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F. ARNOLD

RULING MACHINE

Filed June 1, 1925

Fig. 1.

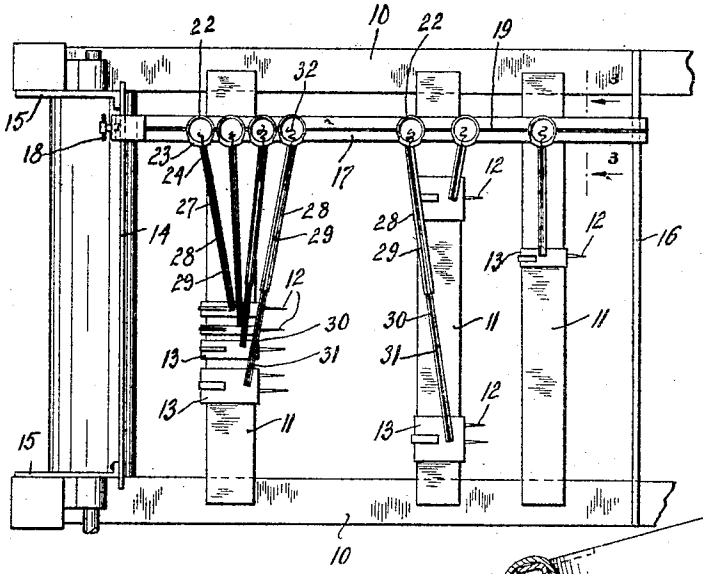
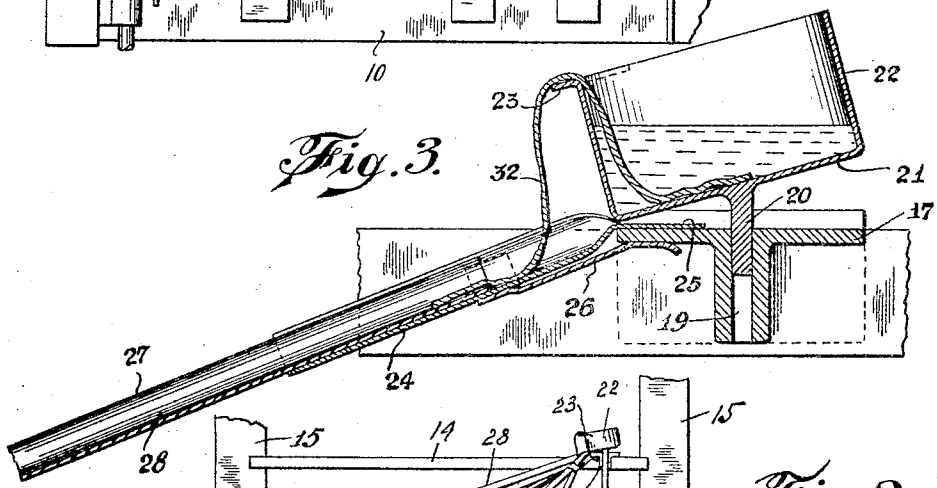


Fig. 3.



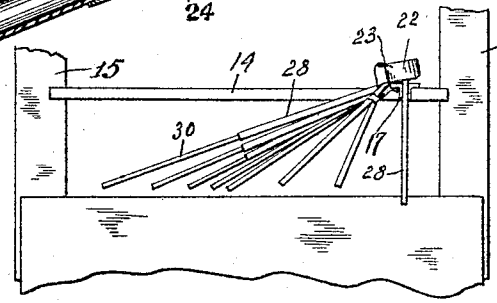


Fig. 2.

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UNITED STATES PATENT OFFICE.

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RULING MACHINE.

Application filed June 1, 1925. Serial No. 34,052.

To all whom it may concern:

Be it known that I, FRANK ARNOLD, a citizen of the United States, and resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Ruling Machines, of which the following is a specification.

The present invention relates to improvements in paper-ruling machines, and more particularly to the ink fountains thereof.

These ruling machines usually contain a plurality of beams, extending transversely of the ruling machine and to which the pens are clamped. Ordinarily there is provided a transversely extending bar above the plane in which the said beams are disposed, the said bar being located in front of the first beam in the series and carrying a plurality of ink fountains, from which ink is led to strips of flannel, placed on the first beam in the series and overlapping the upper parts of the pens. The common method of supplying ink to the pens on the other beams is to saturate, by means of a brush dipped in ink, strips of flannel placed on the beams and overlapping the upper parts of the pens on the said beams. This is an operation requiring careful attention since the supply is soon exhausted. Even the automatic supply of ink to the pens on the first beam in the series is objectionable for the reason that the pens are disposed close one to another and the ink fountains on the fountain bar, owing to their size, are disposed at a greater distance, thereby interfering with the proper feeding of ink to the said pens.

The main object of the present invention is to provide a fountain bar for paper-ruling machines which is disposed lengthwise on the machine, so that each and every pen beam on the machine can be supplied automatically with ink.

A further object of the invention is to so arrange the said fountain bar that it is shiftable transversely of the machine frame.

A further object of the invention is to so construct the fountain bar and the ink fountains that the latter may be conveniently shifted on the said bar to any desired point in relation to the beams of the machine.

A still further object of the invention is to provide a simple and efficient means for clamping the ink leaders to the fountain bar.

Still another object of the invention is to provide ink leaders which are conveniently adjustable in length, thereby permitting the ink to be fed to any point of the pen beams.

A further object of the invention is to so construct the fountain bar and the ink fountains that they may be readily attached to already existing ruling machines, without necessitating changes in the construction of the latter.

Another object of the invention is to provide a device of the character described which is simple in construction, efficient in operation, durable in use and capable of manufacture on a commercial scale, or in other words one which is not so difficult to make as to be beyond the reasonable cost of such a contrivance.

With these and other objects in view, which will more fully appear as the nature of the invention is better understood, the same consists in the combination, arrangement and construction of parts hereinafter described, pointed out in the appended claims and illustrated in the accompanying drawings, it being understood that many changes may be made in the size and proportion of the several parts and details of construction within the scope of the appended claims, without departing from the spirit or sacrificing any of the advantages of the invention.

One of the many possible embodiments of the invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a top plan view of a portion of a paper-ruling machine provided with the improvements; Fig. 2 is a side elevation thereof; and Fig. 3 is a section taken on line 3—3 of Fig. 1, on a larger scale.

Referring now to the drawings, the numerals 10 indicate the side frames of the ruling machine, the same extending longitudinally thereof and supporting, in the manner well known in the art, a plurality of transverse beams 11, to each of which are clamped, in the usual manner, ruling pens 12. With these pens are associated strips 13 of flannel, the said strips overlapping the upper parts of the pens. In front of the first beam in the series is disposed a horizontally extending bar 14, carried by standards or uprights 15, the latter being attached to the side frames 10. In a similar manner is located in rear of the last beam of the series a horizontally extending bar 16. On

these two bars is shiftably mounted, a longitudinally extending fountain bar 17. This last-mentioned bar is adapted to be shifted transversely on the bars 14 and 16, it being held in the desired position by a set-screw 18.

The fountain bar 17 is provided with a longitudinal slot 19, extending throughout its length, and into this slot are adapted to be fitted projections 20 on the inclined bottoms 21 of ink fountains 22. Each of these fountains is in the form of a small receptacle, provided with a lip 23 on the open top thereof. The projections 20 fit closely into the slot 19, so that the said ink fountains may be conveniently shifted into any desired position on the fountain bar and held in such position without the aid of special fastening means. With each ink fountain is adapted to co-operate a leader support 24, in the form of an open tubular body, provided with a clamp 25, that is adapted to rest on the upper face of the fountain bar 17 and co-operates with a spring clamp 26, which is adapted to bear against the underface of the said fountain bar (Fig. 3). The springs 26 are attached in any suitable manner to the respective leader supports 24. On each support is mounted an ink leader 27 including a tubular body 28, provided with a longitudinal slot 29. This slot extends along the top of the tubular body 28, so that the flow of ink may be viewed as the feeding proceeds toward the pen beams. Into some of the tubular bodies 28 is telescoped a tubular body 30, also provided with a longitudinal slot 31. The several leaders of the machine convey the ink from the fountains to the several strips 13, which are associated with the ruling pens. As appears from Figs. 2 and 3 of the drawings, these leaders are inclined, they sloping toward the strips 13. Ink is conducted from the fountains 22 to the respective ink leaders by absorbent material, for instance worsted cords 32, the said worsted cords being immersed in the liquid in the fountains and extended over the respective lips 23 into the respective leaders.

In use, the ink fountains are shifted on the fountain bar to the desired positions and leaders associated therewith, each of a length to extend to the strip 13 to which ink is to be fed. The rate of feed depends on the length of worsted cords extending below the ink level.

As appears from Fig. 1 of the drawings, with each of the pen beams may be associated any desired number of ink fountains, and the ink fountains associated with any pen beam may contain either inks of the same color or of different colors, as the nature of the work requires.

The feeding of the ink is entirely automatic, and, no matter how close the pens are disposed one to another, they may be supplied continuously with ink of the same color or of different colors after the fountains and leaders have once been set up in the proper manner.

It is to be noted that the fountain bar is shiftable transversely of the machine frame and can thus be worked either from the near side or the far side of the machine, whatever position may be more convenient for the operator. Attention is also called to the fact that the invention herein described may be readily attached to already existing ruling machines, without necessitating changes in the construction of the latter. It is to be noted that the transverse bar 14 above described is the fountain bar in the machines heretofore in use, and the fountain bar 18 of the present construction is attached to the bar 14.

Attention is also called to the fact that any one of the ink fountains may be used to feed ink to more than one strip 13 either on the same beam or on different beams. In other words, one single fountain may be used to feed ink of the same color to one of the pen beams at more than one point or to a plurality of beams.

What I claim is:—

1. A paper-ruling machine including a pen beam, a fountain bar disposed above said beam and extending at right angles to the longitudinal axis of said beam, an ink fountain shiftably carried by said fountain bar, a support associated with said ink fountain, a tubular body fitted into said support inclined toward and leading to said beam, and a fibrous element dipped into the fluid in said fountain and extending into said tubular body.

2. In a paper-ruling machine according to claim 1, said tubular body being composed of a plurality of telescoping sections.

3. In a paper-ruling machine according to claim 1, said support including clamps for fixing the same to said fountain bar.

4. A paper-ruling machine according to claim 1, comprising a frame on which said fountain bar is shiftable in the direction of the longitudinal axis of said pen beam, and means for fixing said fountain bar on said frame in any adjusted position.

5. A paper-ruling machine including a pen beam, a fountain bar disposed above said beam and extending at right angles to the longitudinal axis of said beam, said fountain bar being provided with a longitudinal slot, an ink fountain with a projection fitted into said slot, a support associated with said ink fountain, a tubular body fitted into said support inclined toward and leading to said beam, and a fibrous element dipped into the fluid in said fountain and extending into said tubular body.

6. A paper-ruling machine including a plurality of parallel pen beams, a fountain bar disposed above said beams and extend-

ing at right angles to the longitudinal axes of said beams, a plurality of ink fountains shiftably carried by said fountain bar, a support associated with each ink fountain, a tubular body fitted into each support inclined toward and leading, at will, to any one of said beams, and a fibrous element dipped into the fluid in each ink fountain and extending into the respective tubular body.

Signed at New York, in the county of New York and State of New York, this 25th day of May, A. D. 1925.

FRANK ARNOLD.