

(No Model.)

2 Sheets—Sheet 1.

B. SANDMANN.
PAPER CUTTING MACHINE.

No. 337,286.

Patented Mar. 2, 1886.

fig. 2.

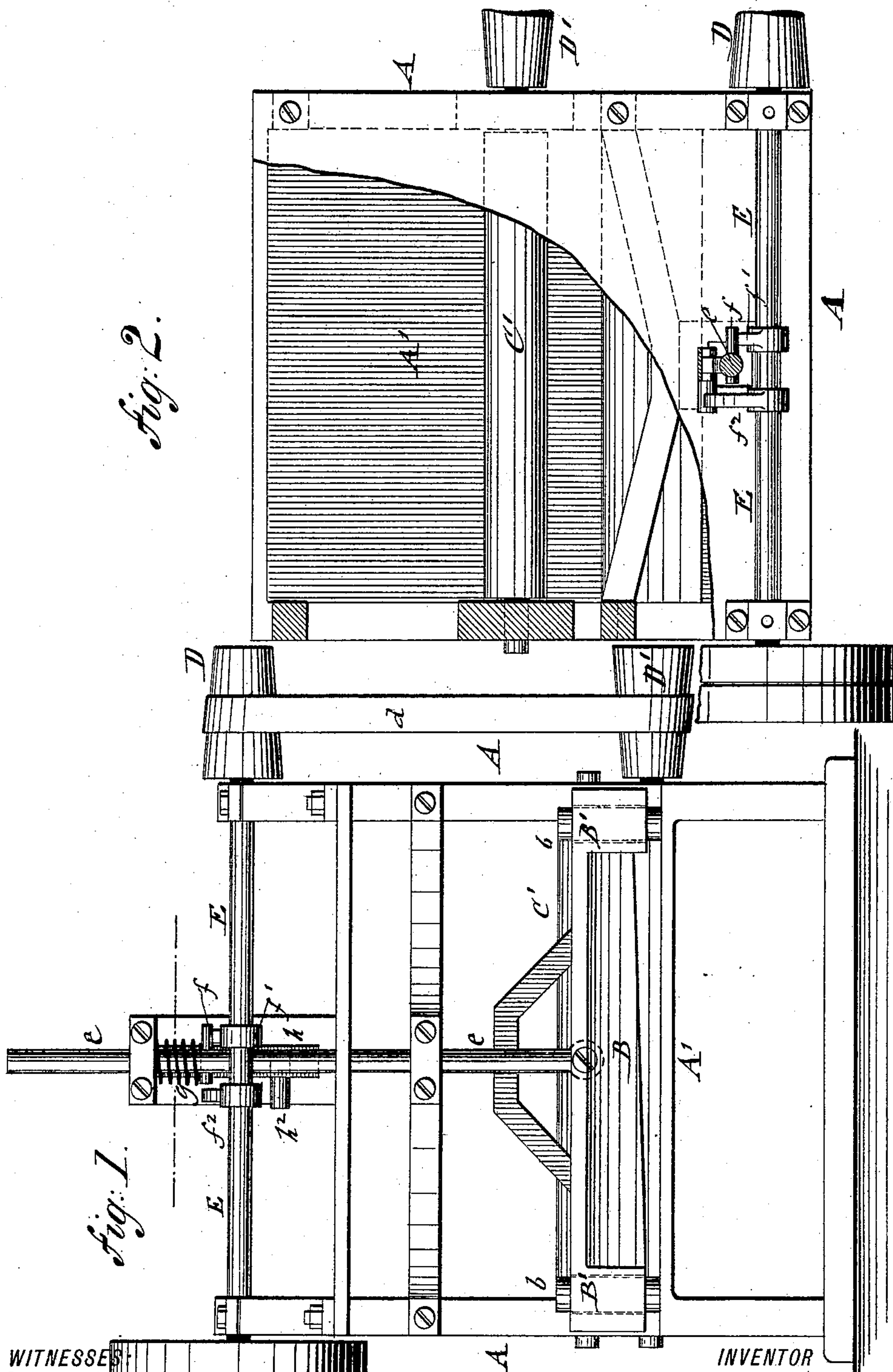


fig. 1.

WITNESSES:

A. Schehl.
Martin Petry.

INVENTOR

Bernhard Sandmann.
BY *Goepel & Raegen*
ATTORNEYS.

(No Model.)

B. SANDMANN.
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fig. 4.

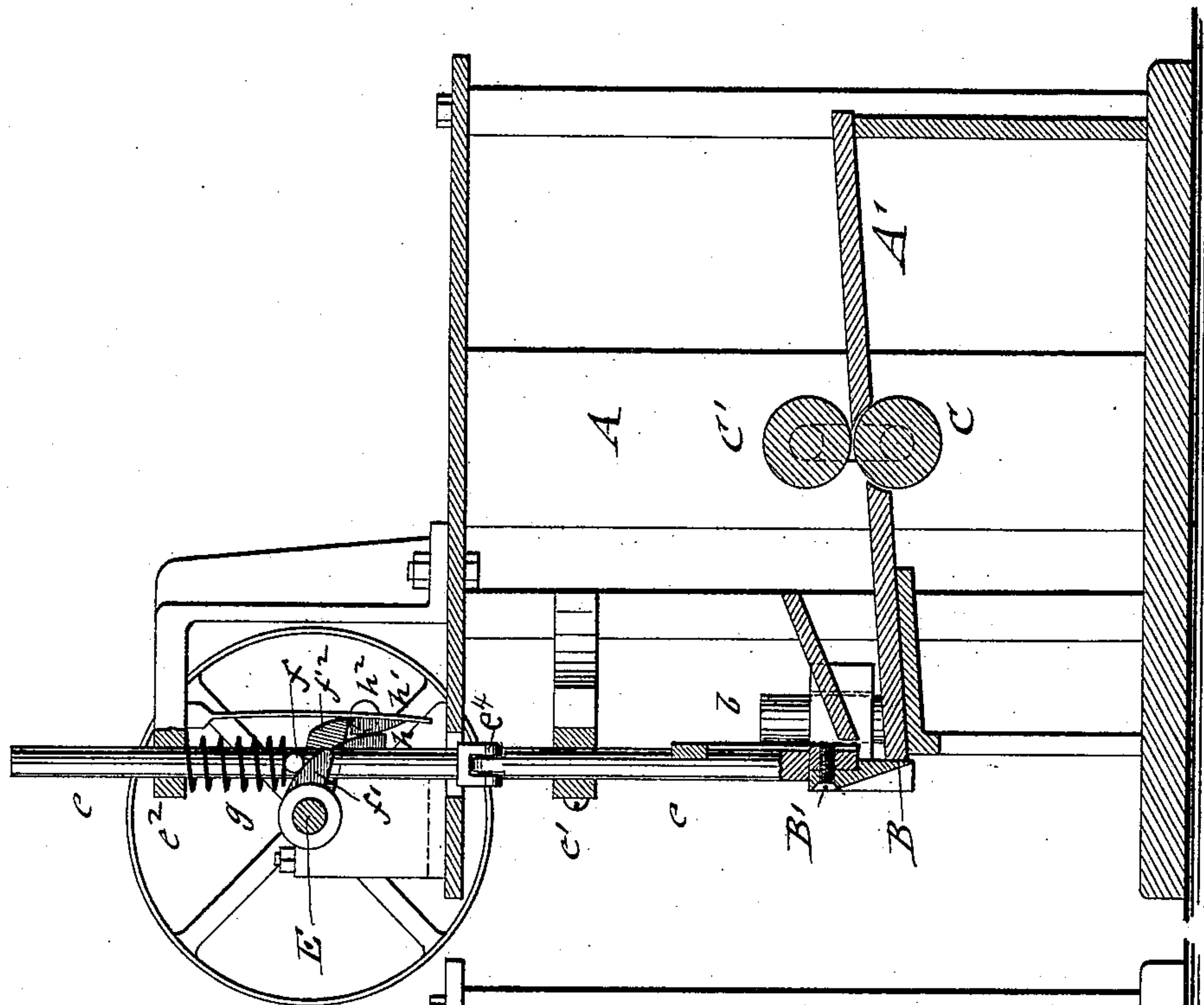


fig. 5.

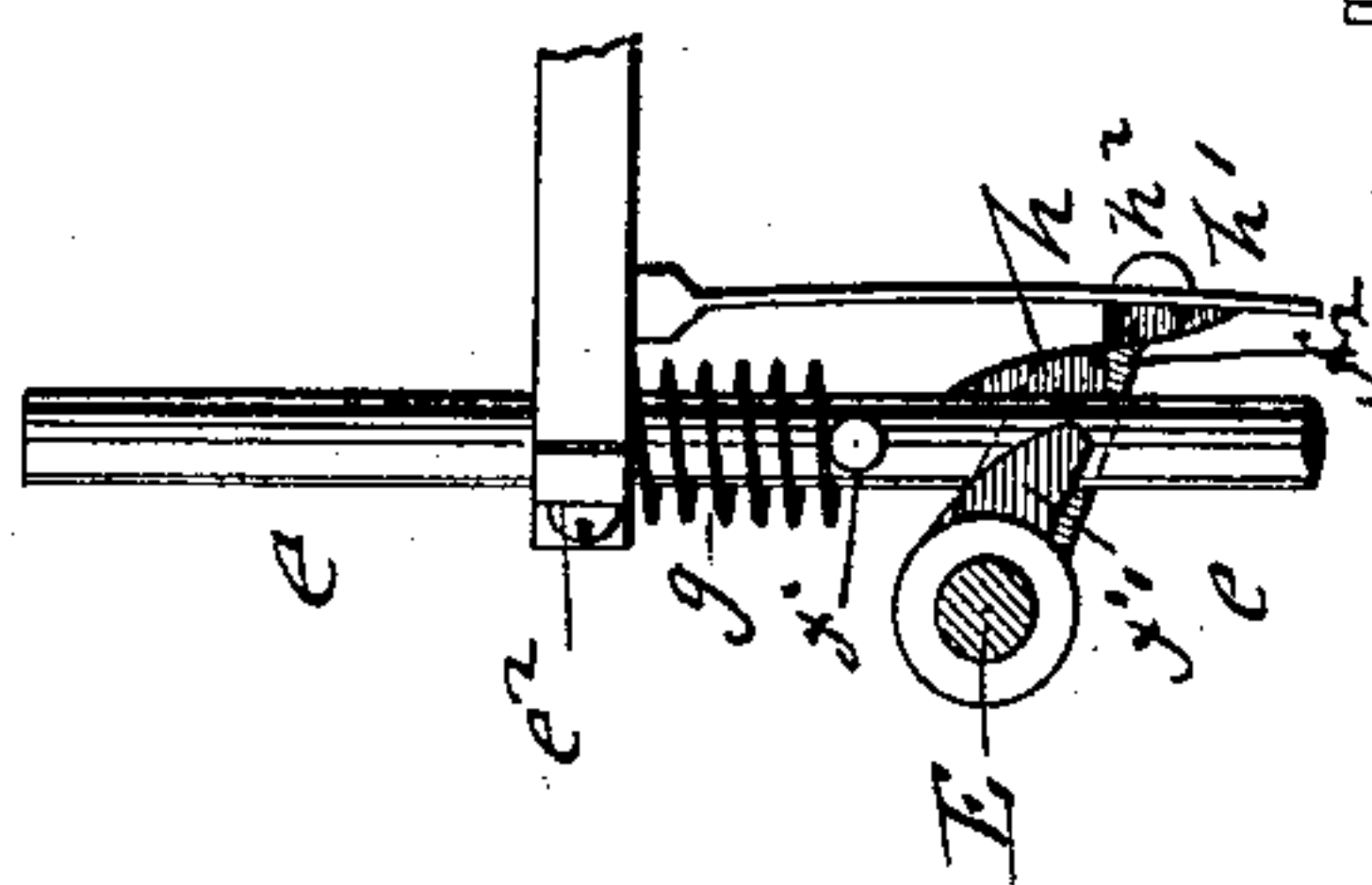
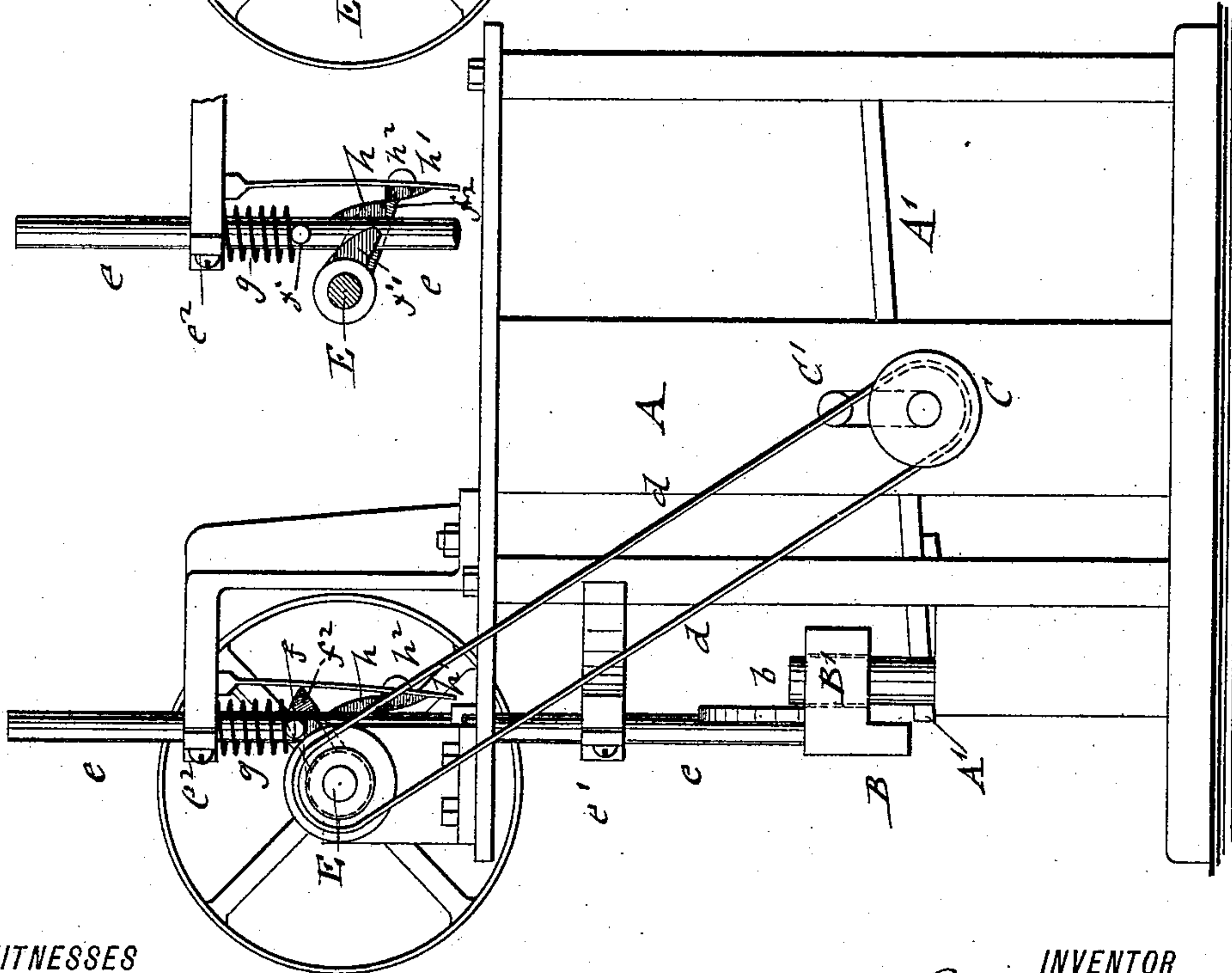


fig. 3.



WITNESSES

A. Schehl.
Martin Petry.

INVENTOR

Bernhard Sandmann.

By his Attorneys.

Georg & Raegen.

UNITED STATES PATENT OFFICE.

BERNHARD SANDMANN, OF BROOKLYN, NEW YORK.

PAPER-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 337,286, dated March 2, 1886.

Application filed June 30, 1885. Serial No. 170,250. (No model.)

To all whom it may concern:

Be it known that I, BERNHARD SANDMANN, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Paper-Cutting Machines, of which the following is a specification.

This invention relates to an improved machine for cutting paper in strips of different widths, to be used for checks, bonds, and similar purposes, the different widths of the strips being regulated by the variations of speed at which the paper is passed through the machine; and the invention consists of the combination of a fixed cutting-knife, a vertically-guided and intermittently-reciprocating cutting-knife, a feed-table, and feed-rollers adapted to be rotated at variable speed for feeding the paper to the cutting-knives. The vertical guide-rod of the reciprocating cutting-knife is acted upon by a strong spring, and intermittently lifted by a cam on the driving-shaft locked by a spring-catch, and released by a second cam on the driving-shaft, as will appear more fully hereinafter, and finally be pointed out in the claims.

In the accompanying drawings, Figure 1 represents a front elevation of my improved machine for cutting paper into strips. Fig. 2 is a plan of the same, partly in section. Fig. 3 is a side elevation, Fig. 4 a vertical longitudinal section, and Fig. 5 a detail side view, of the mechanism for intermittently locking and releasing the shank of the reciprocating cutting-knife.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents the supporting-frame of my improved machine for cutting paper into strips of different widths, suitable for checks, bonds, and other purposes. The paper is fed over an inclined feed-table, A', of the frame to the cutting-knife B, which is vertically reciprocated by suitable mechanism. The cutting-knife B is attached in a slightly-inclined position to a strong frame, B', which is guided by its perforated ends on fixed vertical guide-rods *b b* of the frame A. The inclined edge of the cutting-knife B passes over the front edge of the feed-table and cuts off the paper supported thereon. The paper is fed forward at variable speed by feed-rollers

C C', which are arranged, respectively, below and above a transverse opening of the inclined feed-table A', the speed of the rollers being regulated by means of a transmitting-belt, *d*, and cone-pulleys D D', applied, respectively, to a driving-shaft, E, supported in bearings at the upper part of the frame A, and the shaft of the lower feed-roller, C. The driving-shaft E is so timed that it will reciprocate the knife once during each revolution. When narrow strips have to be cut from the paper, the feed-rollers are slowly rotated, while when wider strips of paper are to be cut from the sheets the feed-rollers are rotated at greater speed. The change of speed of the rolls is due to a change of position of the belt on the cone-pulley D. The speed of the cone-pulley D is fixed, and any change of the belt thereon will change the speed of the feed-rolls C and C'. The cutting-knife B is actuated by the reciprocating rod *e*, which is pivoted at its lower end to the frame B' of said cutting-knife B. This actuating-rod is articulated, the upper end of the lower member being connected to the lower end of the upper member by means of a pivot, *e'*, and said rod is guided in fixed sleeves *e'* and *e''* of the supporting-frame A. The upper section of the actuating-rod *e* is provided with a laterally-projecting pin, *f*, that is engaged by a cam, *f'*, of the shaft E, so as to be lifted against the tension of a strong spiral spring, *g*, that is interposed between the upper guide-sleeve, *e''*, of the rod *e* and the pin *f*. When the cutting-knife B has been lifted to its full extent, a projecting nose, *h*, of the actuating-rod *e* is engaged by a spring-catch, *h'*, and held in this position until a second longer cam, *f''*, on the shaft E engages a lateral pin, *h''*, of the spring-catch *h'*, and releases the latter from the projecting nose *h* of the actuating-rod *e*, as shown clearly in Fig. 5. At the instant when the spring-catch releases the nose of the actuating-rod the spring *g* forces the cutting-knife B quickly in downward direction, so as to cut off a strip of paper. Immediately after the cutting off of the strip has been performed the knife B is retracted again by the cam *f'*, which engages the pin *f*, as shown in Fig. 4, and raises the rod *e* until its nose *h* is supported by the spring-catch *h'*. The cutting-knife B is by the lifting-cam

moved out of the way of the paper, so as not to interfere with the forward feeding of the same, and retained in raised position until the next cutting action is to take place. The lifting, releasing, and dropping of the cutting-knife takes place intermittently once at each rotation of the driving-shaft D, so as to cut off the paper fed forward by the feed-rollers in a regular and rapid manner. Large quantities of paper can thus be cut by the machine into strips of uniform size in a given time, the same being adapted for special work in which large quantities of paper in sheets or rolls have to be cut into strips of uniform or varying width.

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

1. The combination of a driving-shaft, a reciprocating cutting-knife, mechanism, substantially as described, for reciprocating said knife once for each rotation of the driving-shaft, a feed-table, feed-rolls disposed, respectively, above and below said feed-table, a cone-pulley on said driving-shaft, a cone-pulley on the shaft of one of the feed-rolls, and a shifting belt connecting said pulley for changing the relative speed of the feed-rolls and driving-shaft, substantially as described.

2. The combination of an actuating-rod, a vertically-guided spring-actuated cutting-knife, an actuating-rod connected to said knife, a driving-shaft, a cam attached to said shaft for intermittently lifting said rod, a spring-catch for locking said rod in its highest position, and a second cam on said shaft for intermittently releasing said knife, substantially as described.

3. The combination of a feed-table, feed-rolls, adjustable mechanism, substantially as described, for rotating the feed-rolls at different speeds, a vertically-guided and spring-actuated cutting-knife, a vertical shank pivoted to the cutting-knife and provided with a projecting pin and nose, a rotating shaft having a cam for lifting and a cam for releasing the shank of the cutting-knife, and a spring-catch that engages the nose on said shank and is released therefrom by said cam, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

BERNHARD SANDMANN.

Witnesses:

PAUL GOEPEL,
CARL KARP.