged in proximity to the knife.

7. In a paper-slitter, the combination with a rotary cylinder and a band secured thereto, of a rotary knife coöperating with the band  
 115 and a receptacle arranged in proximity to the knife.

8. In a slitting attachment for printing-presses embodying a rotary printing-cylinder provided with longitudinally-extending bars,  
 120 the combination with a band having a cutting edge, hooks at the end of the band engaging the bars on said cylinder, and means for moving the hooks on the band to secure it to the cylinder, of a support and a knife  
 125 thereon having the edge coöperating with the cutting edge on the band.

9. In a slitting attachment for printing-presses provided with a rotary printing-cylinder having a segmental printing-surface, the  
 130 combination with a band adapted to be arranged on said surface and provided with a



cutting edge, devices securing the band at its ends and connections between the devices and band permitting adjustment of the latter without disengaging it from the printing-surface, of a support, a knife thereon and a gage attached to the support and coöperating with the band.

10. In a paper-slitter, the combination with a movable support, a band secured thereto having a cutting edge and a stationary support, of a gage mounted on the latter and coöperating with the band, whereby the latter may be trued on the first-mentioned support, and a knife mounted on the stationary support and coöperating with the band.

11. A slitting attachment for printing-presses embodying a band adapted to be secured to a press-cylinder and provided with a recess, a stationary support arranged at one side of the cylinder, a carrier on the support, a cutter on the carrier and a truing-gage mounted on the latter adjustable into and out of engagement with the band.

12. The combination with a printing-press having a printing-cylinder, a support extending at one side thereof, and a clip on the support movable longitudinally of the cylinder and also capable of rotary movement on the support, of an arm in the clip carrying a cut-

ter and a single clamping device engaging the arm in the clip and securing the latter in adjusted position on the support.

13. The combination with a printing-press having a printing-cylinder, a band secured to the latter and a support extending at one side thereof, of a clip revolubly mounted on the support and capable of a tilting and a longitudinal movement relatively to the cylinder, an adjustable arm arranged in the clip carrying a knife, a gage on the clip adapted to coöperate with the band and a single clamping device for securing the parts on the support.

14. In a slitting attachment for printing-presses provided with a printing-cylinder having longitudinally-extending bars thereon, the combination with a band, hooks adapted to engage the said bars and elastic connections between the hooks and the ends of the band, whereby the latter may be adjustably secured to the cylinder, of a support and a cutter adjustably mounted thereon and movable into and out of engagement with the band.

JOHN FREDERICK FROMM.

Witnesses:

ELIZABETH J. PERRY,  
G. WILLARD RICH.