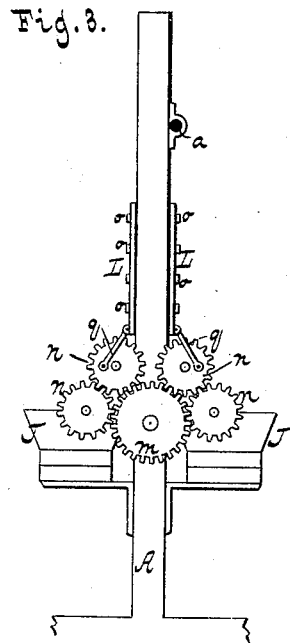
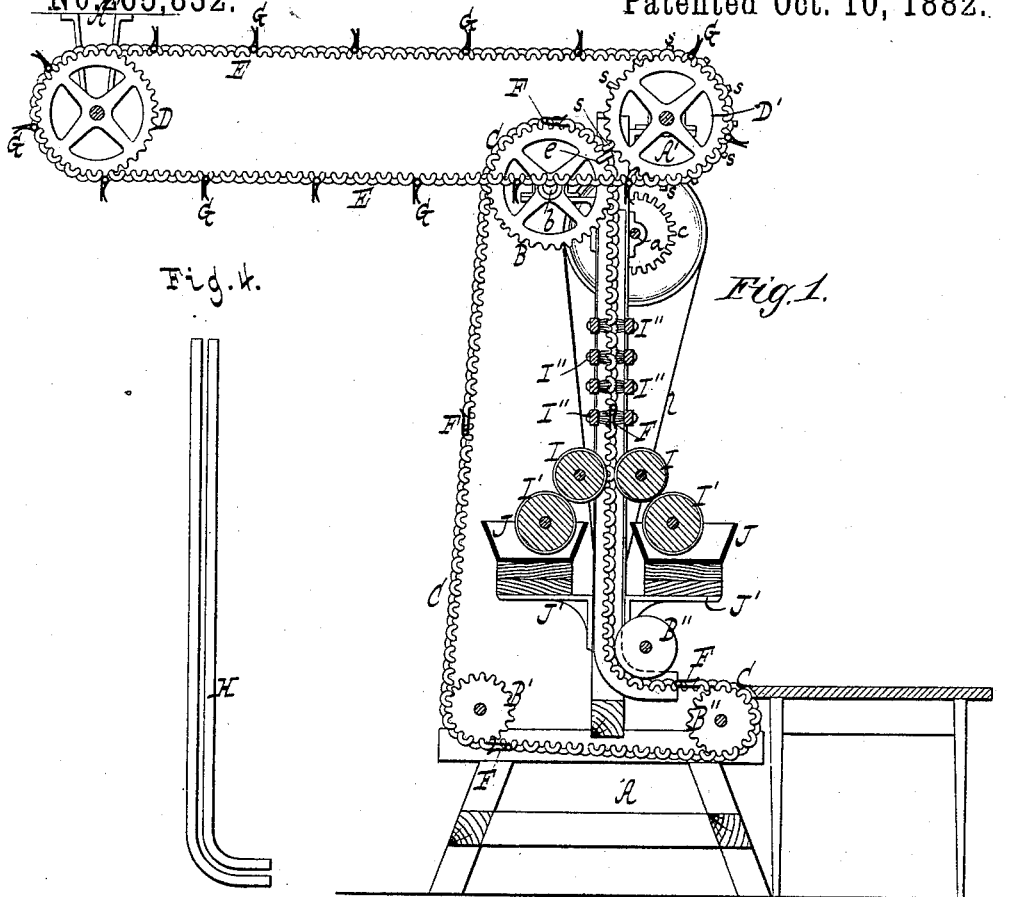


A. KOMP.

MACHINE FOR STAINING AND DRYING PAPER.

No. 265,832.

Patented Oct. 10, 1882.



WITNESSES:

*Chas. Wahlers*  
*William Miller*

INVENTOR

*Albert Komp*

BY *Van Sautwons & Hauff*  
his ATTORNEYS

(No Model.)

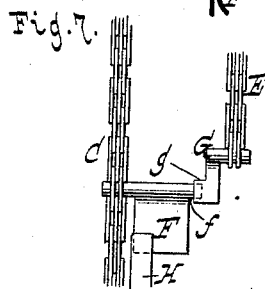
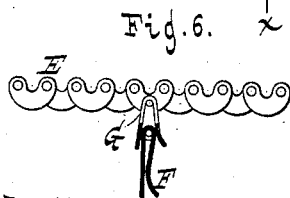
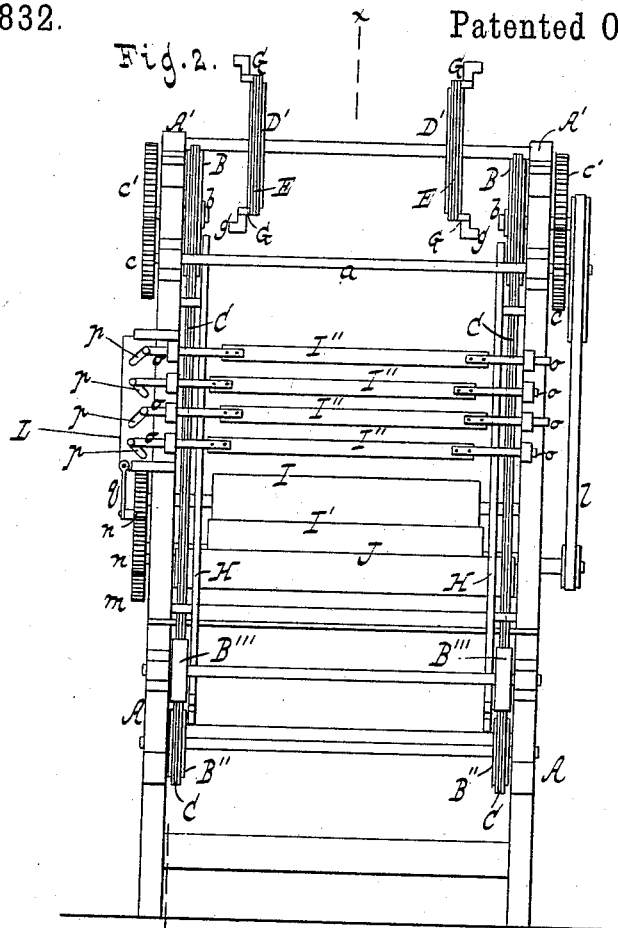
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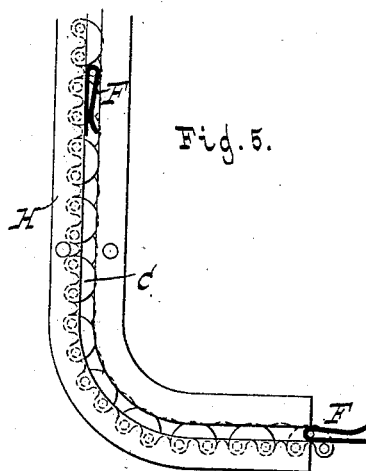
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WITNESSES:

Chas. Wablers.

William Miller



INVENTOR

Albert Kohn

BY Van Santwood & Hauff  
his ATTORNEYS

# UNITED STATES PATENT OFFICE.

ALBERT KOMP, OF NEW YORK, N. Y.

## MACHINE FOR STAINING AND DRYING PAPER.

SPECIFICATION forming part of Letters Patent No. 265,832, dated October 10, 1882.

Application filed September 6, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT KOMP, a citizen of the United States, residing at New York, in the county and State of New York, have invented new and useful Improvements in Machines for Staining and Drying Paper, &c., of which the following is a specification.

This invention consists in a machine wherein sheets of paper or other similar material, stained or sized, or both, on one or both sides, are hung up to dry by the joint action of two pairs of endless chains, one traveling in a vertical plane with a continuous motion and the other traveling in a horizontal plane with an intermittent motion, and both provided with grippers of such nature that the grippers of the vertical chains not only seize and elevate the sheets, but also automatically open those of the horizontal chains and deposit the leading ends of the sheets therein. The staining or sizing of the sheets is accomplished by means of revolving rollers and laterally-reciprocating brushes, combined with the vertical chains, the whole being hereinafter set forth in detail.

This invention is illustrated in the accompanying drawings, in which Figure 1 represents a vertical cross-section, the plane of section being indicated by the line *x x*, Fig. 2. Fig. 2 is a front elevation. Fig. 3 is a detail view, showing the mechanism for imparting motion to the staining or sizing devices. Fig. 4 is a similar view, showing one of a pair of channels for closing the grippers of the vertical chains. Fig. 5 illustrates the operation of the channels referred to. Figs. 6 and 7 illustrate the action of the grippers of the vertical chains upon those of the horizontal chains.

Similar letters indicate corresponding parts.

The letter A designates the machine-frame, having mounted therein chain-wheels B B' B'', which carry the vertical pair of endless chains C, the lower wheels, B' B'', being arranged in proper relation to idlers B''' to bring a portion of the chains into horizontal planes for convenience in feeding the sheets.

D D' indicate chain-wheels carrying the horizontal pair of chains E, one pair of such wheels being mounted in brackets A' on the machine-frame and the other being mounted in hangers A''.

F denotes the grippers of the vertical chains,

and G the grippers of the horizontal chains. These grippers are arranged opposite to each other on the respective pair of chains, so as to permit the introduction of the leading end of a sheet of paper or other material at once into the grippers of both chains of each pair. A continuous motion is imparted to the vertical chains C from a counter-shaft, *a*, the latter being geared with studs *b*, carrying the upper chain-wheels, B, by cog-wheels *c c'*, (best seen in Fig. 2,) while an intermittent motion is imparted to the horizontal chains E from either or both of the upper chain-wheels, B, through the medium of a tooth, *e*, (see Fig. 1,) which is arranged on said chain-wheel to act successively on a series of teeth, *s*, upon either or both of the wheels D' of the horizontal chains. If desired, however, a continuous motion can be imparted also to the horizontal chains. Said motions of the vertical and horizontal chains C E are so timed or regulated relatively to the positions of the grippers thereon that each of the grippers of the vertical chains shall meet one of the grippers of the horizontal chains at or immediately below the points where the ascending portions of the vertical chains intersect the horizontal chains. Each of the grippers F G of the two pairs of chains is composed of two spring-jaws, which are fixed to the chains at one end, and in the grippers of the vertical chains these jaws have a tendency to open, while in the grippers of the horizontal chains they have a tendency to close automatically. Both series of grippers F G, moreover, are provided with an offset, *f* or *g*, (see Fig. 7,) one at the leading end and the other at the tail end, and when the grippers meet, as before stated, the offset *f* enters between the offset *g*—namely, between those portions of the grippers G containing said offset—and in this manner the grippers G are opened and held in that condition until the offsets pass each other, when the gripper-jaws resume their normal positions.

Adjacent to the ascending portions of each of the vertical chains C is arranged a guide-channel, H, in such a manner that when the leading end of the sheet has been introduced into the grippers F the latter enter said channels and are thereby closed, as indicated in Fig. 5, they being held in that condition the entire length or height of the channels and

until they leave the same in the movement of the vertical chains.

The height of the guide-channels H is such that the grippers F recede therefrom at the moment the offsets *f g* pass each other, as will be perceived by reference to Fig. 7, and hence the leading end of the sheet, which has been carried up on the vertical chains by the grippers F, is released thereby at that moment, so that it is deposited in and caught by the grippers G. The guide-channels H are formed by two rails secured to the machine-frame in the proper manner. The operation of the grippers F can also be produced by arranging their jaws to close automatically and to be opened at the proper places by the action of cams or other suitable means.

On opposite sides of the ascending portions of the vertical chains C are arranged staining or sizing rollers I, which revolve in superficial contact with feed-rollers I', dipping into troughs J for containing the staining or sizing material, the troughs resting on brackets J'. The required motion is given to the rollers I' from the counter-shaft *a* by a belt, *l*, which connects with a cog-wheel, *m*, gearing with pinions *n* on the roller-shafts. Said staining or sizing rollers I occupy the proper positions to act on the sheets carried up by the grippers of the vertical chains C, and above the rollers, on opposite sides of the ascending portions of the chains, are arranged brushes I'' for distributing the substance which is applied to the sheets by the rollers. These brushes are provided with slide-rods *o* (see Fig. 2) at the opposite ends, which are guided in suitable eyes on the machine-frame, and the rods at one end of the brushes are provided with roller-studs working in oblique slots *p*, formed in vertically-reciprocating slides L, so that by the action of these slides a laterally-reciprocating motion is imparted to the brushes. Said slides L are guided on the machine-frame in a suitable manner and receive motion from two of the pinions *n* through pitmen *q*.

It will be perceived from the foregoing description that sheets of paper or other similar material can be successively stained or sized and then hung up to dry without the exercise of any manual labor except to feed the sheets, while the two operations at the same time are performed in a superior manner.

It may be remarked that the horizontal chains are made of proper length to insure the drying of the sheets before reaching the point of delivery, and, if found expedient, the grip-

pers of such chains may be opened by mechanical means at that point.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, substantially as hereinbefore set forth, of the vertical chains having grippers for seizing and elevating the sheets, the horizontal chains having grippers for suspending the sheets, and devices whereby the grippers of the vertical chains are adapted to automatically open those of the horizontal chains and deposit the leading ends of the sheets therein.

2. The combination, substantially as hereinbefore set forth, of the vertical chains having grippers each composed of two self-opening spring-jaws, and the guide-channels arranged adjacent to the ascending portions of the vertical chains, respectively, to receive and close said grippers.

3. The combination, substantially as hereinbefore set forth, of the vertical chains, the horizontal chains, the grippers of the vertical chains, each comprising the self-opening spring-jaws and offset *f*, the grippers of the horizontal chains, each comprising the self-closing spring-jaws and offset *g*, and the guide-channels arranged adjacent to the ascending portions of the vertical chains, respectively, to receive and close their grippers, and operating to release said grippers when the leading ends of the sheets have been brought into the grippers of the horizontal chains.

4. The combination, substantially as hereinbefore set forth, with the vertical chains having grippers for seizing and elevating the sheets, of the staining or sizing rollers arranged on opposite sides of the ascending portions of said chains to act on the sheets carried thereby.

5. The combination, substantially as hereinbefore set forth, with the vertical chains having grippers for seizing and elevating the sheets, of the staining or sizing rollers and the laterally-reciprocating brushes, both arranged on opposite sides of the ascending portions of the vertical chains to act on the sheets carried thereby.

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

ALBERT KOMP. [L. S.]

Witnesses:

W. HAUFF,  
CHAS. WAHLERS.