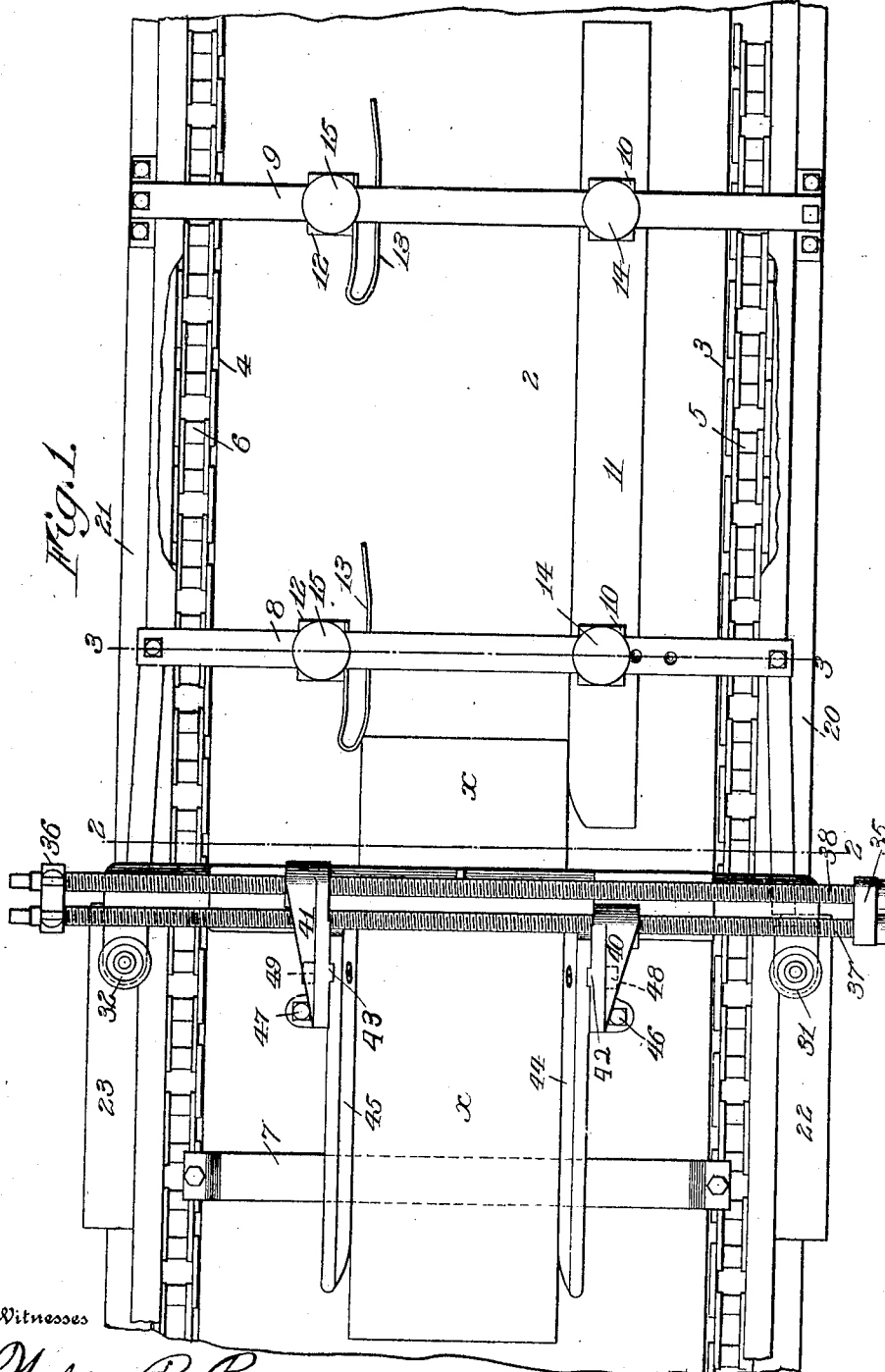


H. W. MORGAN.
FEED MECHANISM FOR PRINTING MACHINES.
APPLICATION FILED OCT. 2, 1905.

926,205.

Patented June 29, 1909.

3 SHEETS—SHEET 1.



Witnesses

Walter B. Payne
Carena A. Bateman

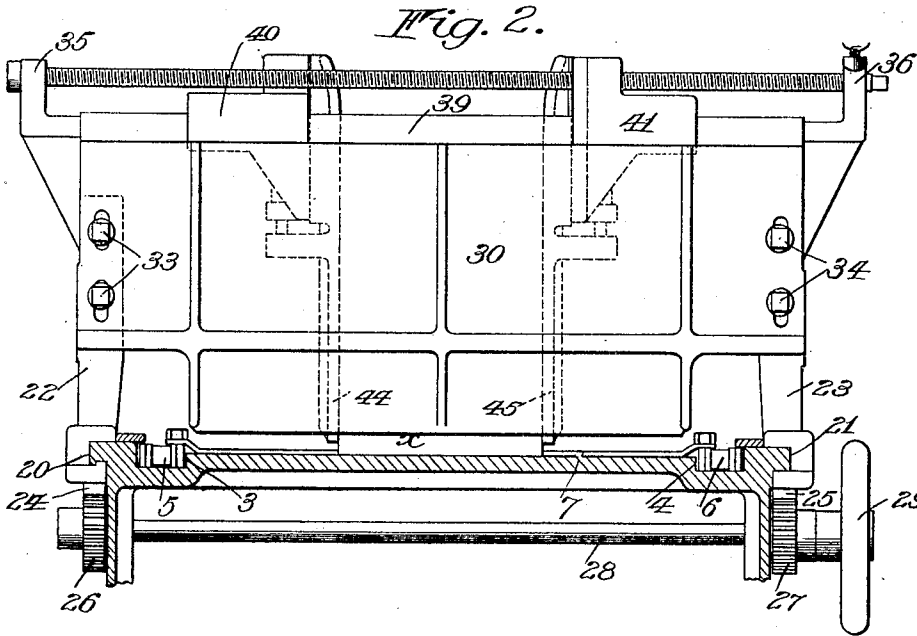
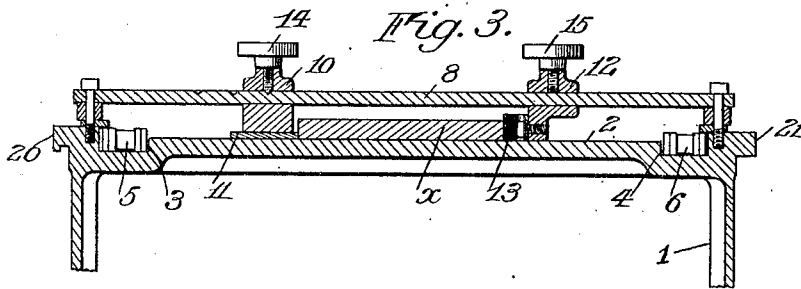
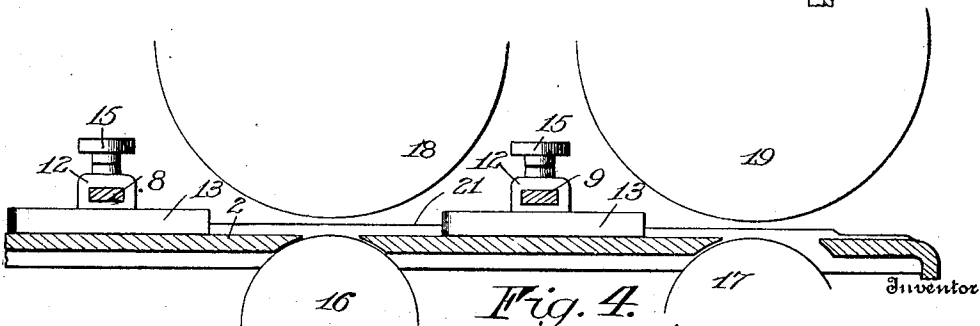
Inventor: Henry Morgan
Frederick H. Chubb, Jr. Attorney

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3 SHEETS—SHEET 2.



Witnesses
Matter B. Payne
Clarence A. Bateman

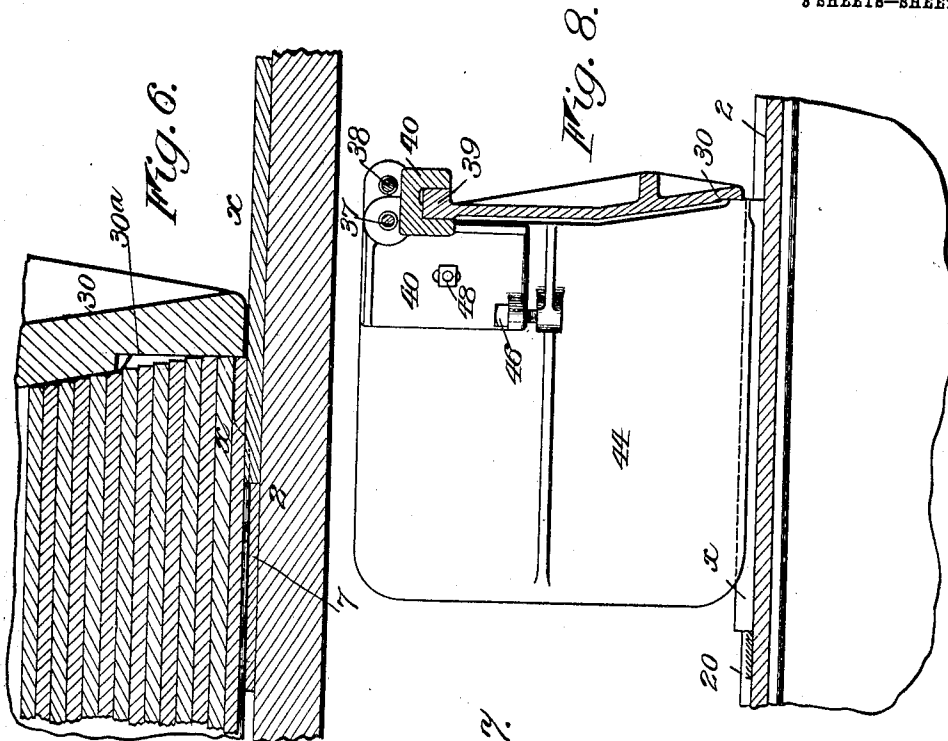
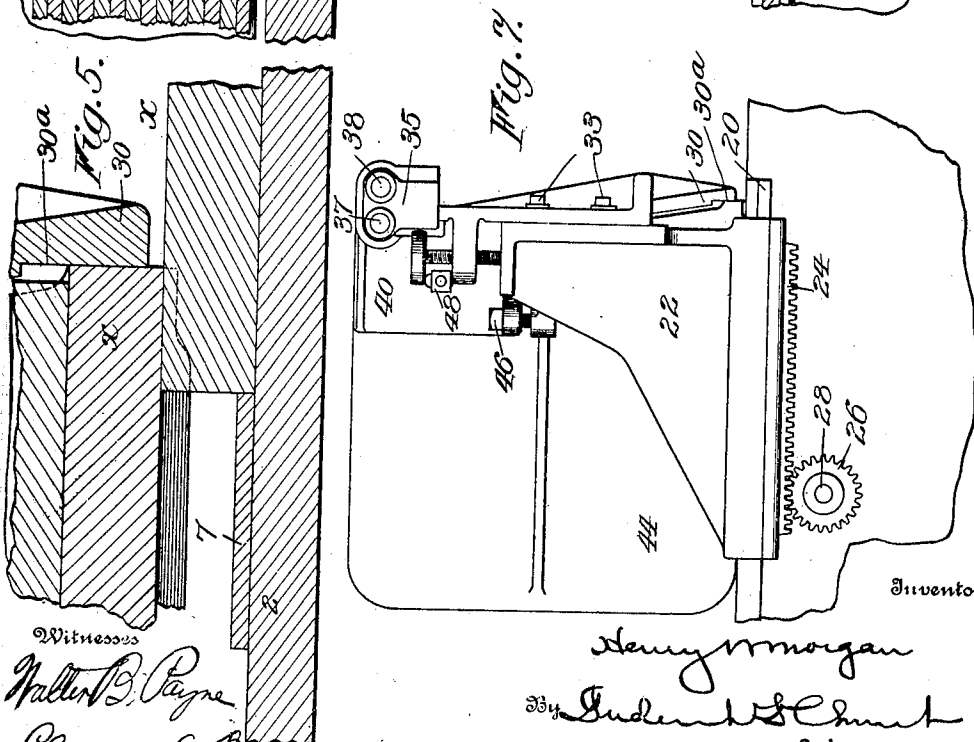
Henry Morgan
By *Edmund H. Church*
his Attorney

H. W. MORGAN.
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3 SHEETS—SHEET 3.



Witnesses
 Walter B. Payne
 Clarence A. Bateman

Inventor
 Henry Morgan
 By Andrew H. Schmit
 his Attorney

UNITED STATES PATENT OFFICE.

HENRY W. MORGAN, OF ROCHESTER, NEW YORK.

FEED MECHANISM FOR PRINTING-MACHINES.

No. 926,205.

Specification of Letters Patent.

Patented June 29, 1909.

Application filed October 2, 1905. Serial No. 280,934.

To all whom it may concern:

Be it known that I, HENRY W. MORGAN, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Feed Mechanism for Printing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention relates to improvements in printing machines, and particularly of the kind adapted for printing on boards such as are intended for box ends, and the purpose of my invention is to provide improved feeding devices having novel adjustments to accommodate boards of different thicknesses, and which are capable of carrying the boards past the printing cylinders in such a way that the printing will cover the entire surface of the board without leaving a margin.

To these and other ends the invention consists in certain improvements and combinations of parts all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawing: Figure 1 is a plan view of a printing machine embodying my present invention. Fig. 2 represents a transverse section of the machine taken on the line 2—2 of Fig. 1. Fig. 3 represents a section on the line 3—3 of Fig. 1. Fig. 4 represents a section taken longitudinally of the bed showing the printing cylinders conventionally. Figs. 5 and 6 are sectional views on enlarged scales, showing the manner of adjusting the fence and the lateral guides to accommodate boards of different thickness, and Figs. 7 and 8 show in elevation, the fence and the lateral guides which constitute a receptacle for the boards.

The same numerals of reference in the several figures indicate similar parts.

The present embodiment of my invention is illustrated as applied to a printing machine of the kind covered in my prior application, Serial No. 138,200, filed January 8th, 1903, comprising generally a frame comprising sides 1 supporting a horizontal bed 2 having channels 3 and 4 arranged longitudinally along its opposite edges to receive the carrier chains 5 and 6 respectively, the latter being connected at suitable intervals

by narrow feed bars 7, the carrier chains passing over sprocket wheels or other suitable devices at the ends of the frame so that their operation will cause the feed bars 7 to travel longitudinally of and very close to the surface of the bed.

Spanning the frame above the bed 2 are the members 8 and 9, one or more of these members being employed corresponding with the number of printing cylinders used. On each of these members are mounted the slides 10 which are movable longitudinally of their corresponding member, each of these slides carrying a gage 11 which extends longitudinally of the bed, and spaced from these slides on the members are similar slides 12, each having a spring or other yielding surface 13 arranged at one side thereof and yielding in a direction parallel to the surface of the bed. The slides 10 and 12 are provided with the adjusting screws 14 and 15 respectively, whereby they may be independently adjusted on the supporting member so as to vary their position and relation in a direction parallel to the surface of the bed. Beneath the bed are mounted the platen rollers 16 and 17 respectively, corresponding with the printing rollers 18 and 19, and the supporting members 8 and 9 carrying their respective gages are arranged immediately in advance of the printing cylinders and their corresponding platens.

The opposite edges of the frame are provided with ways 20 and 21 which coöperate with the lower ends of the standards 22 and 23, the latter being provided at their lower edges with racks 24 and 25 which coöperate with the pinions 26 and 27 respectively carried by a transverse shaft 28, the latter being provided with a hand wheel 29 by means of which they may be rotated to shift the standards 22 and 23 simultaneously in a direction lengthwise of the bed to render the adjacent printing cylinder conveniently accessible for handling the type forms. Connecting these standards is a fence 30 which extends transversely across the bed, and is adapted to slide vertically on the standards, adjusting screws 31 and 32 being provided on the fence for adjusting the latter vertically relatively to the standards to vary the height of its lower edge above the bed, bolts 33 and 34 being provided for securing the fence rigidly to the standards after it has been adjusted. On the opposite ends of this fence are formed bearings 35 and 36, and in

these bearings are journaled horizontal screws 37 and 38, the latter being provided with squared ends to receive a wrench or operating crank. On the fence and arranged parallel to the screws 37 and 38 is a guide 39 to receive the slides 40 and 41, the slide 40 being threaded to receive the screw 37 and the slide 41 to receive the screw 38, such an arrangement permitting each of the slides to be adjusted independently by operation of its respective screw. These slides are provided with vertical ways 42 and 43 respectively to receive the oppositely-arranged vertical guides 44 and 45 which are arranged vertically and extend longitudinally of the bed, these guides being adjustable vertically on the ways of their respective slides to vary the height of their lower edges above the bed by means of the screws 46 and 47, clamping screws 48 and 49 being provided for rigidly securing the guides in adjusted position on their respective slides. The lower edges of these guides and of the fence are arranged in horizontal planes parallel to the surface of the bed, the adjustments described enabling the fence and the lateral guides to be adjusted relatively to the surface of the bed as well as relatively to each other.

In operating a printing machine provided with feed devices embodying my invention, the boards x which have been previously dressed and cut to the desired dimensions, are piled between the lateral guides 44 and 45 and immediately behind the fence 30. In operating the machine with comparatively thick boards, such as shown in Fig. 5, the fence 30 is elevated by means of the screws 31 and 32 until its lower edge is elevated above the surface of the bed a distance greater than but not exceeding double the thickness of the board being operated upon, to allow boards that have become warped or otherwise distorted to pass freely below the fence, and it is preferable to provide a square surface 30^a at the rear of the fence and adjacent to its lower edge to enable the square edges of the boards to bear flatwise against the fence as a firm stop. The guides 44 and 45 are also adjusted vertically by means of the screws 46 and 47 until their lower edges overlap the lateral edges of the lowermost board resting on the bed, it being sufficiently high above the bed to permit the passage of the feed bars 7. Of course in operating upon comparatively thin boards as shown in Fig. 6, it will be necessary to lower the fence until its lower edge is considerably closer to the surface of the bed, and it will also be necessary to depress the lateral guides 44 and 45 relatively to the fence so that their lower edges overlap the lateral edges of the board on the bed, but is sufficiently high to clear the feed bars 7. As the feed bars are carried over the bed by the operation of the carrier chains 5 and 6 they will successively engage

the lowermost board in the pile behind the fence, carrying it beneath the latter and from beneath the next higher board, the latter abutting against the flat surface 30^a at the rear of the fence. The gage 11 and the yielding stops 13 which have been previously adjusted to their proper positions on their respective supporting members, form guides for conducting the boards past the printing cylinders in a given path, the gage and stops engaging the lateral edges of the boards as they pass, leave the entire upper surface of the board untouched during its entire passage through the machine, and this enables the ink to be applied to the entire surface of the boards without danger of smearing, and by providing the yielding stops 13 to cooperate with the gage 11 of the guide, slight variations in the widths of the board will be compensated for. Of course the lateral guides 44 and 45 may be readily adjusted to accommodate boards of different widths by operating the screws 37 and 38, as this enables the guides to be positioned in a direction transversely of the table as well as relatively to each other.

I claim as my invention:

1. In a machine for printing on boards, the combination with a frame having a horizontal bed thereon and a printing device cooperating therewith, of a feed bar arranged to travel over the bed, a fence mounted above the bed, a guide arranged over and transversely of the bed, a slide adjustable longitudinally of the guide and a vertical guide adjustable vertically on the slide relatively to the fence.

2. In a machine for printing on boards, the combination with a frame having a horizontal bed thereon, a printing device cooperating therewith, and a feed bar arranged to travel over the bed, of a fence mounted above the bed, and a vertical guide above the feed bar cooperating with the fence and adjustable vertically relatively to the bed on the fence.

3. In a machine for printing on boards, the combination with a frame having a horizontal bed thereon, and a printing device cooperating therewith, of a fence arranged above the bed, and a guide mounted in ways carried by the fence and adjustable vertically relatively thereto.

4. In a machine for printing on boards, the combination with a frame having a horizontal bed thereon, and a printing device cooperating therewith, of a fence arranged above the bed having vertical ways thereon, and oppositely arranged vertical guides mounted on the ways of the fence for engaging the lateral edges of the boards.

5. In a machine for printing on boards, the combination with a frame having a horizontal bed thereon and a printing device cooperating therewith, of a ver-

tically adjustable fence arranged transversely of the bed, and a vertical guide arranged on the rear of the fence.

6. In a machine for printing on boards, the combination with a frame having a horizontal bed thereon, and a printing device coöperatively arranged therewith, of vertical standards on the frame, a fence arranged transversely of the bed and adjustable vertically on the standards, slides adjustable longitudinally of the fence having vertical ways thereon, and guides adjustable vertically on the ways of the slides.

7. In a machine for printing on boards, the combination with a frame having a horizontal bed thereon, and a printing device coöperatively arranged therewith, of a fence arranged transversely of the bed in rear of the printing device for engaging the forward edges of the boards, slides adjustable longitudinally of the fence having vertical ways thereon, and oppositely arranged guides adjustable in the vertical ways of the slides for varying the height of the guides relatively to the bed independently of the fence, said guides engaging the lateral edges of the boards.

8. In a machine for printing on boards,

the combination with a frame having a horizontal bed thereon, and a printing device coöperatively arranged therewith, of a fence arranged transversely to the bed, a slide mounted on and adjustable longitudinally of the fence and a vertical guide arranged on and adjustable vertically of the slide.

9. In a machine for printing on boards, the combination with a frame having a bed thereon, and a printing device coöperatively arranged therewith, of means embodying feed bars extending transversely of the bed and movable longitudinally thereof for feeding the boards to the printing device and means for positioning the boards relatively to the printing device embodying a member arranged transversely to the bed, relatively adjustable slides arranged on the transverse member, and stops or gages supported on the slides above the transverse feed bars for engaging the edges of the boards, one of the stops being yieldable in a direction parallel to the surface of the bed.

HENRY W. MORGAN.

Witnesses:

CLARENCE A. BATEMAN,
G. WILLARD RICH.