

Sheet 1. 2 Sheets.

Paper Mach.

$N^{\circ} 6,337$

Patented Apr. 17, 1849.

Fig. 1

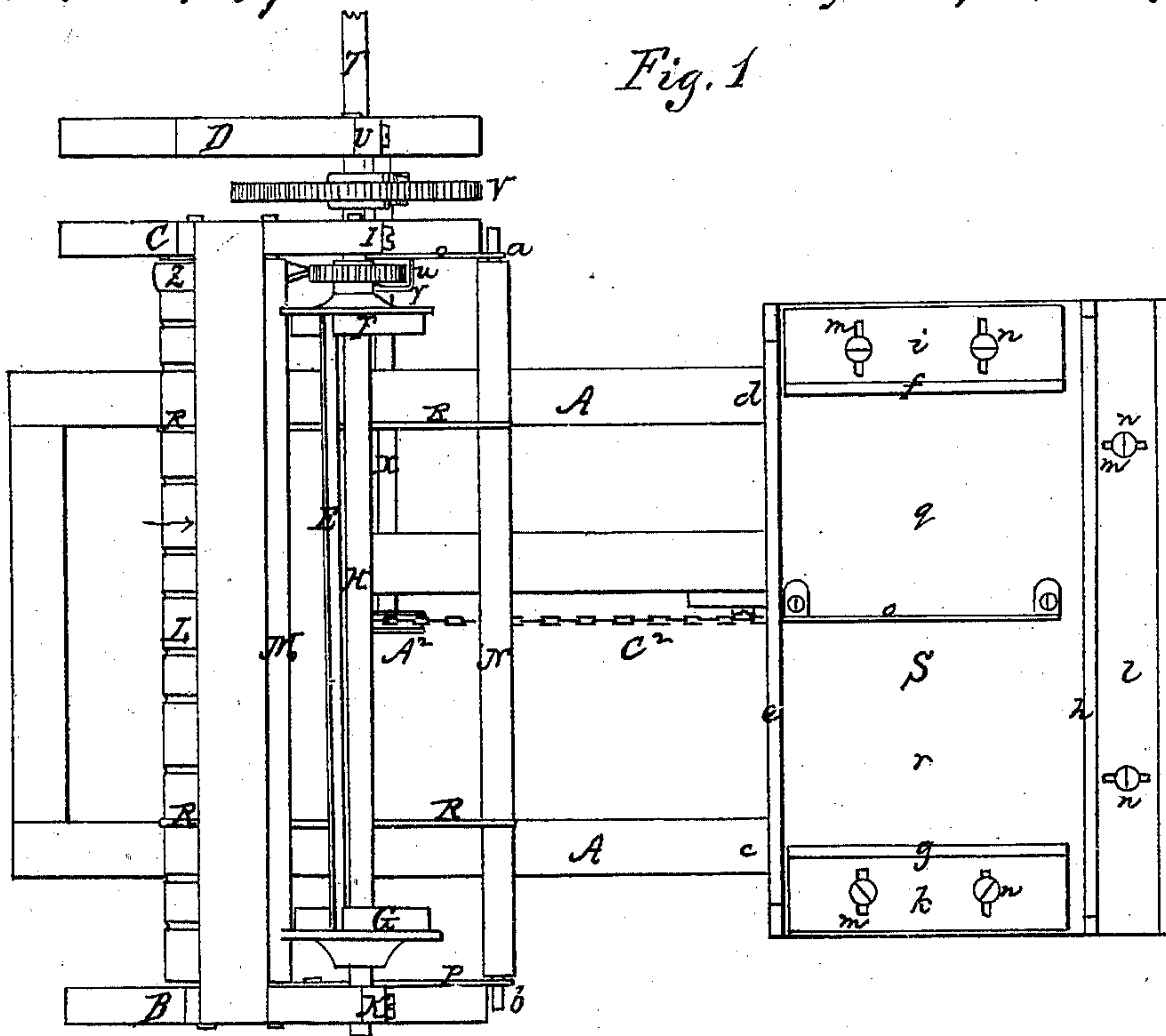
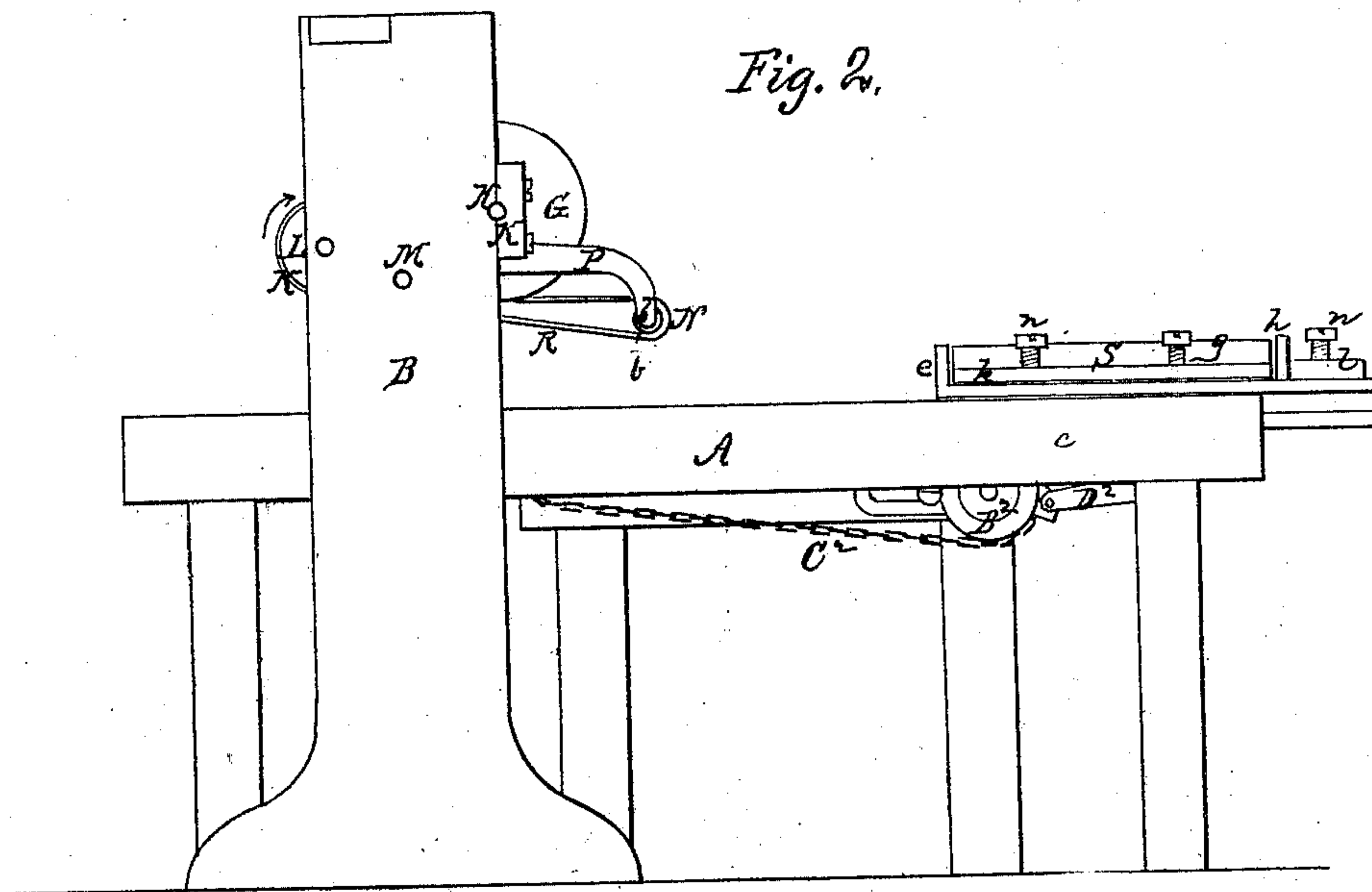


Fig. 2.



J. M. Hollingsworth. Sheet 2. 2 Sheets.

Paper Mach.

N^o 6,337.

Patented Apr. 17, 1849.

Fig. 3.

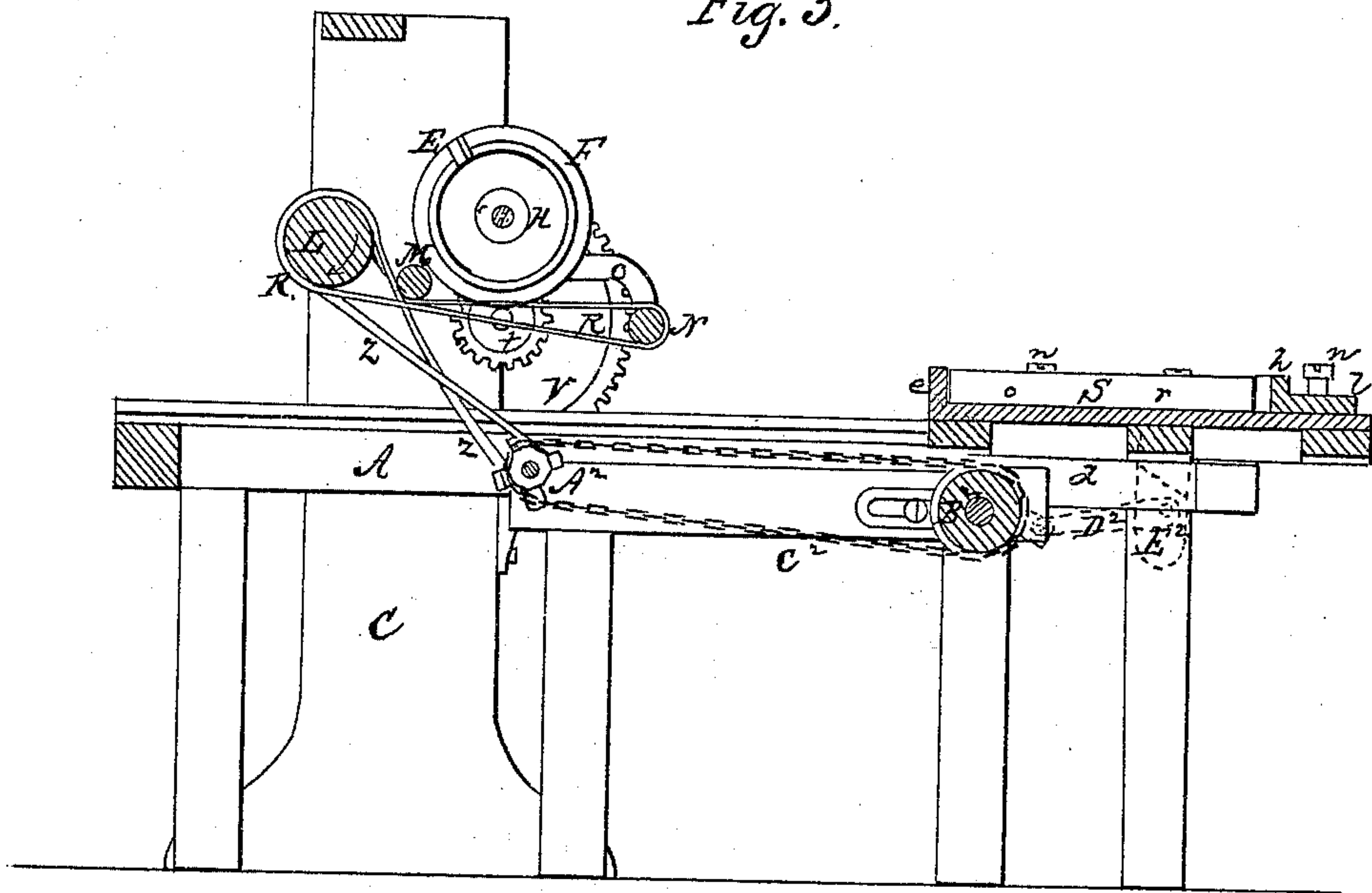
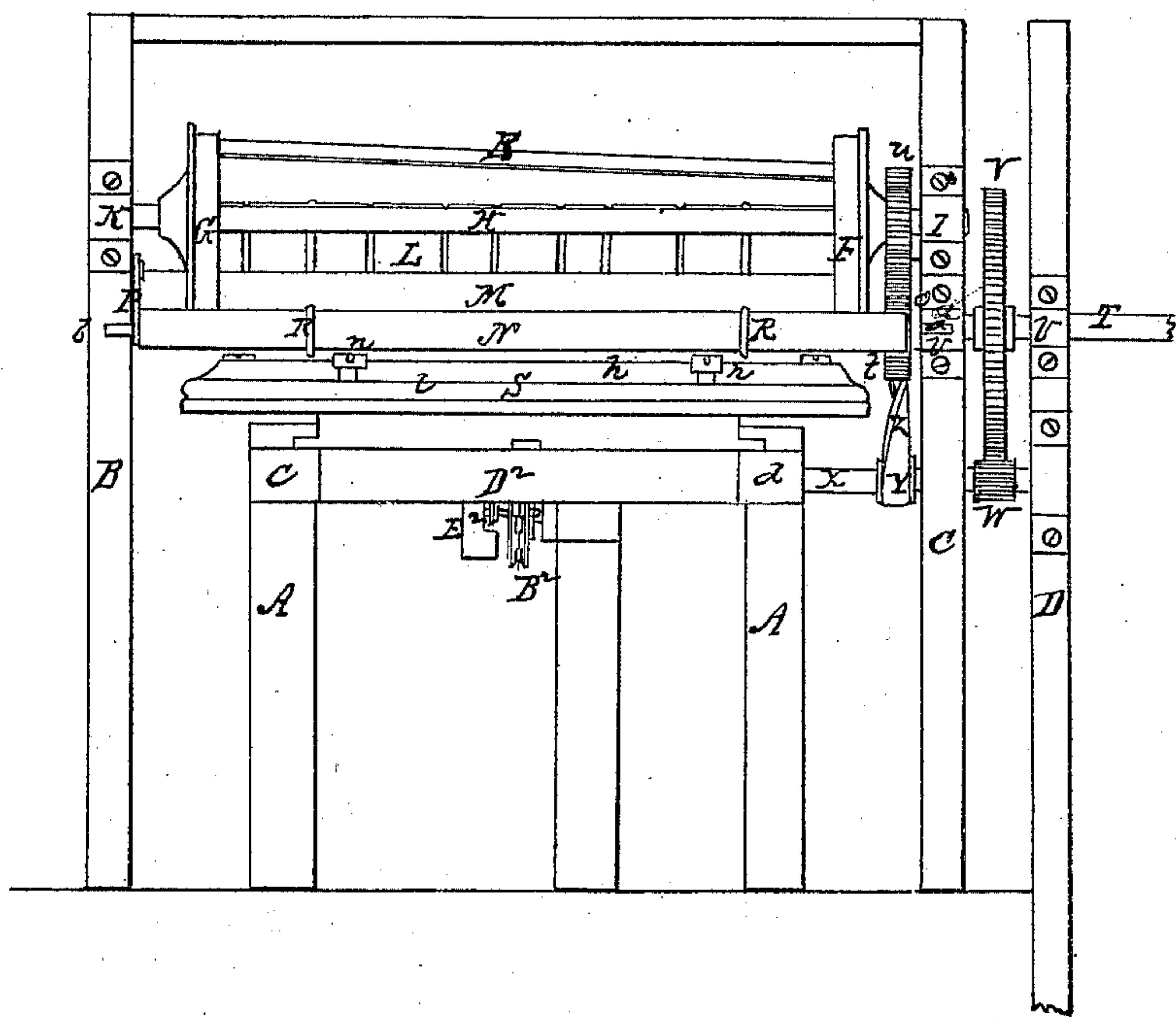


Fig. 4.



UNITED STATES PATENT OFFICE.

J. M. HOLLINGSWORTH, OF MILTON, MASSACHUSETTS, ASSIGNOR TO J. M. HOLLINGSWORTH AND L. HOLLINGSWORTH.

MACHINERY FOR TAKING AND LAYING PAPER FROM THE CUTTING-ENGINE.

Specification of Letters Patent No. 6,337, dated April 17, 1849.

To all whom it may concern:

Be it known that I, JOHN M. HOLLINGSWORTH, of Milton, in the county of Norfolk and State of Massachusetts, have invented a new and useful machine for receiving paper from a paper-making engine or other contrivance and piling or laying it in sheets one on the other, which machine I herein term an "automatic lay-boy;" and I do hereby declare that the said machine is fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of the said drawings Figure 1, represents a top view of the said machine. Fig. 2, a side elevation, Fig. 3, a central vertical and longitudinal section, and Fig. 4, an end elevation of the same.

In the said drawings A, represents a frame by which certain of the operative parts of the machine, are sustained in their respective positions.

B, C, D, denote three posts, or a part of the framework of a common engine or machine for making sheets of paper from pulp.

E, denotes the rotating knife of said paper engines, the said knife being made to act in connection with a fixed or stationary knife (not shown in the drawings) and in such manner as to separate the sheets of paper from the web of paper as fast as it is produced by and proceeds from the paper making engine. The said knife E, is secured at or near its two ends to two circular heads, F, G, or other suitable equivalents, affixed to a horizontal shaft H, the journals of said shaft being supported in suitable boxes I, K. The said rotary knife, and the said stationary knife, are devices well known, and in common use on ordinary paper making engines; the web of paper after being made by the engine, being caused to pass between the said two knives at a regular velocity, and to be cut up into sheets, by the action of the said knives. In rear of the said rotary knife and below it, and in a convenient position to receive between them the lower end of the sheet of paper, two rollers L, M, are arranged. The said rollers are placed with their axes parallel to one another, and to that of the shaft of the rotary cutting knife, as seen in the drawings. Somewhat in advance of and below the shaft of the rotary cutting knife is another roller

N, whose journals *a*, *b*, are supported by and revolve in bearings made in the outer ends or parts of two arms O, P, projected from the two posts B, C. Around the two rollers L, and N, and passing under the roller M a series of any suitable number of endless tapes or bands R, R, R, is made to operate; each of the said bands or tapes being made to pass about the rollers, as seen in the drawings.

When the rear roller L, is put in revolution in the direction denoted by the arrow in Fig. 3, it at the same time puts in motion the several endless tapes or bands, and as the web of paper which passes over the fixed knife, descends its lower edge is caught by or received between the endless tapes, and the roller M, which operating together draw the sheet of paper between them and remove it from the web, as soon as said sheet is separated from the web by the knife. The sheet next passes from the roller M, to the roller N, toward which it is carried on and by the several endless tapes, and from thence it drops or falls upon a table or platform S, which in due time is brought into a proper position to receive the sheet.

The said table S, or platform is arranged upon the horizontal ways *c*, *d*, of the frame A, and is so applied to the said ways and sustained by them as to be capable of being alternately moved backward and forward in a longitudinal direction that is in a direction first toward and next away from the series of endless tapes or bands. On the upper surface of said table are four ledges, rules, or strips of metal *e*, *f*, *g*, *h*, one of which *e*, is fixed firmly to the rear edge of the table, while each of the three others is attached at right angles to one of three plates *i*, *k*, *l*, provided with slots *m*, *m*, *m*, and set screws *n*, *n*, *n*, which pass down through the said slots, and screw into the table; the aforesaid contrivances being such as will enable a person at any time to regulate the distance of either of the two ledges *f*, *g*, or *e*, *h*, asunder. As the web of paper previous to being cut into sheets, is generally divided in the middle by another knife suitably placed, a fixed ledge *o*, may be placed on the table and between and parallel to the two ledges *f*, and *g*, as seen in the drawings, the two spaces *q*, *r*, between said ledge *o*, and the ledges surrounding it, con-

stituting two shallow boxes or receptacles to catch the paper when it is discharged from the endless tapes or bands above set forth.

Having thus specified the elements of my invention, I shall now proceed to describe the machinery by which they are caused to perform their respective duties, T, is a main driving shaft whose journals are supported by and revolve in boxes U, U, affixed to the posts C, D, as seen in the drawings; power to rotate said shaft being applied to it in any proper manner. On the inner end of said shaft is a small spur gear t , which engages with another spur gear u , fixed upon the rotary knife shaft; the said spur gear t , when revolved by its shaft, being made to communicate motion to the other spur gear, and in such manner as to revolve the shaft and rotary knife. The shaft T, has another and larger spur gear V, fixed upon it, so as to be rotated by and with it. The said gear V, engages with a small pinion W, fixed upon a horizontal shaft X, arranged as seen in the drawings, and made to revolve in suitable bearings. On said shaft X, is a pulley Y, around which and the main roller L, an endless belt or band Z, is stretched and made to operate, the said band serving to put in motion the system of rollers, and endless tapes.

On the inner end of the shaft X, is a small sprocket wheel A^2 , around which and a pulley B^2 , disposed with respect to it as seen in the drawings, an endless chain C^2 , works. To this endless chain a crank D^2 , is jointed, the said crank rod being also jointed to a projection E^2 , made to extend downward from the movable tables, before mentioned.

The revolution of the chain about the sprocket wheel, and pulley will impart to the tables, its proper alternate reciprocating rectilinear movement; and when the crank passes around either the sprocket wheel or pulley, a kind of a jogging motion, or such

a peculiar motion is produced, as serves to lay the sheet of paper received on the top of the piles, evenly with respect to the remainder of said pile.

At the time of the separation of the sheet of paper from the web, the system of tapes and rollers, should so act upon it, as to draw it somewhat tightly. The velocity of motion of the table S, should correspond with that of the tapes or endless bands, and the movements of the said table, should be so regulated as always to receive the several sheets at or over one given place.

I do not always intend to employ for operating the elements of my invention, precisely such mechanism as I have herein above described, as other kinds well known as a mechanical equivalent or equivalents for any part or portions of the same, may be substituted, and used, as circumstances may require. Neither do I intend to give to any or all of its parts the exact shape or shapes as represented in the drawings, but intend to vary the same in such manner as may be necessary.

What I claim as my invention is—

The movable platform, table, or sheet receptacle S, in combination with the system of endless tapes and their supporting rollers, and applied to the paper making engine machinery, by which the sheets of paper are separated from the web thereof, and delivered to said system of tapes or endless bands, and rollers, or any other equivalents therefor, or as applied to any contrivance or machine from which sheets of paper are to be received and evenly packed or piled as above described.

In testimony whereof I have hereto set my signature this seventh day of August, A. D. 1848.

JOHN M. HOLLINGSWORTH.

Witnesses:

R. H. EDDY,
F. GOULD.