

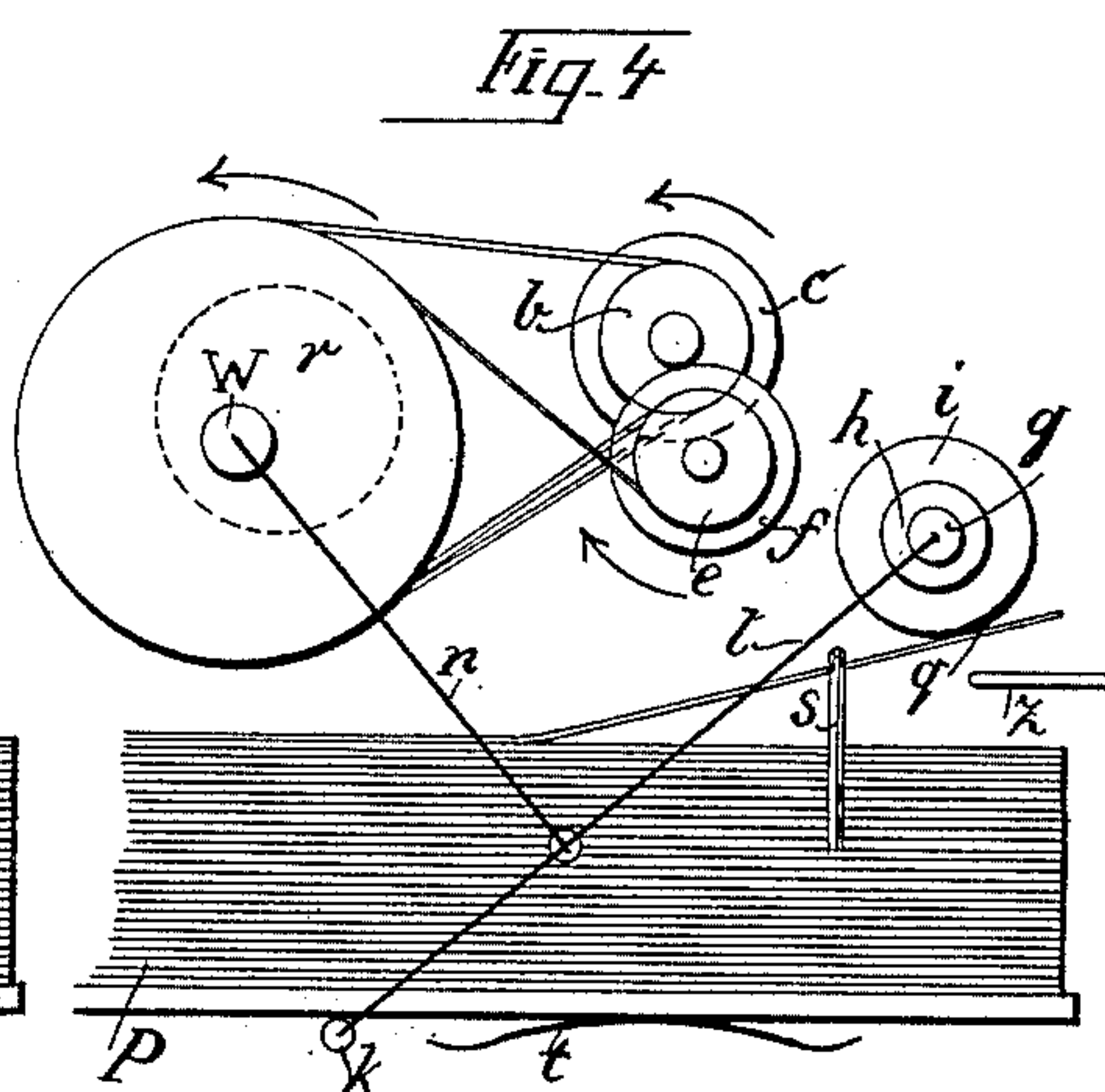
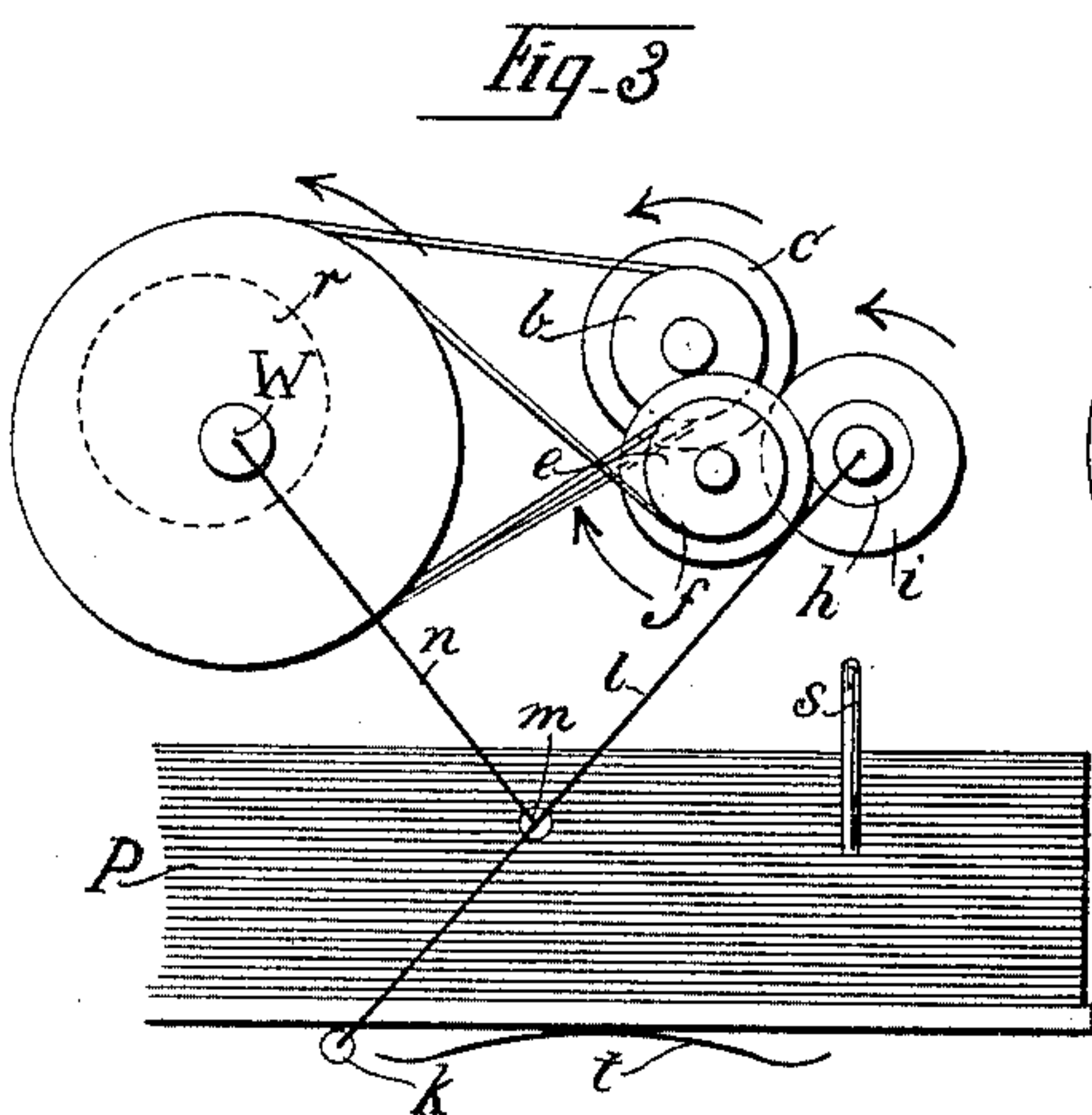
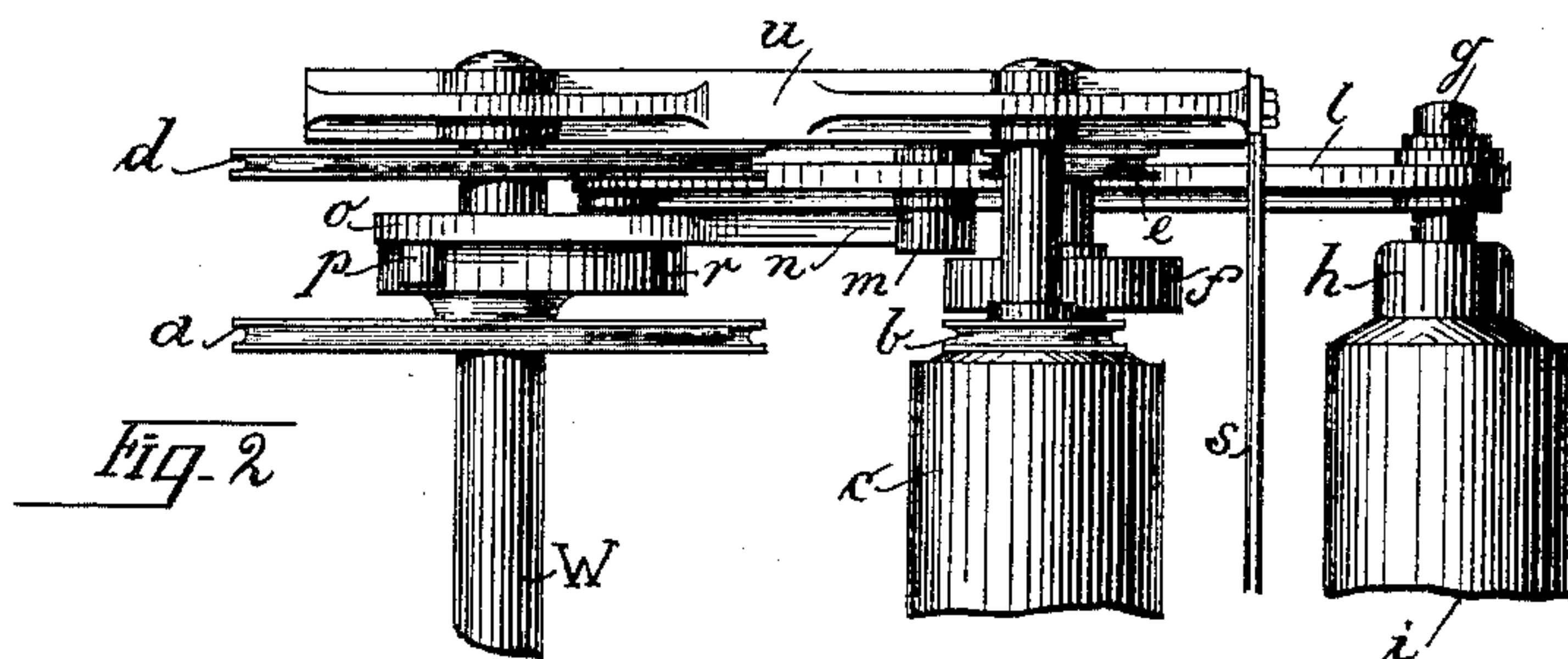
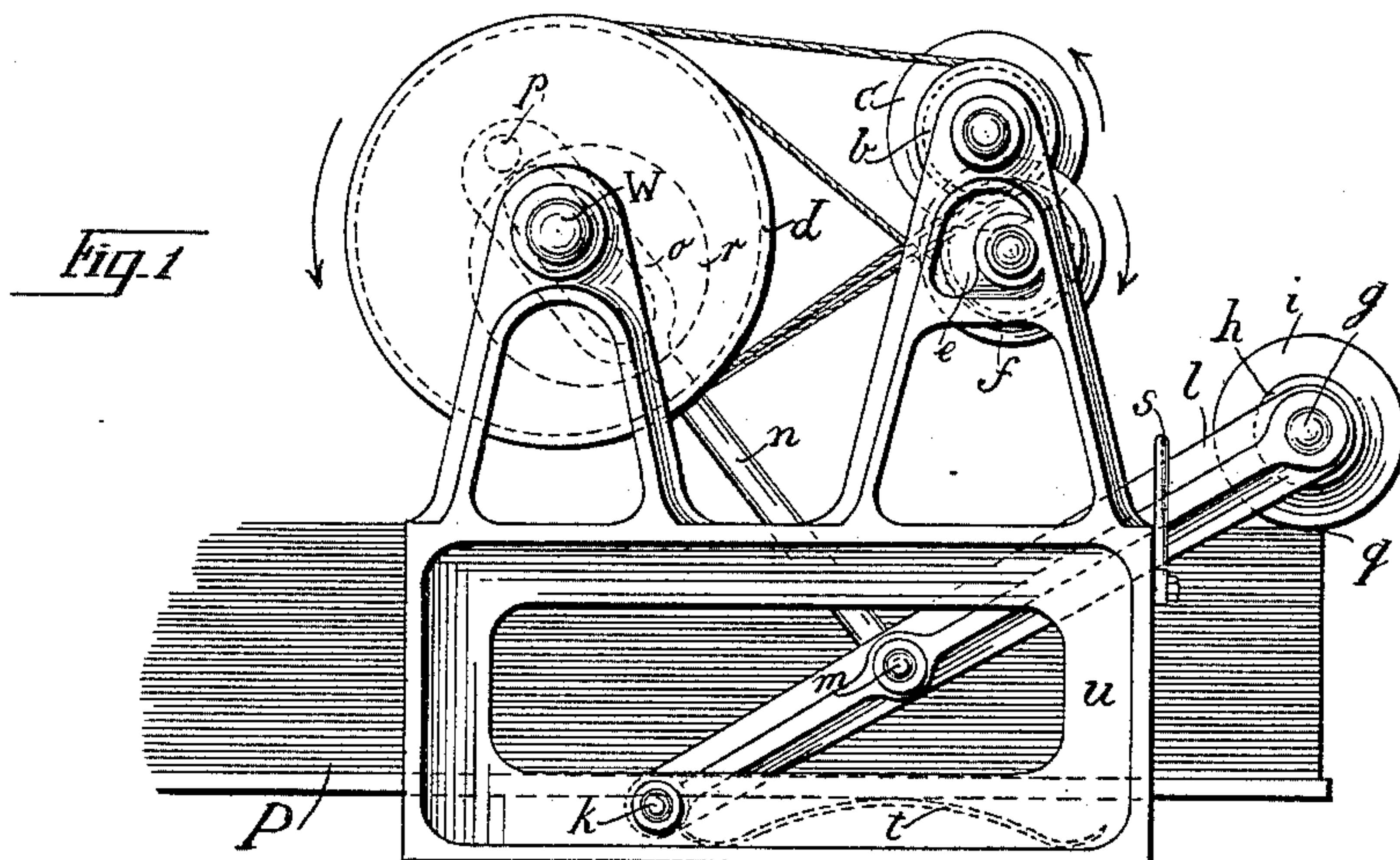
(No Model.)

A. WEIDENBUSCH.

MECHANISM FOR SEPARATING SHEETS OF MATERIAL.

No. 450,854.

Patented Apr. 21, 1891.



Attest
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UNITED STATES PATENT OFFICE.

ADOLF WEIDENBUSCH, OF DARMSTADT, GERMANY.

MECHANISM FOR SEPARATING SHEETS OF MATERIAL.

SPECIFICATION forming part of Letters Patent No. 450,854, dated April 21, 1891.

Application filed August 6, 1890. Serial No. 361,191. (No model.)

To all whom it may concern:

Be it known that I, ADOLF WEIDENBUSCH, merchant, of Darmstadt, in the Grand Duchy of Hesse and German Empire, have invented a new and useful Mechanism for Separating Sheets of Materials, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an apparatus for separately picking up through the agency of frictional or static electricity single sheets of thin and light material—such as paper, light fabrics, tin-foil, and the like—in such a manner that each single sheet thus removed may be subsequently taken up by hand or by machinery, in order to be fed further on. The apparatus is preferably used in combination with mechanism serving to lay down single sheets in printing-presses and in envelope-making, ruling, gumming, and other similar machines. This apparatus is illustrated in the accompanying drawings, in which—

Figure 1 is a side view thereof. Fig. 2 is a plan of the apparatus broken off, and Figs. 3 and 4 show various positions of the roller *i*.

u is the frame of the apparatus carrying the driving-shaft *w* and the movable parts, hereinafter more fully described. The roller *c*, which is covered with fur, is rotated at a high speed by the motor-shaft *W*, with the aid of the grooved wheels *a* and *b*. The grooved wheel *e* and the friction-disk *f*, tightly connected thereto, are rotated in a contrary direction to that of the roller *c* by the grooved wheel *d* of the motor-shaft *W* and by means of a cross cord or rope. The shaft *g*, upon which the friction-disk *h* and the roller *i* connected thereto are keyed, is carried by the arm *l*, rocking up and down upon the pin *k* of the frame *u*. The roller *i* is formed of a substance which is capable of being charged with electricity. This arm *l* is alternately raised from or lowered upon the paper by the draw-rod *n*, pivoting at *m*, and provided at its upper end with a fork *o* and a roller *p*, this motion being carried out by the eccentric *r*, mounted on the shaft *W*.

The apparatus operates in the following manner: As soon as the shaft *W* is set in motion the roller *i* is raised through the action of the eccentric *r* upon the draw-rod *n* and the arm *l*, while the friction-disk *h*, mounted upon

the shaft *g*, is pressed against the rotating friction-disk *f*, Fig. 3. In consequence whereof motion is likewise imparted to the friction-disk *h* and to the roller *i* connected therewith. The raising of the arm *l* causes the roller *i*, which, as before stated, is capable of receiving a charge of electricity, to be brought in close proximity to the roller *c* covered with fur in such a manner that, owing to the rollers *c* and *i* rotating in the same direction, (indicated in Fig. 3 by an arrow,) an intense amount of friction is developed between the said rollers, whereby the roller *i* is highly charged with electricity. This roller *i*, thus rendered electric, sinks subsequently by reason of the continued action of the eccentric *r* upon the draw-rod *n* and the arm *l* upon the heap or pile of paper sheets or of other material *P*, and attracts the uppermost sheet *q*, the next sheet being at the same time repulsed in accordance with the well-known action of frictional and static electricity. The uppermost sheet thus separated from the heap of paper sheets of light fabric, of tin-foil, or of other light material can then be easily fed forward. The roller *i* carries this uppermost sheet *q* with it in its upward stroke until the latter is removed therefrom as it strikes against the transverse rod *s*, fixed to the frame *u* in the way of the said sheet, which now falls upon a plate or other similar contrivance inserted in the meantime between the pile and the detached sheet, in order to be taken up and moved away to be subjected to further treatment.

In order to insure a constant contact between the roller *i* and the paper heap when the former assumes its lowered position and when the greatest number of the sheets have already been removed from the latter, a spring *t* is arranged below the paper heap and tends constantly to press the paper heap upward against the roller *i*. This spring is so regulated as to act gradually with more force as the weight of the paper heap resting thereon decreases in consequence of the removal of the sheets.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In combination, the sheet-holder, the roller *i*, capable of being charged with electricity, the roller *c*, with means, substantially

as described, for rotating it and generating electricity, and means, substantially as described, for moving the roller *i* from the sheets of material to the roller *c* and back, substantially as described.

5 2. In combination, the sheet-holder, the revolving roller *c* for generating electricity, and the roller *i*, with means, substantially as described, for oscillating it between the roller *c*

and the sheets of material, and the stop extending across the pile of material, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ADOLF WEIDENBUSCH.

Witnesses:

ALVESTO S. HOGUE,
JEAN GRUND.