

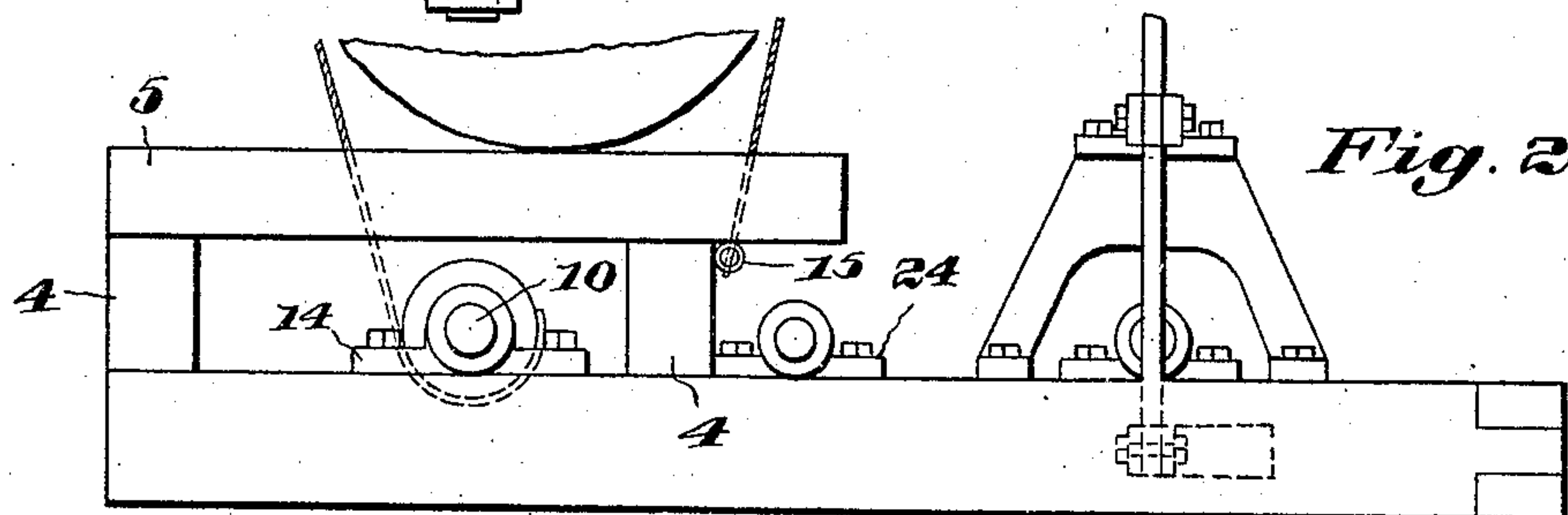
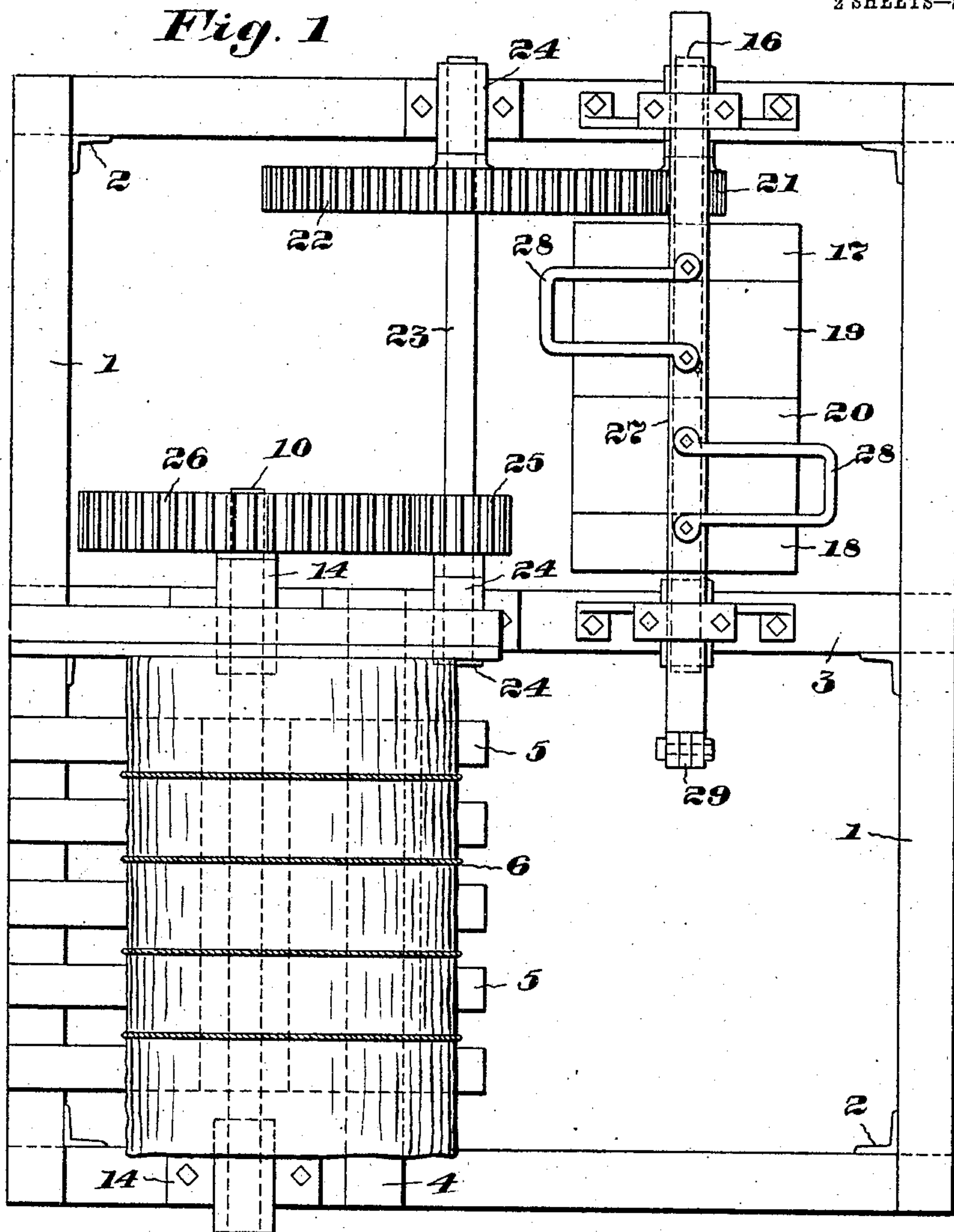
No. 848,550.

PATENTED MAR. 26, 1907.

G. P. HEMSTREET.
SEVERING APPARATUS.
APPLICATION FILED SEPT. 19, 1904.

2 SHEETS—SHEET 1.

Fig. 1



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2 SHEETS—SHEET 2.

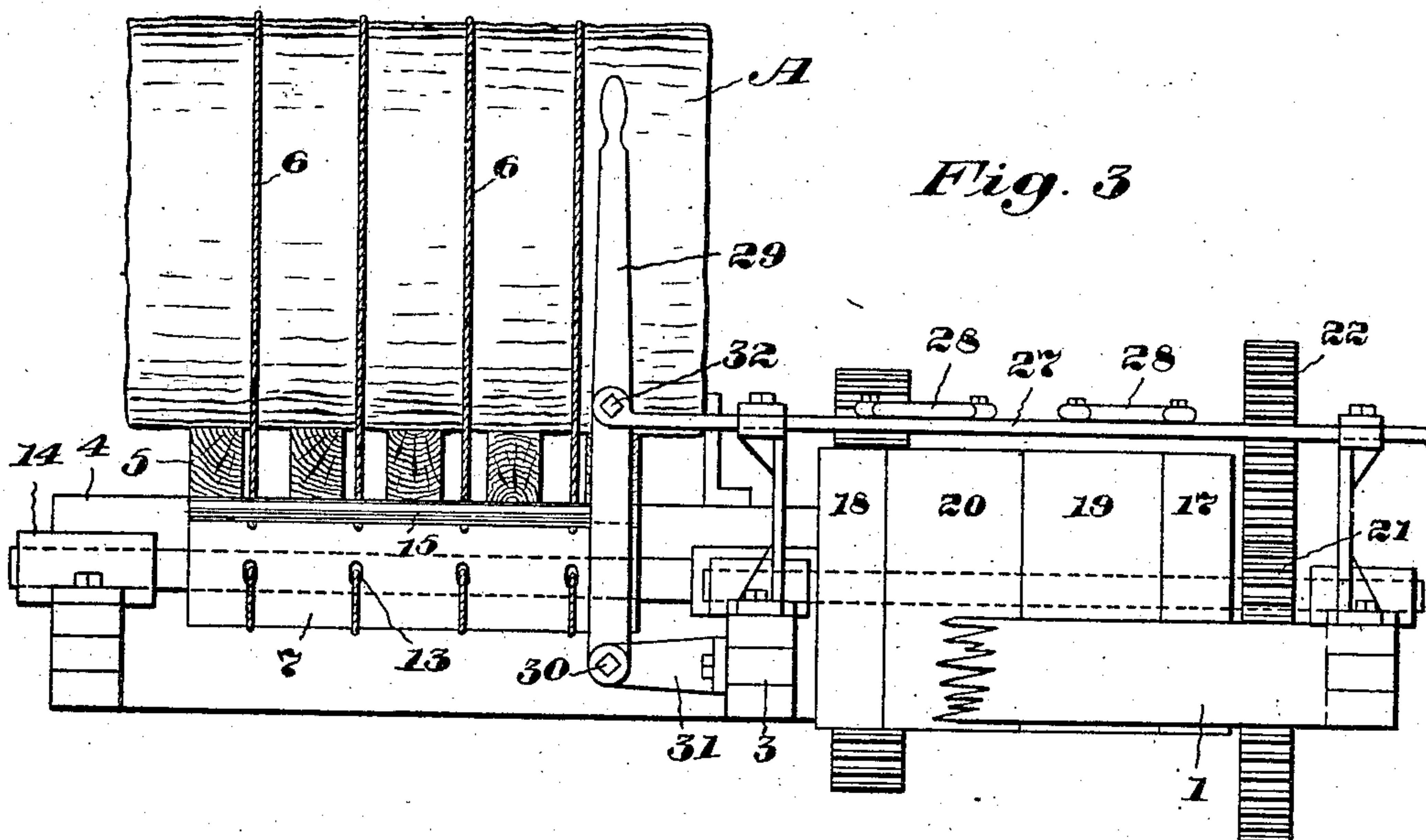


Fig. 3

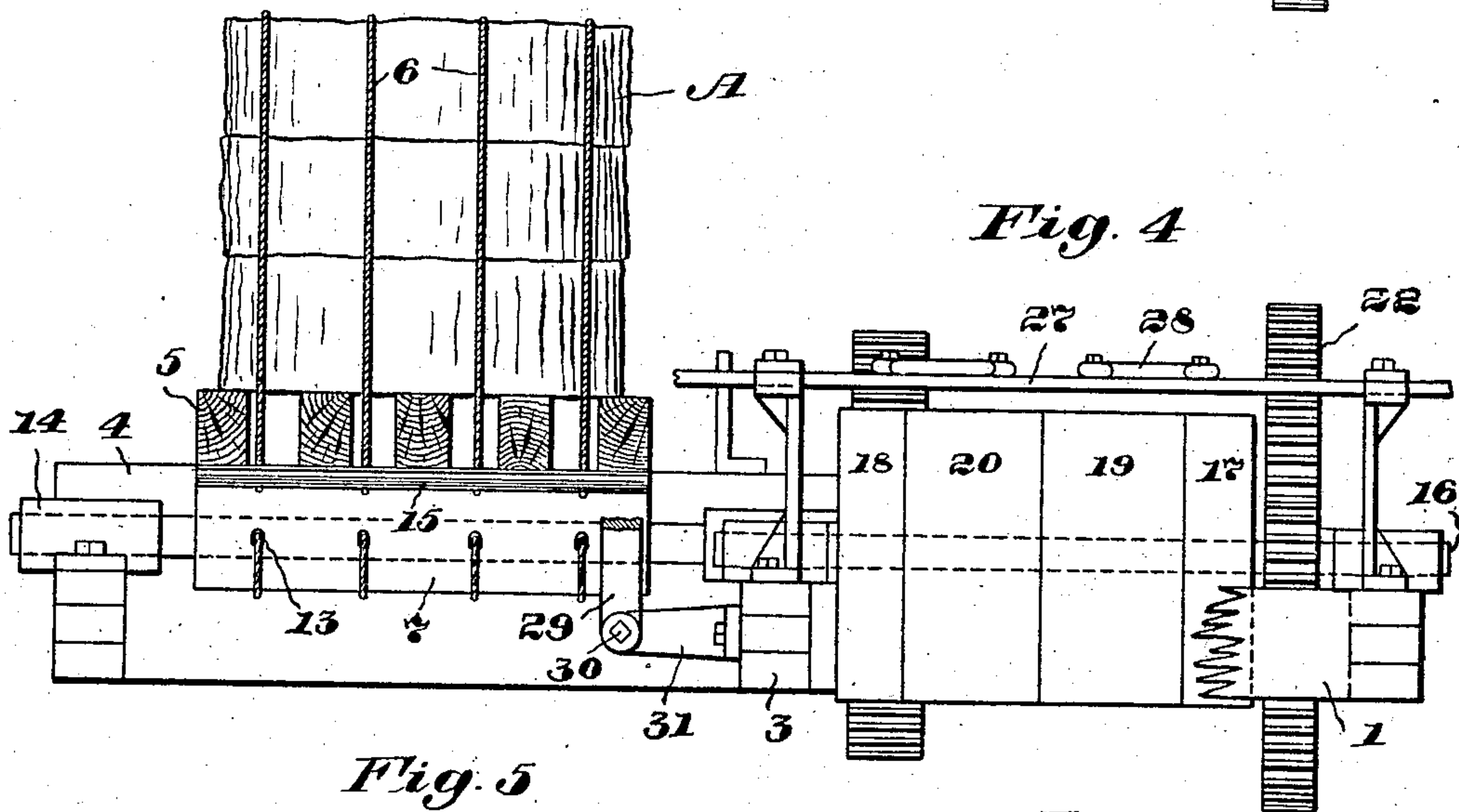


Fig. 4



Fig. 5

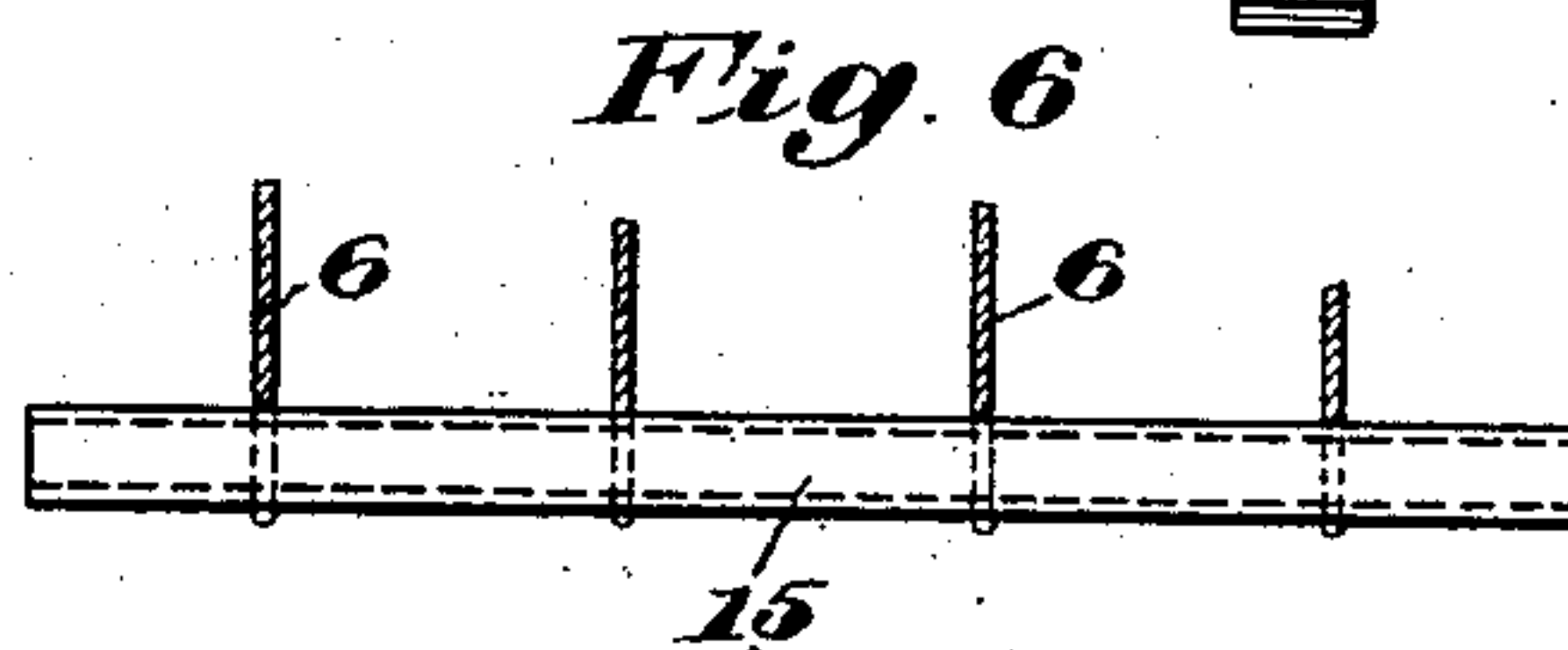


Fig. 6

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UNITED STATES PATENT OFFICE.

GEORGE P. HEMSTREET, OF HASTINGS-UPON-HUDSON, NEW YORK, ASSIGNOR TO THE INTERNATIONAL PAVEMENT COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

SEVERING APPARATUS.

No. 848,550.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed September 19, 1904. Serial No. 224,984.

To all whom it may concern:

Be it known that I, GEORGE P. HEMSTREET, a citizen of the United States, residing at Hastings - upon - Hudson, county of Westchester, and State of New York, have invented an Improvement in Severing Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to means for severing material upon which it is difficult to operate by reason of the gum-like or sticky nature thereof.

The particular application to which the invention has been directed has been the severing of large bodies of pitch, such as that used in combination with asphalt in the construction of asphalt pavements. Owing to the tendency of this material to adhere to any instrument used thereon, it is very difficult with ordinary means or implements to sever it into small masses of a size convenient for treatment preparatory to and for mixing with the other materials used in the present composition.

This invention is designed to overcome the difficulties heretofore experienced, and to this end consists generally in a suitable work support or abutment upon or against which the material to be severed is placed and one or more severing devices which may be placed around the material and drawn bodily there-through to divide the same into blocks of suitable size.

The character and scope of the invention will be clearly apparent from a description of a particular form thereof, such as that illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of the apparatus, showing the material to be severed in position upon the work-support. Fig. 2 is an end elevation viewing the apparatus from the left of Fig. 1. Fig. 3 is a front elevation, the parts being broken away to more clearly show the interior mechanism. Fig. 4 is a view similar to Fig. 3, showing the material arranged for a second cutting. Figs. 5 and 6 are details of parts shown in the other figures.

The embodiment of the invention which is here selected for illustration consists of a

supporting-frame 1, which may be of any desired and suitable construction, but, as here shown, consists of beams united by angle-irons 2. A cross-beam 3 serves to strengthen the supporting-frame and also affords more convenient support for parts of the apparatus hereinafter described. Mounted upon suitable beams 4 above the supporting-frame is the work-support 5, consisting in the embodiment here shown of a plurality of strong beams, which at one side have their extremities projecting beyond the outside supporting-beam 4 and are spaced apart a convenient distance to permit the passage of the severing devices, here shown consisting of strong wire cables 6, adjacent extremities of which are secured in any suitable manner to a winding-drum 7. (See Figs. 3 and 4.) This drum is shown in detail in Fig. 5, and consists of the cylindrical shell 8, having the bushings 9 secured within the ends thereof and the bushings in turn secured to a shaft 10 by means of the bolts or pins 11. The means here shown for securing the severing devices 6 to the drum 7 consists of a bar or bolt 12, extending longitudinally within the cylinder 8, and secured to the bushings 9. The severing devices 6 are passed through suitable apertures 13 in the shell of the drum and are secured by any suitable means to the bolt or bar 12. The shaft of the drum is mounted in suitable bearings 14 on the frame 1 and beneath the work-support 5. As shown in Fig. 6, the opposite extremities of the severing devices are secured to a spacing and anchoring bar 15, whereby the said devices may be drawn over the material to be severed—as, for instance, a block of pitch A—and the bar suspended beneath the ends of the beams composing the work-support 5 by means of said severing devices, as indicated in Figs. 3 and 4, preparatory to the cutting operation.

In conjunction with the cutting apparatus described suitable driving mechanism is provided, which consists in this instance of a power-shaft 16, carrying the loose pulleys 19 and fast pulleys 17 and 18. A pinion 21, also mounted upon the shaft 16, meshes with a gear 22, mounted upon a shaft 23, which rotates in bearings 24 on the supporting-frame. On the shaft 23 is also secured a pinion 25, which meshes with the gear 26 on

the drum-shaft 10, whereby rotative motion is imparted to the drum for operating the severing devices 6.

The mechanism for starting and stopping the apparatus herein shown consists of belt-shifting means comprising a shifter-bar 27, carrying the shifting forks or loops 28, which normally are in alinement with the loose pulleys 19 and 20. The actuating-belts, of which there are two for the purpose—one for operative drive and the other for reversing the mechanism—pass around the pulleys 19 and 20, respectively, rotating said pulleys in opposite directions. The shifter-bar 27 is provided with an operating-lever 29, pivoted at any convenient point, as 30, on a bracket 31, fastened to the frame of the machine and attached to the shifting-bar at the pivot-point 32.

The operation of the mechanism, which will be more clearly apparent from a short statement in conjunction with the description above given, is as follows: The material, in this instance a cylindrical block of pitch which is to be severed, is placed lengthwise upon the work-support 5, as shown in Figs. 1 and 3. The operator then grasping the spacing and anchoring bar 15 carries the severing members or cables 6 over the material to be severed and drops said bar down beneath the extremities of the beams of the work-support 5, as indicated in Figs. 2 and 4. To start the operation of the mechanism, the operator after placing the severing devices in operative position, as above described, shifts the bar 27 to the right as viewed in Figs. 3 and 4, thus carrying the driving-belt upon the pulley 17, whereby through the train of gears connecting the pinion 21 with the gear 26 the drum 7 is rotated to wind up the severing devices or cables 6, thus shortening the free lengths thereof or tending to draw the members taut between the drum and the anchoring-bar 15. In so doing the severing devices cut through and sever the material, as will be evident from an inspection of Fig. 3. Upon completion of the first cutting operation the severed sections of the block may be piled vertically upon the work-support, as indicated in Fig. 4, and cut transversely to divide the same into pieces of more convenient size, and again the blocks may be shifted a second time and cut in the direction of the third dimension to reduce them to a still more convenient size, if desired.

To unwind the cutting devices from the drum F after each cutting operation, I have provided the pulley 18 on the shaft 16, which is connected, by means of a suitable belt, with a pulley on the counter-shaft and so arranged as to reverse the rotation of the shaft 16. In order to hasten the unwinding of the cutting devices from the drum, the pulley 18 is operated at higher speed than the driving-pulley 17.

While the cutting devices have been herein shown and described as consisting of wire cables, it is obvious that they may be constructed in various forms—such, for instance, as chains or sections of greater or less length linked together—also a plurality of knives connected in series may form the flexible element or cutting device.

While the mechanism here described affords a clear illustration of the members and general construction of the parts of my invention, it is to be understood that the same is here shown for illustrative purposes only and that the invention may be modified in many respects without departing from the spirit and scope thereof.

I claim—

1. A severing apparatus comprising a stationary work-support, a plurality of flexible severing devices adapted to be placed around material to be severed, means engaging adjacent extremities of said devices and adapted to be secured to said work-support, and a common means engaging the opposite adjacent extremities and acting longitudinally to draw said devices laterally through the material.

2. In a severing apparatus the combination of a stationary work-support, a plurality of flexible severing devices adapted to be placed around the material to be severed, means engaging adjacent extremities of said devices and adapted to be detachably secured to said work-support, and a common rotary means engaging the opposite adjacent extremities and acting longitudinally to draw said devices laterally through said material.

3. In a severing apparatus the combination of a stationary work-support and a plurality of flexible severing devices having their adjacent extremities anchored to and spaced apart by suitable means, with a drum engaging the opposite extremities of said devices and upon which they may be wound and means to rotate said drum to simultaneously actuate said devices.

4. In a severing apparatus the combination of a work-support composed of a plurality of parallel supporting members spaced apart, a plurality of flexible severing devices extending through said support, a spacing and anchoring bar engaging adjacent extremities of said devices and adapted to engage beneath said supporting members to hold said devices in fixed position, with a drum rotatably mounted beneath said support and to which the opposite extremities of said devices are secured, and means to rotate said drum to simultaneously actuate said devices.

5. In a severing apparatus the combination with a work-support and a plurality of flexible severing devices having their adjacent extremities anchored to and spaced

apart by suitable means, with a drum engaging the opposite extremities of said devices and upon which they may be wound, means to rotate said drum, and means to reverse the rotation of said drum at an accelerated speed to unwind the severing members therefrom.

6. In a severing device, a stationary work-support, a plurality of flexible severing devices, a bar to which an end of each of said severing devices is adapted to be secured, means for detachably anchoring said bar beneath the material to be severed but permitting said severing means to operatively engage said material, and a common actuating means upon which said severing devices may be wound.

7. In a severing device, a stationary work-support, a plurality of flexible severing de-

vices, a bar to which an end of each of said severing devices is adapted to be secured, means for detachably anchoring said bar beneath the material to be severed but permitting said severing means to operatively engage said material, a common actuating means upon which said severing devices may be wound, means to rotate said actuating means to operate the severing devices and means to reverse the direction of rotation of said actuating means.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE P. HEMSTREET.

Witnesses:

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FREDERICK L. EMERY.