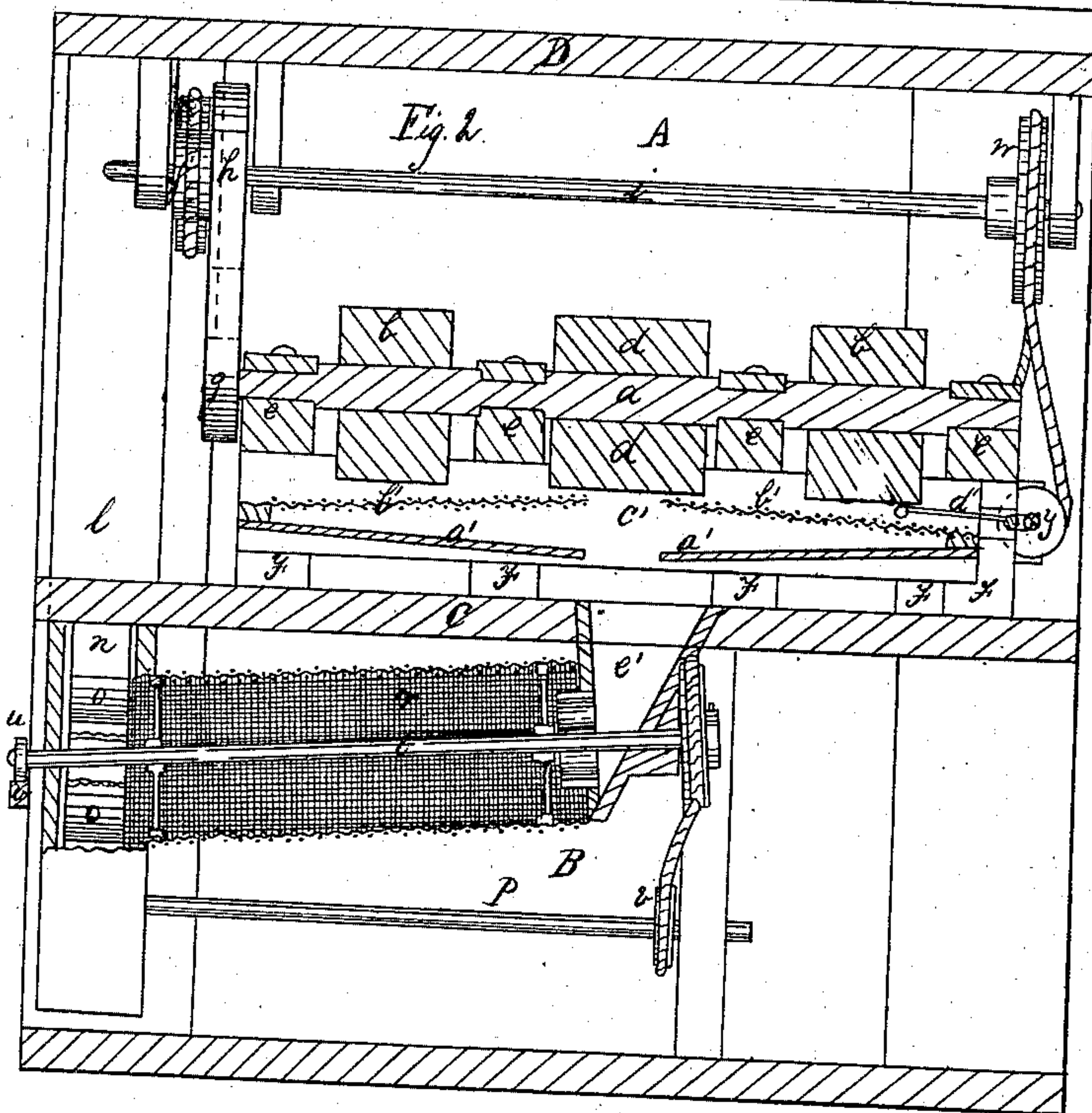
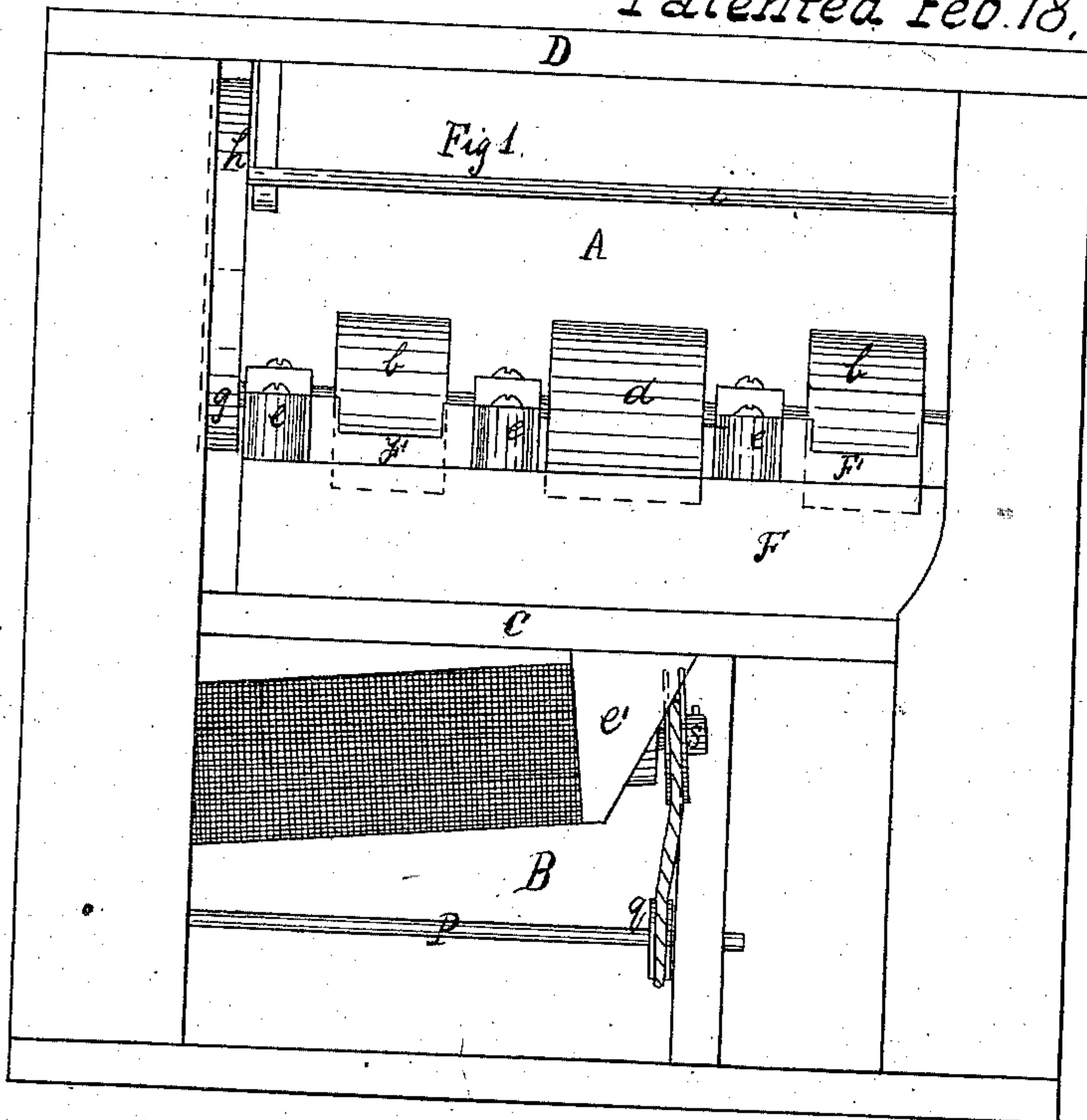


2 Sheets. **Pearson & Coburn**
Cutting & Separating Dye-Woods.
N^o 74586 Patented Feb. 18, 1868



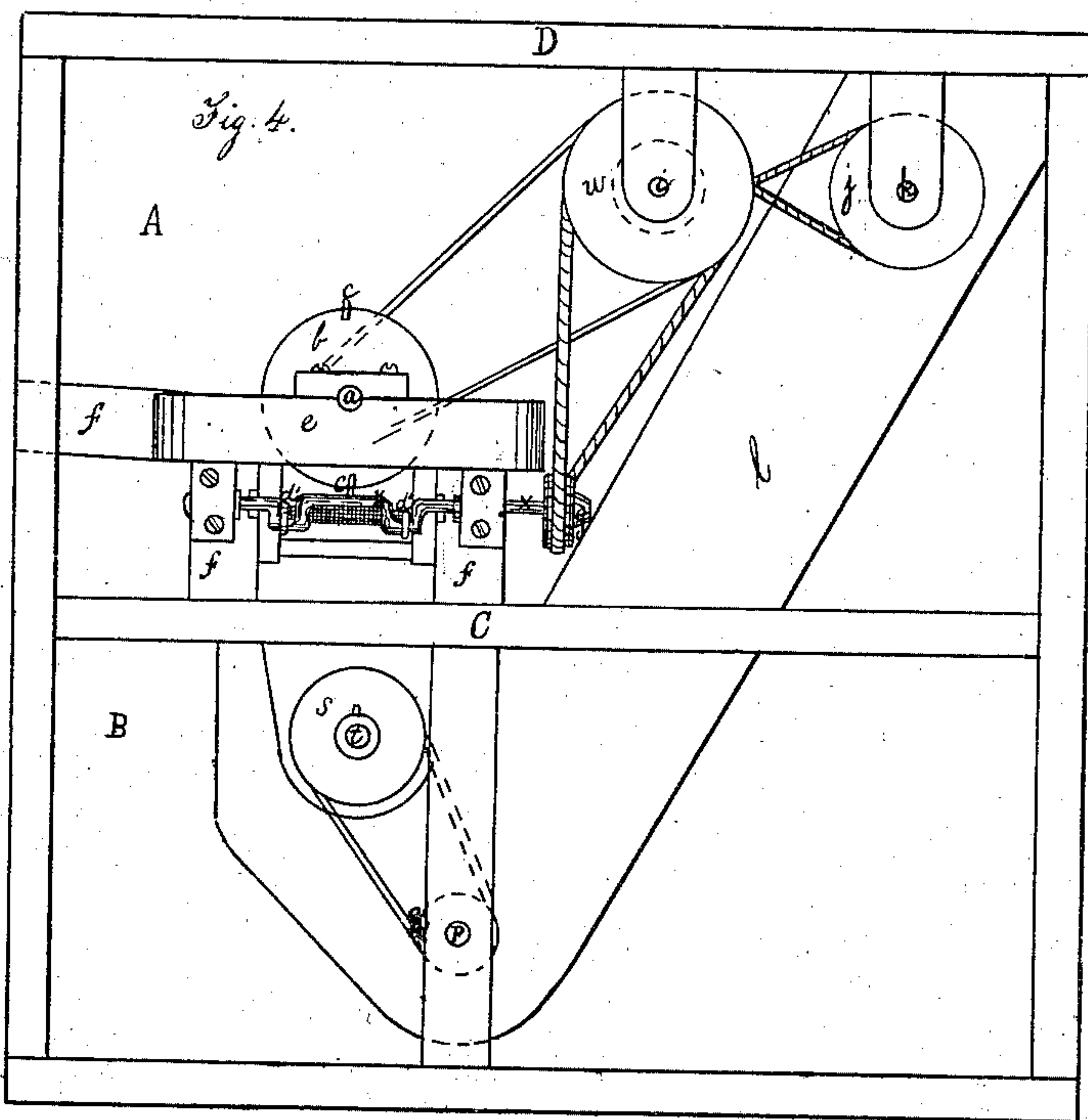
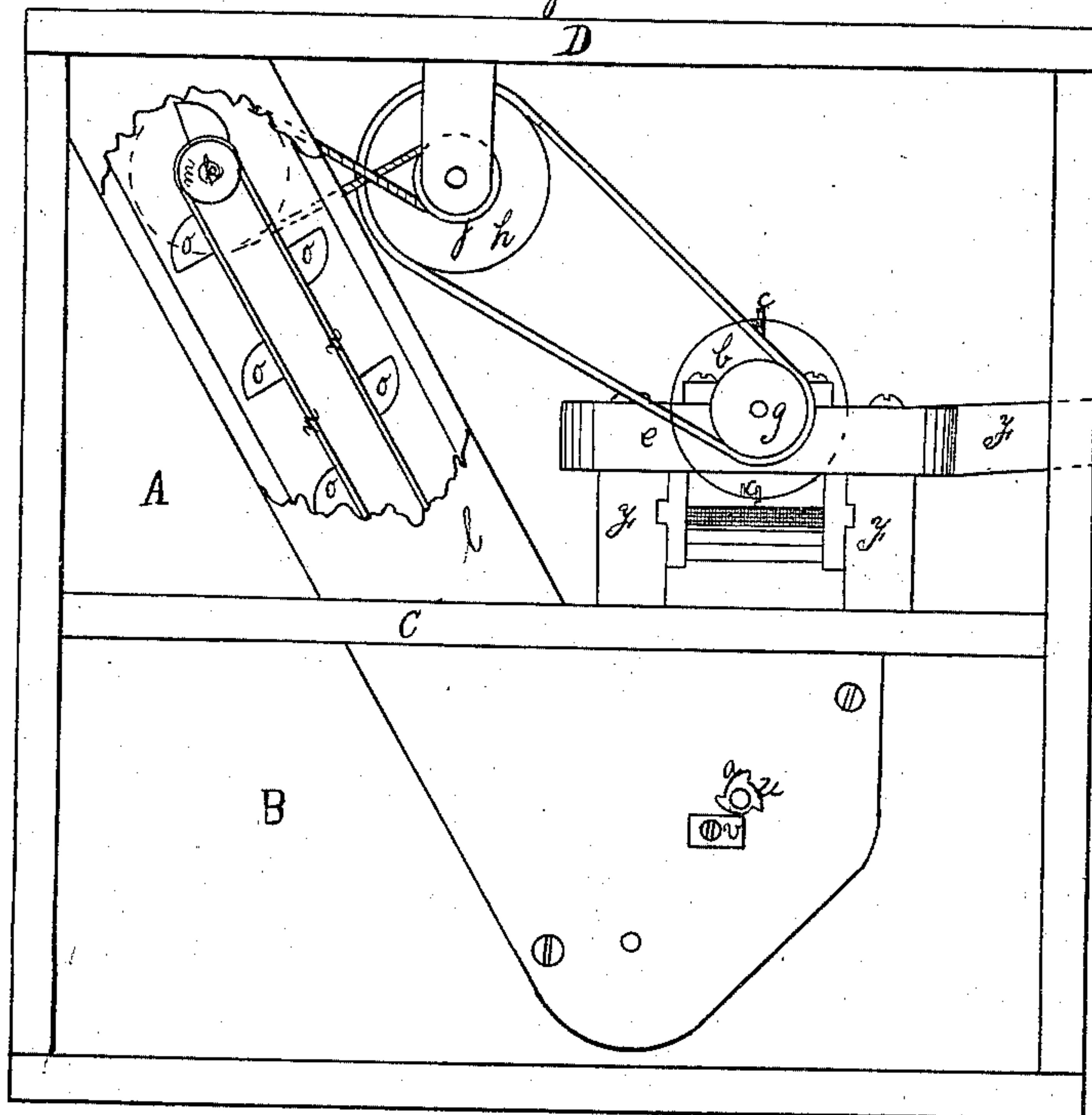
Sheet 2 - 2 Sheets

Pearson & Coburn.

Cutting & Separating Dye-Woods.

N^o 74586

Fig 3 Patented Feb. 18, 1868



Inventors.
Geo. W. Pearson
Daniel Coburn

Witnesses
Abiel Perry
Geo. E. Perry.

United States Patent Office.

GEORGE W. PEARSON, OF BILERICA, AND DANIEL COBURN, OF LOWELL,
MASSACHUSETTS.

Letters Patent No. 74,586, dated February 18, 1868.

MACHINE FOR CUTTING AND SEPARATING DYE-WOODS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, GEORGE W. PEARSON, of Bilerica, and DANIEL COBURN, of Lowell, both of Middlesex county, and State of Massachusetts, have invented a new and improved Machine for Separating and Distributing Dye-Woods; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon:

The nature of our invention consists in providing a machine for cutting, separating, and distributing the coarse from the fine particles and chips of dye-woods in separate places, and in any location desired, at one operation.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

Figure 1 represents a side elevation of our improved machine.

Figure 2 represents a vertical section of the same.

Figures 3 and 4 represent the end elevations.

Similar letters in the different figures represent corresponding parts:

A and B represent two distinct rooms or stories of a mill, separated by the floor C; the cutting of the dye-woods being done in the room A, and the bolting in the room B. *a* represents the main shaft, to which the cylinders *b b*, with their cutters *c c*, are secured, and the main driving-pulley *d*. This shaft *a* is secured in the bearings on the cross-girts *e e e e e* of the frame *f*, by caps, in the usual way. At the extreme end of this shaft *a* is secured the pulley *g*, which connects, by a belt, and drives the pulley *h*, which is secured to the counter-shaft *i*; this shaft *i* being suspended from the floor D above, by hangers, with bearings, to receive the same. On the driven end of the shaft *i*, and attached to the pulley *h*, is the band-pulley *j*, which drives the top elevator-shaft *k*, by means of a belt connecting the two pulleys *j* and *j'*. To the shaft *k*, and running in the trunk *l*, is the pulley *m*, over which passes the endless belt *n*, to which is secured the requisite number of buckets, elevators, or lifters, *o o*. This endless belt, *n*, also passes over a pulley which is located near the bottom of the trunk *l*, in the room B, and is secured to the shaft *p*; this shaft running in bearings in the usual way, and secured at each end. On this shaft *p* is secured the band-pulley *q*, over which passes, connects, and drives the reel-bolt *r*, by means of the driven pulley *s*, which is attached to the end of the bolt-shaft *t*, running in suitable bearings at each end; the driven end elevated on an angle so as to give the reel-bolt *r* sufficient inclination to discharge what particles that do not pass or bolt through. On this shaft *t*, and outside of the trunk *l*, is secured a cam, *u*, which acts against the adjustable block *v* for the purpose of giving the reel-bolt *r* a violent and sudden jerking motion in its revolution. On the counter-shaft *i* is the band-pulley *w*, which drives the crank-shaft *x*, by means of the driven pulley *y*, which is secured on the end of the crank-shaft *x*. This shaft is secured to the frame *f* by caps in the usual way.

Sliding back and forth alternately, directly in under the cutters *c c*, in suitable grooves, or on proper ways, are the aprons *a' a'*, which decline downward towards the centre of the machine, and the sieves *b' b'*, which decline the reverse, both of which are fastened to the frame *c'*, and are connected to the crank-shaft *x* by the connecting-rods *d' d'*. *e'* represents the conducting-spout from the aprons *a' a'* to the reel-bolt *r*.

Its Operation.

The power being applied to the driving-pulley *d*, the whole machine is in motion. The blocks of dye-woods to be cut are placed in the troughs *f' f'* endwise, and fed up to the cutters *c c*, at right angles with the shaft *a*, by suitable machinery. The wood being rapidly cut, is then discharged on to the sieves *b' b'*, by the jerking motion of the sieves *b' b'*, imparted by the crank-shaft *x*. The coarser particles of wood, which are unable to pass through the sieves *b' b'*, are discharged from the same on to the floor C, aided by the declining position of the sieves *b' b'* towards that location. The finer particles which pass through the sieves *b' b'*, by this motion are caught on the aprons *a' a'* and deposited, by aid of their declining positions, into the spout *e'*, which conducts these finer particles into the reel-bolt *r*, where it is then bolted. The coarser particles, unable to pass through the reel-bolt *r*, aided by the declining position of the bolt *r*, and assisted by the violent and

jerking motion produced by the cam *u*, find their way and are discharged into the bottom of the trunk *l*, which are then caught up by the buckets *o o*, and carried up and discharged on to the floor *C*, by the means of the endless belt *n*. The particles which pass through the belt *r* are deposited on the floor under the belt *r*, the meshes of the belt being kept clear and open by means of the violent motion produced by the cam *u*.

The advantage of this improvement is as follows: The different grades of the cut wood, from the finest particles to the coarsest, are separated, assorted, and deposited in any location desired, at one operation. The finest grade produced from the belt *r* is finished and ready for use. The next grade in fineness, (what is termed cut wood,) is elevated to the second floor, and is kept distinct and separate from the bolted, in accordance with the design of the manufacturer, and is also ready to be used. The chips, which are the third grade, are deposited on the floor *C*, and are in condition to be taken up and recut.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. We claim the conducting-spout *e'*, and aprons *a' a'*, or their equivalents, in combination with the cylinders *b b*, for the purpose substantially as described.
2. We claim the application of the elevator and reel-belt *r*, in combination with the conducting-spout *e'* and aprons *a' a'*, when arranged to operate substantially as described, and for the purposes fully set forth.
3. We claim the combination and arrangement of the cylinders *b b* with cutters *c c*, conducting-spout *e'*, aprons *a' a'*, reel-belt *r*, cam *u*, block *v*, and elevator, all for the purposes herein described and fully set forth.

GEO. W. PEARSON,
DANIEL COBURN.

Witnesses:

ABIEL PEVEY,
GEO. E. PEVEY.