

I. D. HURLBUT.
 DRYING MACHINE FOR PRINTED SHEETS.
 APPLICATION FILED SEPT. 13, 1911.

1,042,441.

Patented Oct. 29, 1912.

2 SHEETS—SHEET 1.

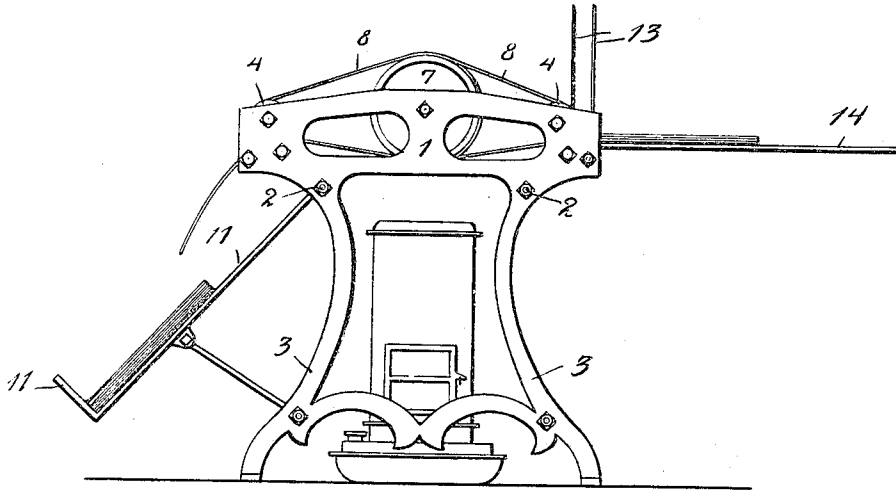


Fig. 1.

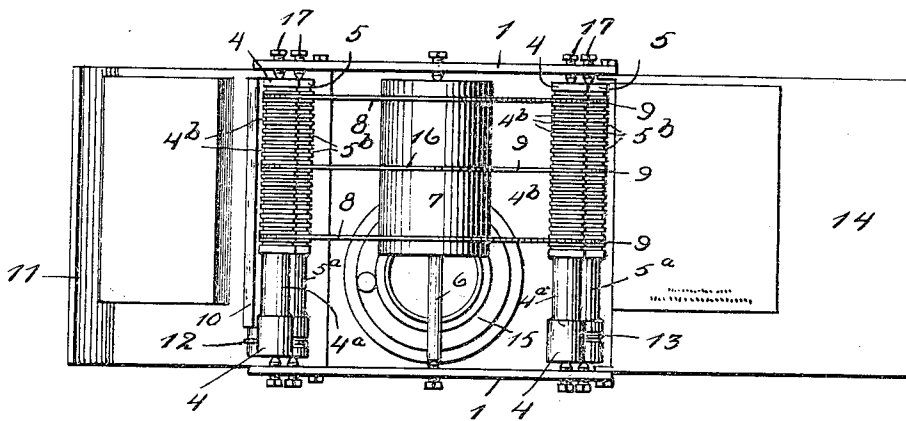


Fig. 4.

Inventor

Witnesses

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2 SHEETS—SHEET 2.

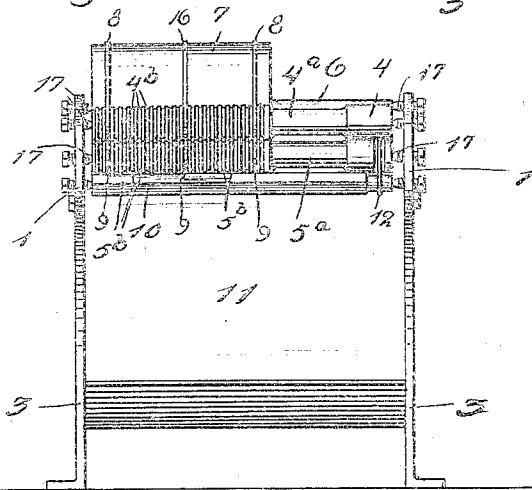
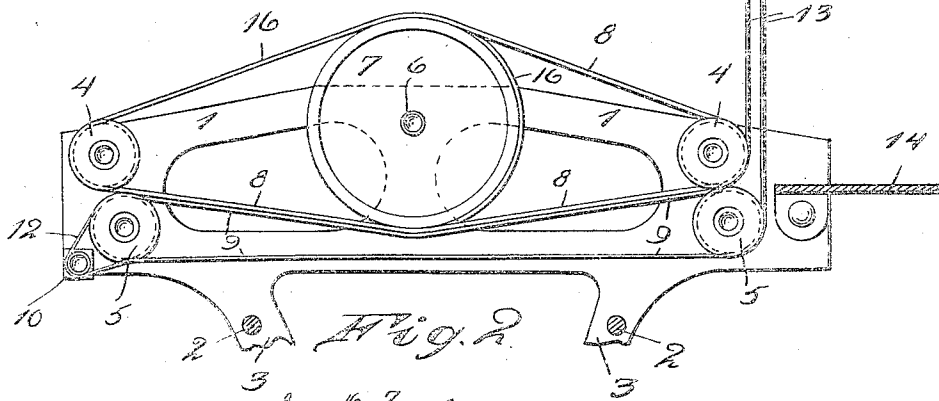


Fig. 3.

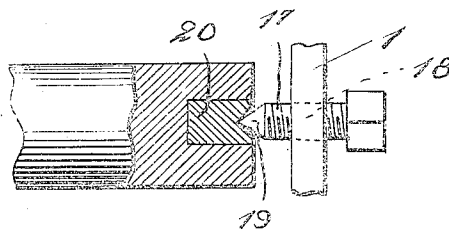


Fig. 5.

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UNITED STATES PATENT OFFICE.

IRA D. HURLBUT, OF PRAIRIE DU CHIEN, WISCONSIN.

DRYING-MACHINE FOR PRINTED SHEETS.

1,042,441.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed September 13, 1911. Serial No. 649,188.

To all whom it may concern:

Be it known that I, IRA D. HURLBUT, a citizen of the United States, residing at Prairie du Chien, in the county of Crawford and State of Wisconsin, have invented certain new and useful Improvements in Drying-Machines for Printed Sheets, of which the following is a specification.

My invention relates to machines for drying printed sheets and particularly sheets on which glossed-embossed and gilded letter heads and the like have been printed, and has for its object the provision of a machine by which the sheets may be quickly and expeditiously handled while the ink is being dried without danger of affecting or smearing the printed matter.

My invention will be described in detail hereinafter and illustrated in the accompanying drawings, in which—

Figure 1 is a side view of my improved drying machine. Fig. 2, a longitudinal sectional view, Fig. 3, a front view, Fig. 4, a top plan view, and Fig. 5, a detail view of the journal mountings of the rolls.

In the drawings similar reference characters will be used to designate corresponding parts in the several views.

The supporting frame of my improved machine consists of two skeleton plates 1 connected by means of cross rods 2 and resting on legs 3.

4 and 5 designate superposed rollers, journaled adjacent to the two ends of plates 1, each of said rollers having a portion of its length formed smaller in diameter than the rest of the roller as shown at 4^a and 5^a, respectively, and the larger portion at one of the ends of the rollers circumferentially corrugated as shown at 4^b and 5^b, respectively.

6 indicates a shaft journaled intermediate of the rollers 4, 5 and having a cylinder or drum 7 secured thereon.

8 indicates endless tapes or bands engaging the upper rollers 4 and cylinder or drum 7, and 9 other endless tapes or bands engaging the lower rollers 5 and passing under cylinder or drum 7, said tapes or bands 8 and 9 engaging the corrugated portions 4^b and 5^b of the rollers.

10 indicates a roller that is square in cross section and journaled at the delivery end of the machine and that serves to agitate the sheets of paper as they leave the machine so that they fall into the inclined tray 11 in position on the top of the pile of sheets al-

ready treated. Roller 10 is actuated by means of a belt or like gearing, shown at 12, led around roller 5 at the delivery end of the machine.

13 indicates the drive belt engaging rollers 4 and 5 at the receiving end of the machine, 14 indicates a feed table at the feeding end of the machine, and 15 a heater of any preferred variety.

To insure rotation of the cylinder or drum 7 at uniform speed with rollers 4 and 5 I provide a tape or band 16 connecting one of the rollers 4 with said cylinder or drum. The rollers 4 and 5, and shaft 6 may be journaled in any suitable manner on plates 1 but in practice I have found that the most satisfactory journal consists of threaded pins 17 engaging threaded holes 18 in the plates 1, and having pointed ends 19 that engage sockets in the ends of the rollers, the ends of the rollers 4 and 5 which may be made of wood or other fibrous material being provided with metal socket members 20 inserted in their ends.

In operation the printed sheets are fed between the rollers 4, 5 from the table 14, care being taken that the printed portion of the sheet passes between the narrow portions of the rollers so that the inked surface does not contact therewith. The drum or cylinder 7 is of sufficient diameter as shown in the drawings to depress the tapes or bands 8 and 9 so that when the sheets of paper are passing through the machine, they are first depressed into closer proximity to the heater 15, and then gradually led back to the same plane as when they passed through the first set of rollers and then out between the rollers 4 and 5 at the delivery end of the machine, and thence into tray 11, the roller 10 serving to agitate the sheets as they are leaving the machine to insure depositing in the tray 11 on top of the pile of finished sheets.

Having thus described my invention what I claim is—

1. In a machine for drying sheets, pairs of superposed feed rollers, a cylinder or drum mounted intermediate of the pairs of rollers, the lower portion of the cylinder or drum being below the plane between the rollers, tapes or bands engaging the upper of each pair of rollers and the cylinder or drum, and other tapes or bands engaging the lower rollers of each pair and passing under the cylinder or drum.

2. In a machine for drying sheets, pairs

of superposed feed rollers, said rollers having a portion of their lengths reduced in diameter, a cylinder or drum mounted intermediate of the pairs of rollers, the lower
5 portion of the cylinder or drum being below the plane between the rollers, and conveying means mounted on said rollers and cylinder or drum.

3. In a machine for drying sheets, pairs
10 of superposed feed rollers, said rollers having a portion of their lengths reduced in diameter and their wider portions circumferentially corrugated, a cylinder or drum intermediate of the pairs of rollers and in
15 alinement with the corrugated portions thereof, the lower portion of the cylinder or drum being below the plane between the rollers, tapes or bands engaging said cylinder or drum and the corrugated portions of
20 the upper of each pair of rollers, and other tapes or bands engaging the lower of each pair of rollers and passing under the cylinder or drum.

4. A machine for drying sheets comprising
25 a frame, rollers journaled in pairs at opposite ends of the frame, a shaft journaled intermediate of the ends of the frame, a cylinder or drum mounted on said shaft, the lower portion of said cylinder or drum being
30 below the plane between the pairs of rollers,

an endless conveyer, a tray to receive the sheets from the conveyer, and a roller rectangular in cross section positioned at the delivery end of the conveyer and adapted to agitate the sheets and insure delivery into
35 the tray aforesaid.

5. A machine for drying sheets comprising a frame, rollers journaled in pairs at opposite ends of the frame, each of said
40 rollers having a portion of its length reduced in diameter and its wider portion circumferentially corrugated, a shaft journaled intermediate of the ends of the frame, a cylinder or drum mounted on said shaft,
45 the lower portion of said cylinder or drum being below the plane between the pairs of rollers, tapes or bands engaging said cylinder or drum and the corrugated portion of the rollers, a heater arranged intermediate of the reduced portions thereof, a tray at
50 the delivery end of the machine, and a roller rectangular in cross-section at the delivery end of the machine.

In testimony whereof I hereto affix my signature in the presence of two witnesses. 55

IRA D. HURLBUT.

Witnesses:

DELLA WELSH,
J. H. PEACOCK.