(No Model.)

C. E. HOLBROOK.

SHEET PILING ATTACHMENT FOR PRINTING PRESSES.

No. 360,439. Patented Apr. 5, 1887.

Fig. 1.

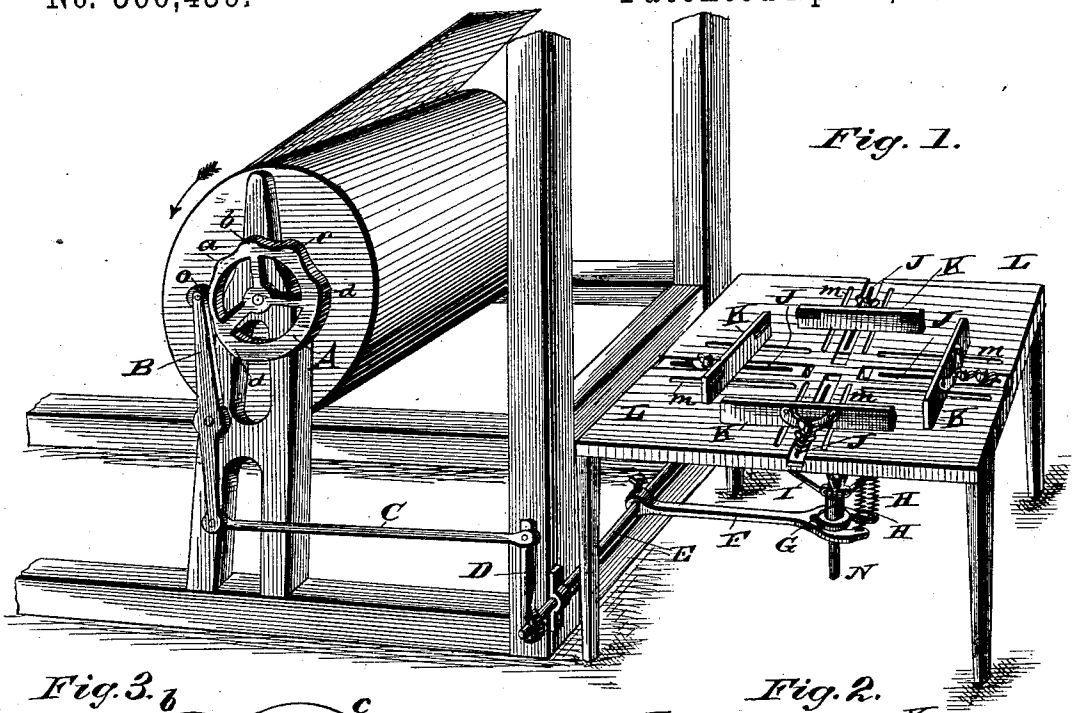


Fig. 3.

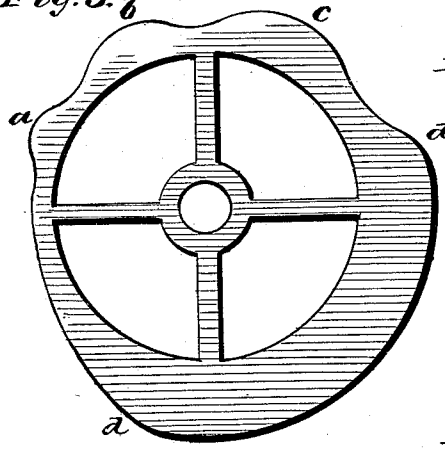


Fig. 2.

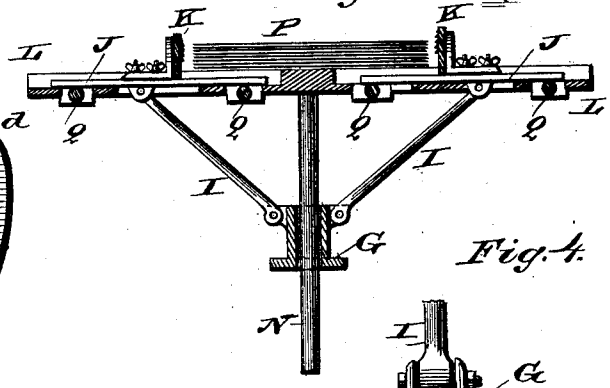


Fig. 4.

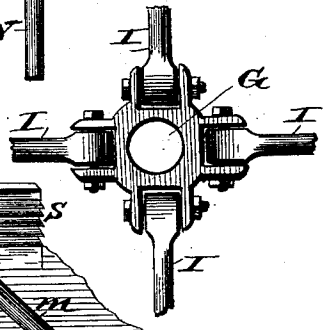
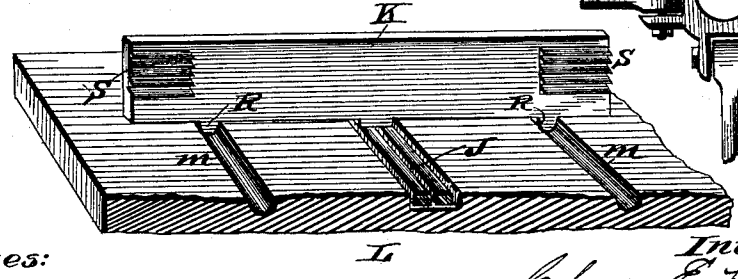


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES E. HOLBROOK, OF WATERTOWN, NEW YORK.

SHEET-PILING ATTACHMENT FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 360,439, dated April 5, 1887.

Application filed August 9, 1886. Serial No. 210,460. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. HOLBROOK, a citizen of the United States, and residing at the city of Watertown, in the county of Jefferson and State of New York, have invented a new and useful Improvement in Sheet-Piling Attachments for Printing-Machines, of which the following is a specification.

The object of my invention is to place printed sheets of paper in an even and regular pile as they are thrown out by the fly of a printing-press, thus doing away with the labor commonly known as "jogging." I attain this object by means of mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my invention. A part of the frame and cylinder of a press is shown to explain the manner in which the connections are made with the press. Fig. 2 is a vertical section of the receiving-table cut through the center from front to back, and detached from the press. Fig. 3 is an enlarged view of cam, giving the form of construction thereof. Fig. 4 is a top view of collar, showing connections. Fig. 5 is an enlarged view of a section of the receiving-table, showing one of the movable gages.

Similar letters refer to similar parts throughout the several views.

The table L is provided with four automatically-moving gages or guides, K, which are attached by thumb-screws to the four slotted slides J. The slides J are arranged to slide toward and from the center of the table through slots cut in the top of the table. The four connecting-rods I are attached to the under side of the slides J, and connect them with the collar G. The collar G slides upward and downward upon the vertical shaft N, which is fastened to the center of the under side of the table-top. The bottom of the collar G rests upon the forked end of the lever F, which is attached to the horizontal shaft E, which has at its end the crank D. The crank D is connected with the lever B by means of the rod C.

Upon the upper end of the lever B is a roller, O, which is held against the face of the cam A. The power which holds the roller O against the face of the cam is the two springs, H, the lower ends of which are attached to the two fork-ends of the lever F, the upper ends of said springs being attached to hooks on the under side of the table-top. The slides J are placed upon the loose rollers Q to reduce friction.

The drawings represent the machine at the instant that a sheet of paper has been laid down by the fly of the press upon the table L. The roller O is against the face of the cam A at its smallest radius, and the gages K are all open to their farthest extent from the center, and about one and one-half to two inches from the edges of the pile of papers P upon all sides. As the cam A revolves with the cylinder in the direction indicated by the arrow, the larger radius of the cam at *a* is brought against the roller O, which pushes the top of the lever B forward, and the lower end is pushed correspondingly backward. This moves the crank D, causing the shaft E to turn a little, which lowers the forked end of the lever F. The weight of the collar G causes it to fall as the fork is lowered. This draws upon the four connecting-rods I, causing the slides J, with the gages K attached, to move a short distance toward the center. The next instant the cam A presents a smaller radius to the roller O, and the springs H draw the fork F and collar G upward, thus causing the gages K to return to nearly their original position. Then the projection *b* upon the cam is forced against the roller O, and, being a larger radius than *a*, the gages are moved inward a trifle farther than before. A smaller radius of the cam is then presented, and the gages are moved backward about half as far as they were moved forward. The variations upon the face of the cam gives a backward-and-forward or jogging motion to the gages, and if the sheet of paper is not laid down accurately upon the pile, the gages will gradually push or "jog" it toward the center. This jogging motion of the gages is kept up until the portion of the cam *d d* is brought against the roller. This being the largest radius of the cam, the gages are moved toward the center until they touch the edges of the pile of paper, and are there held stationary while the cylinder of the press is making about one-third of a revolution. Then the cam again presents its smallest radius to the roller, and the gages are moved outward to their farthest extent at the instant that another sheet of paper is laid upon the table, and the operation is then repeated.

There are small projections R upon the under side of the gages K, which move in grooves *m*. These projections extend below the surface of the table and prevent the edges of the first sheets of paper that are laid down from slipping under the gages. At each end of the gages are the creases S, resembling the teeth of a ratchet. When the edge of a sheet of paper is turned up against the face of a gage, these ratchet-shaped creases prevent it from slipping farther up, and thus aid in pushing the paper toward the center.

There is no positive motion of the gages K, the power which moves the gages backward being the springs H, and that which moves them forward being the weight of the collar G. This prevents the breaking of any parts in case the gages should be set too near the edges of the paper, and enables the machine to adjust itself to slight variations which may occur in the sizes of the sheets of paper. If, owing to friction or other causes, the collar G does not quickly respond to the lowering of the fork F, a small spring can be attached to the upper portion of the collar and connect it with the fork, thus furnishing additional power.

The cam A is intended to revolve upon the same shaft as the cam which operates the fly of the press, as such shaft makes one revolution while one sheet of paper is being printed, and usually the cam A can be fitted to the hub of the fly-cam. On two-revolution presses the fly-cam is not attached to the cylinder-shaft, as it is in the drawings, and on such presses the mechanism connecting the cam with the working parts of the table will necessarily be modified. In case the fly-cam is not in a convenient place, by modifications of connecting mechanism the cam A can be attached to any shaft which makes one revolution while one sheet of paper is being printed.

The shape of the cam A may be modified to suit the requirements of different kinds of presses. Upon a press intended to run at a high rate of speed better results will be obtained by having fewer and more gradual variations upon the cam, and upon some classes of work a simple cam with one side gradually increasing to a greater radius will be found advantageous.

I do not limit myself to the particular shape of the cam A that is shown in the drawings.

The gages K, operating on four sides of the paper, were secured to me by claims 1 and 3 of my patent which was granted August 24, 1886, and bearing No. 348,123. I therefore do not in this application make claim to such a combination, broadly.

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

1. In a sheet-piling attachment for printing-presses, the combination, with the automatic gages K, of a revolving cam for operating the same having different radii and intermediate mechanism between the two, substantially as described.

2. The combination of the cam A, lever B, rod C, crank D, shaft E, forked lever F, collar G, vertical shaft N, connecting-rods I, springs H, slides J, and gages K, substantially as described, and for the purposes set forth.

CHARLES E. HOLBROOK.

Witnesses:
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