J. E. DOYLE.

SUCTION NOZZLE BRACKET.

APPLICATION FILED NOV. 20, 1914.

1,196,439.

Patented Aug. 29, 1916.

2 SHEETS—SHEET 1.

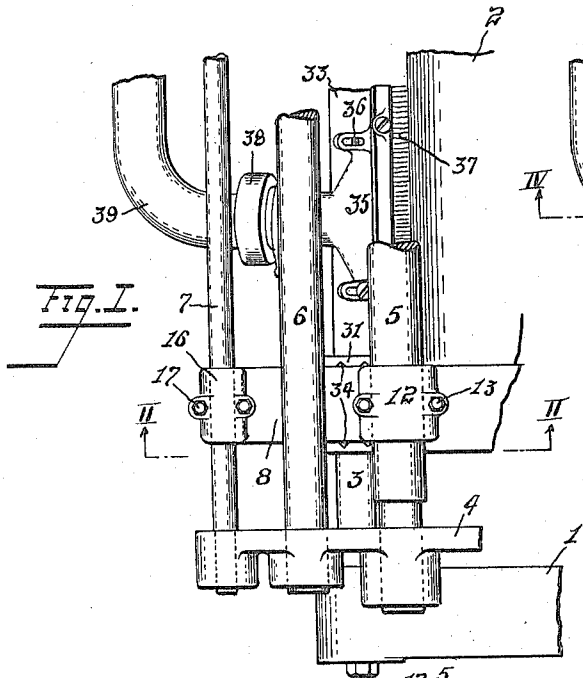


Fig. I.

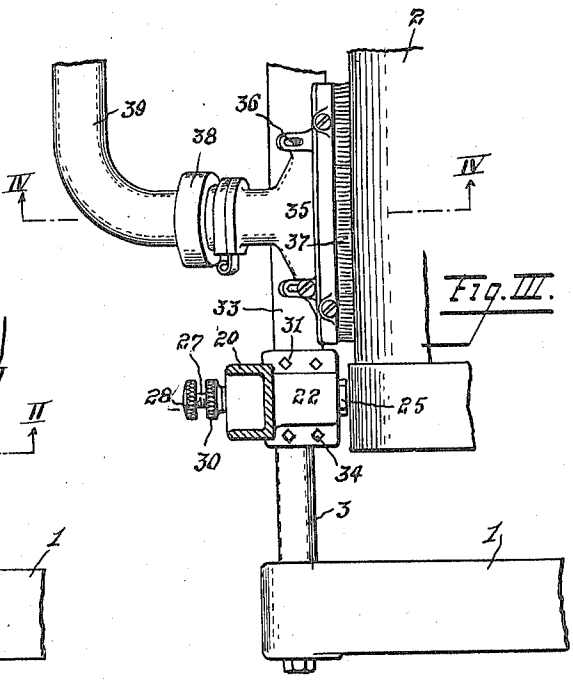


Fig. III.

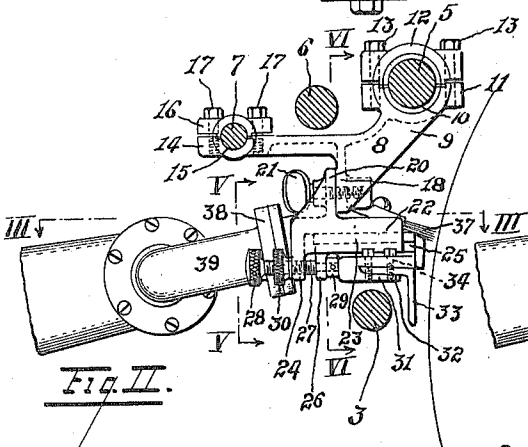


Fig. II.

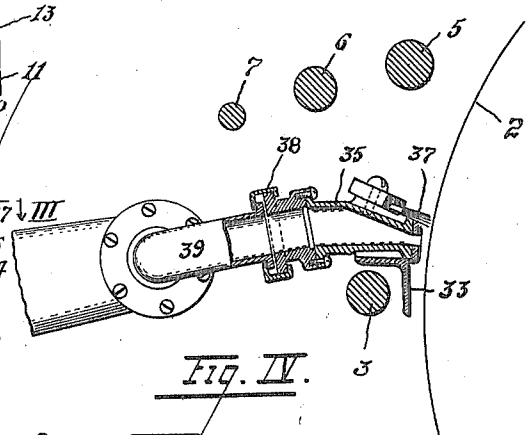


Fig. IV.

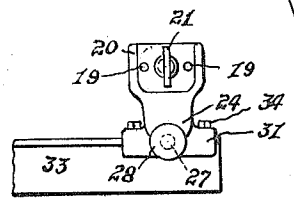


Fig. V.

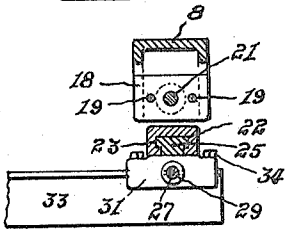


Fig. VI.

Witnesses:

Duncan Cooke

Marie Wagner

C. F. Frambe

Inventor:

James E. Doyle

by his atty,

Chas. R. Middleton

J. E. DOYLE.

SUCTION NOZZLE BRACKET.

APPLICATION FILED NOV. 20, 1914.

1,196,439.

Patented Aug. 29, 1916.

2 SHEETS—SHEET 2.

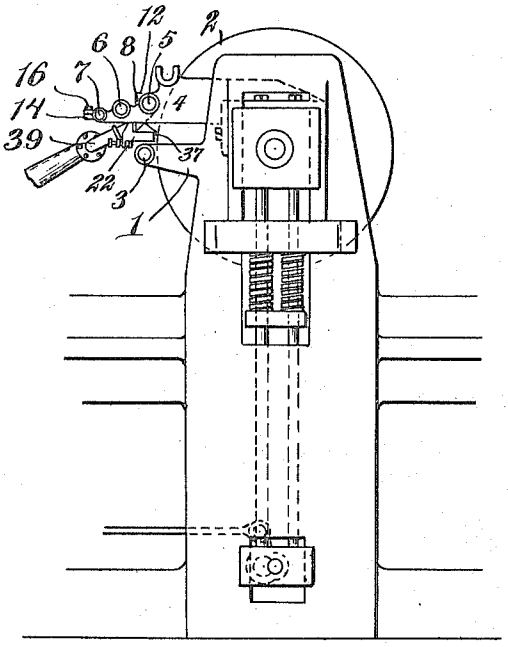


Fig. VIII.

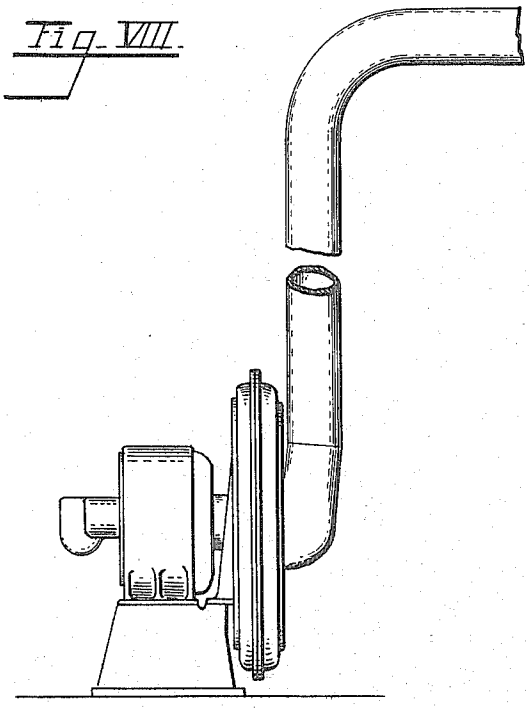
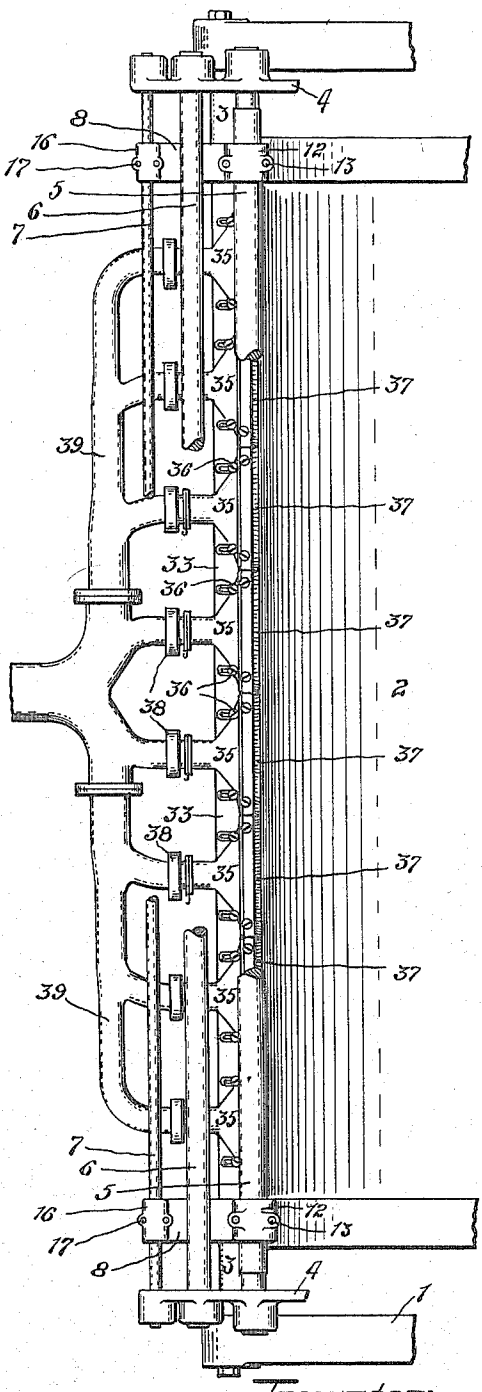


Fig. VII.



Witnesses:
Truman Clark
Marie Wagner
C. F. Franke

Inventor:
James E. Doyle
by his attys.
Curt R. Mueller.

UNITED STATES PATENT OFFICE.

JAMES E. DOYLE, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO CHARLES S. BRITTON, OF CLEVELAND, OHIO.

SUCTION-NOZZLE BRACKET.

1,196,439. Specification of Letters Patent. Patented Aug. 29, 1916.

Application filed November 20, 1914. Serial No. 873,170.

To all whom it may concern:

Be it known that I, JAMES E. DOYLE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Improvement in Suction-Nozzle Brackets, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

This invention has more particular reference to a bracket intended to support one or more suction nozzles adjacent a sheet conveyer which as exemplified is the reciprocal cylindrical surface of a printing press.

The object is to provide a bracket which may be quickly attached and as readily removed from certain standard parts of a printing press, which parts in the illustrated type of press rise and fall in unison with the reciprocal movement of the cylinder. In this manner any predetermined adjustment of the suction device with respect to the surface of a sheet which is being carried upon the cylinder may be maintained.

Adverting to the drawings: Figure I is a plan view of a portion of one end of a printing press involving a cylindrical sheet conveyer. Fig. II is a section on line II—II of Fig. I. Fig. III is a section on line III—III of Fig. II. Fig. IV is a section on line IV—IV of Fig. III. Fig. V is a section on line V—V of Fig. II. Fig. VI is a section on line VI—VI of Fig. II. Fig. VII is a partial top view showing the application of my invention along the cylinder of a two-revolution type of press. Fig. VIII is a partial end view showing the manner in which the cylinder sheet conveyer is mounted for up and down movement on the frame.

A portion only of the frame 1 is shown in Figs. I and III. Inasmuch as the manner in which the cylinder 2 is mounted upon a press of this type so as to rise and fall at determined intervals, is old and well known to the art, the identifying reference just made is all that is required. Extending across the press in front of the cylinder 2 is a bar 3 and higher up three additional bars are supported in step-like arrangement upon a pair of extensions 4. The uppermost or tape bar 5 is rotatably mounted. The middle or stripper-finger bar 6 is also movably mounted. The lower or fly-rest bar 7 is stationary. I choose to attach the bracket to the bars 5 and 7 as is clearly shown in Figs. I and II. The bracket comprising the subject matter of this invention is composed of a number of separable parts certain of which are adjusted moreover with respect to certain other parts, and two complete brackets will ordinarily be required at opposite ends of the press. For the purpose of simplifying the description, but one bracket construction will be described in detail and hence with few exceptions the singular number employed.

A primary part 8 involves an upwardly extending arm 9 provided with a bearing 10 for the tape bar 5. Adjacent the bearing 10, the arm 9 is flanged at 11 such that a cap 12 may be secured thereto by means of cap-screws 13. The part 8 also involves a laterally projecting arm 14 provided below with a semicircular recess 15 in which the fly-rest bar 7 is supported. A cap 16 complementarily recessed is adapted to overlie the fly-rest bar 7 and is secured to the arm 14 by means of cap-screws 17. It is apparent therefore, that the primary part 8 is supported in front of the cylinder 2 without interference with the action of the stripper-finger bar 6 and so as to permit the rotation in a suitable bushing of the tape bar 5. It is from the primary part 8 that such parts as will be described hereinafter are suspended.

The part 8 furthermore comprises a downwardly extending arm 18 provided with a pair of forwardly projecting dowel pins 19, Fitted to the arm 18 with openings correspondingly spaced as such dowel pins, is a secondary part 20 and this may be fixedly secured to the arm 18 through the agency of a thumb-screw 21. The secondary part 20 is fashioned below as a transversally extending guide 22 recessed underneath and from the inner end 23 as is best seen in Fig. VI. The outer end 24 is fashioned as a depending projection and is provided with a horizontally extending screwthreaded opening. A slide 25 corresponding above in exterior contour with the recess 23 is adapted for sliding movement therein, as is also apparent from the inspection of Figs. II and VI. The slide 25 is similarly provided on its outer end with a depending projection 26 having an opening in line with the screw threaded opening in projection 24. A screw

27 provided on its outer end with a knurled head 28 extends through the two alined openings in the projections 24 and 26 and has pinned thereto on its other and inner end a collar 29. A lock nut 30 is also shown.

From the construction just described. and as shall be readily understood, the movement of the screw 27 in either direction serves to actuate the slide 25 in the same direction, and thereby adjust the same toward or away from the cylinder 2. Inwardly, that is toward the cylinder 2 a lower broadened portion 31 of the slide 25 is fashioned with a slot 32 adapted to be occupied by one angular extension of a standard angle bar 33. The bar 33 is secured in a slot 32 by means of cap-screws 34 shown in Figs. II and V. Such bar 33 is intended to extend across the entire front of the cylinder 2 and to directly support, in the exemplification disclosed, a plurality of nozzles 35 secured thereto at 36. These nozzles carry above brushes 37 and are detachably coupled at 38 to branches 39 of a suitable manifold and suction fan neither of which is shown.

I would direct attention especially to the following: That the bracket, owing to the fact that it is supported upon so much of the frame of the press as moves up and down with the cylinder 2, moves in unison with the latter and therefore when once properly adjusted the intake openings of the nozzles are consistently spaced the same distance from the surface of the sheet which is being carried around upon the surface of the cylinder. That the suction contrivance may be readily removed from the press as a whole by simply withdrawing the thumb screws 21. That the nozzles proper after being uncoupled from the manifold may be independently removed by loosening and withdrawing the angle bar 33 from the slide 25. That the adjustment of all of the nozzles relative to the cylinder may be accomplished by the mere manipulation of the two screws 27 at opposite ends of the press.

I claim:

1. A device of the character described comprising the combination with a movable support, a sheet conveyer revolubly mounted on said support, a member carried by said support and extending across said conveyer, a plurality of suction nozzles alined across said member and having intake openings opposed to said conveyer, and a suction manifold connected to said nozzle outlets.

2. A device of the character described comprising the combination with a movable support, a sheet conveyer mounted thereon and independently movable with respect thereto, and a suction nozzle attached to said support in operative proximity to said conveyer.

3. A device of the character described comprising the combination of a frame, a cylindrical sheet conveyer movable relatively thereto, a bracket carried by said frame and movable in unison with said conveyer, a suction nozzle supported upon said bracket in operative proximity to said conveyer, and means for inducing a suction effect in the latter.

4. A suction nozzle bracket comprising the combination with a support and means for raising and lowering such support, a cylinder mounted thereon, a suction manifold, and a series of communicating inlet nozzles attached to said support and movable in unison with said cylinder.

5. A device of the character described comprising the combination of a sheet conveyer movable as a unit, and a suction nozzle movable in unison therewith and in predetermined operative relationship thereto.

6. A device of the character described comprising the combination of a reciprocable support, a cylindrical sheet conveyer rotatably mounted thereon, said conveyer being furthermore reciprocable along with said support as a unit, a plurality of suction nozzles operatively arranged across said conveyer, said nozzles being movable together and in unison with the reciprocal movement of the conveyer, and a suction manifold connected with said nozzles.

7. A device of the character described comprising the combination of a support, a cylindrical conveyer rotatably and reciprocably mounted thereon, a suction nozzle attached to said support so as to be movable coincidently with the reciprocal movement of said cylinder, and means for independently adjusting said nozzle with respect to said conveyer.

8. A device of the character described comprising the combination of a support, a cylindrical conveyer rotatably and reciprocably mounted thereon, a member detachably mounted upon said support and reciprocable in unison with said cylinder, and a suction nozzle adjustably carried by said member.

9. A device of the character described comprising the combination of a support, a cylindrical conveyer rotatably and reciprocably mounted thereon, a pair of members detachably mounted upon opposite ends of said support and reciprocable in unison with said cylinder, a bar adjustably carried by said members and adapted for movement toward and away from said cylinder, a plurality of nozzles attached to said bar and a suction manifold in communication with said nozzles.

10. A device of the character described comprising the combination of a support, a sheet conveyer mounted for movement thereon, a member detachably mounted upon said support and movable in unison with

said conveyer, and a suction device carried by said member and operatively opposed to said conveyer.

11. A device of the character described comprising the combination of a movable support, a sheet conveyer movably mounted upon said support so as to be capable of independent movement with respect thereto, and a suction nozzle adjustably carried by said support and adapted to be fixed in various positions relative to said conveyer.

Signed by me, this 11th day of November, 1914.

JAMES E. DOYLE.

Attested by—
MARIE WAGNER,
CURT B. MUELLER.