

Aug. 18, 1925.

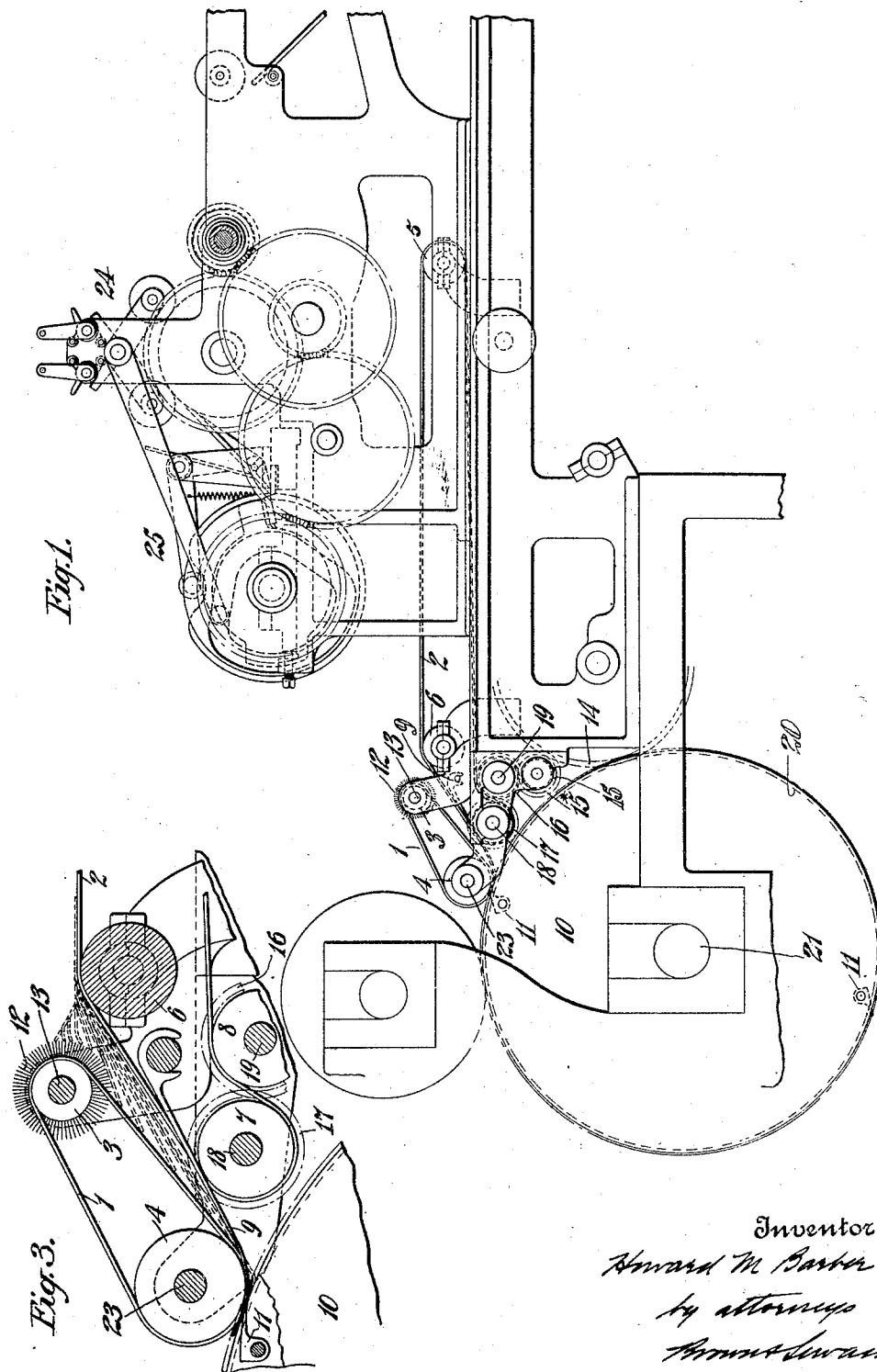
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H. M. BARBER

SHEET FEEDING MECHANISM

Filed Nov. 9, 1922

2 Sheets-Sheet 1



Inventor
Howard M. Barber
by attorneys
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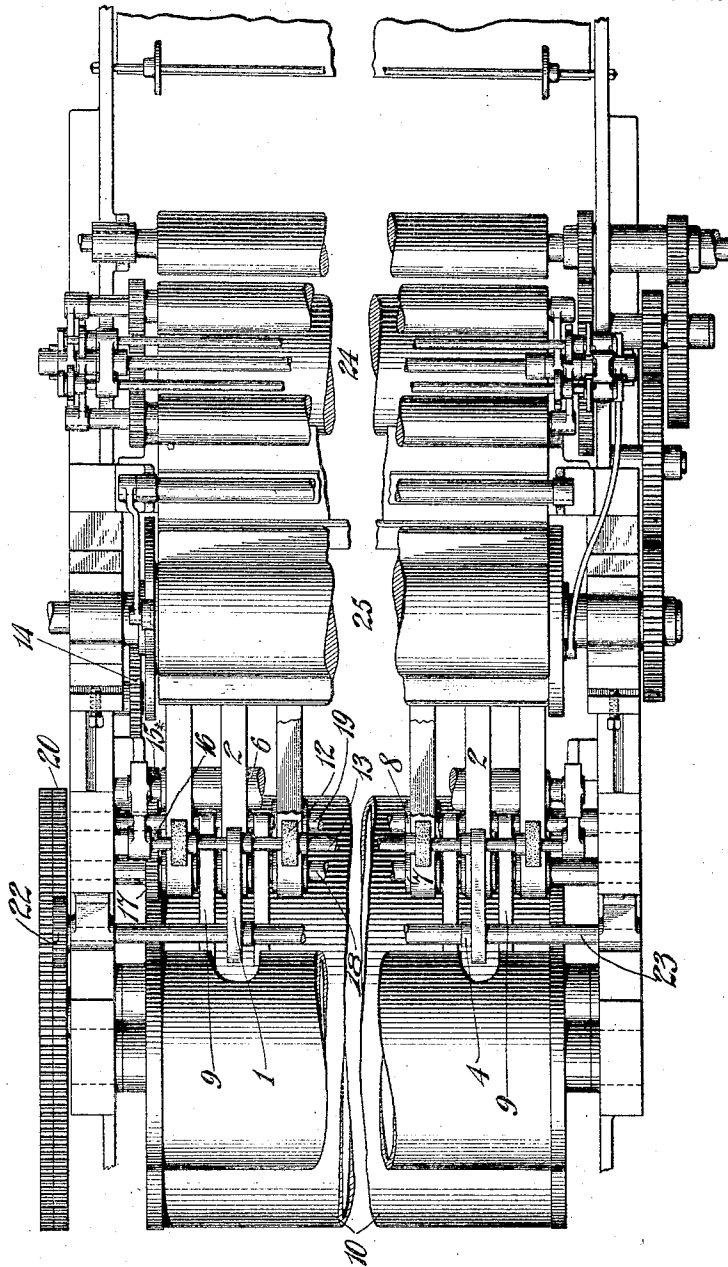
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2 Sheets-Sheet 2

Fig. 2.



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HOWARD M. BARBER, OF STONINGTON, CONNECTICUT, ASSIGNOR TO C. B. COTTRELL & SONS COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

SHEET-FEEDING MECHANISM.

Application filed November 9, 1922. Serial No. 599,896.

To all whom it may concern:

Be it known that I, HOWARD M. BARBER, a citizen of the United States, and resident of Stonington, in the county of New London and State of Connecticut, have invented a new and useful Improvement in Sheet-Feeding Mechanism, of which the following is a specification.

It has been very difficult to accurately cut sheets from light weight and loosely woven fabric webs and feed the sheets in proper register to a predetermined point, such as the grippers on a printing or folding mechanism. This has been especially true in the case of burlap because of the tendency of the material to wrinkle and of the advance edges to curl up or fold back.

The object of my invention is to provide sheet feeding means which will smooth out the wrinkles and curled up or turned-back edges of the sheets as they pass from the cutting mechanism to the printing or folding mechanism, thereby ensuring the proper feeding of the sheets in register to the sheet taking means.

My invention comprises an endless sheet carrier traveling at a certain speed and means such as rotary brushes arranged to engage the sheets to smooth them out as they are fed by the carrier to the sheet taking means, the said brushes having a higher surface speed than the endless sheet carrier.

My invention more particularly comprises upper and lower coating endless tape carriers. The speed of the lower tape carrier is such that it travels slightly more for each cycle of the device than the length of the longest sheet to be cut. The speed of the upper tape carrier is practically the same as the surface speed of the cylinder which is herein shown at the sheet taking means, thus making the surface speed of the brushes more than the surface speed of the cylinder and considerably more than the speed of the lower carrier and the speed of the web. The leading edge of the web is straightened or smoothed by the brushes and is then carried in proper register to the sheet taking means.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Fig. 1 represents in side elevation a portion of a web cutting and sheet feeding

mechanism, with my invention applied thereto.

Fig. 2 represents a top plan view of the same.

Fig. 3 represents a detail sectional view on an enlarged scale of the sheet feeding mechanism.

The upper and lower endless tape carriers are denoted by 1 and 2 respectively, the tapes of the upper tape carrier passing around pulleys 3 at the sheet receiving end of the carrier and around pulleys 4 at the other end thereof. The lower endless tape carrier, 2, passes around pulleys 5 at its inner end, and pulleys 6, 7 and 8 at its outer end. The arrangement of the pulleys 6 and 7 is such that the sheet supporting surface of the tape carrier 2 is directed downwardly and forwardly from the pulley 6 to the pulley 7 beneath the underside of the upper endless tape carrier 1. Sheet guides 9 extend to the surface of a cylinder 10 which may be a part of a printing or folding mechanism, said cylinder having grippers 11 for receiving the advance edges of the smoothed out sheets.

Narrow rotary bushes 12 are mounted on the shaft 13 which carry the pulleys 3 at the inner end of the endless tape carrier 1, the peripheries of which brushes project beyond the surface of the tapes so that the brushes have a greater surface speed than the upper endless tape carriers.

The lower tape carrier is herein shown as being driven from a gear 14 through a train of gears 15, 15*, 16, 17, the gear 17 being on the shaft 18 which supports the pulleys 7 and the gear 16 being on the shaft 19 which supports the pulleys 8 of the lower endless tape carrier. The upper tape carrier is herein shown as being driven from the gear 20 on the shaft 21 of the cylinder 10, through a gear 22 on the shaft 23 of the pulleys 4.

The web feeding mechanism is denoted generally by 24 and the cutting mechanism generally by 25. No specific description of these mechanisms will be made herein as they form no part of the present invention.

In operation: The sheets cut from the web are deposited onto the horizontal portion of the lower endless tape carrier 2 and are fed forwardly to the printing or folding mechanism. The web is fed from either

rolls or bolts, and where fabric, such as burlap is being handled, the sheets are frequently wrinkled with their advance edges curled up or folded back. As the advance edges of the sheets are about to enter the space between the upper and lower endless tape carriers, they are engaged by the rapidly revolving brushes 12 and smoothed out, the two endless tape carriers serving to hold the sheets in their smoothed out condition until the advance edges are taken by the grippers of the printing or folding mechanism, thus ensuring the feeding of the sheets in accurate register to the said grippers.

It is evident that various changes may be resorted to in the construction, form and arrangement of the several parts without departing from the spirit and scope of my invention, hence I do not wish to be limited to the particular embodiment herein shown and described, but

What I claim is:—

1. Sheet feeding mechanism comprising upper and lower coacting endless sheet carriers traveling at certain relative speeds, and rotary brushes traveling in the same direction as the sheets located at the sheet receiving end of the upper carrier and arranged in position to engage and smooth out the sheets to ensure their proper feed.

2. Sheet feeding mechanism comprising upper and lower coacting endless sheet carriers traveling at certain relative speeds, and rotary brushes located at the sheet re-

ceiving end of the upper carrier arranged in position to engage and smooth out the sheets to insure their proper feed, said rotary brushes having a higher surface speed than the carriers.

3. Sheet feeding mechanism comprising a lower endless tape carrier traveling at a certain speed and arranged to receive the sheets and convey them to a predetermined point, an upper endless tape carrier arranged to coact with the lower tape carrier and traveling at a slightly lower surface speed, and rotary brushes at the sheet receiving end of the upper tape carrier projecting into the space between the carriers in position to engage and smooth out the sheets to ensure their proper feed.

4. Sheet feeding mechanism comprising a lower endless tape carrier traveling at a certain speed and arranged to receive the sheets and convey them to a predetermined point, an upper endless tape carrier arranged to coact with the lower tape carrier and traveling at a slightly lower surface speed, and rotary brushes at the sheet receiving end of the upper tape carrier projecting into the space between the carriers in position to engage and smooth out the sheets to ensure their proper feed, said brushes having a higher surface speed than the carriers.

In testimony, that I claim the foregoing as my invention, I have signed my name this second day of November, A. D. 1922.

HOWARD M. BARBER.