3 Sheets—Sheet 1.

S. D. TUCKER.

Pasting Mechanism for Paper-Folding Machines.

No. 212,872. Patented Mar. 4, 1879.

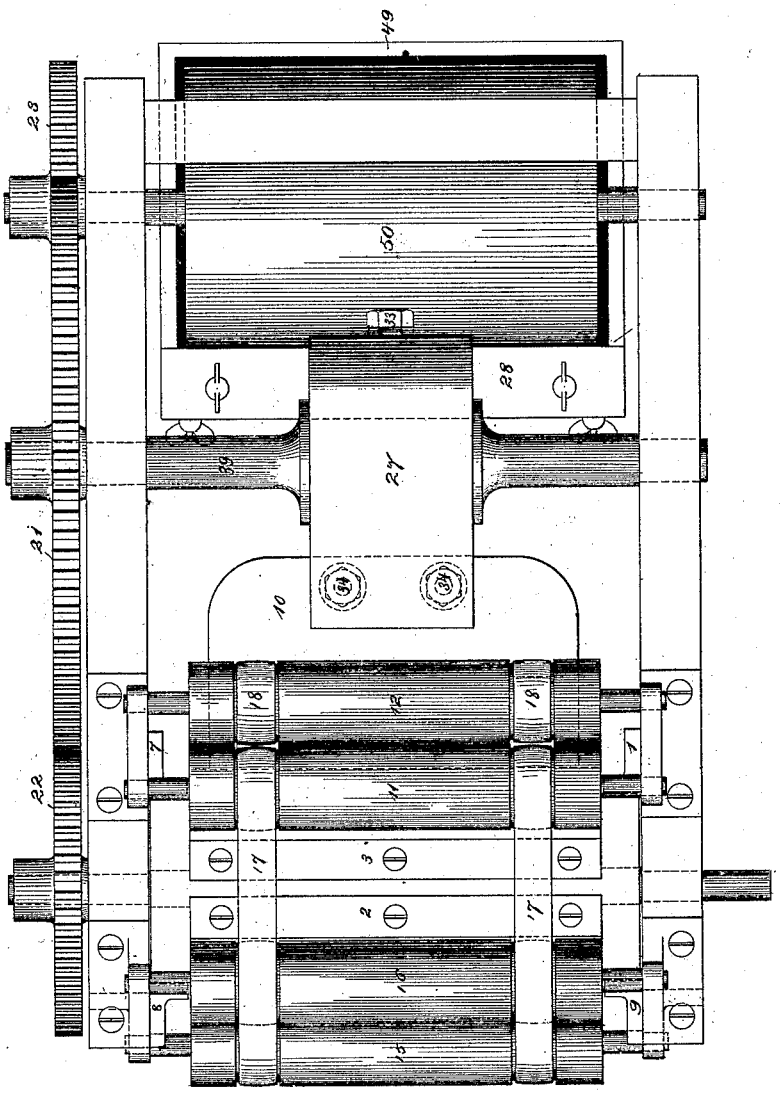

Fig. 1.

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3 Sheets—Sheet 2.

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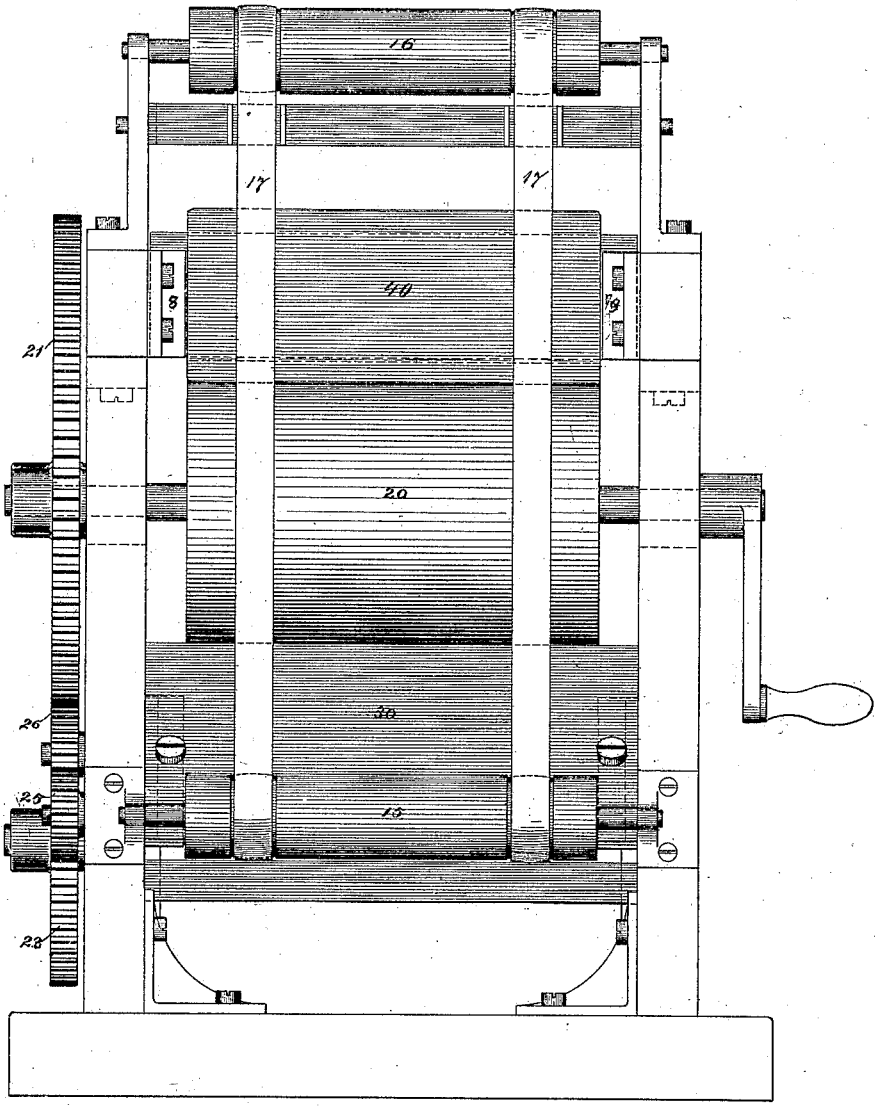
Fig. 2.



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3 Sheets—Sheet 3.

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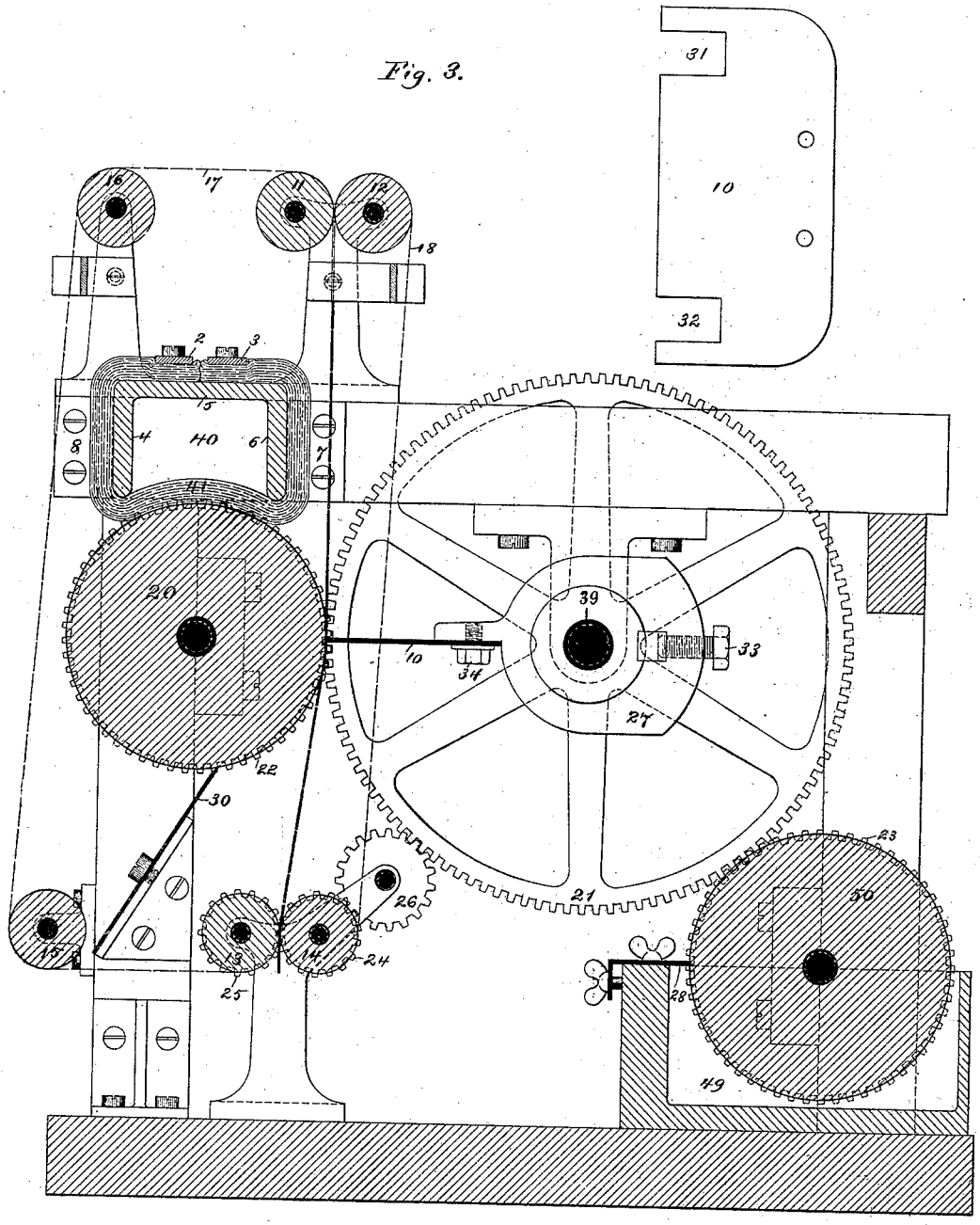
Fig. 3.



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UNITED STATES PATENT OFFICE.

STEPHEN D. TUCKER, OF NEW YORK, N. Y.

IMPROVEMENT IN PASTING MECHANISMS FOR PAPER-FOLDING MACHINES.

Specification forming part of Letters Patent No. **212,872**, dated March 4, 1879; application filed September 16, 1878.

To all whom it may concern:

Be it known that I, STEPHEN D. TUCKER, of the city, county, and State of New York, have invented certain new and useful Improvements in Pasting Mechanisms for Paper-Folding Machines; and I do hereby declare that the following specification, when taken in connection with the accompanying drawings, is a full, clear, and exact description thereof, sufficient to enable those skilled in the art to make and use the same.

In said drawings, Figure 1 represents a plan view, Fig. 2 an end elevation, and Fig. 3 a longitudinal sectional elevation, of my improved pasting mechanism.

This invention relates to that class of pasting mechanisms which are so constructed as to apply a transverse line of paste upon the surface of a sheet of paper while the same is passing over a revolving supporting-cylinder; and the invention consists in combining with such supporting-cylinder a continuously-acting apparatus, whereby, when the mechanism is in operation and the pasting-blade is moved into contact with said supporting-cylinder, while it is uncovered or not supporting a sheet, the line of paste deposited upon its surface by the pasting-blade will be removed, so that said paste may not be carried onto the inner surface of the next sheet passing over the said cylinder.

The pasting mechanism consists of a sheet-supporting cylinder, 20, with which is combined a rotating pasting-blade, 10. This pasting-blade is a simple plate, (recessed, as at 31 32, so that it may span the tapes and not cut them off,) which is fastened (so as to be radially adjustable, if desired) by screws 34 to an arm, 27, (preferably counterbalanced, as shown,) that is mounted upon a shaft, 39, and secured by means of its set-screw 33. This blade-shaft carries at its end a toothed wheel, 21, by which it is geared with the pinion 22 on the shaft of the supporting-cylinder 20, and to a similar pinion, 23, on the shaft of the paste-fountain roller 50. The blade-shaft 39, supporting-cylinder, and fountain-roller are geared together, so that the edge of the blade and said cylinder and roller shall have the same surface speed. This may be accomplished by suitable gearing, without regard to the size of the said cylinder and roller. Such relative movements of these devices cause the pasting-blade to engage and move in unison with the surface of the paste-fountain roller in receiving paste therefrom, and to engage and move in unison with the paper in depositing said paste thereon, so that in neither case does it drag or sweep over the surface with which it has contact, whereby the paste would be smeared over both the blade sides and surface of the paper. The paste-fountain roller, which runs in the paste-vat 49, has the quantity of paste its surface shall present to the pasting-blade regulated by a doctor, 28, as is common in pasting and inking mechanisms.

The sheet-supporting cylinder is provided with a conducting apparatus, whereby the sheets are carried to it, caused to pass over its surface at the line of contact therewith of the pasting-blade, and delivered to the folding mechanism. As here shown, this consists of sheet-conducting tapes 17 18, the former moving from the roller 11 over or in contact with the surface of the supporting-cylinder 20, around rollers 13 15, and returning over the roller 16. The tapes 18 run from the roller 12, in contact with the tapes 17, over the surface of the supporting-cylinder 20, and return over a roller, 14. These tapes are driven at an equal surface-speed with the travel of the supporting-cylinder 20 and pasting-blade 10 by means of spur-wheels 25 24, gearing their rollers 13 and 14 together, and an intermediate, 26, connecting the wheel 24 with the toothed wheel 21.

The mechanism thus far described, when connected with a mechanism supplying the sheets successively to it at the tape-rollers 11 12, will operate as follows: Each sheet as received will be conducted by the tapes 17 18 down before and in contact with the surface of the supporting-cylinder 20; and the mechanisms are so timed that when the middle portion of said sheet, or such other portion of it that is to receive the line of paste and constitute the line of its ultimate folding, overlies said cylinder 20, the pasting-blade, which has become charged with paste in passing in contact with the fountain-roller 50, will bear upon the sheet, pressing it against the surface of the cylinder 20, as in Fig. 3, and imprint or deposit a line of paste thereon. This sheet,

constantly moving, is conducted onward by the tapes, and delivered from them at the rollers 13 14. In practice, however, these tapes will connect with the mechanism supplying the sheets and with the mechanism which is to fold the same, so that the sheets received by them will be conducted through this pasting apparatus and be delivered to the folding mechanism.

Now, it will be observed that if, for any reason, the supply of the sheets is interrupted, as when starting or finishing work, or otherwise, and the mechanism continues to run so that its pasting-blade makes one or more turns, it must, in the absence of a sheet at the point of its contact with the supporting-cylinder 20, deposit a line of paste thereon; and, further, that if said line of paste remains on said cylinder 20, it will, when a sheet is fed into the mechanism and passes in contact with the cylinder, deposit the same upon the inner surface of the sheet, which paste being exposed in all further manipulation of the said sheet will smear the conducting-rollers and various parts of the folding mechanism, rendering it necessary to stop the apparatus and clean the same.

I have provided means for removing the paste thus accidentally deposited upon the carrying-cylinder, whereby the apparatus may be run without sheets, and yet remain clean and in a condition to operate upon the same at all times. A stripper, 30, consisting of a thin plate of metal, is fixed to the frame-work, and nicely adjusted, so as to bear evenly against the surface of the carrying-cylinder 20. It is thus adapted to strip or scrape off the paste deposited on the surface of the cylinder and prevent said paste from being carried around to the point of contact of the cylinder with the paper. A wiper, 40, is also employed to rub upon the surface of said cylinder, and clean from the same any paste which may adhere thereto, so that the said cylinder shall be perfectly clean when presented to the paper. This wiper consists of a metal frame, composed of the top plate, 5, and sides 4 6, over the open bottom of which is stretched a number of layers of soft clothing, as flannel or other suitable pliable and absorbent material, which are secured to the top plate, 5, by means of clamp-plates 2 3 and suitable screws. The ends of the sides 4 and 6 are suited to rest in bearings formed by angle-plates 7 8 and 1 9, secured to the side frames, and in these bearings the said wiper rides and presses by its own weight upon the top of the cylinder 20, its clothing 41 readily conforming to the surface, and thus extending over a considerable part thereof.

When the paper is fed through this pasting apparatus in the form of a web, which is partially severed on lines where it is subsequently to be separated to form sheets, or, being whole, is to be subsequently divided into sheets, the conducting-tapes will not be needed, and when omitted the pasting-blade need not have the recesses 31 32, but be provided with a continuous edge.

What is claimed herein is—

1. The combination, with a sheet-supporting cylinder, as 20, of a pasting-blade co-operating therewith, and a stripper, as 30, substantially as described.

2. The combination, with a sheet-supporting cylinder, as 20, of a pasting-blade co-operating therewith, and a wiper, as 40, substantially as described.

3. The combination, with a sheet-supporting cylinder, 20, and pasting-blade 10, of a stripper, 30, and wiper 40, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

STEPHEN D. TUCKER.

Witnesses:

H. T. MUNSON,

M. B. PHILIPP.