

(No Model.)

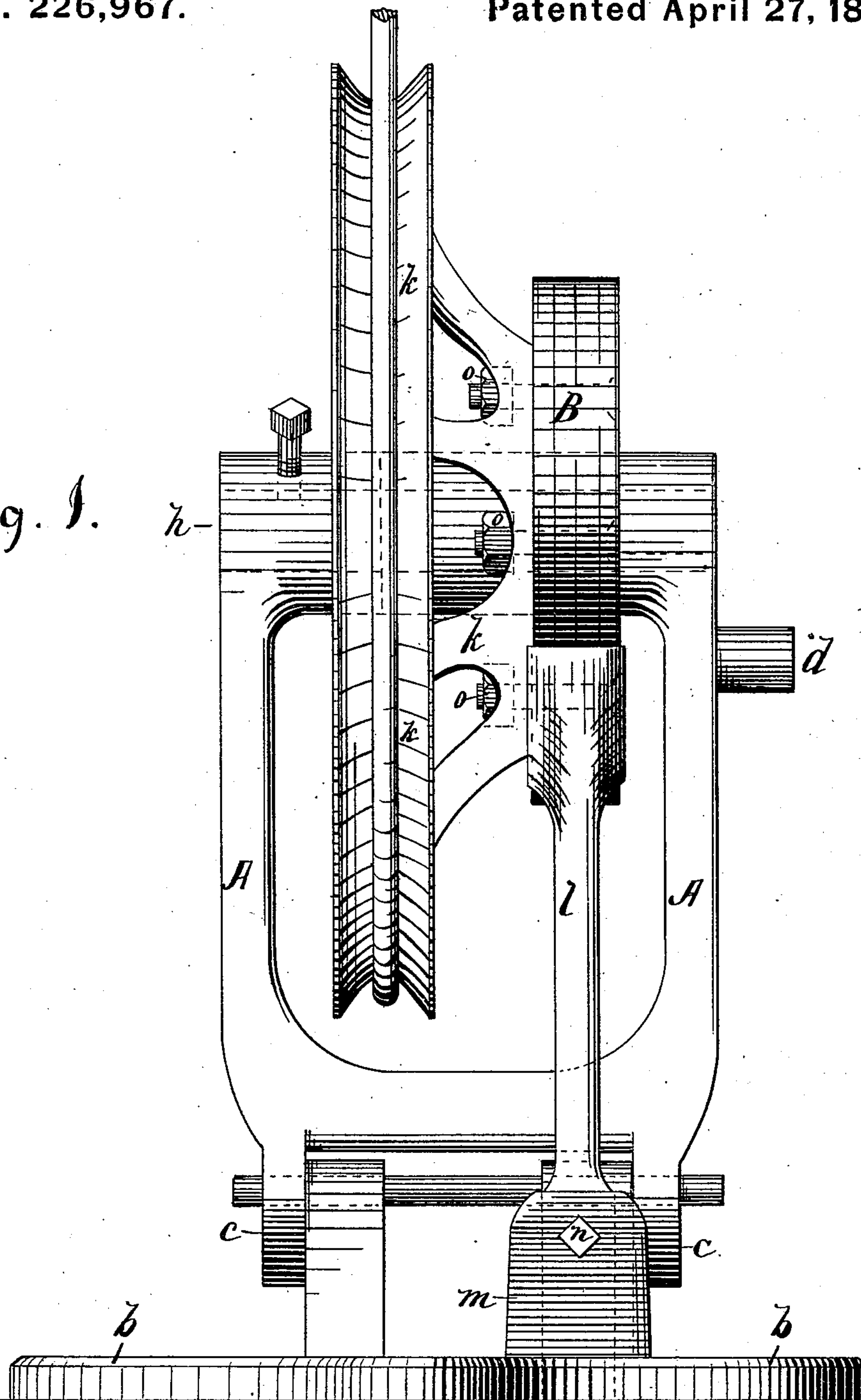
2 Sheets—Sheet 1.

W. BOWERS & W. H. HARRISON.  
Motor for Sewing-Machines and other Purposes.

No. 226,967.

Patented April 27, 1880.

fig. 1.



Witnesses:-  
Charles H. Bell  
Chas. Herr.

Inventors:-  
William Bowers,  
William H. Harrison,  
By Oliver Drake, Atty.

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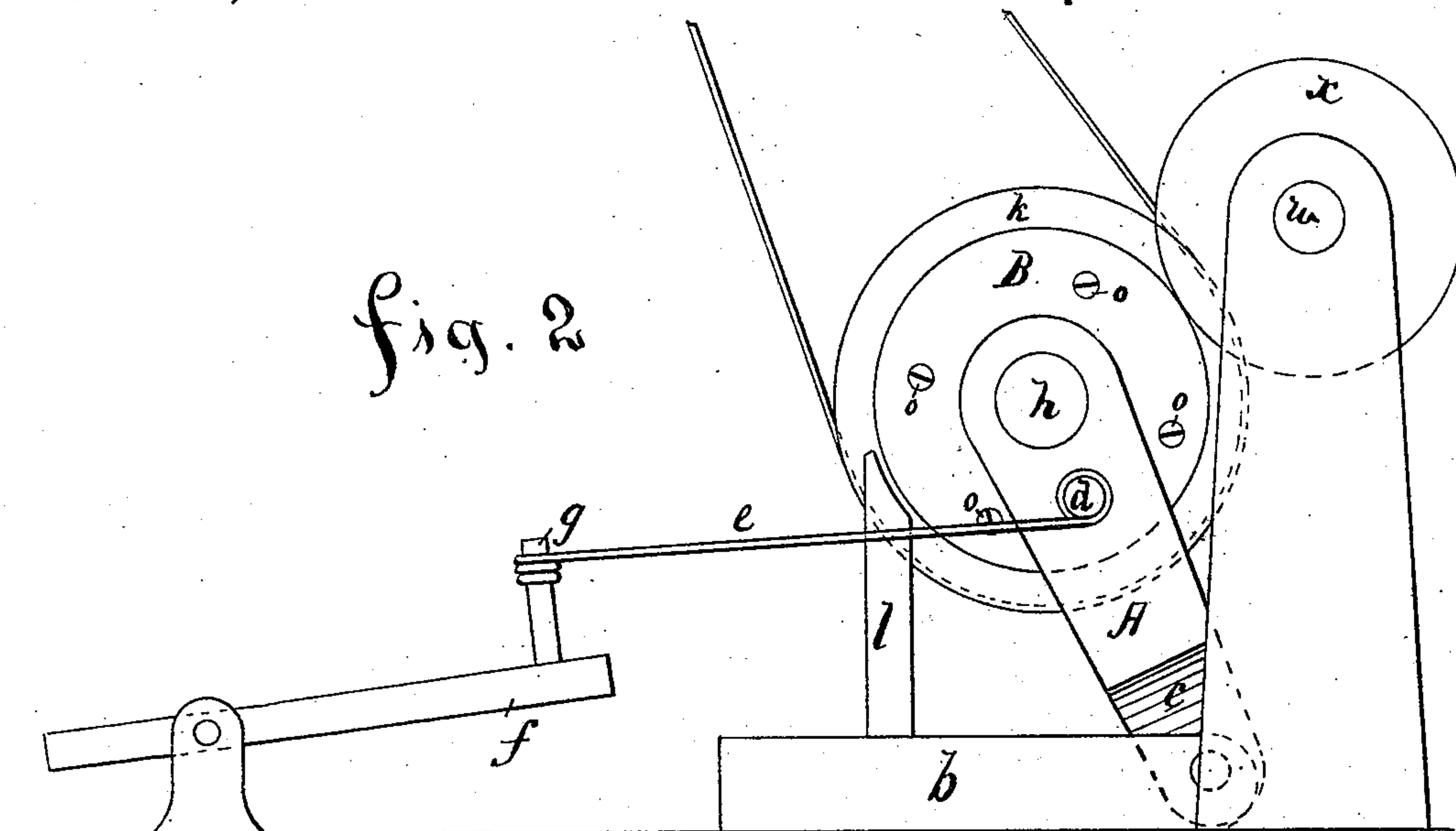
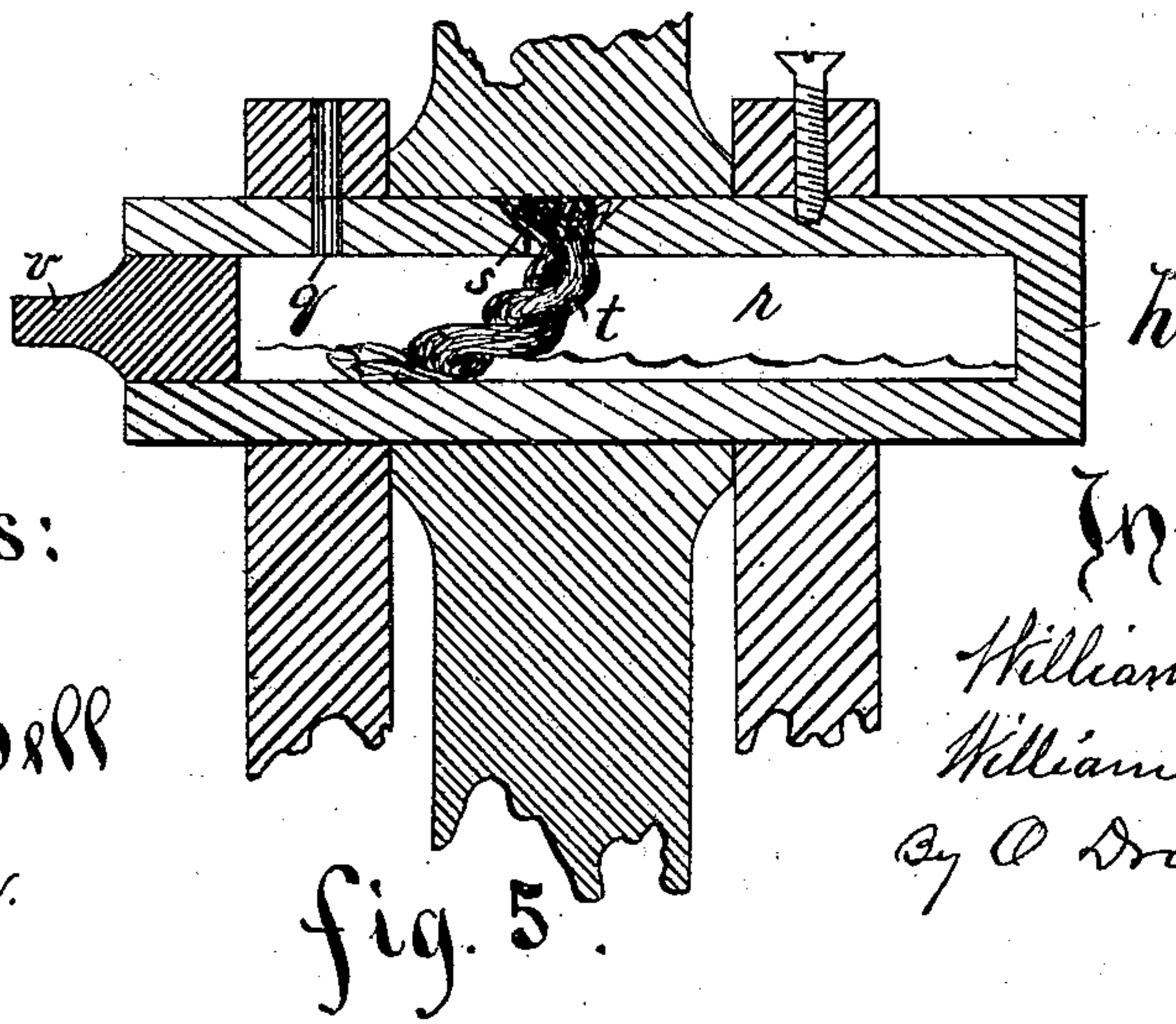
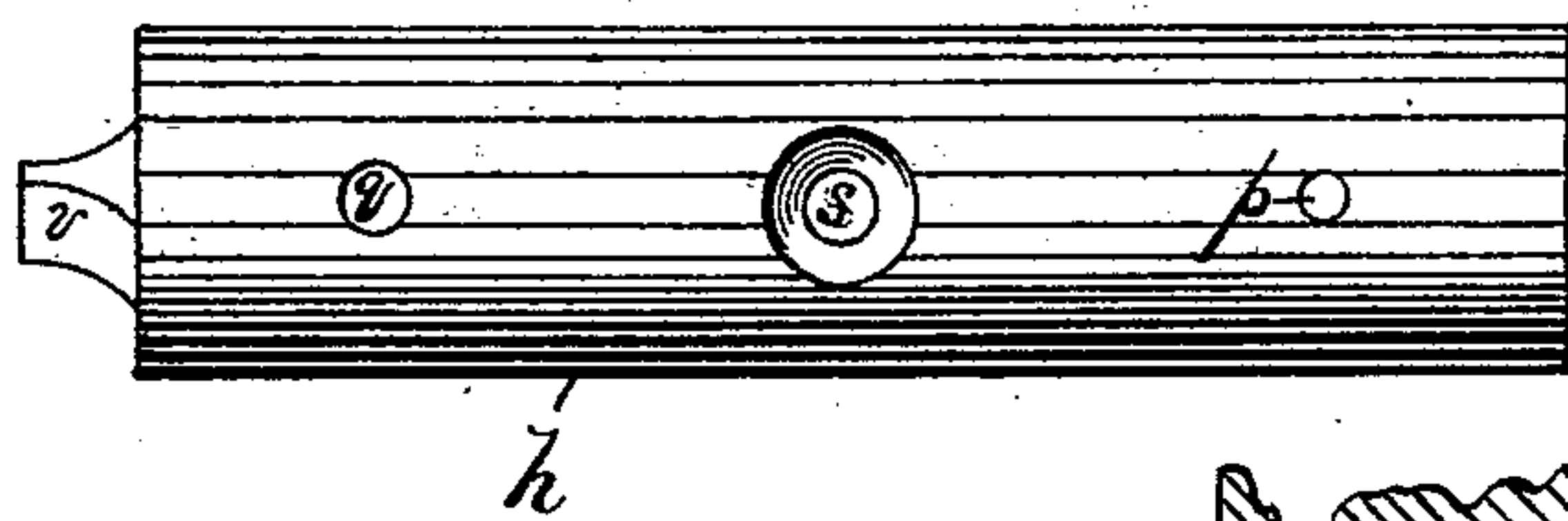


Fig. 3.



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# UNITED STATES PATENT OFFICE.

WILLIAM BOWERS AND WILLIAM H. HARRISON, OF NEWARK, NEW JERSEY; SAID HARRISON ASSIGNOR TO SAID BOWERS.

## MOTOR FOR SEWING-MACHINES AND OTHER PURPOSES.

SPECIFICATION forming part of Letters Patent No. 226,967, dated April 27, 1880.

Application filed March 20, 1880. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM BOWERS and WILLIAM H. HARRISON, both of the city of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Motors for Sewing-Machines and other purposes; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to simplify and thus reduce the cost of construction of sewing-machine motors; to render them capable of performing their functions more perfectly; to do away with the necessity of frequent oiling, and to remove the liability of soiling the fabric that is being fashioned by the operator with the oil used in lubricating the machine.

The invention consists, primarily, in a friction-motor journaled upon an inclined yoke pivoted to the floor or to an ear or ears projecting from a bed-plate which is fastened to said floor, said motor having a friction-pulley which is driven by the contact of its periphery with the periphery of the driving-pulley, which communicates the power thereto.

It also consists in a brake against which the friction-wheel automatically falls by force of gravitation when the power which holds said motor in contact with the driving-pulley is removed by the operator.

It consists, further, in the method and means by which the motor is forced, held, and released from contact with the driving-pulley, which comprises a pitman-rod attached at one end to a lug upon the yoke and by the other to a projecting arm upon a pedal pivoted upon the floor and operated by the foot.

It also consists in the method and means adopted for automatically oiling the motor—viz., by means of a wick or other absorbent material placed within a hollow or tubular shaft or arbor, said shaft or arbor having aper-

tures through which the oil which is absorbed by said wick is poured or replenished, and is also communicated to and lubricates the friction-wheel journal, all as will be hereinafter more fully set forth.

Referring to the accompanying drawings, which fully illustrate the nature of our invention, and in which similar letters of reference indicate like parts in each of the several figures of the same, Figure 1 is a front elevation, showing the motor proper working or running upon a shaft which passes through the arms of the yoke, showing also the manner of fastening said yoke to the floor and the brake against which the friction-wheel rests when the machine is not in operation. Fig. 2 is a side elevation, showing the general connection of the motor with the pedal, the pulley from which the motive power is received, and the connection with the machine to which the power is applied. Fig. 3 is a plan view of the hollow or tubular shaft or arbor; Fig. 4 an end view, and Fig. 5 a section of the same, more fully showing the manner of lubrication.

In carrying out our invention we construct the inclined yoke A, which is adapted to be pivoted to the floor or to a bed-plate, fastened thereon by the ear or ears *c*. The said yoke has cast or otherwise fastened upon one of its sides the lug *d*, to receive the pitman-rod *e*, which connects it to the arm *g* upon the pedal *f*. The arms of the yoke also form bearings for the shaft or arbor *h*, upon which the friction-wheel B and the accompanying band-wheel *k*, to which it is secured, revolve.

The brake *l* is held in position in a socket, *m*, Fig. 1, which is constructed upon the bed-plate *b*, and which allows the brake to be raised or lowered, as may be required, said brake being firmly held in the desired position by the set-screw *n*, Fig. 1.

The friction-wheel B may be composed of any suitable material. We prefer, however, to construct it of solid leather or of several layers of leather in the manner indicated in Fig. 1. This friction-wheel B is joined to the band-wheel *k* by screw-bolts and nuts *o*, or in any other convenient manner.



The hollow arbor or shaft *h*, upon which the friction-wheel and its accompanying band-wheel revolve, is held stationary in the yoke A by a set-screw, or in any other appropriate manner. The said hollow shaft *h* is perforated at *q*, for the introduction of oil into the chamber *r*, and also at *s*, for the insertion of wick, by means of which, through the same, the oil is supplied by capillary attraction to the friction and band wheels above mentioned. One end of the arbor or shaft *h* is left open to receive the stopper *v*, which is adapted to be removed when it becomes necessary to change the wick or to cleanse the chamber *r* of the shaft *h*, all as indicated in Figs. 3, 4, and 5.

In operating our invention, the shafting *w*, which carries the pulleys *x*, Fig. 2, being in motion, the operator applies her foot to the pedal *f*, which, by means of the pedal-arm *g*, the rod *e*, and the yoke-lug *d*, forces the friction-wheel B, which until then has been resting upon the brake *l*, into contact with the pulley *x*, from which it instantly receives motion, which, in turn, communicates it to the band-wheel, and thus sets the sewing or other machine to which it may be applied in operation. When the operator desires to stop the action of the machine she merely removes her foot from the pedal, when the weight of the friction-wheel and its attachments causes it to fall again upon the brake, thereby causing the revolutions of the said wheel to cease, and thus avoiding the use of springs, which have heretofore been employed.

As will be apparent upon examination of Fig. 2, the distance between the brake *l* and the friction-wheel B, when the motor is in operation, or between the friction-wheel B and the pulley *x*, when it is at rest, is very small, requiring but a slight pressure of the foot to set the machine instantaneously in motion, and causing the machine immediately to stop when the pressure is removed.

The speed at which the sewing-machine is run can be regulated by the amount of pressure applied to the pedal by the foot of the operator, a slight pressure of the friction-wheel B upon the pulley *x* allowing some of the motion to be lost, while a heavy pressure causes all the motion of said pulley *x* to be communicated to the motor, as will be readily understood.

In using the automatic oiling apparatus it is only necessary to pour a quantity of oil into the chamber *r*, which will be taken up by the wick *t*, through which it is in sufficient quantities supplied to the wheels, thus not only avoiding the necessity of frequent oiling, but saving the oil by preventing the usual waste, and also preventing the liability of said oil soiling the garments or fabrics in course of manufacture.

The yoke above referred to, although shown in an inclined position, may nevertheless be pivoted to the floor in a vertical position, and

be forced out of contact with the driving-pulley by a spring properly adjusted for the purpose.

Having thus described our invention, what we claim, and wish to have secured by Letters Patent, is—

1. In friction-motors for sewing-machines, the combination, with the driving-wheel of a sewing-machine and the driving-pulley from which the power is received, of a yoke or frame pivoted to the floor, a shaft supported thereby, the band and friction wheels revolving on said shaft and driven by the contact of the peripheries of said friction-wheel and driving-pulley, arranged and operating substantially as and for the purposes set forth.

2. The combination, with the driving-wheel of a sewing-machine and the driving-pulley which communicates the power, of an inclined yoke or frame pivoted to the floor, a shaft supported thereby, a band and friction wheel revolving on said shaft and driven by the contact of the peripheries of said friction-wheel and driving-pulley, said friction-wheel being capable of automatic disengagement from contact with said driving-pulley by means arranged and operating as and for the purpose set forth.

3. In a friction-motor for a sewing-machine, the combination, with the driving-wheel of a sewing-machine and the driving-pulley which communicates the power, of a yoke or frame pivoted to the floor, a hollow shaft supported thereby capable of receiving and retaining oil therein for lubrication, and the band and friction wheels revolving on said shaft and driven by the contact of the peripheries of said friction-wheel and driving-pulley, arranged and operating as and for the purposes set forth.

4. The combination and arrangement of the friction-wheel B, carried by the inclined yoke A, pivoted to the floor, and the adjustable brake *l*, secured in the socket *m*, arranged and operating as and for the purpose set forth.

5. The combination of the yoke or frame carrying the band and friction pulleys and pivoted to the floor, and the driving-pulley which communicates motion to said friction pulley, of a rod connecting said yoke with a pedal operated by the foot, for forcing and holding said friction-pulley into contact with the periphery of the driving-pulley, as and for the purposes set forth.

6. The combination, with the yoke or frame A, pivoted to the floor, the band and friction wheels *k* B, carried by said yoke, and the driving-pulley *x*, of the pitman or connecting-rod *e* and the pedal *f*, arranged and operating as and for the purpose set forth.

7. The combination, with the yoke or frame A, pivoted to the floor and having the lug *d*, the band and friction wheels *k* B, carried by said yoke, and the driving-pulley *x*, of the

pitman or connecting-rod *e* and the pedal *f*, carrying the arm *g*, all being arranged and operating as and for the purposes set forth.

8. The combination, with the driving-pul-  
5 ley *x*, of the band-wheel *k* and the friction-wheel B, rigidly secured thereto, made entirely of leather and driven by the contact of its periphery with that of said driving-pulley, arranged and operating as and for the pur-  
10 poses set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 11th day of March, 1880.

WILLIAM BOWERS.  
WILLIAM H. HARRISON.

Witnesses:

OLIVER DRAKE,  
CHARLES H. PELL.