

J. B. SIPE & C. ROGERS.
 Manufacture of Paneled Paper.

No. 223,768.

Patented Jan. 20, 1880.

Fig. 1.

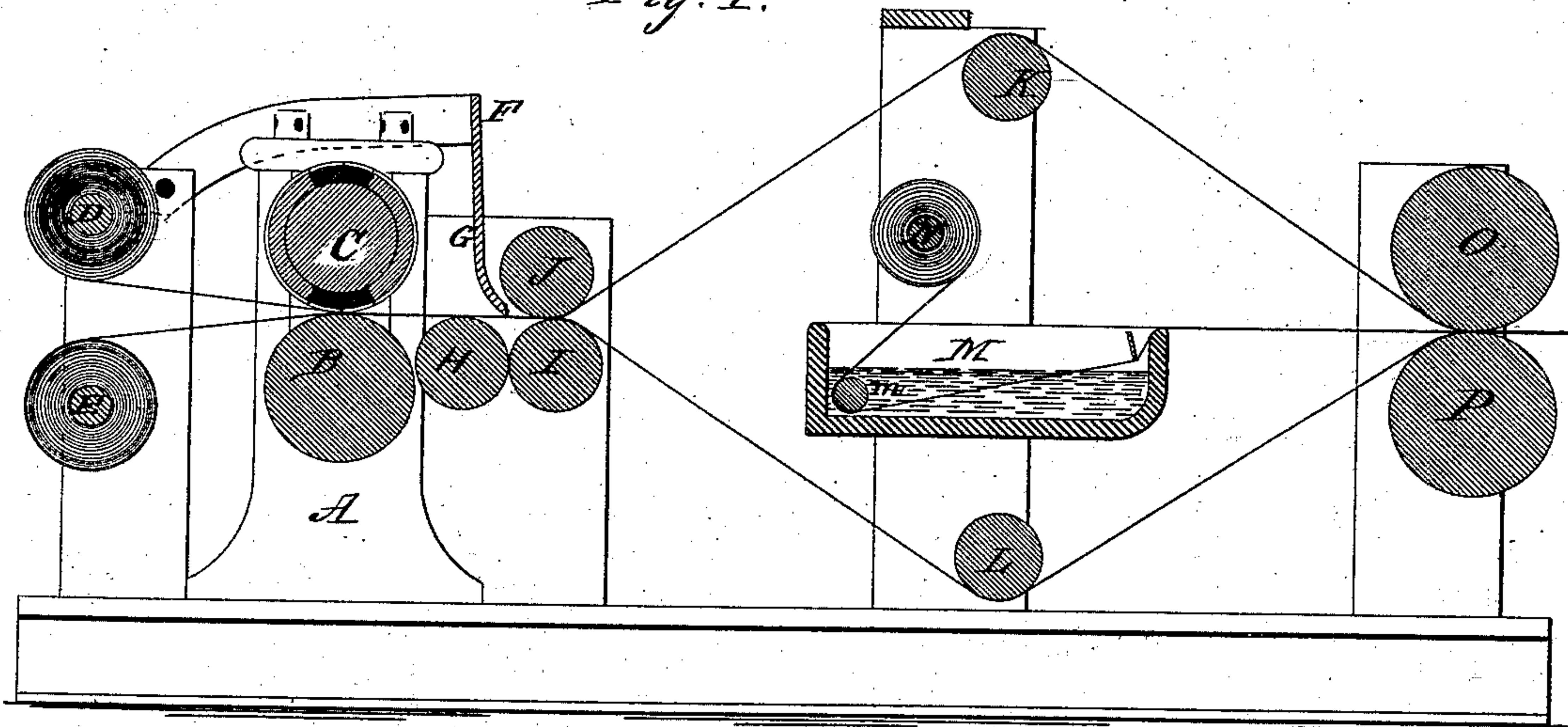


Fig. 2.

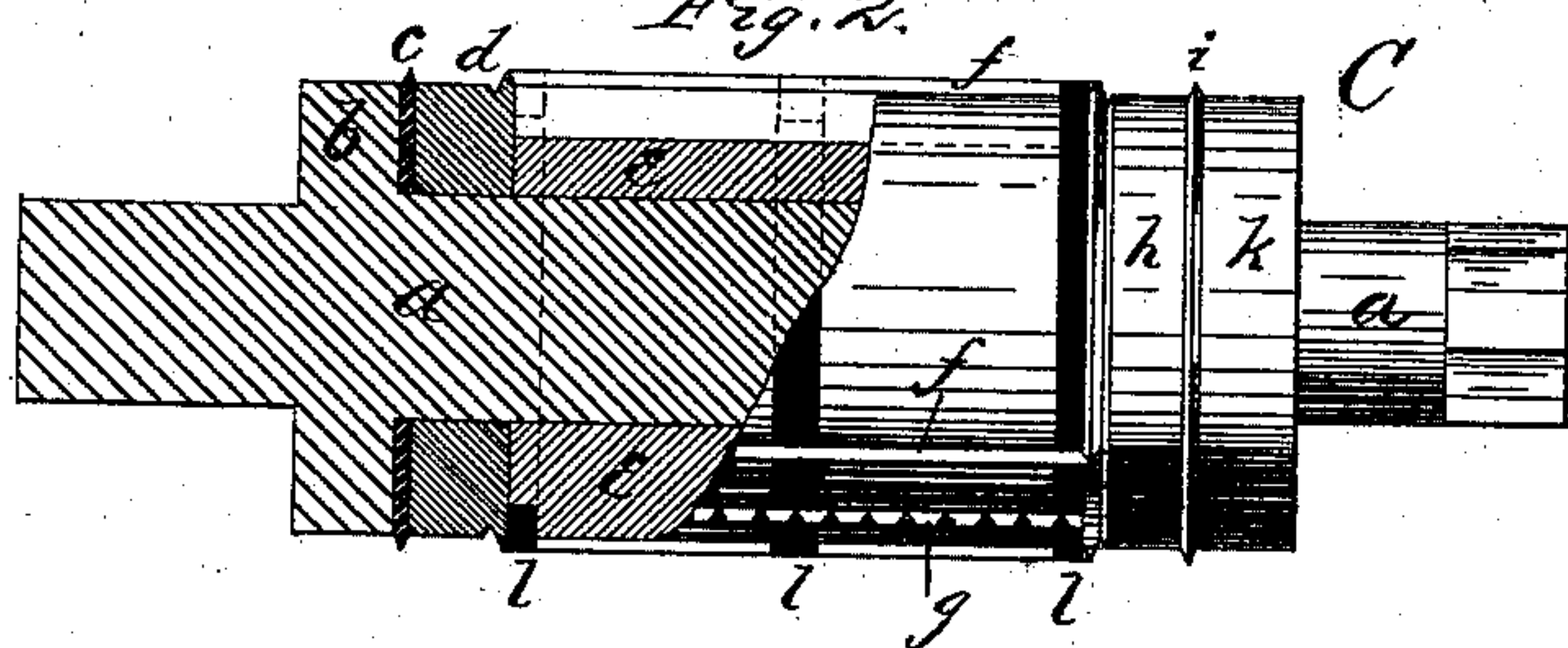


Fig. 3.

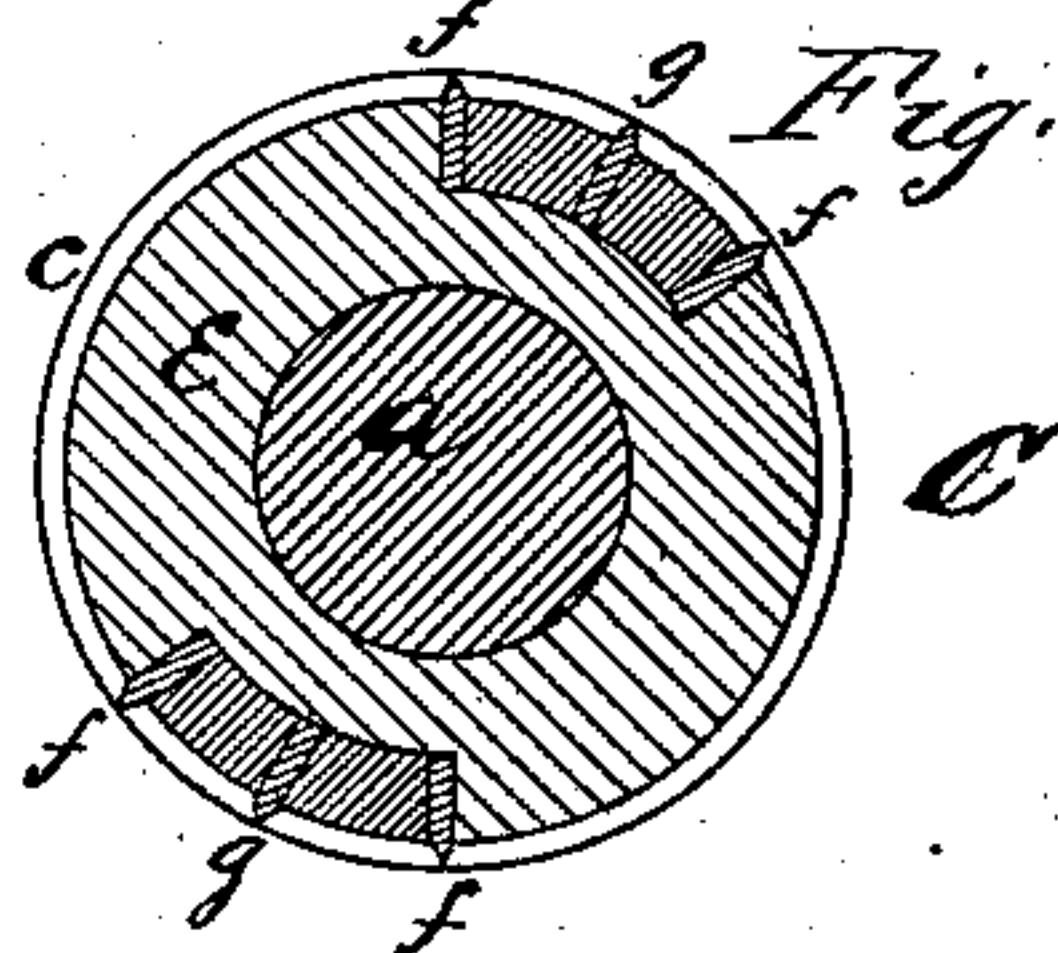


Fig. 4.

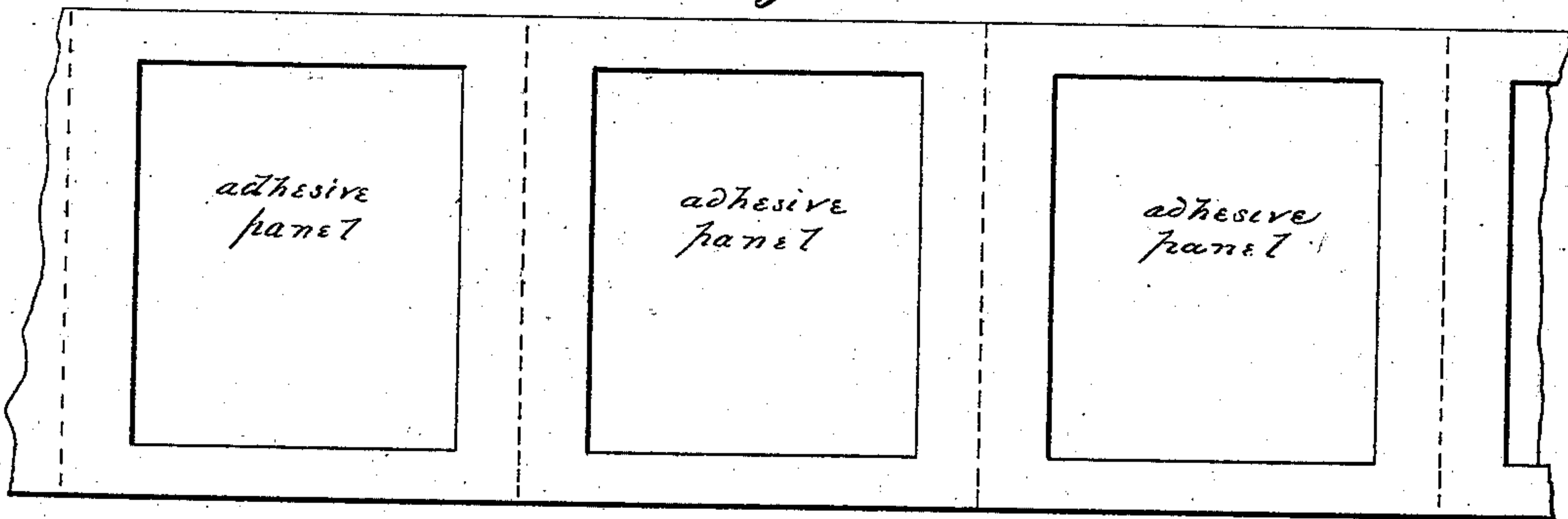
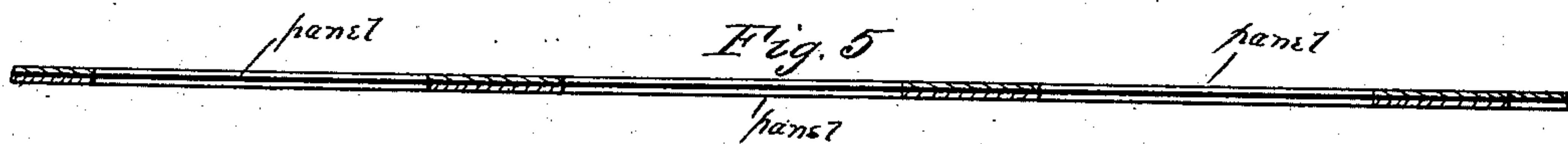


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES B. SIPE AND CHARLES ROGERS, OF ALLEGHENY, PENNSYLVANIA;
SAID ROGERS ASSIGNOR TO SAID SIPE.

MANUFACTURE OF PANELED PAPER.

SPECIFICATION forming part of Letters Patent No. 223,768, dated January 20, 1880.

Application filed December 4, 1879.

To all whom it may concern:

Be it known that we, JAMES B. SIPE and CHARLES ROGERS, of Allegheny, in the county of Allegheny and State of Pennsylvania, have
5 invented certain new and useful Improvements in the Manufacture of Paneled Paper; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in
10 the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a longitudinal section of our machine. Fig. 2 is an elevation, partly sectional, of the paneling-roll. Fig. 3 is a transverse
15 section of same. Figs. 4 and 5 are respectively a top and section view of the product, showing the thin center with thick edges.

This invention has reference to the manufacture of what we term "paneled paper"—a paper sheet or folio having a thin center or panel and thick edges—and includes both the
20 machinery and the product of the same.

It consists in the construction, combination, and arrangement of devices, and in their product, substantially as hereinafter fully described and claimed.

The object is to produce a folio made up of
30 a thin center, having edges of thicker stuff, the thick edges being on both faces of the thin center.

We accomplish this by cutting a continuous length of the thick paper into panels—that
35 is, cutting out all the central part—then pasting a continuous piece of thin paper between two such paneled lengths, and then cutting the completed product into folios, as hereinafter shown.

To this end our invention is as follows: Though the various steps in the operation could be accomplished by separate mechanisms, we prefer to unite all into one co-operative whole, and to such will confine our description.
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In suitable housings A we arrange two rolls, the lower roll, B, being preferably cylindrical and of soft material, such as annealed cast-iron, brass, or Babbitt metal. The upper roll,
50 C, is made adjustable to and from roll B by

any of the well-known means of adjustment. Both rolls are geared together and driven by suitable power.

Roll C does the cutting, for which purpose it is provided with knives suitably located. We prefer the manner of constructing this roll
55 shown, which is as follows: (See Fig. 2.) It is built in sections. The spindle *a* has a collar, *b*, forming one end of the roll. Next this is a steel knife, *c*, projecting slightly out from the face of the roll. Then a thicker collar of steel, *d*, is set on, also having a knife-edge, as shown. Next is a long sleeve, *e*, forming the middle portion of the roll, and in longitudinal
60 recesses in this, at the proper intervals, are set the knives *f* and perforating-edge *g*. At the end of the sleeve *e* is a steel collar, *h*, corresponding exactly to collar *d*. Beyond this a thin steel knife, *i*, is set, corresponding to knife *c*, and the whole held in place by the
70 collar *k* screwing on the spindle, or otherwise attached.

Knives *c* and *i* are continuous around the roll to cut the paper to a smooth and regular edge. Knives *d* and *h* are not continuous, being intended to cut the top and bottom of the
75 panels only. Hence their cutting portions occupy only the distance between the knives *f*, which cut the sides of the panel. Of these there may be as many as desired, according to the size of the roll C. In the present instance we show two sets for cutting two distinct panels at one revolution.

In recesses passing around the roll, at appropriate points, we insert india-rubber rings
85 or segments *l*, whose object is to gripe the paper and prevent its catching in the pass on account of slipping on the roll-faces.

A roll of paper, being fed into the rolls B C, is cut as follows: Knives *c* and *i* trim the edges to the desired width, knives *d* *h* cut the top and bottom of the panels, knives *f* cut the sides of the panel, and perforating-blades *g* indent the strips between the panels, the result being
90 that the paper comes out of the rolls paneled and ready for cutting into such lengths as are desired.

In front of rolls B C are the rolls D E, each of which holds a roll of thick paper, and the end of each roll is passed on between the rolls
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B C, thereby causing two continuous sheets of panels to be cut simultaneously.

To facilitate the remaining operations it is necessary to provide some means of insuring the displacement of the pieces cut out in forming the panels. A frame, F, is pivoted to a suitable point on the frame-work or housings, and has a downward extension, G, the whole forming a "dropper," curved at its lower edge, so that when elevated it will not catch on the edges of the sheet. This is caused to rise and fall by pins or cams on one of the rolls B C, and is preferably so arranged as to fall upon the front edge of the panel as it emerges from the rolls. Immediately beneath its lower edge are two horizontal rolls, H I, geared to the rolls B C, or by any other means given the proper motion. A roll, J, is placed above roll I, the three rolls forming a triangle with a vertical and a horizontal pass.

As the sheets with their cut panel emerge from rolls B C the dropper F G falls upon the forward edge of the cut panel, forcing that edge downwardly into the rolls H I, which then draw it down and let it fall out of the way. The dropper rises in time to clear the uncut portion of the sheet, which passes on through the rolls H J. Here the two cut sheets separate, one passing up over a friction-roll, K, and the other down under a friction-roll, L. Between these two rolls is a sizing or paste box, M, having a small roller, m, in its front portion.

Above the box M is a spindle, N, holding a roll of thin paper, as shown, whose end passes down into the paste-box and under roller m, receiving sizing or paste on both surfaces in its passage.

Emerging from the box M, scrapers may be applied to smooth off the coatings, after which the sheet passes onto a pair of pressure-rolls, O P. The paneled sheets converge to these rolls also, and the three sheets, the uncut sized or gummed sheet in the middle, pass through, and are united by pressure, after which they are passed off to dry. When dry they are cut to any desired length and used for any required purpose.

Roll I is provided with a yielding bearing, which keeps its face close against the face of roll H, so as to always bite upon the cut-out panels. Roll O is similarly journaled.

Though we prefer to indent the strip between the panels as a guide to their subsequent cutting, the perforating-knives for this purpose may be dispensed with without departing from the essence of the invention.

What we claim, and desire to secure by Letters Patent, is as follows:

1. The herein-described mode of making paneled paper, consisting in cutting the panels out of two lengths of paper, separating the two, sizing another length of uncut paper, and passing all three sheets between compressing-surfaces, substantially as described.

2. The herein-described mode of making paneled folios of paper, consisting in cutting the panels out of two lengths of paper, separating the two, sizing another length of uncut paper, passing all three sheets between compressing-surfaces, and then dividing the lengths into paneled folios.

3. In paper-paneling machines, in combination with the panel-cutting rolls, a dropper arranged and operating substantially as described, whereby the cut panels are pushed out of the way.

4. The combination of the dropper and the horizontal rolls under it for carrying off the cut panel, substantially as set forth.

5. In paper-paneling machines, a cutting-roll having continuous knife-edges to cut the outer edge, segmental knives to cut the top and bottom of the panel, and longitudinal knives to cut the side edges of the panel, in combination with a pressure or anvil roll revolving therewith, substantially as specified.

6. In combination with the cutting-roll having the described knives for cutting one or more panels at one revolution, the perforating-edges g, arranged longitudinally of the roll between the knives f, substantially as described.

7. The combination of rolls B C, dropper F G, and rolls H I J, substantially as specified.

8. The combination of rolls B C, dropper F G, rolls H I J, rolls K L, box M, with its roller m, spindle N, and compression-rolls O P, substantially as set forth.

9. As a new article of manufacture, paneled paper, consisting of a middle sheet of gummed paper having a continuous edge or frame of heavier paper pasted on both faces thereof, substantially as set forth.

10. The described blank, consisting of a continuous length of adhesive paper, having pasted on both faces thereof paneled lengths, the panels on both faces corresponding, the whole adapted to be severed at the strips separating the panels to form single folios or groups of the same.

In testimony that we claim the foregoing we have hereunto set our hands this 26th day of February, 1879.

JAMES H. SIPE.
CHAS. ROGERS.

Witnesses:

THOS. J. MCTIGHE,
JOHN M. PATTERSON.