

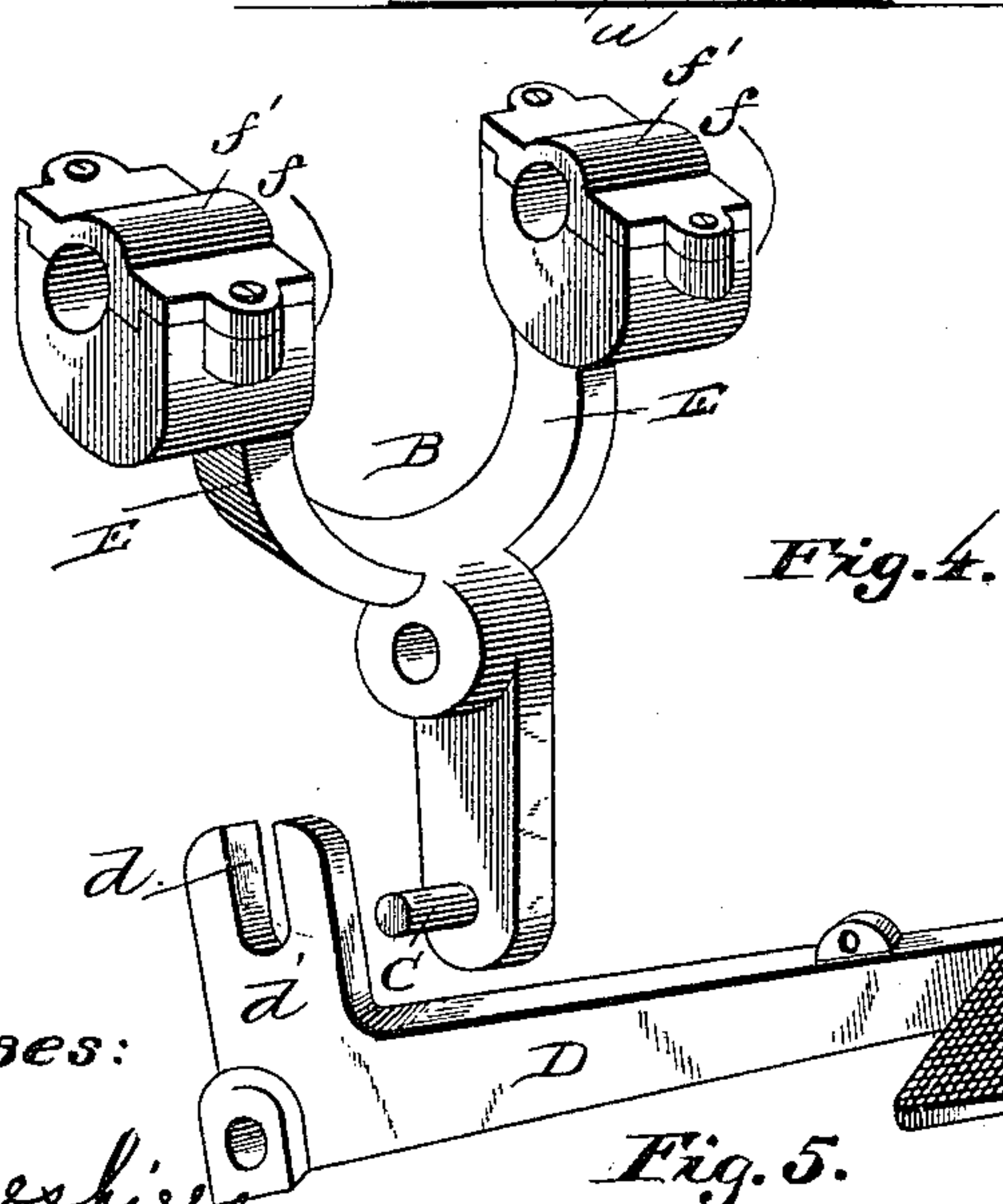
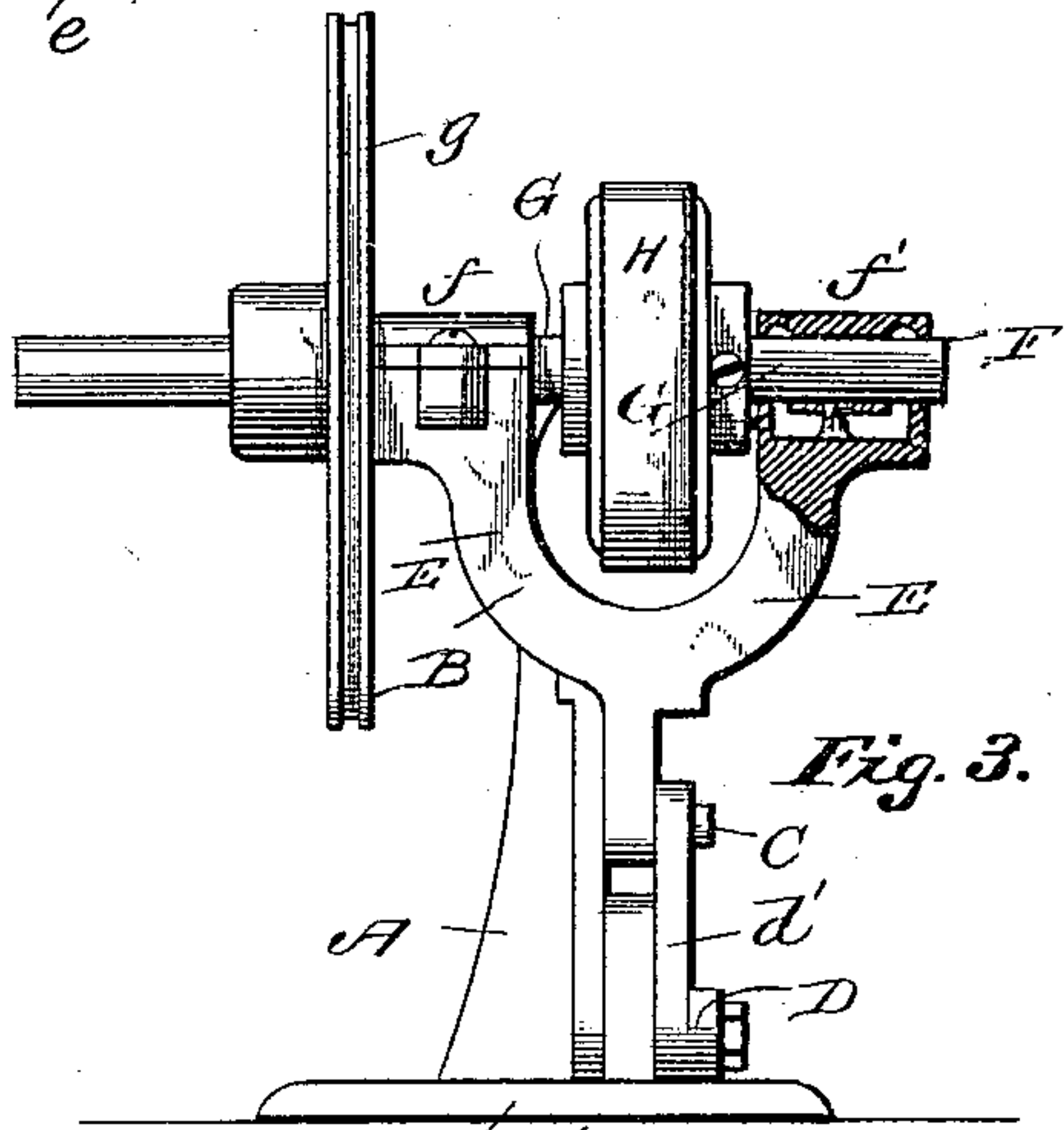
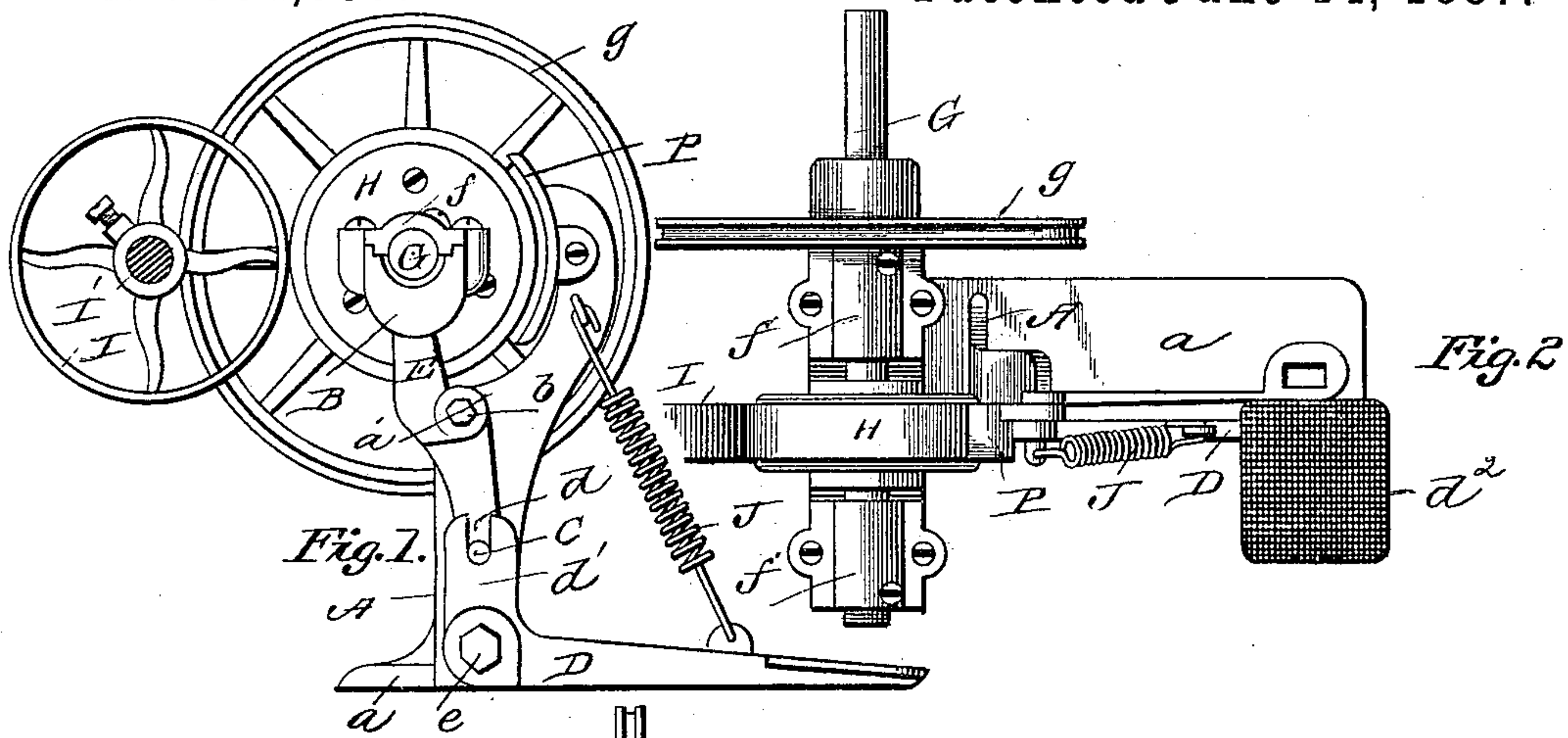
(No Model.)

H. EXLEY.

## FRictional DRIVING GEAR.

No. 364,997.

Patented June 14, 1887.



*Witnesses:*

St. Verkie  
A. Rawlins

*Fig. 5.*

Inventor:  
Henry Exley  
By: Edson B. ~~Edson~~  
attorneys.



# UNITED STATES PATENT OFFICE.

HENRY EXLEY, OF FRANKLIN, MASSACHUSETTS.

## FRICTIONAL DRIVING-GEAR.

SPECIFICATION forming part of Letters Patent No. 364,997, dated June 14, 1887.

Application filed February 14, 1887. Serial No. 227,570. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY EXLEY, a citizen of the United States, residing at Franklin, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Frictional Driving-Gear, of which the following is a specification, reference being had therein to the accompanying drawings.

10 My invention relates to improvements in frictional driving-gear for running sewing and other machines in factories and other places; and it consists of a novel combination of devices and peculiar construction and arrangement of parts, substantially as hereinafter fully set forth, and particularly pointed out in the claims.

My invention relates to improvements in that class of frictional driving-gear in which 20 the belt-pulley employed to impart motion to the sewing or other machine may be caused to revolve through the action of a friction-pulley mounted on a shaft journaled in a rocking bearing, which is pivoted to an upright or 25 standard and adapted to be forced out to throw the friction-wheel in contact with a constantly-rotating driving-pulley fastened to a counter-shaft, the friction-pulley being caused to bear against the driving-pulley by the action of the treadle under the control of the operator, so that the motor can be thrown into and out of action at will by simply relieving or applying pressure to the treadle, the said friction-wheel retiring from contact with the 30 driven pulley when the operator releases the treadle, and returning to its normal position in contact with the driving-pulley through the action of a spring connected with the rocking bearing.

40 The primary object of my invention is to provide an improved driving-gear of the class specified, in which the spring is connected at one end with the treadle of the motor to draw the same and the rocking bearing toward each other when pressure is released from the 45 treadle, and thereby simplify and cheapen the cost of the motor.

In the accompanying drawings, which illustrate a frictional driving-gear for sewing and 50 other like machines embodying my present improvements, Figure 1 is a side elevation

showing the friction-wheel in contact with the driving-pulley. Fig. 2 is a top plan view thereof. Fig. 3 is an end elevation. Figs. 4 and 5 are detached perspective views of the 55 rocking bearing and treadle.

Referring to the drawings, in which like letters of reference indicate corresponding parts in all the figures, A designates a vertical standard or post, which is cast or formed integral 60 with a bed-plate, *a*, having suitable transverse openings, through which are passed screws or bolts to rigidly and immovably secure the standard in place. This standard is formed with a laterally-projecting lug, *a'*, near its upper end, and to this lug is pivoted a rocking bearing, B, said bearing being formed or cast in a single piece. This bearing is pivoted at an intermediate point of its length on a suitable pin or bolt, *b*, and the lower end of the 65 bearing is extended a considerable distance below its pivot. At the lower extremity of this bearing an arm is formed by extending the bearing, and the arm is provided on its outer face with a fixed pin, C, formed integral therewith, which is adapted to fit in a slot, *d*, 70 formed in a vertical or inclined arm, *d'*, fixed on the inner end of the treadle D. The treadle is arranged in substantially a horizontal position near the lower end of the standard, and the slotted arm is cast on the inner end of the treadle, and an enlarged foot-piece, *d''*, is formed on the outer end of the treadle, 80 on which the foot of the operator is adapted to press. The lever is pivoted at or near its inner end on a pin or bolt, *e*, which is fixed or secured in a standard. The upper end of the rocking bearing is bifurcated, and thereby provides two diverging arms, E, in the upper end of which are formed the shells *f* for the journal-bearings F, the upper ends of the shells being opened and closed by removable caps *f'*, held or fixed in place by suitable devices—as, for instance, screws, as shown. A horizontal shaft, G, is journaled in the bearing F, and to 85 this shaft is rigidly affixed or secured a friction-wheel, H, that is arranged between the diverging arms of the rocking bearing, and has its periphery covered by a friction-band of any preferable material—such, for instance, as paper, leather, &c. This shaft G is provided at a suitable point outside of the arms of the rock- 90 95 100



ing bearing with a band pulley or pulleys, *g*, over which passes a belt or belts to run the sewing or other machine, and the friction-wheel of the shaft is adapted to come in contact with the periphery of a driving-pulley, *I*, mounted on a counter-shaft, *I'*, as shown.

*J* designates the coiled spring, which is connected at its lower end to the treadle at a point beyond the pivot thereof, and at its upper end to a fixed standard, as shown. The function of this spring is to normally elevate the outer end of the treadle, so that it is in a position for immediate operation at all times, and depress the inner end thereof, so that one of the sides of the slot in the arm will throw the rocking bearing rearwardly, and thus withdraw the friction-wheel from the driven pulley. It will thus be seen that the single spring performs two functions, and thereby dispenses with separate springs or separate weights for performing the results attained by the one spring, whereby the number of parts are reduced and the structure correspondingly simplified and cheapened. A segmental shoe, *P*, is rigidly affixed to the upper end of the standard and arranged so that its curved face will come in contact with the friction-wheel, to thereby retard and arrest the motion of the same when it is released from contact with the driving-pulley to normally elevate its free end, as and for the purpose described.

The operation of my invention is as follows: The outer end of the treadle is normally elevated by the spring, and the slotted arm thereof rides against the fixed pin to throw the rocking bearing rearwardly, and thereby hold the friction-wheel out of contact with the driving-pulley. To throw the friction-wheel into contact with the driving-pulley and thereby rotate the horizontal shaft and the belt-pulleys

thereon, the foot is applied to the lever to overcome the force of the spring and depress the lever, so that the slotted arm will ride against the pin of the rocking bearing and throw the upper end thereof forward, which forces the friction-wheel into contact with the driving-pulley.

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

1. In a frictional driving-gear for sewing-machines, the combination of a suitable standard, a rocking bearing pivoted to the standard and having an arm extended below the said pivot, a friction-wheel mounted on a suitable shaft, a treadle supported on a pivot and connected near its pivotal point to the arm of the bearing to move the latter, and a retracting-spring connected to the free end of the treadle to normally elevate the same and throw the rocking bearing rearwardly, as and for the purpose described.

2. In a frictional driving-gear for sewing-machines, the combination of a suitable standard, a rocking bearing pivoted to the standard at an intermediate point of its length and having the arm extended below its pivot and provided with the pin, a shaft journaled in the rocking bearing, a friction-wheel, a pivoted treadle carrying a slotted arm fixed thereto, in which the pin is fitted, and a spring connected to the treadle to normally elevate the free end and to throw the rocking bearing rearwardly, as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY EXLEY.

Witnesses:

ARTHUR J. CLAPP,  
CHARLES B. LOWELL.