May 9, 1933. A. I. STEINBERG 1,908,076

APPARATUS FOR FINISHING HALF TONE PRINTS

Filed May 14, 1930

Fig. 1.

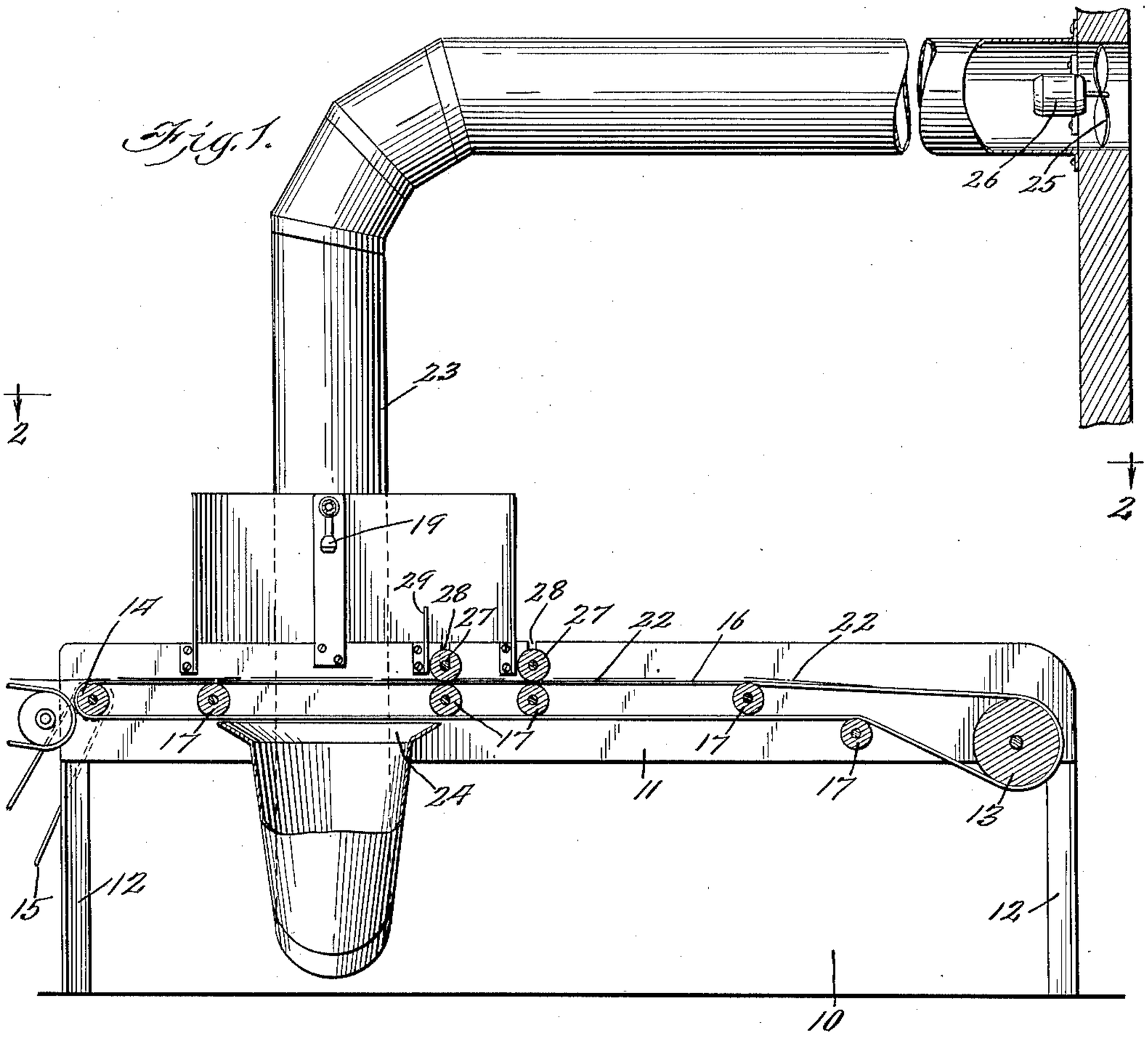
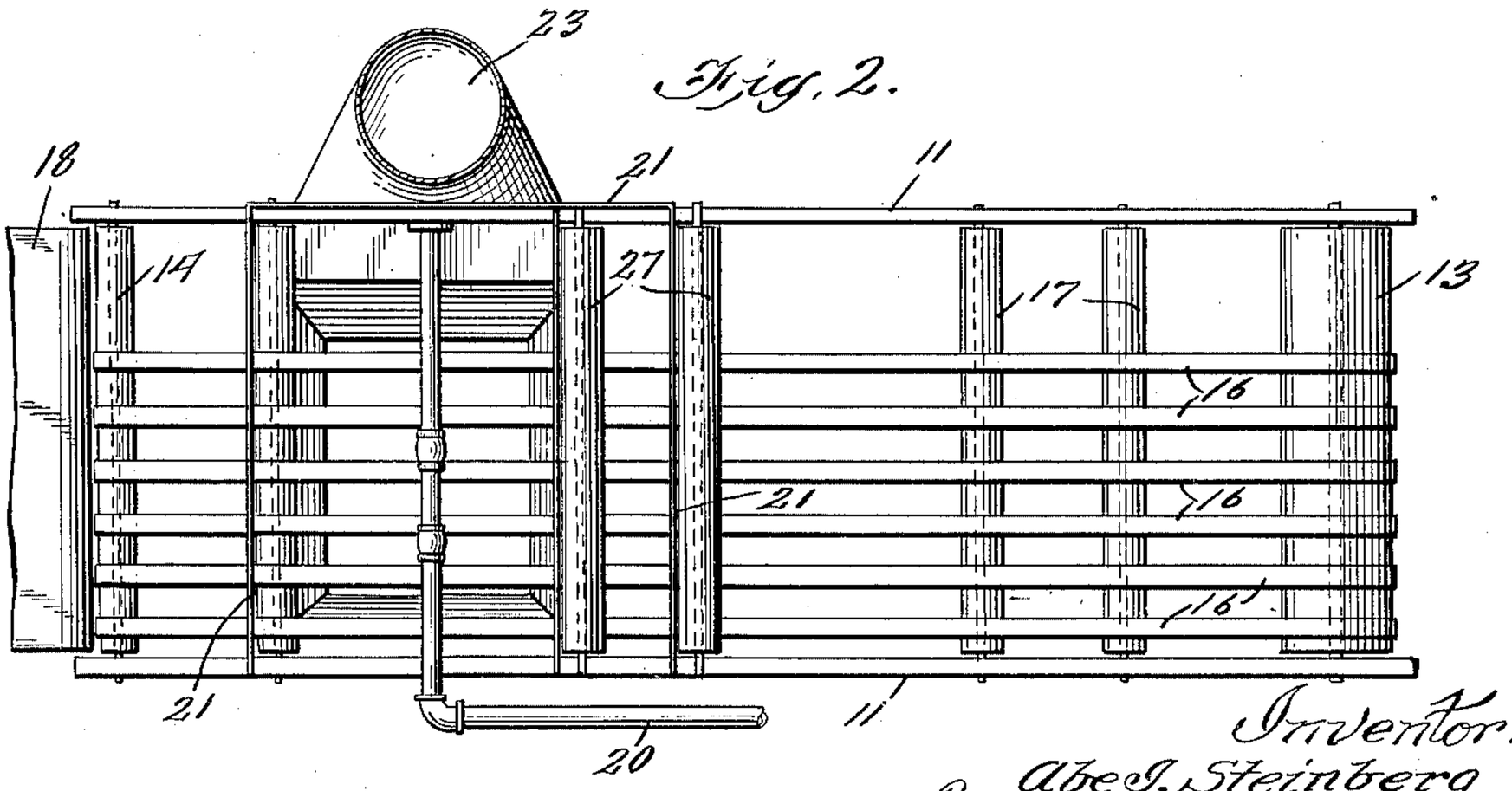


Fig. 2.



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UNITED STATES PATENT OFFICE

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APPARATUS FOR FINISHING HALF-TONE PRINTS

Application filed May 14, 1930. Serial No. 452,213.

This invention relates to a novel and improved apparatus adapted for spraying ink prints for the purpose of finishing the same in order to increase their usefulness and durability, as well as to preserve their attractiveness, so as to adapt them for use in imitation of photographic prints.

This application relates particularly to an apparatus adapted for carrying out the process disclosed in the application of this applicant, bearing Serial Number 421,911, filed January 20th, 1930; as fully set forth in said application, the ink prints which may be made by any well known process, such for example, as a half tone process or the like, and treated with a suitable solution by spraying or the like, and then permitted to dry, the resulting effect being a print which simulates the photographic prints. This spraying is under pressure by a series of air brushes disposed above the ink prints.

It is the main object of this invention to provide an apparatus for facilitating the spraying and finishing of said prints, which apparatus will be simple and durable in construction, and highly efficient for carrying out the purposes for which it is designed.

In view of the pressure employed in the spray, it has been found difficult to maintain the prints in a substantially flat position while passing under said air brushes, and it is the further object of this invention to provide novel means for maintaining said prints in a substantially flat position while passing under said air brushes.

A further object of said invention, is to provide in an apparatus of the character described, a suction means acting on the underside of the prints while the same are being sprayed for holding down the same in a substantially flat position.

A still further object of this invention is to provide in an apparatus of the character described, a plurality of air brushes disposed above a movable conveyor upon which the prints are disposed, and a suction means cooperating with the underside of said conveyor for acting on the underside of said prints in order to hold the same in a substantially flat position while passing under the air brushes.

A still further object of this invention is to provide an apparatus of the character described, comprising a movable conveyor adapted to receive thereon a plurality of prints, a series of air brushes disposed above said conveyor and in position to spray a suitable solution onto said prints, a suction means associated with the underside of said conveyor at a point below said air brushes, whereby said suction means will act on the under surface of said prints to maintain the same in a substantially flat position while passing under said air brushes.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention consists of certain novel features of construction and arrangement of parts hereinafter more fully described, and more particularly pointed out in the appended claim, it being understood that various changes in the form, size and minor details of the structure may be made without departing from the spirit, or sacrificing any of the advantages of the invention.

For the purpose of facilitating an understanding of my invention, I have illustrated in the accompanying drawing, one embodiment of my invention, from an inspection of which, when considered in connection with the following description, my invention, its mode of construction, and many of its advantages should be readily understood and appreciated.

Referring to the drawing, in which similar characters of reference are employed to indicate corresponding parts throughout the several figures of the drawing,

Figure 1 is a longitudinal sectional view

of an apparatus embodying my invention; and

Figure 2 is a top plan view of the same, taken on lines 2—2 of Figure 1.

Stated generally, the invention comprises a novel and improved apparatus for spraying ink prints with a solution under pressure in order to give the same a finish of such a quality as to adapt them for use in imitation of photographic prints. This apparatus consists of a table having suitable transverse rollers mounted adjacent each end thereof, suitable endless belts on said rollers, and means for rotating said rollers for moving said belts.

Intermediate the ends of said table, and above the same are mounted a plurality of air brushes of any suitable construction, which air brushes are connected up with a suitable supply of liquid to a suitable compressor, said liquid being forced to said brushes under pressure. In order to maintain the prints in a substantially flat position, while passing under said brushes, a suitable conduit is provided, one end of which is open and disposed along the underside of said table, immediately beneath the said air brushes, and the other end of which is connected with the outside of the building or the like. The conduit has disposed therein, adjacent its outer end, a suitable suction fan, which, when in operation will act on the underside of the prints passing under said air brushes, and above said open end of said conduit to hold the same snugly against the conveyor belts. Said apparatus may be disposed adjacent a suitable conveyor for carrying off said prints after they had been sprayed for the purpose of drying the same.

Referring to the drawing more specifically, by characters of reference, the numeral 10 designates generally a table having the sides 11, and the leg portion 12. Disposed between the said sides 11, adjacent each end thereof, are the rollers 13 and 14, the latter being connected in any suitable manner, such as by a belt 15, with some driving mechanism, (not shown) for driving the same. A plurality of endless belts 16 are mounted on said rollers 13 and 14, said belts being supported intermediate their ends by means of the transverse rollers 17, mounted in the sides 11. The said table 10 is disposed adjacent one end of a suitable movable conveyor 18, which is adapted to receive the prints from the belts 16. Intermediate the ends of said table, and above the same, are disposed in any suitable manner a plurality of air brushes 19, of any suitable and well known construction. Said air brushes are connected up with a supply of liquid to be sprayed on to said prints, and a suitable supply of air by means of a pipe 20. Said air brushes are surrounded on three sides thereof by the walls 21, which may be of any suitable material, and which are securely fastened to the sides 11 of the table 10. The side walls are disposed immediately above the belts 16, and are spaced a sufficient distance therefrom to permit the passage thereunder of the prints 22.

In order to prevent the air pressure issuing from the air brushes from blowing around the said prints as they pass under the said air brushes, I provide a suitable conduit 23, having an enlarged open mouth 24 disposed immediately beneath the air brushes 19, and adjacent the under surface of the belts 16. The other end of said conduit 23 is in communication with the outside atmosphere, and has disposed therein a suitable suction fan 25, driven in any suitable manner, such for example as by the motor 26 or the like. When the fan 25 is in operation, it will be noted that the same will cause a suction action at the point adjacent the mouth of the conduit 24, and will act on any prints disposed above said mouth to hold the same snugly against the surface of the belts 16, thereby maintaining said prints in a substantially flat position, and greatly facilitating in the spraying of the same. The suction means above described will also be effective in carrying away any fumes that may have been formed during the spraying operation, said fumes being carried away through the exhaust pipe 23 and out into the outside atmosphere.

In order to prevent the turning up of the forward edges of said prints, immediately upon entering the space enclosed by said walls 21, because of the air pressure issuing from the air brushes 19, I provide the loose rollers 27, the ends of which are disposed in suitable slots 28, provided therefor in the sides 11 of the table 10. A suitable guard member 29 is provided adjacent the inner roller for preventing the same from being sprayed with the liquid issuing from the air brushes.

In operation, the driving means for the roller 14 is started for driving the belts 16, the prints are then placed on said belts adjacent one end of the table, said prints being carried along by said belts into the space enclosed by the walls 21, where they will pass under the air brushes 19, and be sprayed by said air brushes. The fan 25, which has also been started will create a suction through the conduit 23, causing a pull on the under surface of the prints as they pass over the open mouth 24 of the conduit 23 to maintain the same in a substantially flat position. From the belts 16, the said prints will pass on to a conveyor 18 which may be of any suitable length provided with any suitable heating means for thoroughly drying the said prints. Obviously, any suitable type of drying conveyor may be employed and as the same forms no part of the present invention, it is not thought necessary to describe the device in more detail.

It is believed that my invention, its mode

of construction and many of its advantages should be readily understood from the foregoing without further description, and it should also be manifest that while one embodiment of my invention has been shown and described for illustrative purposes, the details of construction, are, nevertheless, capable of wide variation within the purview of my invention, as described in the appended claim.

What I claim and desire to secure by Letters Patent of the United States is:

In an apparatus of the character described, the combination of a movable conveyor consisting of a plurality of relatively narrow endless belts spaced from each other, said conveyor being adapted for receiving thereon and carrying forward prints or the like, spraying means disposed above said conveyor adapted for spraying said prints with a suitable solution under pressure, and an air conduit having a relatively large open end disposed adjacent the underside of said conveyor and directly below the said spraying means, the other end of said conduit being in communication with the outside atmosphere, and having means disposed therein for creating suction therethrough for acting on the underside of said prints to maintain the same in a substantially flat position on said conveyor while passing under said spraying means, and for carrying away any fumes formed during the spraying operation, and means in the form of loosely mounted rollers for holding down the forward edge of the print as the latter is being sprayed.

In witness whereof, I affix my signature.

ABE I. STEINBERG.