

(No Model.)

G. GILBERT.  
CUTTING MACHINE.

No. 271,835.

Patented Feb. 6, 1883.

FIG. 1.

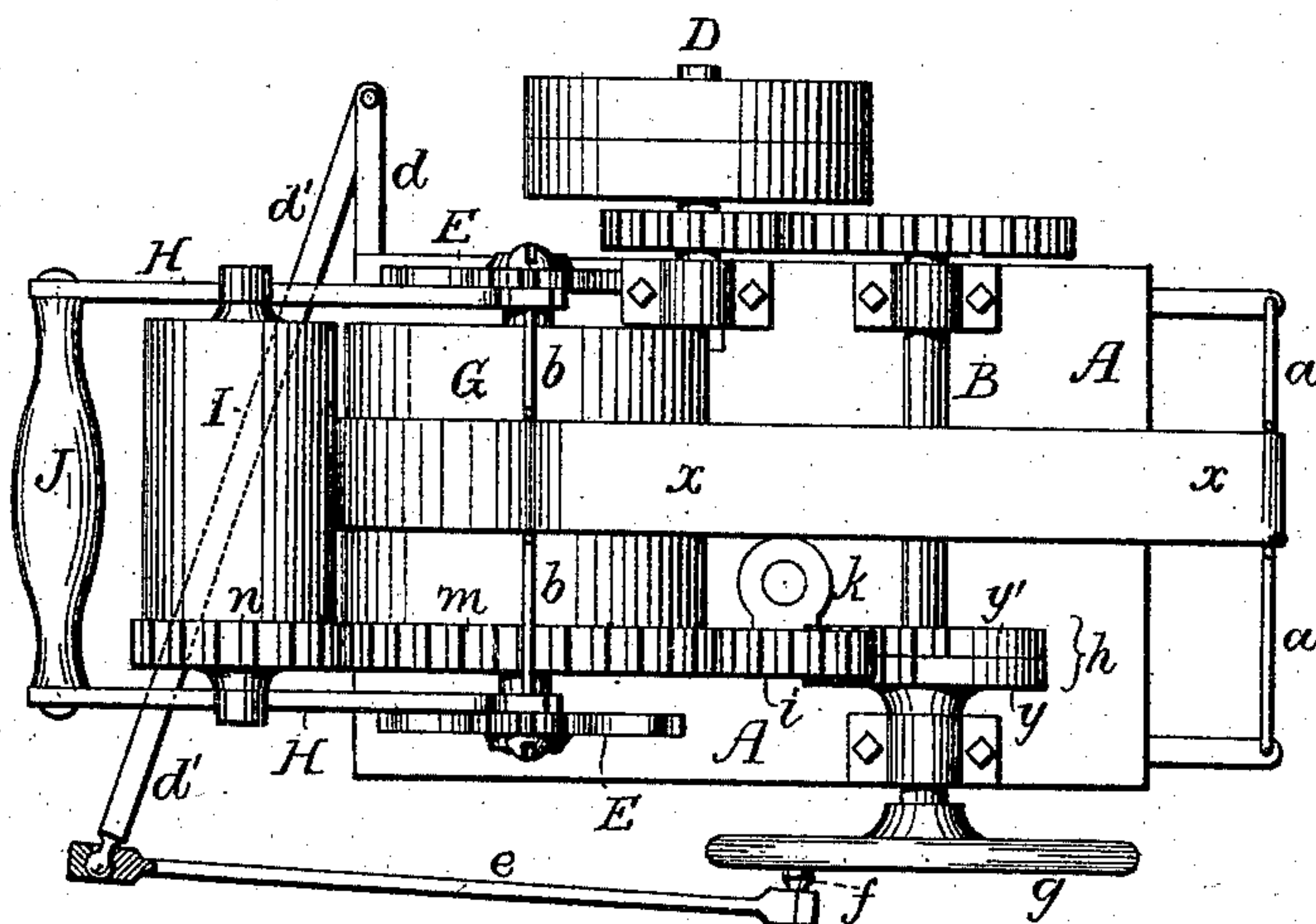


FIG. 2.

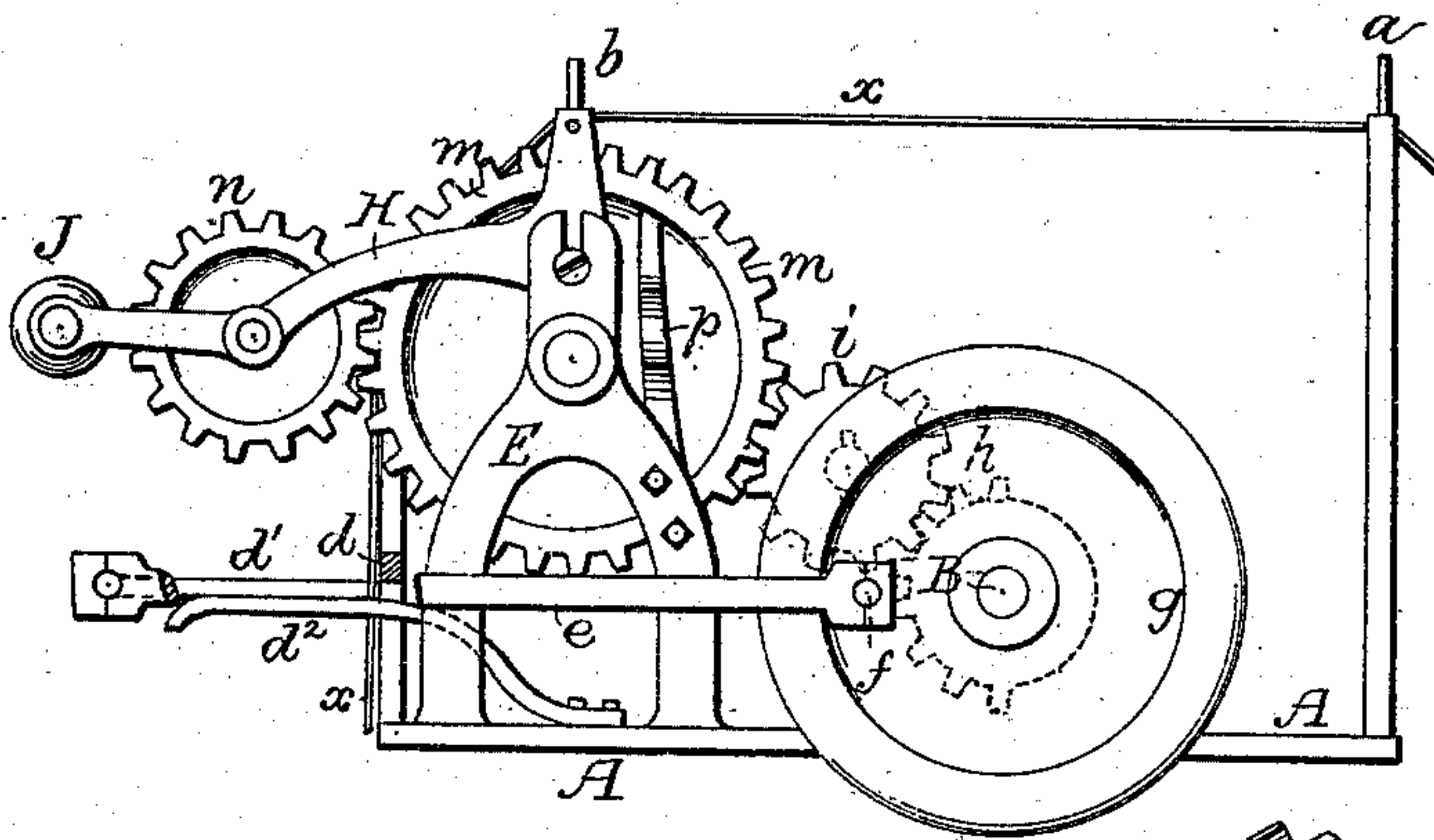


FIG. 4.

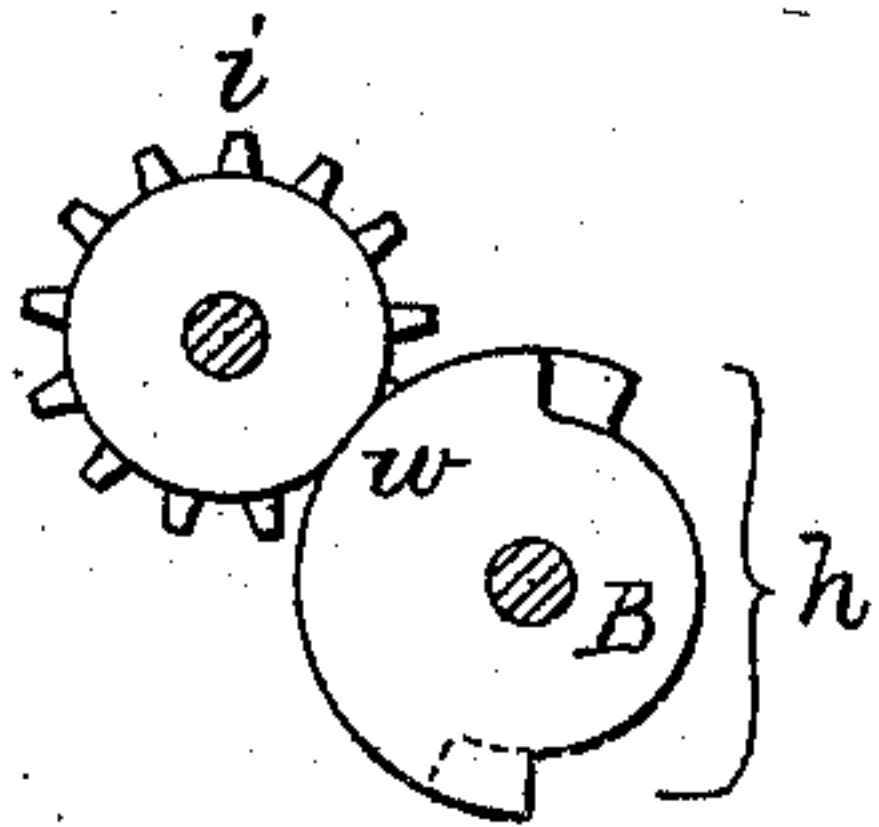
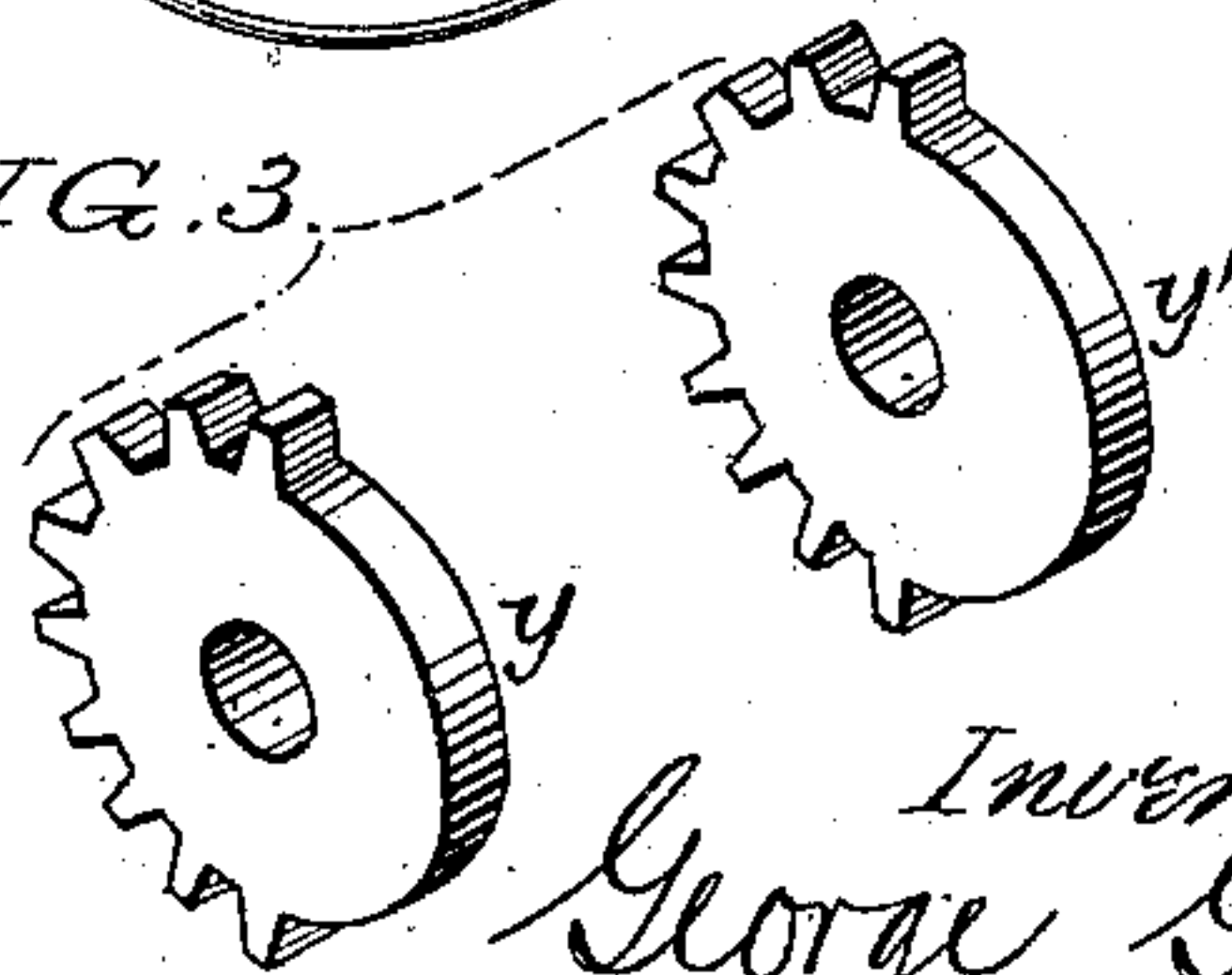


FIG. 3.



Witnesses:

Harry Drury  
Harry Smith

Inventor:

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By his Attorneys  
Howson & Son



# UNITED STATES PATENT OFFICE.

GEORGE GILBERT, OF PHILADELPHIA, PENNSYLVANIA.

## CUTTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 271,835, dated February 6, 1883.

Application filed December 14, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE GILBERT, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain  
5 Improvements in Cutting-Machines, of which the following is a specification.

The object of my invention is to construct a machine for rapidly cutting into any suitable  
10 lengths strips or tubes of textile fabric, paper, or like material, and this object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of my improved cutting-machine; Fig. 2, a side view of the same,  
15 partly in section; Fig. 3, a perspective view of part of the machine, and Fig. 4 a view of a modification of part of the machine.

A is a base or platform, having bearings for  
20 the main shaft B and driving-shaft D, the latter having a suitable fast pulley and loose pulley, and being geared to the shaft B by spurgearing; or the shaft B may itself form the driving-shaft.

To bearings in standards E on the base A is  
25 adapted the shaft or spindle of a roll, G, and to said standards E is hung a frame, H, carrying another roll, I, and provided with a handle, J. The rolls G and I form a pair of feed-  
30 rolls, the strip or tube *x* to be cut into lengths being drawn over suitable guiding-supports, *a* *b*, and being fed by the rolls to a pair of shears comprising two blades, *d* and *d'*, the blade *d* being fixed to the frame, and the blade *d'* being pivoted at one end and connected at the  
35 opposite end by means of a rod, *e*, to a crank-pin, *f*, on a wheel, *g*, secured to the end of the shaft B, the connection between the rod *e* and blade *d* and between said rod *e* and the pin *f*  
40 being by means of a ball-and-socket joint, owing to the fact that the outer end of said blade *d'* moves in the arc of a circle, thus necessitating more or less lateral play of the connecting-rod *e*.

On the shaft B is a mutilated pinion, *h*,  
45 which gears into a spur-wheel, *i*, carried by a stud on a post, *k*, the latter wheel engaging with a spur-wheel, *m*, on the spindle of the roll G, and said spur-wheel *m* gearing into a  
50 wheel, *n*, on the spindle of the roll I.

It will thus be seen that as the shaft B is rotated an intermittent rotating movement will

be imparted to the feed-rolls and a vibrating movement to the blade *d'* of the shears, the pinion *h* being so set in respect to the crank-  
55 pin *f* of the wheel *g* that the feeding of the strip to the shears is effected while the latter are open, the closing of the blades and the cutting of the strip taking place during the time that the feeding of the strip is interrupted. 60  
A spring, *d*<sup>2</sup>, serves to maintain the blade *d'* in contact with the blade *d*. By this means the cutting of the strip into lengths can be readily accomplished, all of the cut pieces being of precisely the same length, thus overcoming a se-  
65 rious objection to the usual method of cutting by hand.

The pinion *h* is made in two parts, *y* and *y'*, arranged side by side on the shaft B, each half of the pinion being partly toothed and partly  
70 plain, and both halves gearing into the spur-wheel *i*. The character of the pinion can thus be changed at pleasure by the adjustment of one of the halves of said pinion in respect to the other. For instance, supposing that each  
75 of the two parts of the pinion is furnished with twenty teeth which occupy one-half of its circumference, the remainder being plain, when the teeth of the two parts of the pinion coincide with each other the pinion will have but  
80 twenty teeth, but by advancing one half of the pinion in respect to the other half the number of teeth may be increased as desired, the extreme adjustment being reached when the  
85 halves are set opposite to each other, the pinion then having forty teeth, which will extend entirely around its periphery. This extremity of adjustment is never intended to be resorted to, however, as it would defeat the purpose for  
90 which the mutilated pinion is used.

When it is desired to stop the feeding of the strip *x* without stopping the machine, the frame  
H, carrying the roller I, is turned on its pivots so as to free said roller from contact with the  
95 strip, the feeding of which is therefore at once arrested.

To prevent the momentum of the roller G from carrying it forward in excess of its proper movement, I secure to one of the standards E a spring, *p*, which bears upon the wheel *m* and  
100 serves as a brake upon the movement of the same.

I have shown in the drawings a crank-wheel which rotates continuously, the blade *d'* of the



knife having an extended movement. In some cases, however, it may be advisable to impart an intermittent movement to the crank-wheel, which in this case can be hung to a stud and provided with a spur-wheel gearing into a second mutilated pinion on the shaft B, said second pinion being so set in respect to the one which works the feed-rolls that the latter and the shears will work alternately.

10 Instead of furnishing the mutilated pinion with teeth, said pinion may have a segmental friction-surface, *w*, as shown in Fig. 4, in place thereof, the said friction-surface working in contact with a drum on the spur-wheel *i*, and  
15 both friction-faces being clothed with rubber, leather, or like material to insure a proper bite.

The pinion with segmental friction-face I consider to be the equivalent of the toothed pinion, and it may be made duplex in the same  
20 manner and for the same purpose as that described in connection with said toothed pinion.

I claim as my invention—

1. The combination of the feed rolls G I, the

shear-blades *d d'*, the shaft B, with mutilated pinion *h*, the transmitting-gearing, the crank- 25 pin *f*, and the connecting-rod *e*, as specified.

2. The combination of the roll G, the shaft B, having a mutilated pinion, *h*, transmitting-gearing, and a friction-plate, *p*, whereby movement of the roll G in excess of the proper extent is prevented, as set forth. 30

3. The combination of the shaft B, the pivoted knife *d'*, the crank-pin *f*, the connecting-rod *e*, the feed-rolls, and the duplex pinion *h*, comprising two segments, *y y'*, adjustable cir- 35 cumferentially in respect to each other on the shaft B, and both gearing into a pinion of the feed mechanism, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two sub- 40 scribing witnesses.

GEORGE GILBERT.

Witnesses:

HARRY DRURY,  
HARRY SMITH.