(No Model.) 3 Sheets—Sheet 1.

G. A. GOLDSMITH & W. J. SHEDLOCK.

Machine for Pasting and Folding Paper.

No. 231,307. **Patented Aug. 17, 1880.**

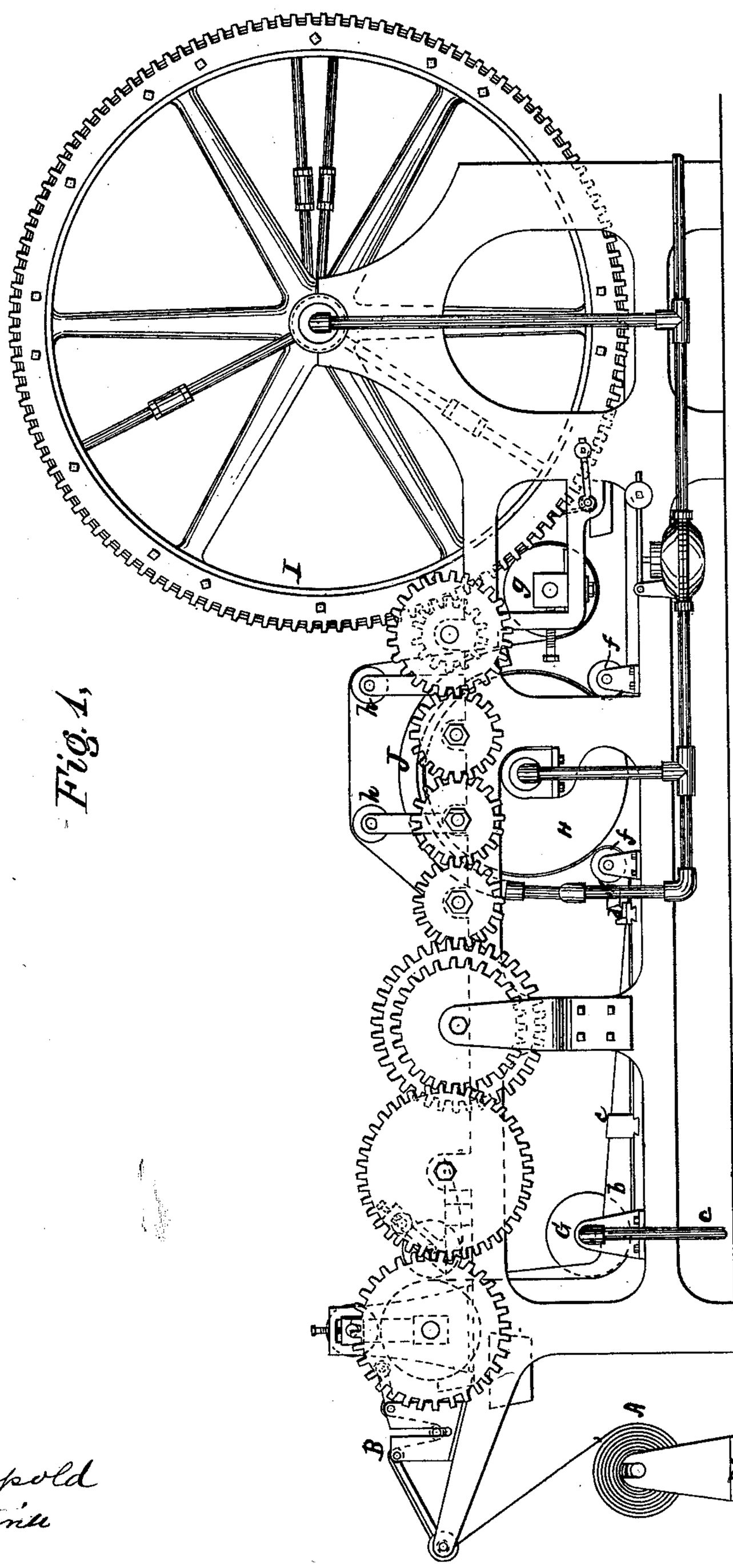

Fig. 1.

Witnesses.
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(No Model.) 3 Sheets—Sheet 2.

G. A. GOLDSMITH & W. J. SHEDLOCK.

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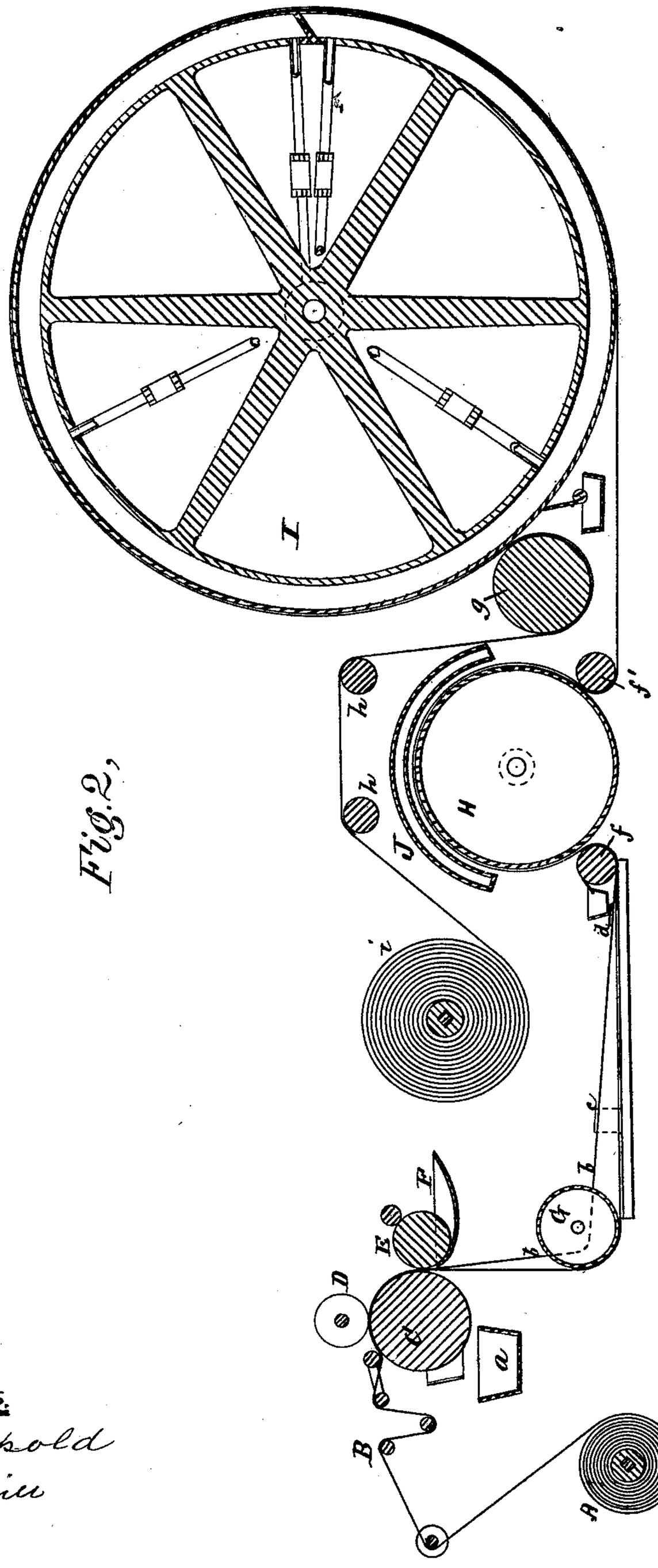

Fig. 2,

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(No Model.) 3 Sheets—Sheet 3.

G. A. GOLDSMITH & W. J. SHEDLOCK.

Machine for Pasting and Folding Paper.

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Fig. 3,

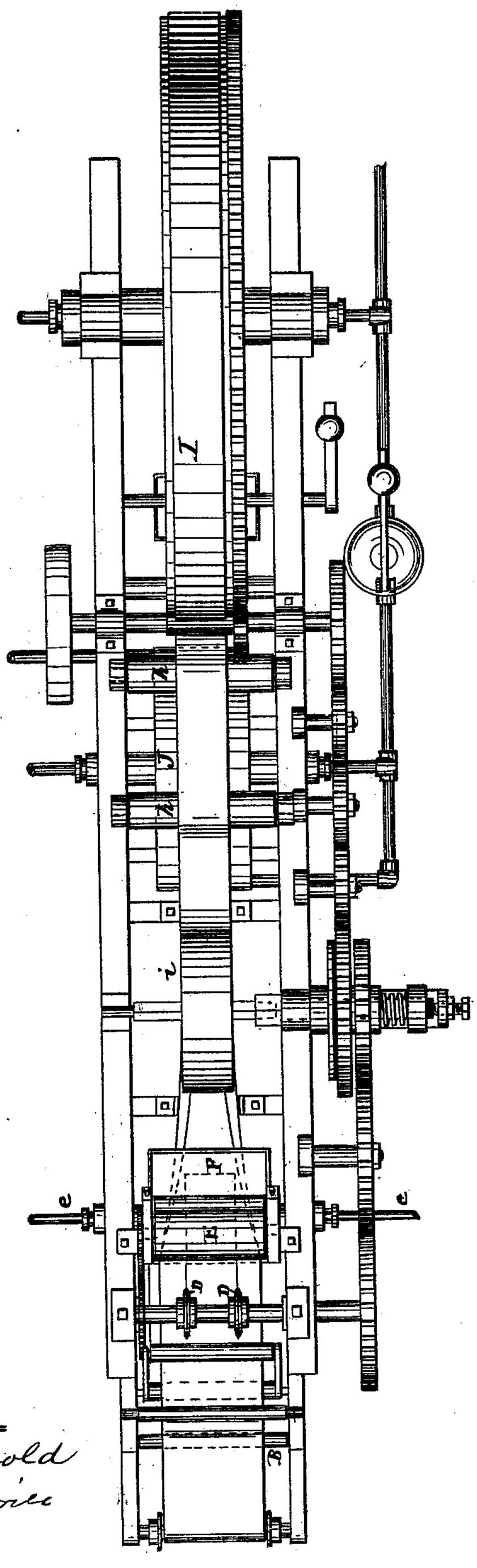
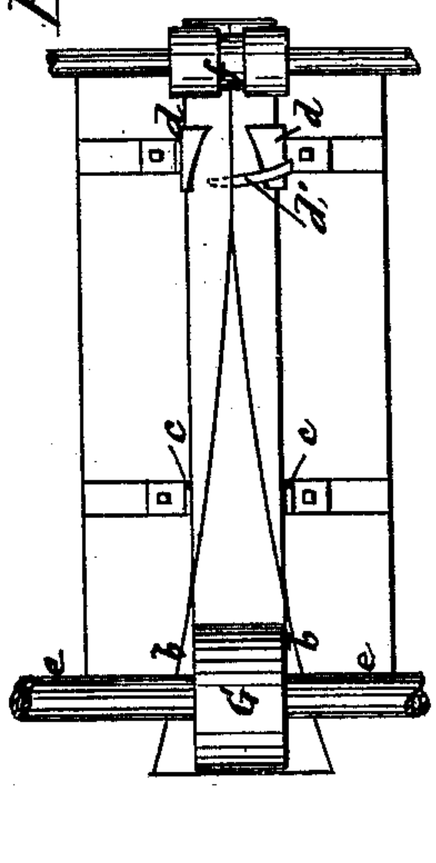


Fig. 4,



Witnesses.
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UNITED STATES PATENT OFFICE.

GUSTAVUS A. GOLDSMITH, OF NEW YORK, AND WILLIAM J. SHEDLOCK, OF BROOKLYN, ASSIGNORS TO G. A. GOLDSMITH, OF NEW YORK, N. Y.

MACHINE FOR PASTING AND FOLDING PAPER.

SPECIFICATION forming part of Letters Patent No. 231,307, dated August 17, 1880.

Application filed July 15, 1880. (No model.)

To all whom it may concern:

Be it known that we, GUSTAVUS A. GOLDSMITH, of New York city, State of New York, and WILLLIAM J. SHEDLOCK, of Brooklyn, New York State, have invented certain new and useful Improvements in Machinery for Pasting and Folding Paper to be used in the manufacture of collars and cuffs, of which the following is a specification.

Our invention is directed, primarily, to means for producing the folded strip used in the manufacture of collars and cuffs under G. A. Goldsmith's patent of July 29, 1879, No. 217,937. The first step in that manufacture is to prepare a suitable stock by taking a strip of prepared material—such, for example, as combined paper and cloth—and folding over the longer edges of the material upon the body of the strip, the folds being secured to the body by some adhesive substance. The machinery which we have devised is adapted and intended to produce a folded strip of this kind.

The three operations necessary for the production of the strip are pasting, folding, and setting and drying.

We will now proceed to describe the machinery by which these operations are performed, and will then point out more particularly those features of the machine which we believe to be novel and original with us.

In the drawings, Figure 1 is a side elevation of a machine embodying our improvements. Fig. 2 is a longitudinal vertical central section of the same, representing only the working parts without the framing, for the sake of greater clearness. Fig. 3 is a plan of the machine. Fig. 4 is a plan of the folding mechanism detached.

The prepared paper, which we will suppose to be combined paper and cloth, of a width suitable for the use for which it is intended, is in a roll, A, suitably mounted at the front of the machine. A suitable tension arrangement, B, is provided, from which the strip passes over the large roll C under the creasers D, which crease it in two lines, that determine the line of fold. Thence the paper passes down between the roll C and pasting-roll E, the latter revolving in paste-trough F and coating the adjacent face of the strip with paste or other adhesive substance. The paste-roller is somewhat longer than the strip is wide, so as to insure that the edges of the latter shall receive paste, and consequently the roll C is liable to receive some paste from the ends of the paste-roller.

A scraper suitably arranged can be used to remove the paste from the roll C, the paste thus removed being caught in the box *a*.

From the paste-roller the creased and pasted strip passes down under the folding-roller G, which is of a length to correspond with the width of the finished folded strip, so that its ends will meet the crease-lines made in the strip by the creasers D. The body of the strip between the crease-lines passes under and in contact with the roller, while the side flaps, *b*, of the strip project on each side beyond the ends of the roller and turn up, as indicated plainly in the drawings. It is this roller G which virtually makes the fold. The strip passes along between guides *c*, and then under folding-guides *d*, one of which is provided with a finger, *d'*, in advance relatively to the feed of the other folding-guide. This finger presses down the one flap, so that the other flap may lap over on it without trouble.

We may remark here that it is preferred, in most cases, to have the side flaps, when they are folded down, to lap one another.

The roller G is a "cold" roll, so called, being kept cool in this instance by water, which is kept circulating through it by means of the axial water-pipes *e*, in order to prevent the pasted strip from sticking to it.

In lieu of water, cold air or any other suitable cooling medium may be employed.

From the folding-guides the strip passes under a guide-roller, *f*, up over and nearly around a small drum, H, heated by suitable means—by steam in this instance. On this drum, which we term the "setting" drum, the paste is set, so as to prevent the folds from rising or becoming loose. The strip passes from the setting-drum under a guide-roller, *f'*, to the main or drying drum I, being brought back over and around this drum under a guide-roller, *g*, and thence up above the setting-

drum, over guide-rollers *h*, to the roll *i*, on which it is wound preparatory to removal from the machine. By the time the strip leaves the drying-drum it is fully dried and completed.

In order to prevent the vapor which rises from the strip on the setting-drum from affecting the completed strip, which passes over the rollers *h* above the drum, we place above the setting-drum a curved shield, J, which is preferably a hollow steam-heated structure, and which acts to prevent moisture or vapor from reaching or affecting the completed strip.

The machine is, of course, power-driven. The gearing is shown clearly in the drawings, and requires no explanation. Such of the rollers or drums as require it may have a scraper or other appliance to remove paste which may accidentally be deposited on them. The rollers *f*, *f'*, and *g* exercise sufficient pressure to press the folds and the body of the strip firmly and smoothly together.

We remark, in conclusion, that the fold-guides are not indispensable. The strip may pass directly from the folding-roller to the guide-roller *f* of the setting-drum, if desired, the flaps folding down on one another as they approach and pass beneath the roller *f*. We prefer, however, to employ the guides.

Having now described our improved pasting and folding machine, what we claim therein as new, and desire to secure by Letters Patent, is—

1. The combination, substantially as hereinbefore set forth, of the pasting mechanism, the cold folding-roller, and the setting-drum.

2. The combination, substantially as hereinbefore set forth, of the creasers, the pasting mechanism, the cold folding-roller, and the setting-drum, with or without the folding-guides.

3. The combination, substantially as hereinbefore set forth, of the pasting mechanism, the cold folding-roller, the setting-drum, and the drying-drum.

4. In combination with the setting-drum and the drying-drum, the hollow heated shield spanning that portion of the setting-drum above which the completed strip passes, substantially as hereinbefore set forth.

5. The combination, substantially as hereinbefore set forth, of the creasers, the pasting mechanism, the cold folding-roller, the setting-drum, and the drying-drum.

In testimony whereof we have hereunto set our hands this 13th day of July, A. D. 1880.

GUSTAVUS A. GOLDSMITH.
WILLIAM J. SHEDLOCK.

Witnesses:
GEO. E. WEED,
JAMES MOONE.