

No. 678,837.

Patented July 16, 1901.

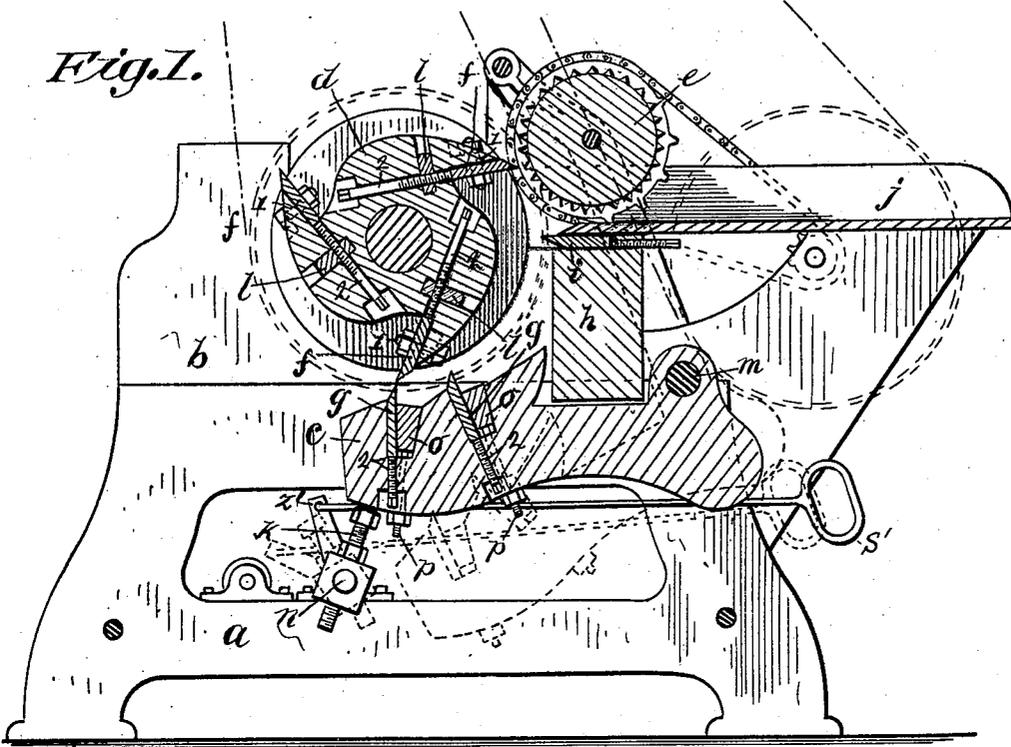
C. W. GRIFFIN.
MACHINE FOR CUTTING PAPER STOCK.

(Application filed July 11, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



Witnesses:
J. D. Garfield
S. Sweeney

Inventor,
Charles W. Griffin
by Webster & Tilley
Attorneys.

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2 Sheets—Sheet 2.

Fig. 2.

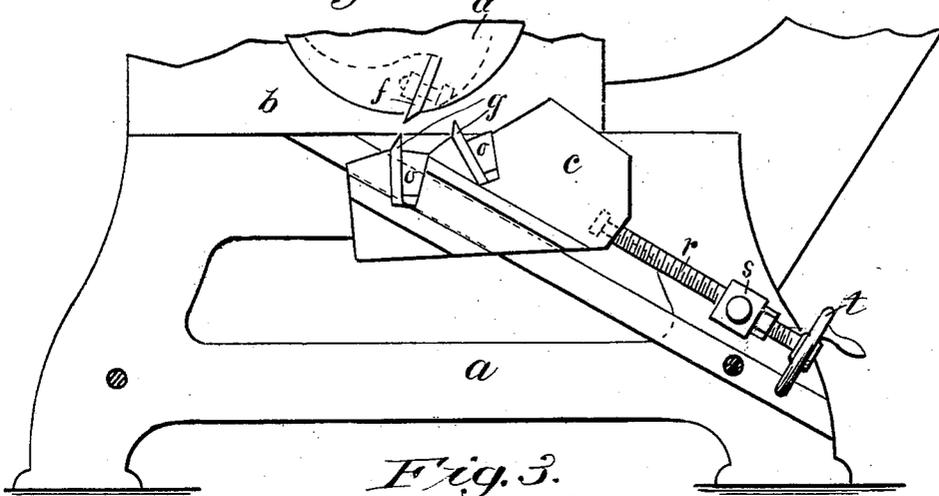


Fig. 3.

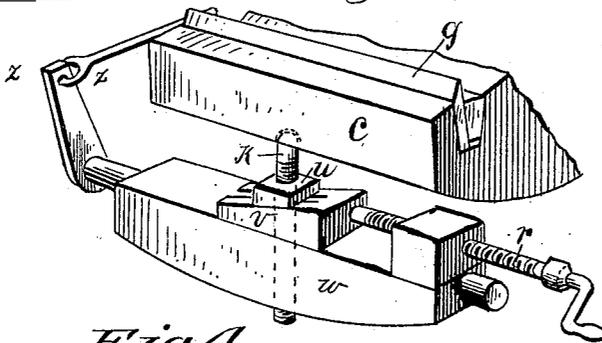
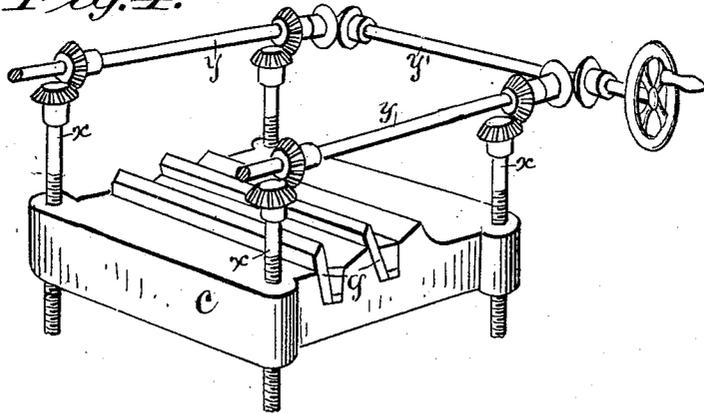


Fig. 4.



Witnesses:
John Garfield
S. Sweeney

Inventor,
Charles W. Griffin
by Webster, Tilley
Attorneys

UNITED STATES PATENT OFFICE.

CHARLES W. GRIFFIN, OF RIEGELSVILLE, NEW JERSEY, ASSIGNOR TO
TAYLOR, STILES & COMPANY, OF SAME PLACE.

MACHINE FOR CUTTING PAPER-STOCK.

SPECIFICATION forming part of Letters Patent No. 678,837, dated July 16, 1901.

Application filed July 11, 1900. Serial No. 23,230. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. GRIFFIN, a citizen of the United States of America, residing in Riegelsville, in the county of Warren and State of New Jersey, have invented new and useful Improvements in Machines for Cutting Paper-Stock, of which the following is a specification, reference being had to the accompanying drawings and characters of reference marked thereon.

The object of my invention is to provide a construction of machine for cutting paper-stock of all kinds other than wood, thus comprising cotton and woolen rags, bagging, jute, butts, rope, &c., which shall be strong, easily operative, effective in operation, comparatively inexpensive in cost of manufacture, adjustable and convenient for cleaning and repairing, and a machine which will perform more than one cutting operation, reducing the product to such size that it can be most economically handled and manipulated in the following operation for converting the material into paper, doing away with the operation of re-cutting and rehandling, and a machine which will rapidly and with great economy of power reduce the material to the desired requirements.

I accomplish the object of my invention by the construction herein shown.

In the accompanying drawings, in which like characters of reference indicate like parts, Figure 1 is a side elevation of the machine constructed in the preferred form, the cross-tie or support *h* of the frame, the hopper, and the adjustable bed being shown in section. Fig. 2 illustrates a modification in the method of adjusting the adjustable bed wherein inclined ways are used instead of a pivotal support, as shown in Fig. 1. Fig. 3 is a perspective view illustrating another modification wherein the adjustable bed is moved vertically by the employment of wedge-shaped pieces, and Fig. 4 is a view illustrating a modification wherein the bed is moved by a series of threaded rods.

In detail, *a* and *b* indicate the supporting-frame; *c*, adjustable bed or blade-support; *d*, rotating blade-carrier; *e*, feed-roll; *f*, blades mounted in the rotating cutter-head; *g*, blades in adjustable bed; *h*, first stationary

blade-support; *i*, blade mounted thereon; *j*, hopper or feed-table; *k*, adjustable support for the free end of the adjustable bed.

The construction and operation of my machine are as follows:

A frame *b* is suitably supported upon a frame *a*, and while I prefer that these two parts be made separately it will readily be seen that they may be made integral, if desired. The cutter-head *d* is mounted on a suitable shaft, which shaft has suitable bearings and is provided with any convenient driving means. The cutter-head *d* is provided with blade-receiving recesses, in which the blades *f* are adjustably secured, preferably by the employment of bolts 1 or other suitable locking means and by the employment of adjusting-bolts 2, passing through a suitable opening in the head and through a threaded nut or part *l* and bearing against the heel of the blade, so that by turning the bolts 2 the blades *f* may be adjusted toward or from the stationary blades. Suitable recesses are provided at the free end of the adjusting-bolts, so the same may be engaged by a wrench when desired.

A hopper or feed-table of any suitable construction may be employed, and a spur-provided feed-wheel *e* is arranged to feed the material to be operated upon gradually to the cutter.

The machine is provided with a stationary cutting-blade *i*, mounted upon a support *h*, against which blade the first cutting operation is performed. This blade is adjustable in like manner to those first described.

The adjustable bed *c* is preferably constructed and arranged as shown in Fig. 1, it being mounted near one end portion upon pivots, trunnions, or a shaft *m* and is free to be turned on its pivotal support to carry its forward portion toward or from the rotary cutting-head. This movement—*i. e.*, the raising and lowering—may be accomplished in any convenient manner, and for the purpose of adjustably maintaining the adjustable bed in the desired position I prefer to arrange a bolt *k*, adjustably mounted in a rock-shaft *n*, which rock-shaft is adapted to be rotated to carry the bolt *k* from its normal position, as indicated in full lines in Fig. 1, to the posi-

tion indicated in dotted lines in the same figure, thus moving the bolt *k* out of the path of the adjustable body *c* and allowing it to be turned upon its pivot to occupy the position shown in dotted lines in said figure. For convenience in turning the supporting-bolt *k* out of the path of the adjustable bed and afterward returning it to its normal position I employ a rod *z*, attached to an arm *z'*, which arm is fixed to the rock-shaft *n*, the free end of the rod *z* being carried to a convenient position for manipulation. In this position the machine may be easily cleaned or repaired. To raise and lower the bed *c*, Fig. 1, a lever is mounted at *s'*. I prefer that two stationary blades *g* be mounted in the adjustable bed *c* and that they be secured in position by the employment of wedge-shaped pieces *o*, which pieces are arranged in recesses having the wall opposite the bolt formed at an incline, the pieces *o* being inclined also, and threaded rods *p* extend from the wedge-shaped pieces *g* through the bed and are provided at their free ends with nuts. Threaded rods are also provided which bear against the heels of these blades, so that the blades may be adjusted toward and from the rotary cutting-blades, as desired, and after being properly adjusted in the desired position they are locked therein by tightening the nuts upon the rod *p*, thus drawing the wedge-shaped pieces *o* into the recess and causing them to bear firmly against the blades, and thus prevent all disarrangement. Any convenient means for moving the adjustable bed toward and from the rotary cutting-head may be employed.

As a modification of the construction illustrated in Fig. 1 I show in Fig. 2 a construction wherein the adjustable bed is mounted upon inclined ways and a threaded rod *r* is suitably connected with the bed *c* and passes through a nut *s*, which rod is provided with a hand-wheel *t*, and it will readily be seen that if the hand-wheel is revolved the bed *c* will be moved up or down the incline, and thus adjusted toward or from the rotary cutting-head.

In Fig. 3 I illustrate another modification wherein the supporting-bolt *k* is mounted in a nut *u*, which nut is inclined or wedge-shaped upon its lower surface and rests upon a bifurcated block *v*, which latter has its upper surface inclined and is suitably connected with a threaded rod *r*, passing through a suitable nut and provided at its free end with a hand-wheel or crank, so that a revolution of the rod will move the wedge *v* and cause the nut *u* to slide up or down upon its incline face, thus carrying the bolt *k* upwardly or downwardly, and with it the bed *c*, the whole being mounted upon a rock-shaft or body *w*, provided with trunnions, so the adjustable supporting mechanism may be turned out of the path of the bed *c*, as described with reference to the construction shown in Fig. 1.

In Fig. 4 I illustrate another modification wherein the adjustable bed *c* is carried vertically toward or from the rotary cutter-head, this being accomplished by the employment of four threaded rods *x*, each provided with a bevel-gear, and rods *y* being provided with suitable gears to intermesh with the first-described gears, so that a revolution of the shaft *y'* will cause a revolution of all the shaft and rods, and such rods having threaded connection with the bed *c* it will readily be seen that as these rods are revolved the bed will be carried upwardly or downwardly, dependent upon the direction of revolution of the operating-shaft *y*.

It will now be seen that by the employment of the construction illustrated herein the material is first operated upon by the rotary knives cutting it against the first stationary knife *i* and that the material is then carried downwardly and is cut against the first stationary blade in the adjustable bed and then against the second stationary blade in said bed, so the material is acted upon substantially three times, or, in other words, there are three distinct cutting operations performed with only one handling of the material.

It will readily be seen that the number of both rotating and stationary knives may be increased or diminished, as may be desired.

The adjustable bed normally occupies a position substantially horizontal and by reason of its weight is held by gravity from being accidentally moved toward the rotary cutter, so that it becomes unnecessary to provide any means for forcing it away from the cutter.

Having therefore described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a machine for cutting paper-stock, the combination with a suitable supporting-frame, of a rotary cutter-head mounted therein, one or more blades mounted in the cutter-head, a bed pivotally mounted at one end upon the frame, cutting-blades secured in the bed, a rock-shaft journaled within the frame and below the said bed, means on the rock-shaft arranged to bear against and support the said bed, and means to rock the rock-shaft.

2. In a machine for cutting paper-stock, the combination with a suitable frame, of a rotary cutting-head mounted therein, one or more blades mounted on the cutter-head, a swinging bed pivotally mounted at one end upon the frame, cutting-blades secured within the bed, a rock-shaft journaled in the frame and below the free end of the bed, an adjustable bolt on the rock-shaft to bear against and support the free end of the bed, an arm on the rock-shaft and a lever secured to the arm to operate the rock-shaft.

3. In a machine for cutting paper-stock, the combination of a suitable frame, a rotary cutter-head mounted thereon, one or more cutters in the head, a bed adjustable to and

from the cutter-head, blades in the adjustable bed, a stationary support h across the frame above the adjustable bed, and a cutter or blade mounted on the support, substantially as described.

5 4. The combination in a machine for cutting paper-stock of a suitable frame, a rotary cutting-head, having one or more blades mounted therein, a stationary adjustable bed
10 having one or more blades mounted therein, threaded rods arranged to bear against the heels of the blades and wedges arranged to lock said blades in position when adjusted, substantially as shown.

15 5. The combination in a machine for cutting paper-stock, of a suitable frame, a rotary cutter-head mounted in the frame, three blades mounted in the cutter-head, and three

stationary blades, arranged one adjacent to the point where the material is fed to the machine and the other two near to each other and remote from and below the point of feed, substantially as shown. 20

6. In combination with a rotating cutter-head mounted in a frame, in a machine for cutting paper-stock, a blade-carrying bed mounted in said frame, and rocking means for adjustably supporting said bed, said means being arranged to be moved out of the path of the bed whereby it will automatically
25 move from its normal cutting position, substantially as shown. 30

CHARLES W. GRIFFIN.

Witnesses:

HARRY W. GRIFFIN,

EDWARD H. APGAR.