

W. H. SCHUYLER.  
SPACE BAND CLEANER.  
APPLICATION FILED JULY 1, 1907.

914,522.

Patented Mar. 9, 1909.

3 SHEETS—SHEET 1.

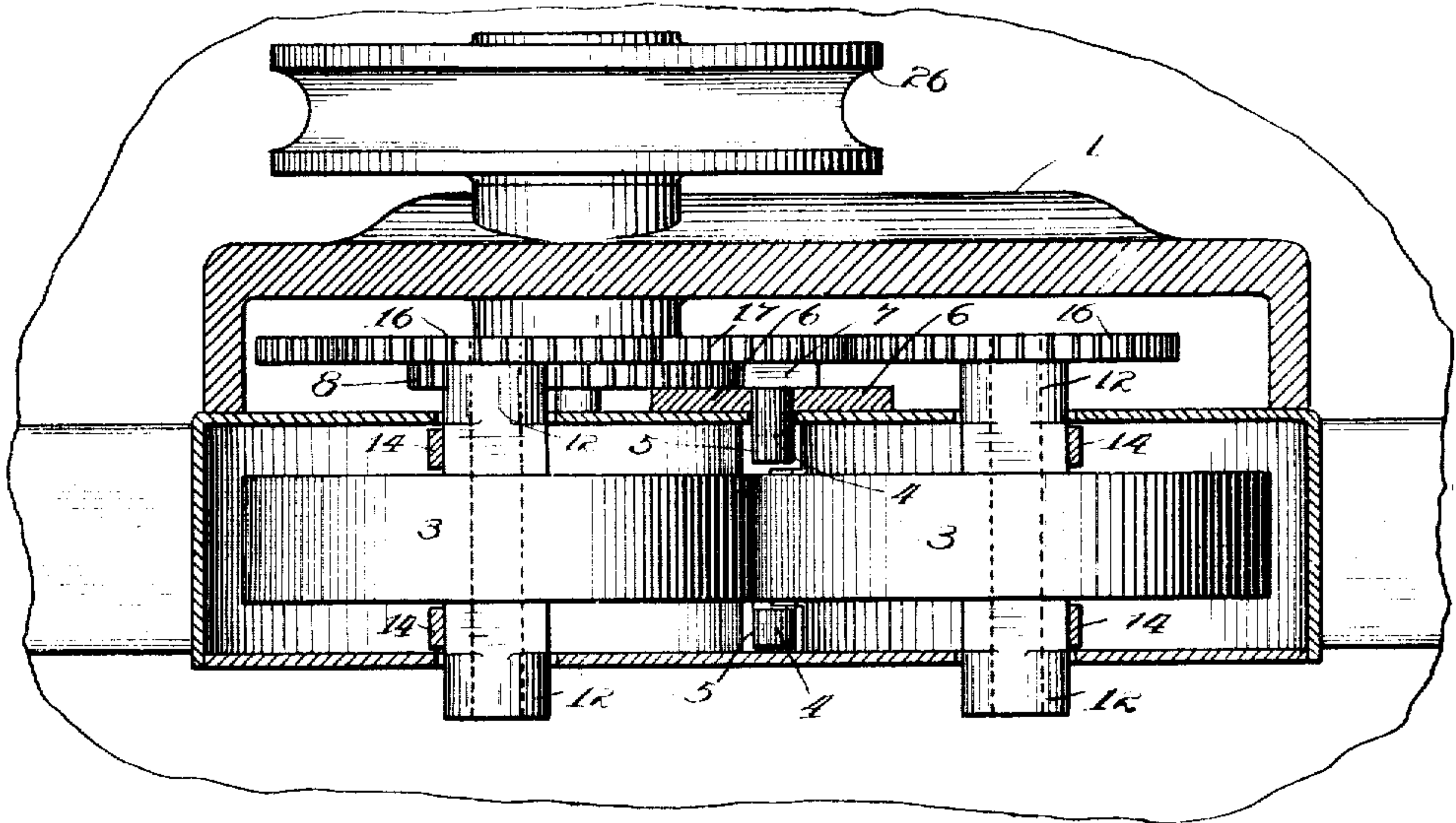
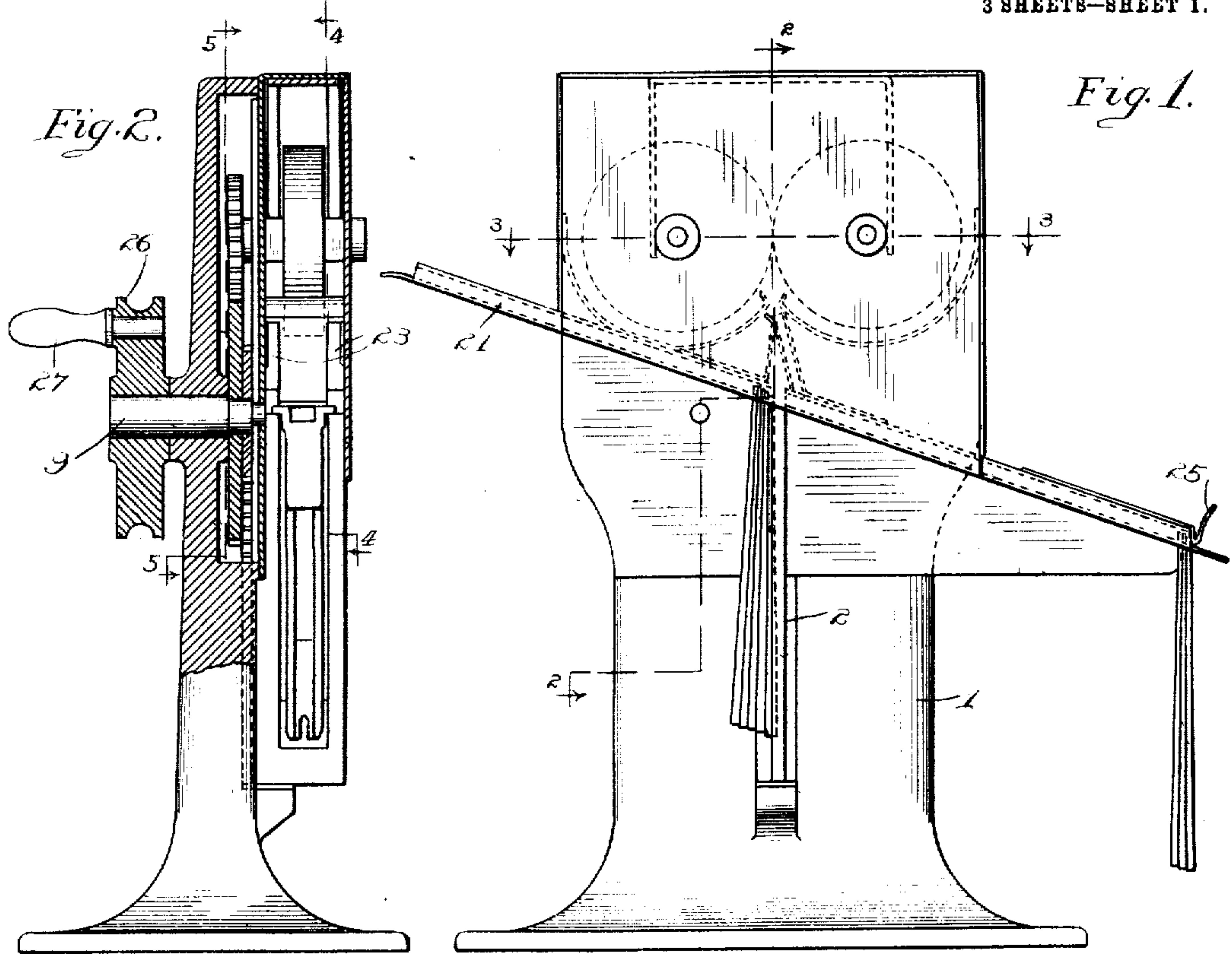


Fig. 3.

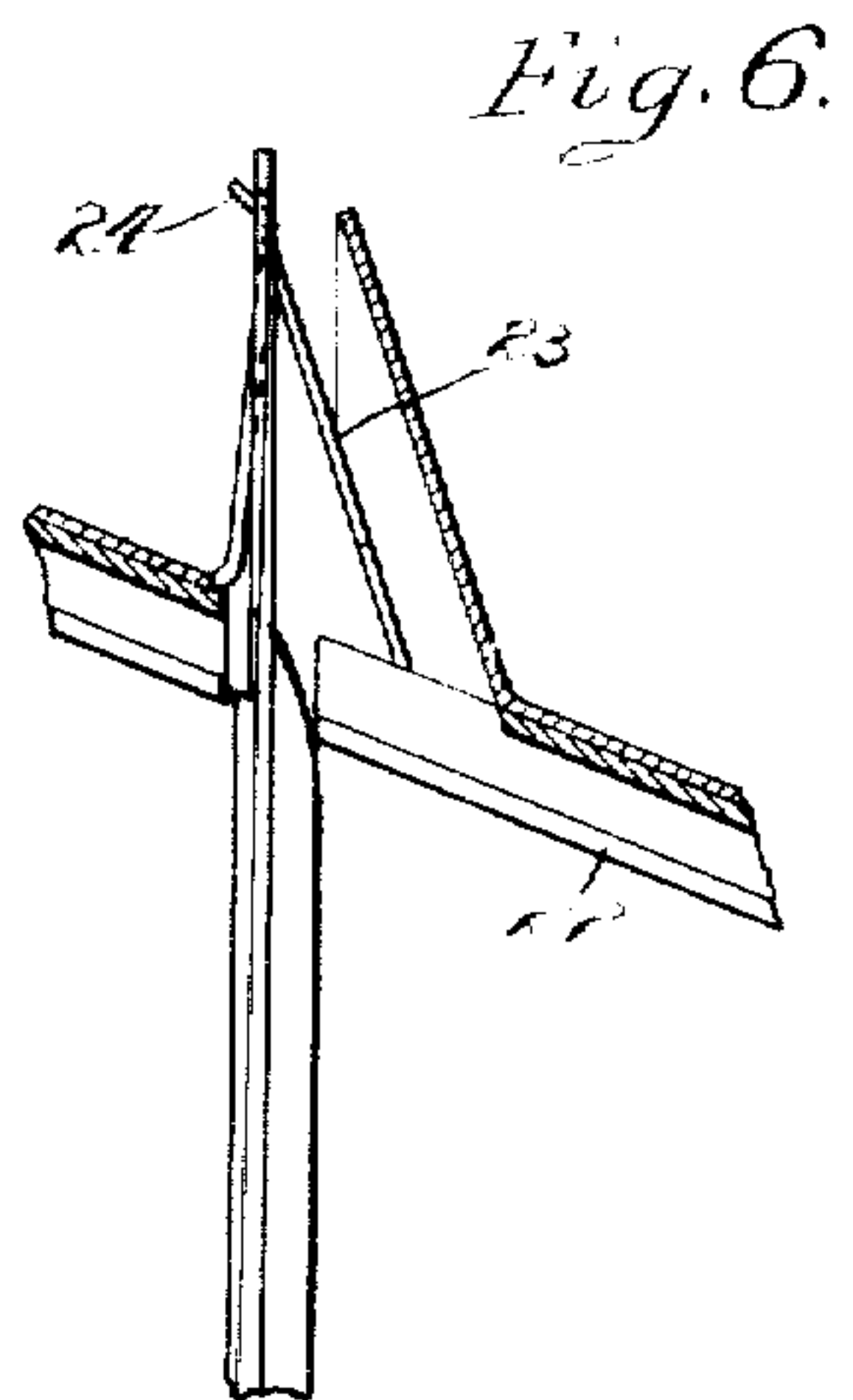
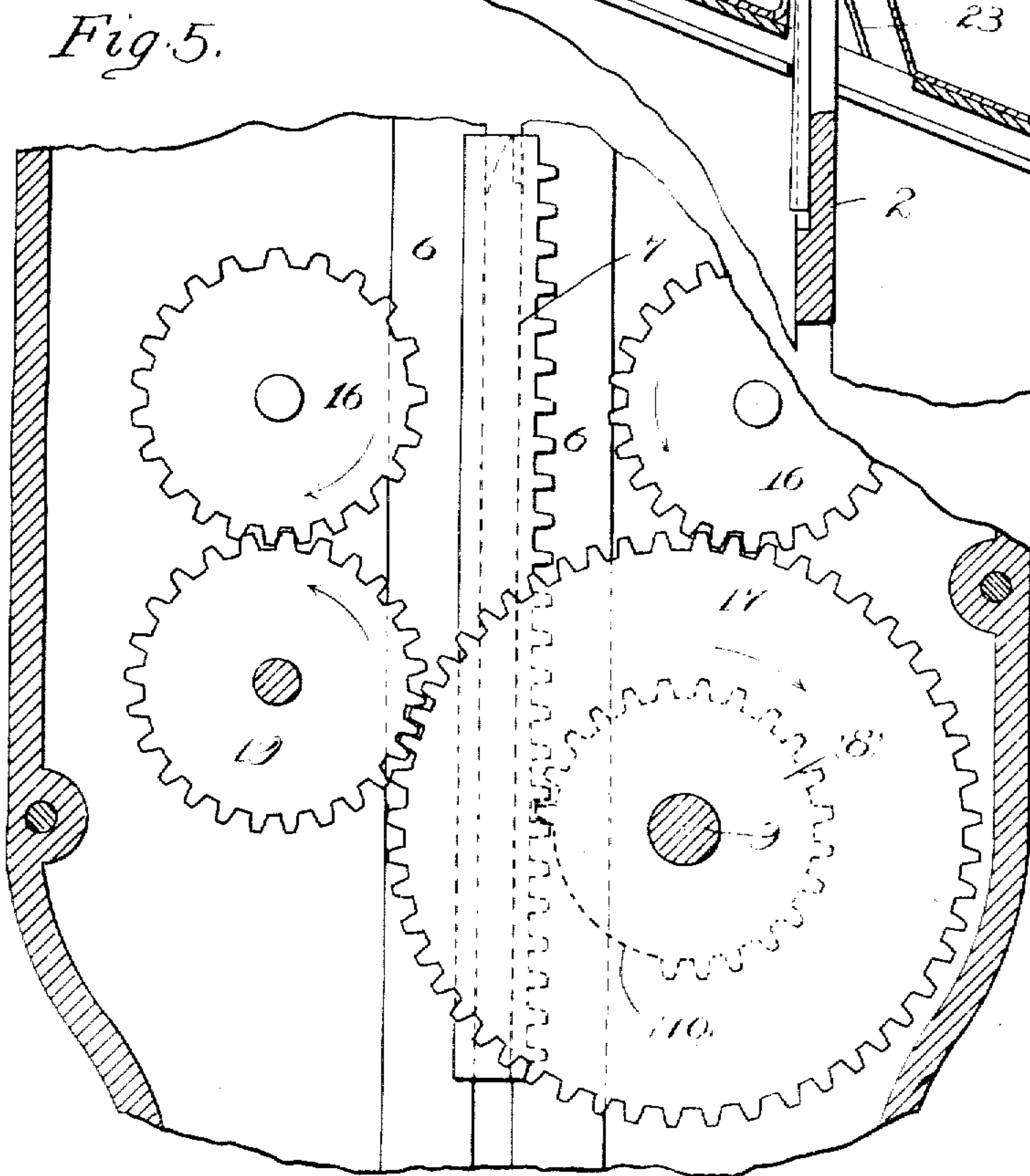
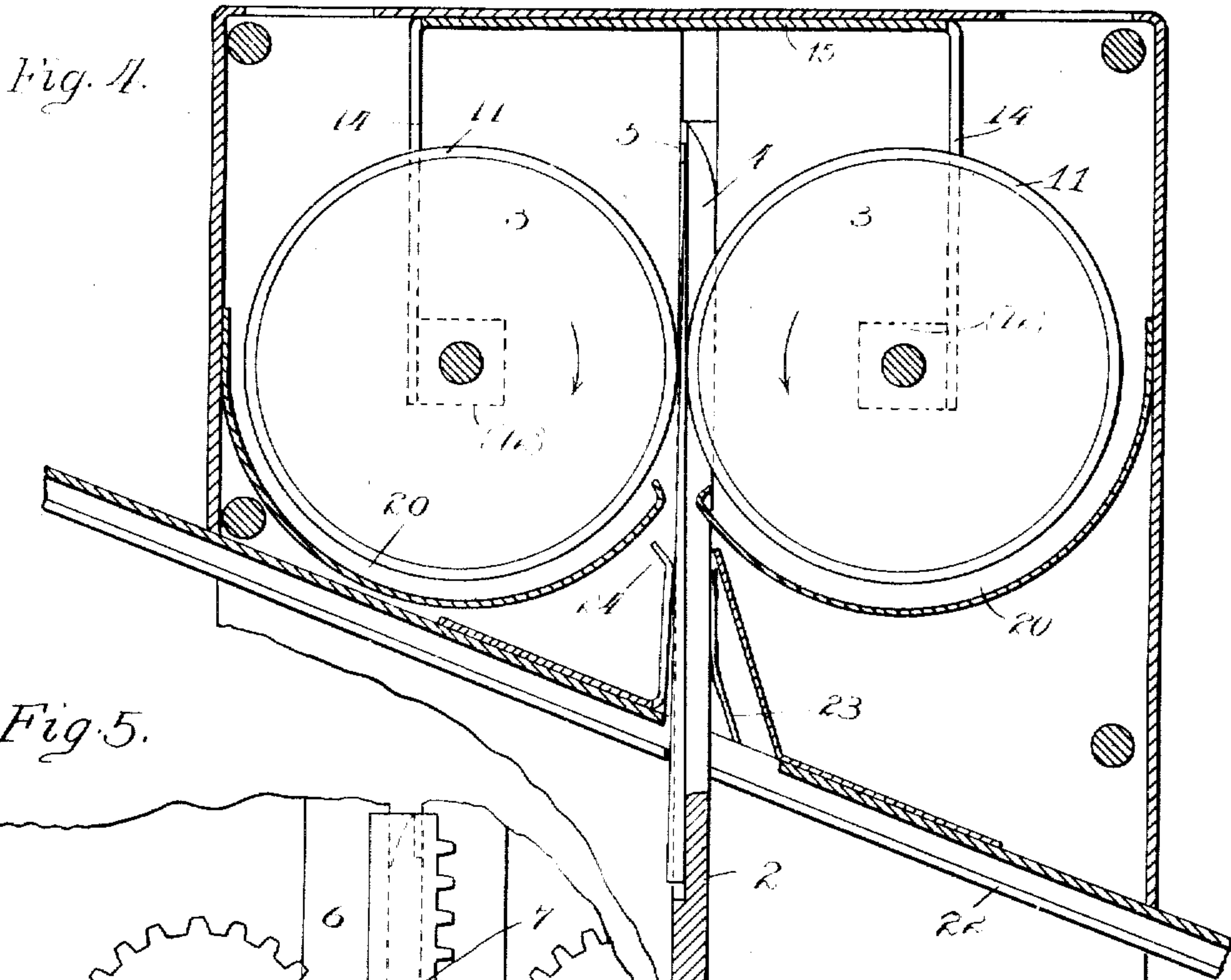
Witnesses:  
John Braunwalder  
Charles J. Cobb

Inventor:  
William H. Schuyler  
By Hill & Hill  
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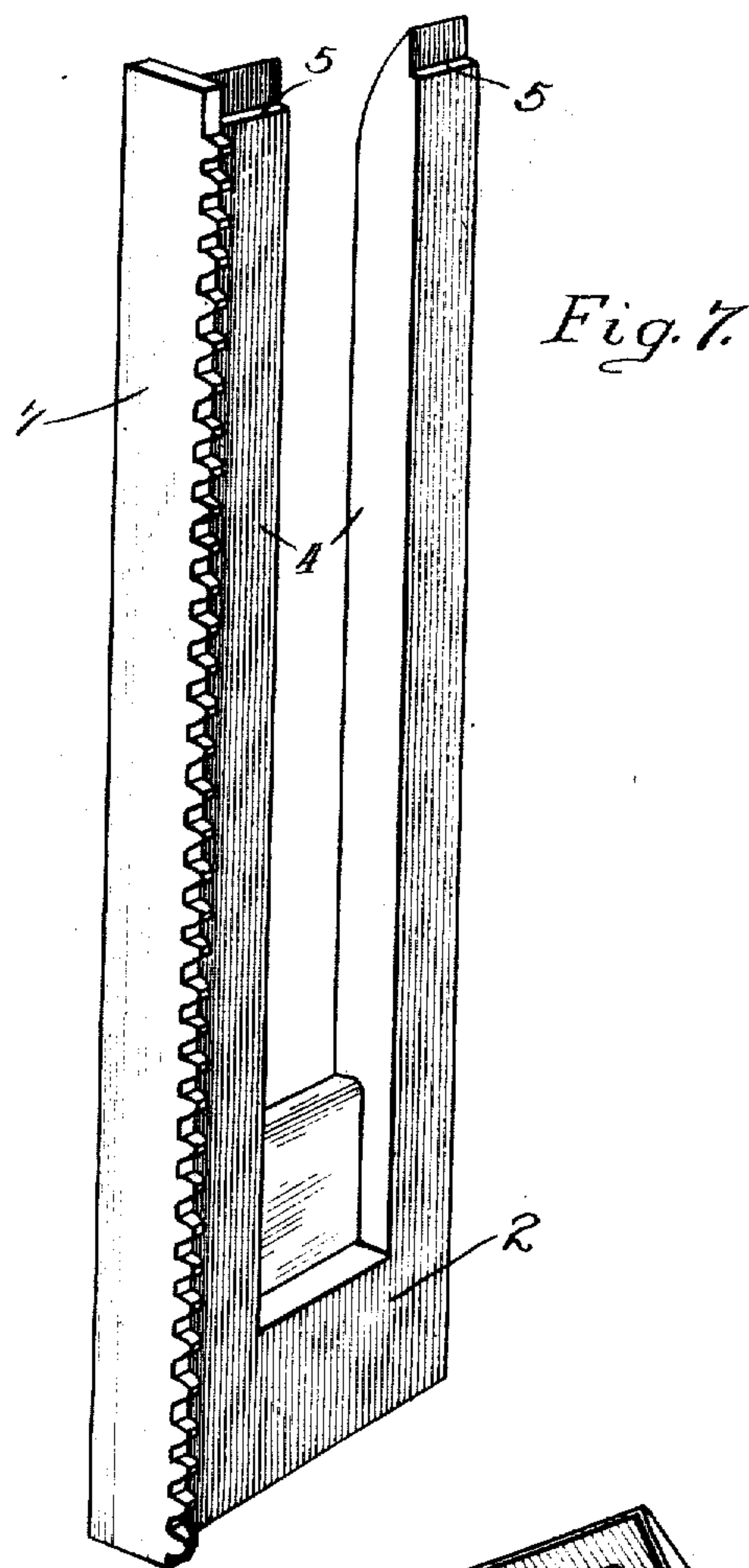
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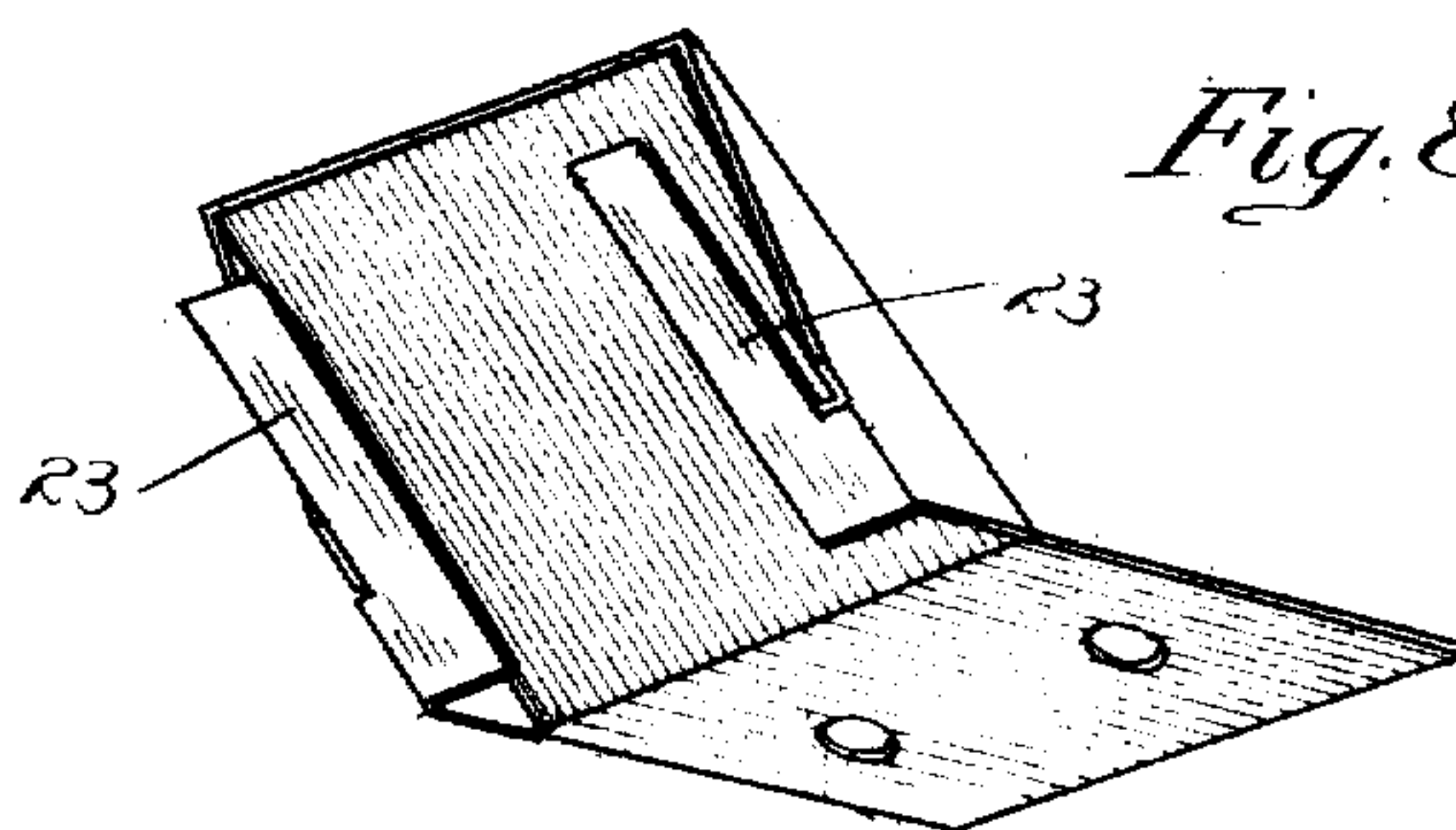
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*Fig. 7.*



*Fig. 8.*

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# UNITED STATES PATENT OFFICE.

WILLIAM HARRISON SCHUYLER, OF TRAVERSE CITY, MICHIGAN.

## SPACE-BAND CLEANER.

No. 914,522.

Specification of Letters Patent.

Patented March 9, 1909.

Application filed July 1, 1907. Serial No. 381,616.

*To all whom it may concern:*

Be it known that I, WILLIAM H. SCHUYLER, a citizen of the United States, residing at Traverse City, county of Grand Traverse, and State of Michigan, have invented certain new and useful Improvements in Space-Band Cleaners, of which the following is a description.

My invention relates to means for preparing the space bands employed upon linotype machines or the like for use in the machine.

The object of my invention is to provide a simple, strong, and efficient device of the kind described, adapted to operate automatically and insure the thorough and rapid preparation of each space band operated upon by the machine.

To this end my invention consists in the novel construction, arrangement, and combination of parts herein shown and described and more particularly pointed out in the claims.

In the accompanying drawings, wherein like or similar reference characters indicate like or corresponding parts; Figure 1 is a side elevation of my device. Fig. 2 is a section taken substantially on line 2—2 of Fig. 1. Fig. 3 is a section taken substantially on line 3—3 of Fig. 1. Fig. 4 is an enlarged section taken substantially on line 4—4 of Fig. 2 with parts shown in operation upon a space band. Fig. 5 is an enlarged section taken substantially on line 5—5 of Fig. 2 with the parts positioned substantially the same as shown in Fig. 4. Fig. 6 is a partial section similar to Fig. 4 but showing the parts in their normal position. Figs. 7 and 8 are details.

In the preferred form of my device shown in the drawings, 1 is a suitable frame or body upon which is mounted a vertically movable carriage 2, adapted to engage a space band and carry the same longitudinally between a pair of rubbers 3—3 arranged upon opposite sides of the path of the space band, to rub the face of the band as it is moved between them.

As shown the carriage consists of two substantially parallel arms 4—4 rigidly connected at their lower ends and sufficiently separated to receive the body portion of a space band between them. The upper end of each of the arms 4—4 are preferably provided with a shoulder 5 or other suitable means adapted to engage the ears of a space band to support the same in a suitable position upon the carriage.

Any suitable means may be employed to direct and control the movements of the carriage. As shown a pair of suitable guides 6—6 are attached to the frame 1 in position to extend longitudinally of the carriage and receive one of the arms 3 between them to direct the movement of the carriage, and a rack 7 is rigidly secured to the arm 4 positioned between the guide, and arranged to cooperate with a pinion 8 upon a shaft 9 rotatably mounted in suitable bearing upon the frame 1.

Any suitable means may be employed for reciprocating the carriage 2 longitudinally such for example, as alternately rotating the pinion 8 a fixed distance in opposite directions; but in the preferred construction a space is left upon the pinion 8 that is, a portion of the periphery of the pinion is not provided with teeth, and the shaft 9 is continuously rotated in a direction so that when the teeth of the pinion 8 engage the rack 7 it will elevate the carriage until the space upon the pinion reaches the rack when the carriage is free to fall by gravity to its lowest position, to be again elevated when the teeth of the pinion again engage the rack.

The rubbers 3 may be of any preferred form or construction. As shown each rubber consists of a wheel or circular member having a suitably formed face of sufficient thickness to bear against the entire face of the space band. If desired each wheel may be provided at its periphery with a thickness of felt, leather, or other suitable material to produce the most satisfactory cleaning effect upon the band. Obviously as the space bands vary in thickness longitudinally, it is desirable that the rubbers 3—3 be so mounted that as a space band moves longitudinally between them they may adjust themselves to the varying thickness of the band. For this purpose in the form shown the bearings 12—12 are each attached to a spring 14 rigidly secured to the frame 1 at 15 arranged to resiliently force the rubbers toward each other.

To increase the rubbing action upon the space bands, suitable means may be provided to rotate the rubbers 3 in a direction to oppose the introduction of the space bands between them. In the form shown a pinion 16 is rigidly attached to each rubber 3, and each suitably connected to a gear 17 upon the shaft 9 to secure the desired movement. As shown in Fig. 5 one of the pinions 16



meshes directly with the gear 17 while the other pinion 16 meshes with an intermediate or idle pinion 18 which in turn meshes with the gear 17, thus securing the desired rotary movement of the rubbers 3 and at the same time permitting the desired lateral adjustment of the rubbers without interfering with the operation of their driving mechanism.

After cleaning the space bands it is very desirable to coat the faces of the same with finely powdered graphite, soapstone, or other suitable material to prevent as far as possible the adhesion of the type to the space bands. For this purpose any desired means may be employed to distribute a sufficient quantity of the desired powdered material upon the faces of the rubbers 3 to produce the desired coating. In the form shown each rubber is provided with a receptacle 20 adapted to be filled with powdered graphite or other suitable material and hold the same in contact with the face of each rubber, thus securing the engagement of a sufficient amount of the powdered material in the receptacle by the face of each rubber, to properly coat the face of each space band operated upon.

Any suitable means may be employed to successively position the space bands upon the carriage 1 and remove the same after the cleaning operation. In the form shown an inclined receiving channel or holder 21 is secured upon the frame 1 of suitable form to engage the ears of the space bands to support the same, the holder 21 being sufficiently inclined to insure the movement of the bands by gravity to the lower end thereof. The lower end of the holder 21 is preferably formed to register with the notches 5 upon the arms 4 of the carriage 2 when the same is at the lower limit of its movement, so that any space band supported in the holder 21 will freely pass by gravity from the holder into proper position upon the carriage the several cooperating parts being suitably formed to prevent the engagement of more than a single space band with the carriage at a time. When the carriage 2 arrives at the limit of its operative movement, it is released as before described and falls by gravity, leaving the space band which it carried, grasped between the rubbers 3 which are preferably rotated at a suitable speed to make the movement of the space band somewhat slower than that of the carriage.

Any suitable means may be employed to control the movements of the space bands as they are delivered from the rubbers 3. As shown an inclined discharge or delivery channel or holder 22 is provided to receive the space bands, and suitable mechanism is arranged to direct each space band as it leaves the rubbers into the delivery holder. In the form shown springs 23—23 are provided for each arm of the carriage 2, each ar-

ranged to cooperate with a second pair of springs 24 to form a pair of inclined ways or guides, when the carriage is at the lower limit of its movement extending directly across the path of the arms 4—4 of the carriage in position to engage the ears of the space bands as they are delivered from the rubbers 3 and guide the same directly into the delivery holder 22, and which are temporarily forced out of position at each upward movement of the carriage. The delivery holder 22 is preferably of sufficient length to store any desired number of the space bands and is preferably provided with a latch or catch 25 at its lower end to prevent the immediate escape of the bands from the holder.

In the drawings the receiving holder 21 and delivery holder 22 extend substantially in a straight line having a uniform inclination and with the carriage 2 arranged to move at an angle to, and between their proximate ends. But it is obvious that while this arrangement is very convenient, it is not essential, and may be altered if desired.

Any suitable means may be employed to rotate the shaft 9. In the preferred construction shown a belt pulley 26 provided with a crank or handle 27 is rigidly mounted at the extremity of the shaft 9, so that the shaft 9 may be rotated to operate my device either by power or by hand as preferred.

In operation a suitable amount of powdered material is placed in the receptacles 20—20, any desired number of space bands are positioned in the receiving holder 21, and the shaft 9 is rotated, the carriage 2 at once commences to reciprocate and successively engages a space band and forces it upward between the rubbers 3 to the limit of its movements where it is disengaged from the space band and returns to its normal position, leaving the space band engaged between the rubbers 3. When it is discharged from between the rubbers 3 the space band is directed by the springs 23, and 24 into the delivery holder 22 from which the bands may be removed as desired.

Having thus described my improvement, it is obvious that various immaterial modifications may be made in my device without departing from the spirit of the invention, hence I do not wish to be understood as limiting myself to the exact form or construction shown.

What I claim as new, and desire to secure by Letters Patent is:—

1. In a device of the kind described, means for engaging a space band and moving the same longitudinally, and means positioned upon opposite sides of the path of said space band adapted to engage and rub the space band as it moves between them, and thereafter move said space band in the opposite direction.



2. In a device of the kind described, means for engaging a space band and moving the same longitudinally and a pair of rotatable wheels positioned upon opposite sides of the path of said space band adapted to engage and rub the same as it moves between them, and thereafter move said space band in the opposite direction.

3. In a device of the kind described, means for engaging a space band and moving the same longitudinally, and means positioned upon opposite sides of the path of said space band adapted to resiliently engage and rub the same as it moves and thereafter move said space band in the opposite direction.

4. In a device of the kind described, means for engaging a single space band and moving the same longitudinally, a pair of wheels positioned upon opposite sides of the path of said space band adapted to resiliently engage and rub the space bands between their peripheries as it is moved and thereafter to move said space band in the opposite direction, and means for continuously rotating said wheels to oppose the movement of said space band.

5. In a device of the kind described, a reciprocating carriage adapted to engage a single space band and move the same longitudinally, and means positioned upon each side of said carriage adapted to engage said space band between them and rub the same as it moves between them, and control the movement of said space band in one direction.

6. In a device of the kind described, means for engaging a single space band and moving the same longitudinally, a receptacle for finely powdered material, and means positioned upon opposite sides of the path of said space band to engage the space band and a portion of the material and rub the material upon the face of said space band, and control the movement of said space band in one direction.

7. In a device of the kind described, means for engaging a space band and moving the same longitudinally, a receptacle for finely powdered material, and means positioned upon opposite sides of the path of said space band above said receptacle to engage the space band and a portion of said material and rub the material upon the face of said space band, and control the movement of said space band in one direction.

8. In a device of the kind described, a carriage adapted to engage a space band and move the same longitudinally in one direction, means arranged to resiliently engage said space band and control its movement in the opposite direction, said means being adapted to rub the face of said space band while the same is engaged by said carriage.

9. In a device of the kind described, a reciprocating carriage, adapted to engage a

space band and move the same longitudinally in one direction, means arranged to resiliently engage said space band and control its movement in the opposite direction independently of the return movement of said carriage said means being adapted to rub the faces of said space band while the same is engaged by said carriage.

10. In a device of the kind described, a carriage adapted to engage a space band and move the same longitudinally in one direction, and a pair of rotatable rubbers arranged to resiliently engage said space band and control its movement in the opposite direction, said rubbers being adapted to rub the faces of said space band while the same is engaged by said carriage.

11. In a device of the kind described, a carriage adapted to engage a space band and move the same longitudinally in one direction, and a pair of rotatable rubbers arranged to resiliently engage said space band and control its movement in the opposite direction, said rubbers being adapted to rub the faces of said space band while the same is engaged by said carriage, and intermediate means for controlling the operative movements of said carriage and rubbers.

12. In a device of the kind described, a carriage adapted to engage a space band and move the same longitudinally in one direction, a pair of receptacles adapted to contain a powdered substance, and a pair of rotatable rubbers extending into said receptacle arranged to engage said space band and control its movement in the opposite direction, said rubbers being arranged to engage a portion of the material in said receptacle and rub the same upon the faces of said space band while the same is engaged by said carriage.

13. In a device of the kind described, a receiving holder, and a discharge holder, each adapted to support a plurality of space bands, a pair of rubbers and a reciprocating carriage adapted to successively engage a single space band in said receiving holder, move the same longitudinally between said rubbers, and release the same at the limit of movement of said carriage said rubbers controlling the reverse movement of said space band, and means for directing each space band when released by said rubbers into said discharge holder.

14. In a device of the kind described, a receiving holder, and a discharge holder, each adapted to support a plurality of space bands, a pair of rubbers, and a reciprocating carriage positioned between said holders and adapted to successively engage a single space band in said receiving holder, move the same longitudinally between said rubbers, and release the same at the limit of movement of said carriage, said rubbers controlling the reverse movement of said space band,



and means for directing each space band when released by said rubbers into said discharge holder.

15. In a device of the kind described, a receiving holder, and a discharge holder, each adapted to support a plurality of space bands, a pair of rubbers, a receptacle adapted to contain a powdered material for each rubber, and a reciprocating carriage adapted to successively engage a single space band in said receiving holder, move the same longitudinally between said rubbers, and release the same at the limit of movement of said carriage, said rubbers controlling the reverse movement of said space band, and means for directing each space band when released by said rubbers into said discharge holder.

16. In a device of the kind described, a receiving holder, and a discharge holder, each adapted to support a plurality of space

bands, a pair of rotatable rubbers, means for distributing a powder upon the faces of said rubbers, and a reciprocating carriage adapted to successively engage a single space band in said receiving holder, move the same longitudinally between said rubbers, and release the same at the limit of movement by said carriage, said rubbers controlling the reverse movement of said space band, means for directing each space band from said rubbers to said discharge holder and intermediate means between said rubbers and said carriage for controlling the operative movement of each.

In testimony whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM HARRISON SCHUYLER.

Witnesses:

N. J. HAVILAND,  
JOSEPH POHL.