

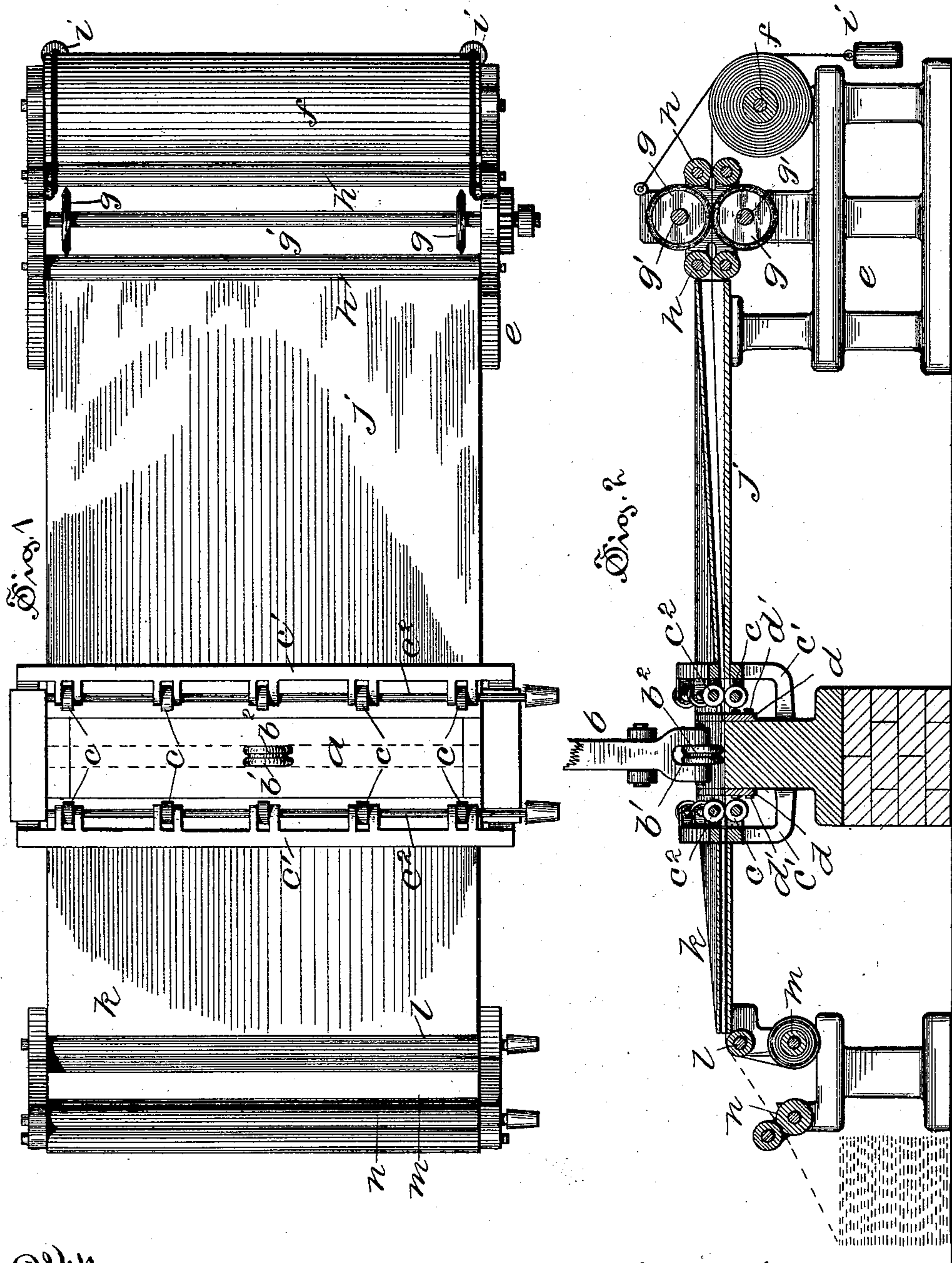
(No Model.)

2 Sheets—Sheet 1.

H. E. ROGERS.  
MACHINE FOR POLISHING PAPER.

No. 478,762.

Patented July 12, 1892.



Witnesses:

W. B. Jenkins,

P. A. Phelps

Inventor,

Henry E. Rogers by,

Harry P. Williams  
att'y.

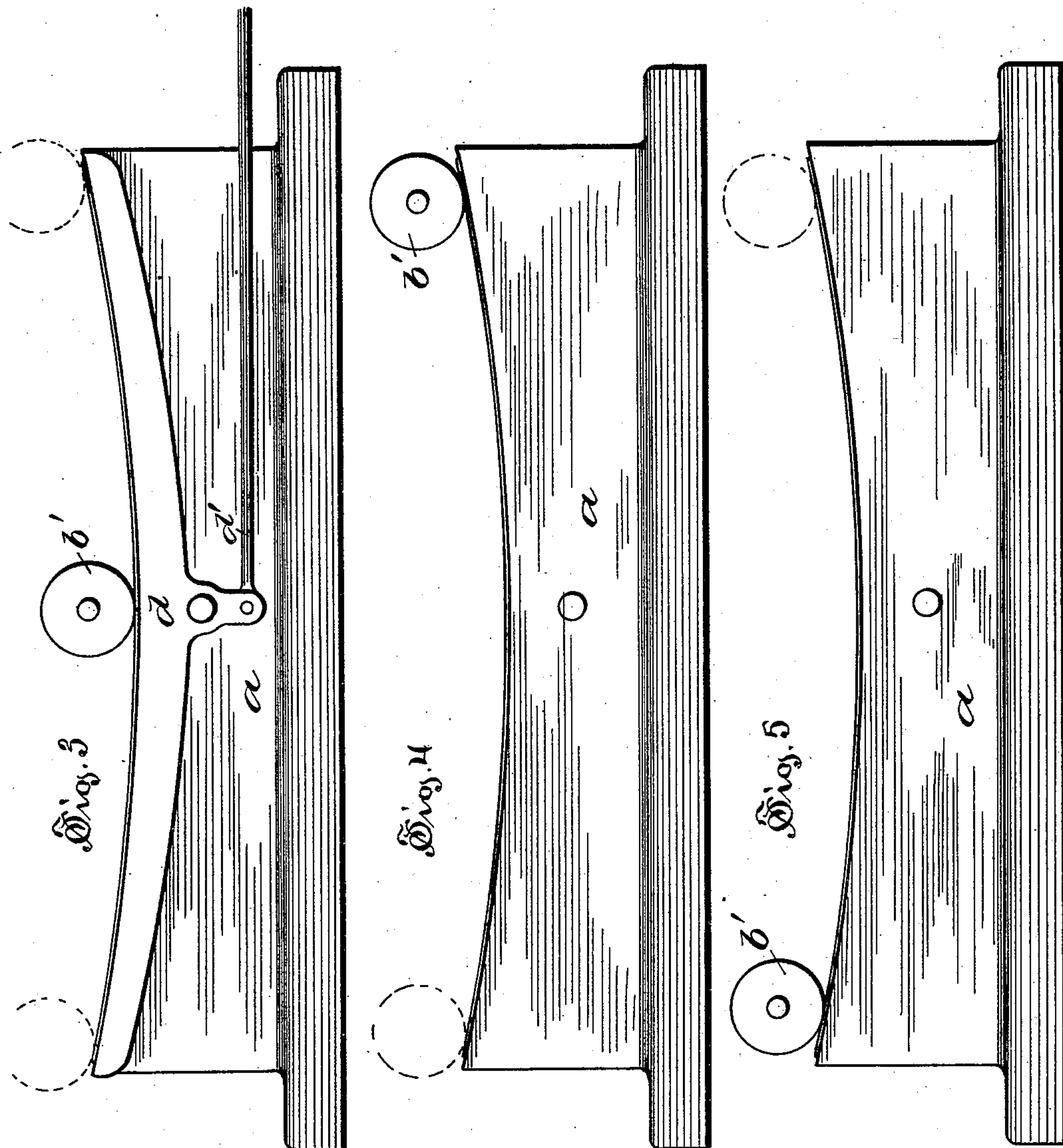
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# UNITED STATES PATENT OFFICE.

HENRY E. ROGERS, OF SOUTH MANCHESTER, CONNECTICUT.

## MACHINE FOR POLISHING PAPER.

SPECIFICATION forming part of Letters Patent No. 478,762, dated July 12, 1892.

Application filed May 16, 1891. Serial No. 393,006. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY E. ROGERS, a citizen of the United States, residing at South Manchester, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Machines for Polishing Paper, of which the following is a full, clear, and exact specification.

My invention relates to a machine for finishing thick paper, more particularly known as "press-board;" and the object is to provide a machine of such construction that the material may be glassed or polished by a traversing roll or glassing-jack in a web or continuous sheet, if desired.

The invention is illustrated as embodied in a machine wherein the material is passed with a straight feed without oscillation to the glassing-roll, which travels back and forth across the surface of the material as it advances in a straight line, whereby a strip of indefinite length may be polished by simple mechanism.

In all prior methods for polishing by a transversely-rolling jack the material has been oscillated from side to side and hitched forward in this manner as the jack oscillated, which necessitated the use of short pieces or a complicated arrangement for oscillating the supply and receiving rolls containing the entire material.

Referring to the accompanying drawings, Figure 1 is a plan view of a machine for practicing my invention. Fig. 2 is a central vertical section of the same. Fig. 3 is an enlarged view of a traversing roll and bed. Fig. 4 is a view of the same, showing the material divided on different longitudinal lines from those shown in Fig. 3. Fig. 5 is a view of the same, showing the material divided on still different lines.

In the views which illustrate my machine, *a* indicates the traversing bed, upon which runs a traversing roll or glassing-jack *b*'. This bed, which is mounted upon any suitable foundation, is usually formed on an arc of a circle the center of which is coincident with the center of the pivot of the oscillating beam *b*, which bears the glassing-roll, that is preferably provided with a groove *b*<sup>2</sup> in its periphery, so that it has two bearing or polishing surfaces. This beam is oscillated in any common manner and is of such length that

the roll travels back and forth, bearing with great pressure upon the bed.

Closely adjacent to the glassing-roll is placed a feeding mechanism, which in the construction shown consists of a number of small rolls *c*, mounted in bearings projecting from the frame *c'*, supported by the bed upon each side of the glassing-roll. These rolls are placed upon the arc of the circle of the bed and are connected by flexible shafts *c*<sup>2</sup>, bearing outside of the frame-pulleys, which may be rotated by any suitable counter-shaft in the vicinity of the machine, so that the rolls are driven uniformly. Of course, instead of a number of small rolls connected in this manner, rollers having convexed and concaved surfaces similar to the contour of the bed may be used, if desired; but the small feed-rolls upon one or both sides of the bed are preferable, as they may be placed closer to the glassing-roll without interfering with its action.

Upon one or both sides of the bed is placed a lifting device, which preferably consists of an arm *d*, extending to the ends of the bed, which arm is oscillated, as by means of a rod *d'*, connected with a crank, so that the paper may be slightly raised from the bed in order to prevent its adhering to the bed under the action of the roll, which would interfere with its proper advance beneath the glassing-roll.

Mounted upon a suitable bed *e* at one side of the glassing-bed is a roller *f* for holding the material to be polished, and in front of this roller *f* in the path of the material are placed slitting-knives *g*, which are adapted to slit the material longitudinally as it passes to the glassing-roll. These slitters are preferably mounted upon and movable along shafts *g'*, borne by standards on the bed *e* and driven by any common means at a suitable speed. At each side of the slitters are located guiding-rollers *h*, to facilitate the passage of the material, which is prevented from unwinding too rapidly from the roller *f* by means of any common friction device, as by straps and weights *i*.

From the slitters to the glassing-bed is placed a supporting-tube *j* for guiding the material to the feed-rolls, and the glassing-roll where the tube opens with a narrow slit having the same curve as the surface of the bed,



and from the opposite side of the glassing-bed leads a tube  $k$  for guiding the polished material to the idle-roller  $l$ , from which the material passes to the receiving-roller  $m$ , upon which it is wound in a continuous web. If desired, however, instead of winding up the material in a web it may be passed over a roller  $n$ , bearing a cutting-knife and severed into sheets of any required length. The material to be polished from the roller  $f$  after being subjected to the action of the slitters is passed by the feed-rolls to the action of the glassing-jack, which oscillates back and forth across its bed, bearing upon the material with such great pressure that the material under the roll cannot be advanced.

Previously it has been the custom to pass the material in short lengths to the action of the glassing-roll, and when this roll was upon one side to by hand oscillate the paper toward the other side, and thus in an oscillatory manner to hitch or edge the paper forward, so that the glassing-roll traveled upon its surface diagonally from side to side, and in prior attempts to pass a continuous web beneath the glassing-roll it has been found necessary to, by expensive mechanism, oscillate the rollers bearing the entire length of the paper, giving to it the same hitching motion which causes the glassing-roll to travel diagonally across the paper being polished.

With my improved machine the paper, which may of course be slitted upon any number of longitudinal lines before or after leaving the supply-roller, is advanced to the glassing-roll by a feed continuously and evenly in a straight line with a uniform motion. When the glassing-roll is upon either section of the material, that section cannot be drawn forward by the feed, as can the sections upon which the roll is not bearing; but as the roll passes from this section it is pulled forward while the next section is being glassed.

If the material is slitted near the edges, as

shown in Fig. 3, the central web is allowed to advance when the glassing-roll reaches the end of its oscillation and is about to return, while if the material is slitted at the center, as shown in Fig. 5, one section is drawn forward while the roll is upon the other section, it being understood that while the glassing-jack is on one strip of paper the feeding-rolls for advancing such strip slip, due to the heavy pressure of the glassing-jack, while the other strip or strips are being advanced. This permits a continuous sheet or web to be glassed by the action of an oscillating polishing-roll, which travels straight across the paper, and not diagonally, as in the prior art, nor is complicated mechanism for oscillating the entire material necessary in order that it may be advanced beneath the glassing-roll.

If desired, of course the slitters may be set so as to cut the material into a wide and a narrow strip, while short lengths may be passed through the machine, instead of a continuous length, without departing from this method.

With this machine the material is advanced with a straight feed without permitting the glassing-roll to strike the bed beyond the edges of the material, which would soon wear the roll and the bed.

I claim as my invention—

1. In a machine for glassing or polishing paper, the combination, with a bed, of a glassing-jack and means for drawing strips of paper past the glassing-jack alternately.

2. In a machine for glassing or polishing paper, the combination, with a bed, of a glassing-jack, means for dividing the paper longitudinally into strips, and means for drawing the strips of paper past the glassing-jack alternately.

HENRY E. ROGERS.

Witnesses:

H. R. WILLIAMS,  
A. L. PEARE.