No. 814,938. PATENTED MAR. 13, 1906.

A. C. CAREY.

DRYING MACHINE.

APPLICATION FILED JAN. 3, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

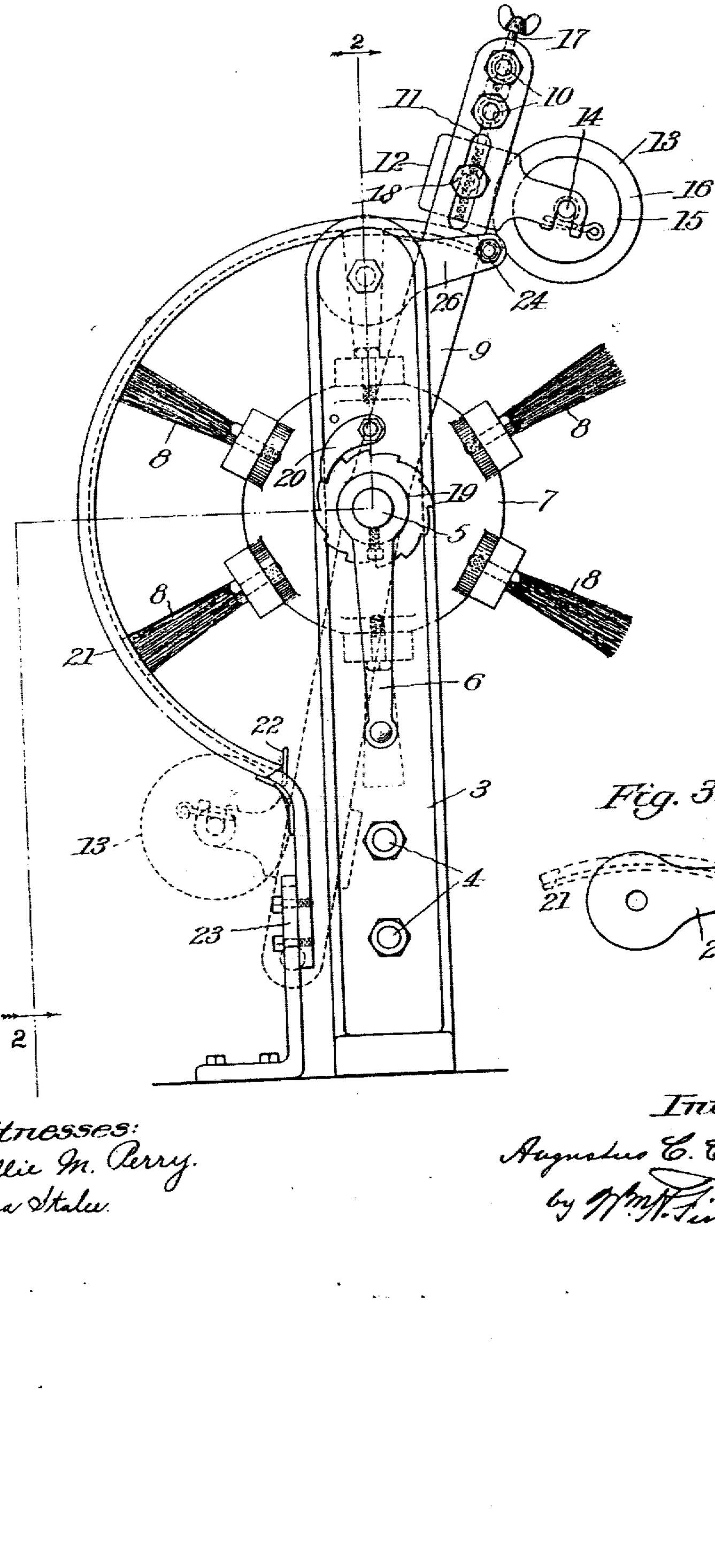

Fig. 3.

Witnesses:
Lillie M. Perry.
Ina Stalu.

Inventor:
Augustus C. Carey
by Wm. F. Linnell
Atty.

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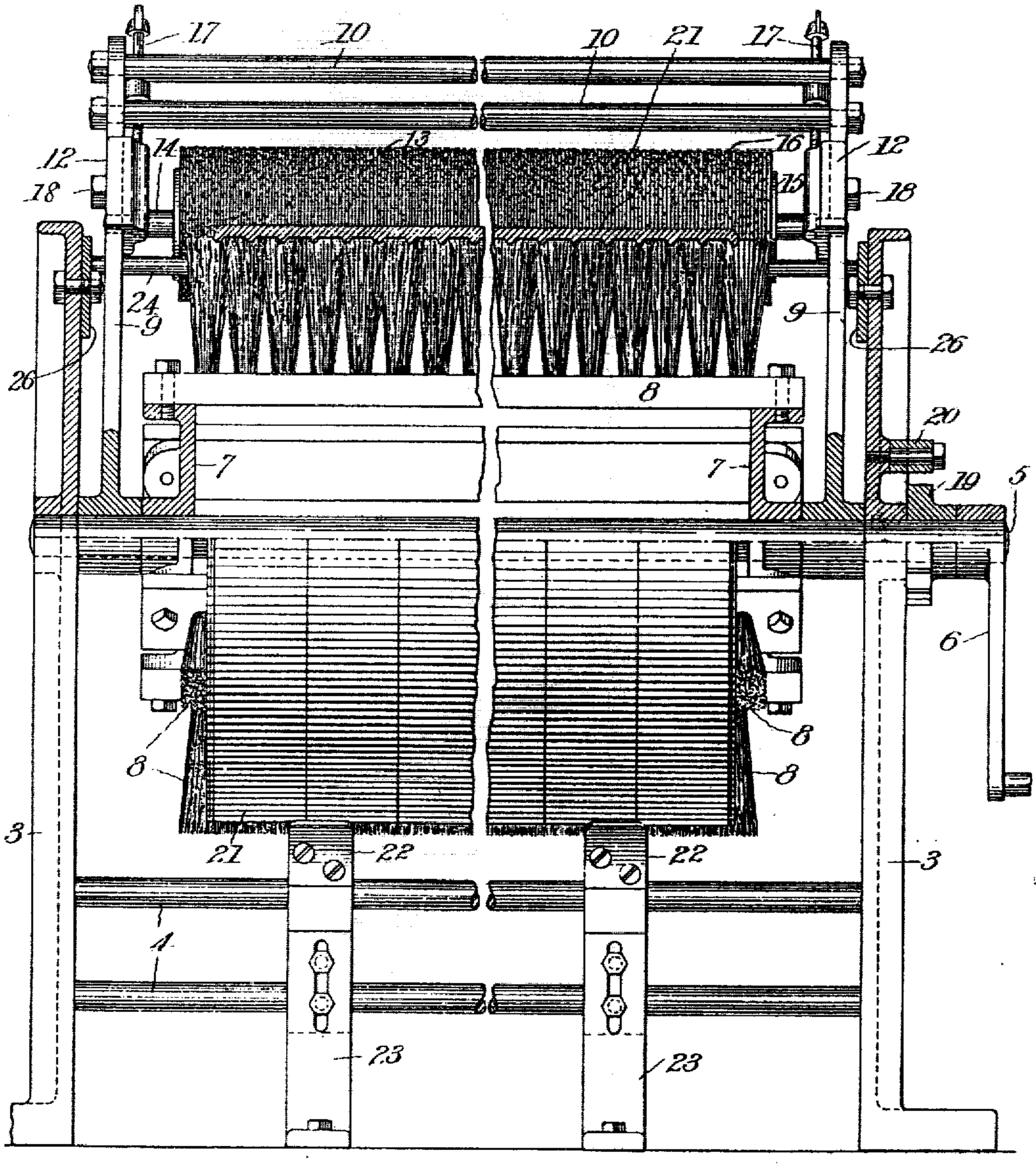
2 SHEETS—SHEET 2.

Fig. 2.



Witnesses:
Lillie M. Perry.
Ina Staley

Inventor:
Augustus C. Carey
by Wm. H. Pinsett
Atty

UNITED STATES PATENT OFFICE.

AUGUSTUS C. CAREY, OF BOSTON, MASSACHUSETTS.

DRYING-MACHINE.

No. 814,938. Specification of Letters Patent. Patented March 13, 1906.

Application filed January 3, 1906. Serial No. 294,402.

To all whom it may concern:

Be it known that I, AUGUSTUS C. CAREY, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Improvement in Drying-Machines, of which the following is a full, clear, and exact description.

In newspaper-printing offices using stereotype-forms on rotary or cylinder presses and where the work of stereotyping is done in a hurry it is customary to cast the stereotype-plates and then rapidly cool them by immersion in water and then dry them preparatory to fixing them on the cylinder of the printing-press. Any water remaining on the plates is apt to so spoil the inking-rollers as to mar the impressions. It is usual to take out inking-rollers thus defaced and substitute perfect ones, and this involves loss of time as well as loss of rollers. Were the plates perfectly dried in the first instance and before being mounted upon the cylinder, there would be no such loss, and hence it is quite desirable to provide means for drying the inside and outside faces of the plates as they are taken from the cooling-bath. Hand-wiping is not only slow and uncertain, but it is apt to deface any half-tones or other process illustrations included in the forms. I have found that these plates may be dried perfectly, quickly, and without injury by machinery containing a revolving brush for acting upon the concave inside or back of the plates and an absorbent roll for acting upon the convex outside or printing-face of the plates.

The invention consists of a plate-support, a rotary brush for drying the back, and a swinging roll for drying the face organized in a hand or power machine, so that the plate may be thoroughly dried before it is placed upon the cylinder.

The invention is herein shown as embodied in a hand-operated machine; but it is not thus limited.

In the accompanying drawings, illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a side elevation showing the outside wiping-roll in two positions by full and dotted lines, respectively. Fig. 2 is a front elevation and partial section, the plane being indicated by the dotted line 2 2, Fig. 1. Fig. 3 is a side elevation and partial section of part of the upper support for the plate.

I will now describe one form of the invention which is in use, but mean not thereby to be limited to the construction and arrangement of parts shown, since obviously these may be varied within the principle of the invention so as to meet the requirements of various printing-offices.

The machine may be mounted upon a bench, table, or stand of suitable construction (not shown) over a drip-pan (not shown) arranged to conduct away the water removed by the apparatus from the stereotype-plates.

Two uprights 3 are provided, and these are connected by stay-rods 4 to constitute a frame which is adapted to receive a shaft 5, suitably equipped with any desired mechanism, such as a crank-handle 6, for rotating same. On this shaft is secured a rotary brush, here shown as comprising heads 7, fast on the shaft, and on these heads are fixed the brushes 8, of bristles or other suitable material.

Mounted loosely upon the shaft 5 are arms 9, connected by any suitable number of stay-rods 10 to constitute a swinging frame. The arms are slotted longitudinally at 11 to receive adjustable brackets 12, in which is mounted a pad-roll 13. This pad-roll is preferably constructed of a spindle 14, having on it heads 15, between which are clamped a number of disks 16 of some absorbent material, such as cheese-cloth or other textile fabric or other material which will readily absorb water. This pad-roll is mounted in its brackets, so as to be readily removable when the rolls become saturated, and it is necessary to replace them by dry rolls while the wet rolls are being dried for further use. The brackets 12 embrace the arms 9 and are adjustable longitudinally of the slots 11 by means of set-screws 17 engaging them, and the adjustment may be fixed by means of clamp-bolts 18. The object in making the brackets adjustable is to secure the requisite pressure of the pad-roll upon the stereotype-plates.

The brush is arranged to be turned to the left, Fig. 1, and in order to prevent its opposite rotation a ratchet 19 is provided on shaft 5, and the direction of rotation of the ratchet, and consequently the shaft, is controlled by a pawl 20, pivoted upon the adjacent upright.

The stereotype-plate 21 of common construction is supported at its lower end in brackets 22, mounted in longitudinally-adjustable stands 23, erected upon the ma-

chine-support. The upper end of the stereotype-plate is supported upon a bar or other suitable device 24, having pins 25, Fig. 3, and mounted in arms 26, which are secured to the uprights 3.

After the stereotype-plate has been cast and cooled by dipping it in water, as usual, it is placed upon the brackets 22 with its upper edge resting against the pins 25, its upper end being overbalanced, as indicated in Fig. 1, so that its concave side will be next to the brush. The pad-roll is then drawn over the upper edge of the plate, so as to hold the plate firmly in place. The brush then being rotated to the left, Fig. 1, will sweep over the surface of the plate and carry down the water with it, and the agitation of the air incident to the rotation of the brush will further serve to thoroughly dry the concave or inside of the plate. By swinging the pad-roll-carrying frame downward the pad-roll will be rolled over the type or convex side of the plate under sufficient pressure to thoroughly absorb all of the water or moisture on that side of the plate. By resting the upper edge of the plate against the pins space is left at that point for the escape of the water and the circulation of air.

In Fig. 1 the pad-roll is shown in full lines at the beginning of its movement over the plate and is shown in dotted lines at the end of its drying motion. The movement of the pad-roll over the plate may be repeated as often as necessary. The brush carries down the water before it and the pad-roll absorbs the water, and whatever drip there is falls into the pan beforementioned, but not shown, and is conveyed away.

By the construction described I have provided a very simple, durable, and effective means for thoroughly and rapidly drying stereotype-plates, especially those used in newspaper-offices.

What I claim is—

1. A drying-machine, comprising a plate-support, a frame, a rotary brush mounted on said frame and adapted to act on the concave or inside of a stereotype-plate arranged upon said support, and a swinging absorbent roll also mounted on said frame and adapted to be passed over the convex or printing side of said plate.

2. In a drying-machine, the combination of uprights, a rotary shaft mounted therein, a brush on said shaft, means to rotate said shaft, a swinging frame mounted on said shaft and a pad-roll carried by said frame.

3. In a drying-machine, the combination of uprights, a rotary shaft mounted therein, a brush on said shaft, means to rotate said shaft, a swinging frame mounted on said shaft, a pad-roll carried by said frame, and a support for the stereotype-plate.

4. A drying-machine, comprising essentially a frame, a rotary shaft supported in said frame, a brush on said shaft, means to limit the rotation of said brush in one direction only, a frame mounted to swing on the shaft independently of its rotation, a pad-roll carried by said swinging frame, and means to support a printing-plate between the brush and the pad-roll.

5. A drying-machine, comprising essentially a frame, a rotary shaft supported in said frame, a brush on said shaft, means to limit the direction of rotation of said brush, a frame mounted to swing on the shaft independently of its rotation, a pad-roll carried by said swinging frame, means to adjust the pad-roll in said frame, and means to support a printing-plate between the brush and the pad-roll.

6. In a drying-machine, the comb nation of a frame, a rotary brush supported in said frame, a swinging frame mounted in the brush-frame, brackets on said swinging frame, a detachable absorbent pad-roll mounted in said brackets, and means to support a printing-plate between the brush and the pad-roll.

In testimony whereof I have hereunto set my hand this 30th day of December, A. D. 1905.

AUGUSTUS C. CAREY.

Witnesses:
THOMAS BAXTER,
ABBIE K. T. CAREY.