H. C. SCHROEDER.

TUCKER FOR COLLECTING CYLINDERS.

APPLICATION FILED JAN. 4, 1912.

1,048,745.

Patented Dec. 31, 1912.

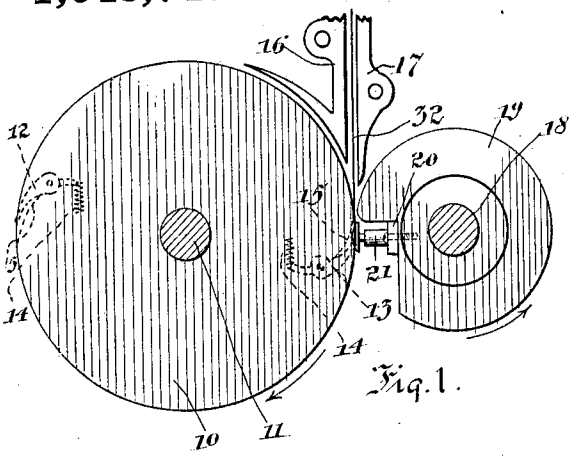

Fig. 1.

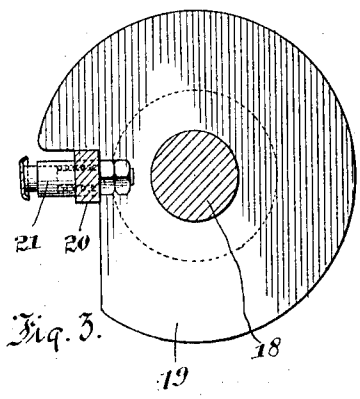

Fig. 3.

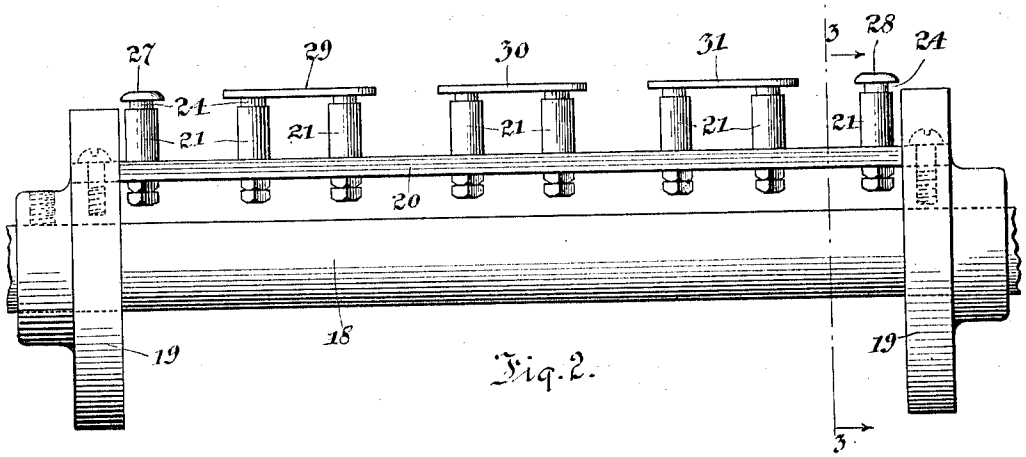

Fig. 2.

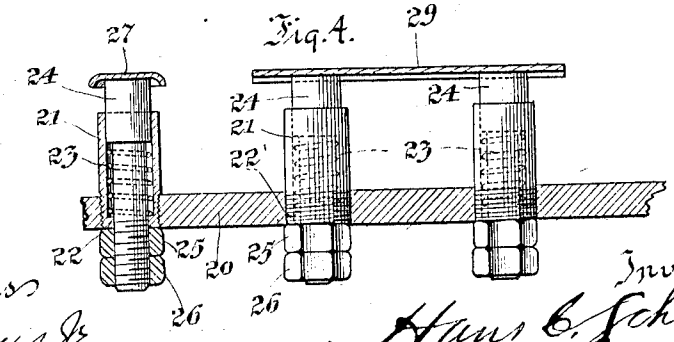

Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

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TUCKER FOR COLLECTING-CYLINDERS.

1,048,745. Specification of Letters Patent. Patented Dec. 31, 1912.

Application filed January 4, 1912. Serial No. 669,406.

To all whom it may concern:

Be it known that I, HANS C. SCHROEDER, a subject of the German Emperor, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Tuckers for Collecting-Cylinders, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to tuckers for collecting cylinders of web perfecting printing presses and its object is to provide a new and improved construction by reason of which the tucker may be adjusted to meet a variety of different conditions.

In a modern press-room, the number of pages to be collected, and the thickness and character of the paper printed upon vary greatly from time to time for any particular press, and to meet these requirements I have provided a tucker which can be readily adjusted to vary the force of its pressure upon the paper to correspond to the conditions.

The means by which I have accomplished my object are illustrated in the drawings and hereinafter specifically described.

That which I believe to be new is set forth in the claims.

In the accompanying drawings—Figure 1 is an end view of the collecting cylinder and its co-acting tucker; Fig. 2 is an enlarged top view of my improved tucker shown in Fig. 1; Fig. 3 is a cross-section taken on line 3—3 of Fig. 2; and Fig. 4 is an enlarged detail, being a central cross-section through one end of the bar which supports the tucker elements and through the parts carried thereby.

Referring to the several figures of the drawings, in which corresponding parts are indicated by like reference characters—10 indicates a collecting cylinder mounted on a shaft 11 supported in any suitable manner.

12—13 indicate grippers pivotally mounted in any suitable manner upon the cylinder 10, held yieldingly by springs 14 in turned position against the faces 15 of the cylinder. These grippers are adapted to be operated in the usual manner, by any suitable mechanism not shown, to open at the proper moment to receive the lead edges of the sheets of paper which are gripped against the faces 15 and securely held, and to again open to release the paper for delivery in any well-known manner. As is well-known in the art, it is customary to provide a number of such grippers spaced at intervals from one end of the cylinder to the other end, in the construction shown four such grippers being used.

16—17 indicate guides of any well-known form between which the paper, after being cut into sheets, is directed to the collecting cylinder.

18 indicates a shaft upon which are mounted, in the construction shown, two circular plates 19 which are cut away at one side to form seats for a bar 20.

21 indicates a series of sleeves screw-threaded into said bar 20 at intervals, each of said sleeves being provided with a flange 22 at its inner end which forms a seat for the inner end of a coiled spring 23 mounted upon a pin 24 inserted in said sleeve. 25 indicates nuts on the inner ends of said pins and 26 indicates jam-nuts thereon. By this construction the pins 24 are freely movable inward relative to the bar 20 against the action of the springs 23. By screwing up the nuts 25—26 the operative length of the pins 24 can be changed very quickly and easily to suit the conditions of the work.

27—28 indicate caps upon the pins 24 nearest the ends of the bar 20.

29—30—31 indicate short bars each secured upon the outer ends of two adjacent pins 24 as shown in Fig. 4. It will be readily understood that the tucker is made thus in sections so as not to interfere with the grippers 12 or 13 the sections of the tucker being so located as to come between the grippers in the operation of the machine.

The operation is as follows: With the cylinder 10 being driven in the direction indicated by the arrow in Fig. 1 and with the shaft 18 driven in the opposite direction so as to carry the disk 19 in the direction indicated by the arrow, the bar 20 is carried about the shaft 18. In the construction here shown the shaft 18 is driven twice as fast as the shaft 11, bringing the tuckers 27—28—29—30—31 into operative position twice for each rotation of the cylinder, once between the grippers 13 and once between the grippers 12. The parts are so propor-

tioned that the surface speed of the cylinder at the point of contact of the tuckers therewith is approximately the same as the speed of the tuckers. With the nuts 25—26 tightened to suit the number of sheets of paper 32 to be fed to the collecting cylinder the shafts 11 and 18 are driven as just described. The grippers 13 being forced outward at the proper time against the action of the springs 14, the sheet or sheets 32 are fed downward between the guides 16—17 and the lead edges pass between the grippers and the face of the cylinder, being held pressed against the cylinder by the spring-pressed tuckers carried by the bar 20. At the proper moment, the grippers 13 are permitted to move inward, gripping the lead edges of the sheets of paper against the face 15 of the cylinder. When the cylinder has made a half revolution farther, the grippers 12 are forced outward by the usual means, and the lead edges of other sheets of paper are pushed downward between such grippers and the face 15 on that side of the cylinder, these sheets also being held lightly in position against the cylinder by the spring-pressed tuckers carried by the bar 20 in the same manner as above described. When, upon another half revolution of the cylinder, the grippers 13 are again brought into receiving position, the tuckers serve to hold lightly in position both the sheets 32 first delivered to the grippers 13 and the sheets just then being delivered, until the grippers 13 are again permitted to grip the whole number of sheets. This operation is repeated until the desired number of sheets are collected, when, by mechanisms of the ordinary type not shown in this application, the collected sheets are thrust from the cylinder and delivered as will be readily understood.

The use of coiled springs for pressing the tuckers yieldingly outward insures there being a comparatively large margin in their action, with the result that they work properly for either one or a number of sheets at a time.

While I have shown and described my improved tucker mechanism in connection with a collecting cylinder of a circumference to carry two sheets, it will be understood that I do not limit myself to that particular form of collecting cylinder or to any particular form, as any other form may be used. The only particular requirement as to the collecting cylinder is that it be of a size and form to coöperate with the tucker, the tucker heads being brought into position at the proper time to hold the lead-edges of the sheets against the cylinder preliminary to their being gripped by the grippers.

While I have shown the pins 24 carried by a bar 20 mounted on oppositely-disposed heads 19, it will be understood that I do not limit myself to that particular form of seat for the pins 24 except as hereinafter specifically so claimed.

That which I claim as my invention, and desire to secure by Letters Patent, is—

1. In a tucker for collecting cylinders, the combination of a bar adapted to revolve about a fixed axis, a pin adapted to slide outward and inward relative to said bar, other tucker members adapted to move outward and inward relative to said bar, and springs tending to hold said tucker members in their outermost positions, each tucker member being adapted to move inward against the spring action independently of the remaining tucker members.

2. In a tucker for collecting cylinders, the combination of a shaft, a bar carried by and spaced a distance from said shaft, a plurality of pins each adapted to slide outward and inward relative to said bar, and a plurality of springs one adapted to hold each of said pins yieldingly in its outermost position.

3. In a tucker, the combination of a shaft, two oppositely-disposed collars mounted thereon, a bar mounted upon said collars in spaced relation to said shaft, a pin adapted to slide outward and inward relative to said bar, and a spring adapted to hold said pin yieldingly in its outermost position relative to said shaft.

4. In a tucker, the combination of a shaft, two oppositely-disposed collars mounted thereon, a bar mounted upon said collars in spaced relation to said shaft, a sleeve mounted on said bar, a pin slidingly mounted in said sleeve, a spring mounted in said sleeve adapted to hold said pin yieldingly in its outermost position relative to said shaft, and means for adjusting the normal position of said pin in said sleeve.

5. In a tucker, the combination of a shaft, two oppositely-disposed collars mounted thereon, a bar mounted upon said collars in spaced relation to said shaft, a sleeve mounted on said bar, a pin slidingly mounted in said sleeve, a spring mounted on said pin between a shoulder on said pin and a flange or shoulder on said sleeve and adapted to hold said pin yieldingly in its outermost position relative to said shaft, and a nut screw-threaded on the inner end of said pin adapted to hold said pin from withdrawal from the sleeve.

6. In a tucker for collecting cylinders, the combination of a bar adapted to revolve about a fixed axis, two pins adapted to slide outward and inward relative to said bar, a short bar secured to the outer ends of said two pins, and two springs each adapted to hold one of said pins yieldingly in its outermost position relative to said first-mentioned bar.

7. In a tucker, the combination of a shaft, two oppositely disposed collars mounted

thereon, a bar mounted upon said collars in spaced relation to said shaft, a plurality of sleeves screw-threaded in said bar at intervals there-along, a plurality of pins slidingly mounted in said sleeves, a plurality of springs tending to hold said pins in their outermost positions in said sleeves, and short bars joining the outer ends of adjacent pins.

8. The combination with a collecting cylinder provided with grippers arranged at intervals about its circumference, of a shaft, a bar carried by and adapted to revolve about said shaft, pins mounted radially in said bar and adapted to have movement outward and inward therein, a tucker head mounted on the outer ends of said pins, and a spring adapted to hold said tucker head yieldingly in its outermost position.

9. The combination with a collecting cylinder provided with grippers arranged at intervals about its circumference, of a shaft, a bar carried by and adapted to revolve about said shaft, pins mounted radially in said bar and adapted to have movement outward and inward therein, a tucker head mounted on the outer ends of said pins, and coiled springs mounted on said pins adapted to hold said pins yieldingly in their outermost positions.

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