No. 816,402. PATENTED MAR. 27, 1906.

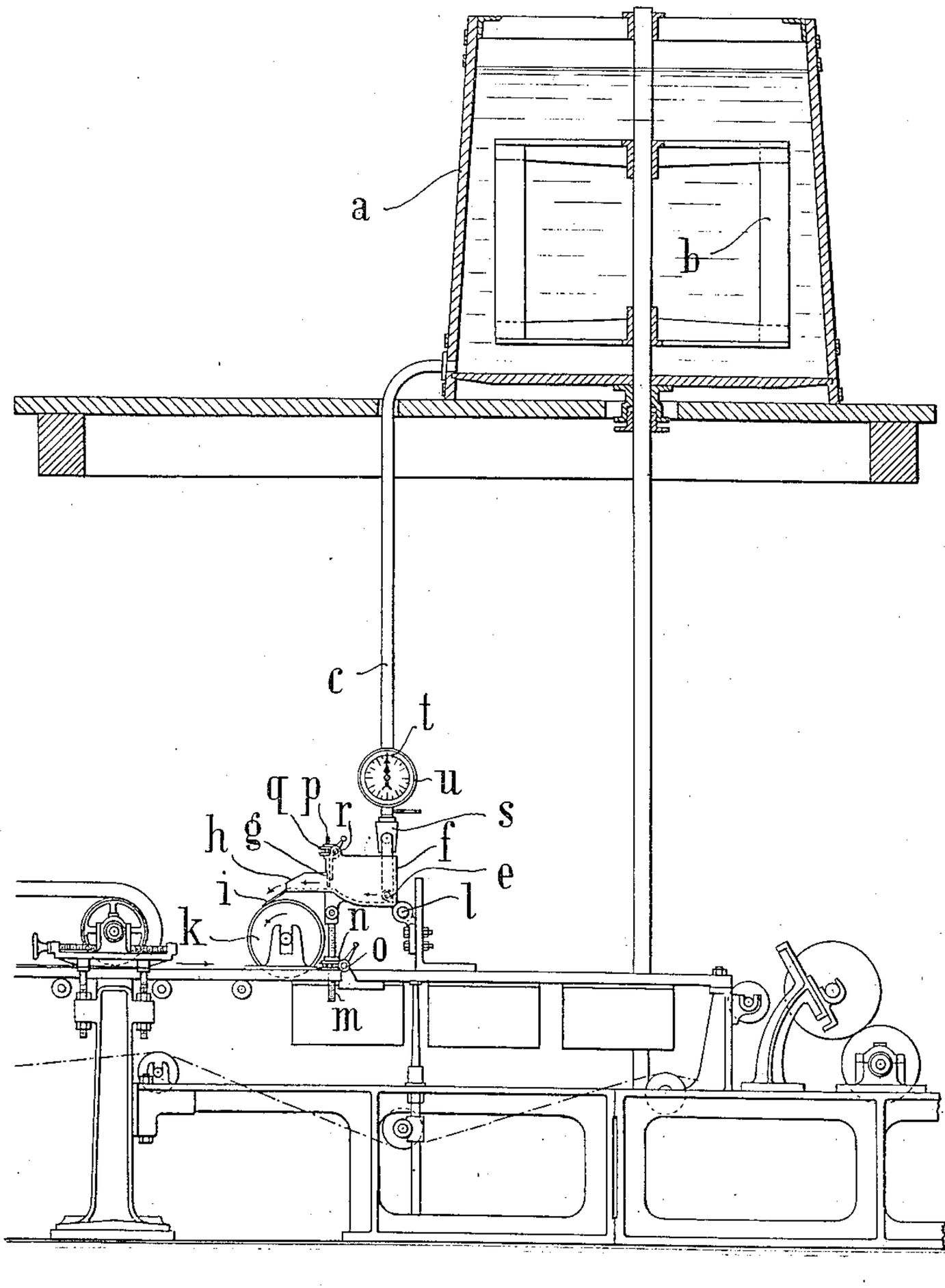
C. TITTEL.

PAPER MAKING MACHINE.

APPLICATION FILED JUNE 20, 1904.

2 SHEETS—SHEET 1.

Fig 1.



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2 SHEETS—SHEET 2.

Fig. 2.

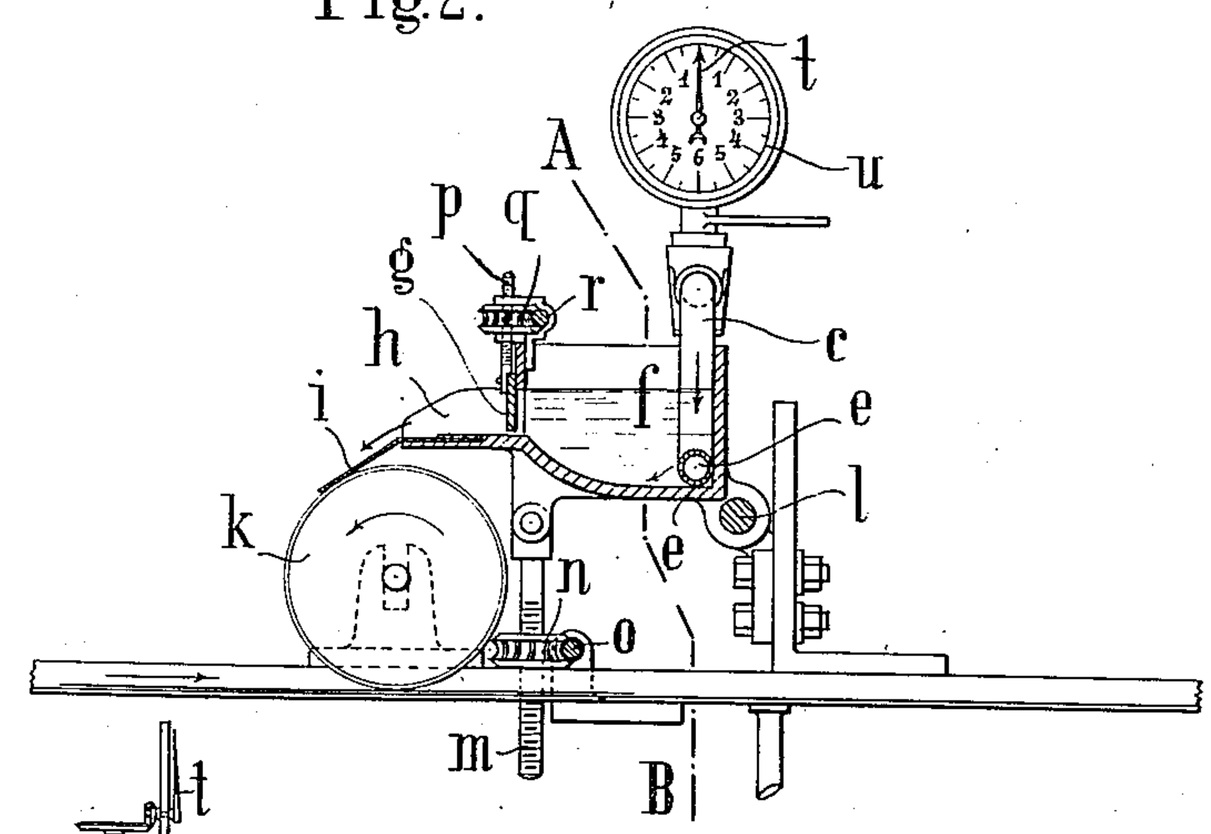


Fig. 3.

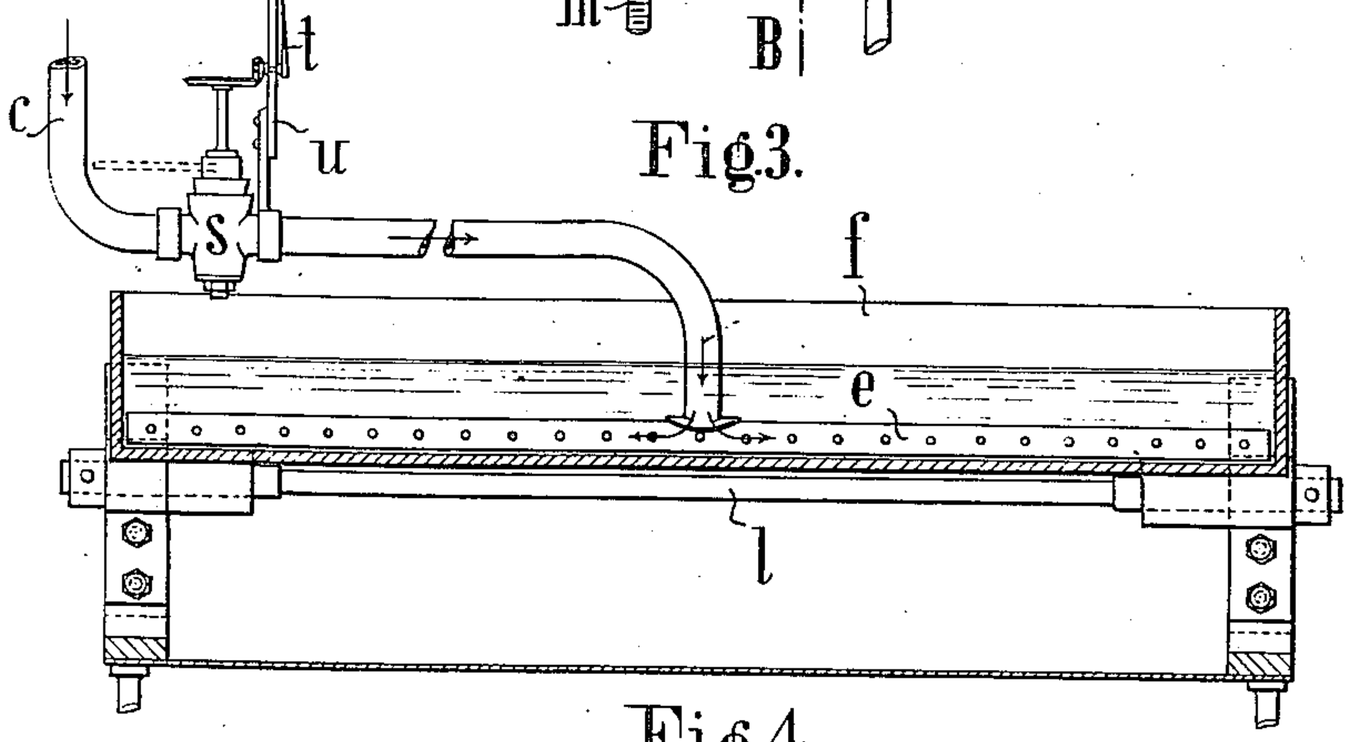
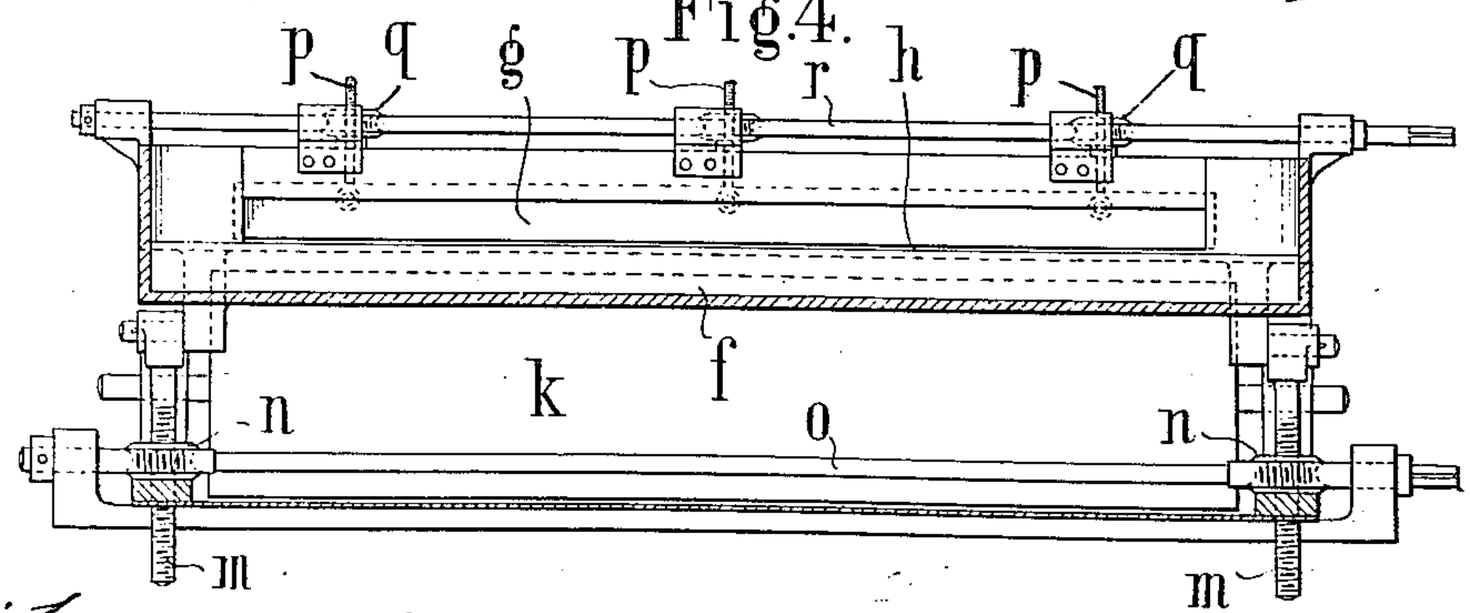


Fig. 4.



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UNITED STATES PATENT OFFICE.

CLEMENS TITTEL, OF JOSEFSTHAL, NEAR LAIBACH, AUSTRIA-HUNGARY.

PAPER-MAKING MACHINE.

No. 816,402. Specification of Letters Patent. Patented March 27, 1906

Application filed June 20, 1904. Serial No. 213,396.

To all whom it may concern:

Be it known that I, CLEMENS TITTEL, a subject of the Emperor of Germany, residing at Josefsthal, near Laibach, Province of Carniola, Austria-Hungary, have invented certain new and useful Improvements in Paper-Making Machines, of which the following is a specification.

Heretofore the application to paper of a coating of colored material has been effected after the manufacture of the paper by means of a special coating-machine, whereby the production of one-side coated papers was comparatively expensive and involved considerable labor.

The present invention relates to a process for the production of such papers coated on one side with colored material directly on the paper-machine, whereby the operation of coating is rendered considerably cheaper than when effected as heretofore by means of brushes, while at the same time the operation of the paper-machine is in no way hindered, and a uniform smooth surface of the coated paper is obtained, so that also with the simple satining process a uniform fine impression is possible, the excessive glaze which is so hurtful to the eyes being avoided. Lastly, in employing this improved process only a small amount of waste is obtained.

The process consists, essentially, in that the coating material is applied to the layer of paper material while still wet upon the wire frame and by couching and pressing is felted in on the surface of the paper and, lastly, is effectually combined therewith by the drying of the paper layer. Consequently according to this invention completely-prepared paper coated on one side is obtained directly from the paper-machine.

The present invention relates to paper-machines which produce paper coated on one side with colored material directly on the paper-machine; and the invention consists in a device which is used with the layer of paper material. This apparatus is shown on the accompanying drawings, in which—

Figure 1 shows a side view of the general arrangement. Fig. 2 shows the tilting trough in cross-section, while Figs. 3 and 4 show cross-sections through the trough and paper-machine on line A B, Fig. 2, Fig. 3 being viewed in one direction and Fig. 4 in the opposite direction.

The vat *a* for the coating material arranged above the wet part of the paper-machine is provided with a suitable stirring device *b* and communicates, by means of a pipe *c*, with the tipping trough *f* by means of the horizontal perforated part of the pipe *e*, which extends along the entire width of the machine. The tipping trough has a spout *h*, from which a felt apron *i* extends to the squeezing-roller *k*, the spout *h* being provided with a sluice *g*, by which the flow of material from the trough is regulated or when required entirely cut off. The trough is pivotally mounted on a shaft *l*, which can be adjusted in a vertical direction, the front of the trough being supported by screw-bolts *m*, pivoted thereto and screwing through worm-wheels *n*, that can be rotated simultaneously by means of a worm-spindle *o*, rotated by a crank-handle, whereby the front part of the trough can be raised or lowered, as required. The sluice *g* can also be raised or lowered by means of the screw *q*, worm-wheels *p*, and worm-spindle *r*, whereby the supply of the coating material is regulated. The supply-pipe *c* has a regulating-cock *s* so arranged in connection with an index *t* on a dial *u* that on turning the cock-plug to the right or left the index is moved to a corresponding extent, so as to indicate the extent of opening of the cock, whether this be turned to the right or to the left.

After the coating material has been prepared in the mixing-vat *a* it is maintained in continuous motion by the stirrer *b* while it is being supplied to the tipping trough *f*, such supply being accurately regulated by the cock *s*. The sluice *g* is then accurately adjusted by means of the screw-gear *q p r*, so as to allow the exact quantity of the coating material to flow on to the felt apron *i*, from which it is uniformly distributed on to the squeezing-roller *k*, which applies the material to the layer of paper traveling along underneath it.

It will be seen that the regulation of the quantity of coating material supplied to the layer of paper can be very accurately regulated, first, by the cock *s*, secondly, by the sluice *g*, and, thirdly, by raising or lowering the trough by means of the regulating-screw *m*.

I claim—

In combination with the wet part of the squeezing-roller of a paper-machine, a vat for coating material provided with a supporting device, a conduit-pipe leading from the said vat and having a horizontally-perforated pipe extending over the whole width of the machine, a tipping trough communi-

cating with the said pipe, the said tipping trough being vertically adjustable, a sluice movably disposed in the trough, an overflow terminating at the apron of the squeezing-roller, a stop-cock within the conducting-pipe, and an index means connected to the stop-cock and displaceable to right or left.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CLEMENS TITTEL.

Witnesses:
JOSEF RUBASCH,
ALVESTO S. HOGUE.