

Machinery and Appliances.

PATENT IMPROVED CARD GRINDING APPARATUS.

GRINDING FLATS FROM WORKING SURFACES.

INVENTOR: MR. JAMES EDGE, CROSS LANE, GORTON, MANCHESTER.

This is an invention by Mr. James Edge, Manager, Gorton Mill, near Manchester, one of the number belonging to the eminent firm of which the late John Rylands was the founder, and for so many years the head. Mr. Edge has

cylinder must be as nearly as possible a perfect one; in the second, the bend, whether flexible or inflexible, over which the flats travel must be equally true, so that the latter may be perfectly concentric throughout the whole of their traverse; third, the working surfaces must be finished to a similarly perfect condition, which requires that each be formed to accurately constitute a section of the imaginary circle of which they form a part. But this is not all, they must be maintained in this condition. There are two elements that militate against this, the first being the wearing down of the ends of the flats, and the second the grinding away of the wire. The tendency of these two is to counteract one another, but it is not much more than a tendency. To secure perfect

of one and every flat to the cylinder perfectly uniform, so that the wire of every flat throughout the course of its traverse, when properly set, shall not be separated from that of the cylinder by more than the 1-1000th part of an inch. It will be obvious that the solution of this problem requires the greatest skill and the nicest handling and adjustment of details. There are three, or four methods for more or less perfectly accomplishing this, but these we need not stop to describe. It is sufficient to observe that they leave something to be desired. We may, however, refer to one of them with a little detail, as the invention under notice is to some extent based upon the same plan. This is the one in which the grinding roller is supported on

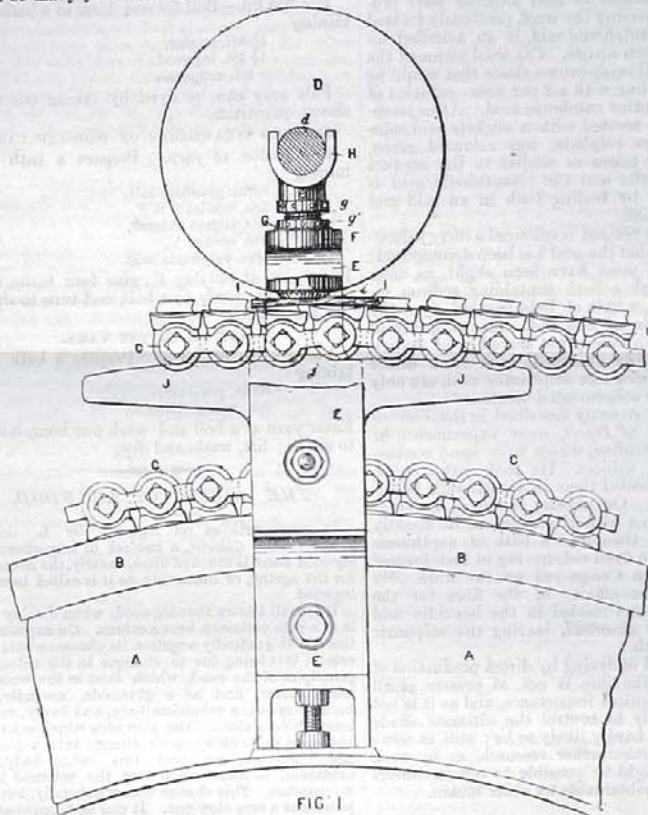


FIG 1

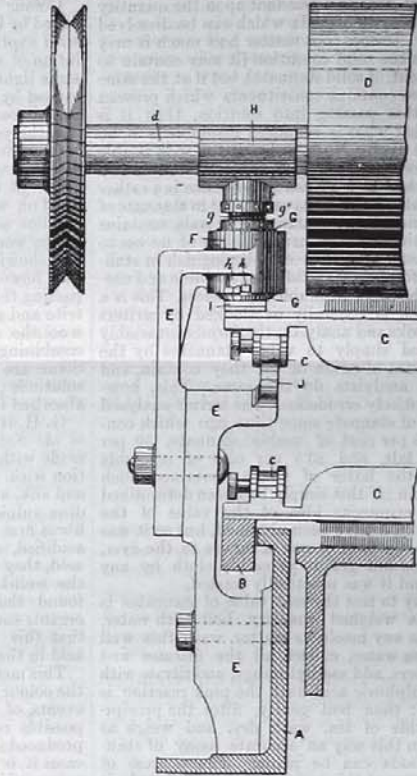
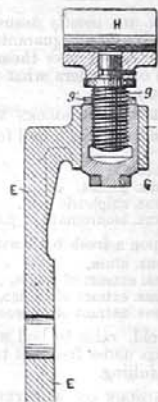


FIG 2

had a large experience, and was quite qualified for undertaking his self-imposed task. The invention is for the purpose of grinding the flats *in situ* or from their working surfaces. Grinding of course has not been neglected, as upon its accuracy has all along depended, to a very great extent, the production of the best work. The so-called flats of a carding engine, are, after all, not flats, or at least ought not to be. The chain of flats if sufficiently extended as to encircle the periphery of the cylinder, should form a hollow cylinder, whose inner clothed surface when in that position should be equi-distant at all its points from the clothed periphery of the carding cylinder. Any want of success in this means the failure of attaining the condition of ideal perfection. The remark holds true of the section of the cylinder over which the flats when at work actually extend. Should there be any irregularity in either by which the surfaces are made to approach too close or move too far apart, imperfect work will be the result. In order to attain this several things are requisite. In the first place the

FIG 3.



grinding is the chief desideratum; this consists in maintaining good working points upon the wire, and above all maintaining the concentricity

a vertically sliding bracket, and is raised as each flat passes, the latter being carried over a rigid supporting piece, and their working surfaces coming into contact with the vertically sliding brackets.

In the invention under notice the grinding roller at the end is so mounted that during the operation of grinding the vertically moving stud or bracket which carries the bearing for the roller shaft, is supported upon the working surface of the flat. Each flat as it passes beneath the grinding roller is adjusted to the required angle against the under surface of the above-mentioned bracket, which is inclined to form an internal angle of from 170 to 176 deg. These details will, however, be more easily comprehended by the aid of the accompanying illustrations. Fig. 1 is a portion of the front elevation; fig. 2, side elevation with parts in section; and fig. 3, sectional side elevation of the upright bracket and vertical sliding stud. The letters indicate in each illustration the same parts. The parts shown are the bend A, the flexible bend B, several flats C, the grinding

roller D, and the bracket E, and other details that will appear in the description. The grinding roller D is supported by the adjustable bracket E bolted to the bend A. As will be observed this bracket is formed in two parts secured to each other, the function of the lower part being to sustain and lift up the flats c as they pass forward to be ground; whilst that of the upper part is to support the grinding roller and regulate its position in relation to the flats when being ground. In this upper part is formed a socket F which receives a sliding stud G upon which is carried the journal of the grinding roller d. This stud G is formed of two parts, the outer one of which slides in the socket F, and the inner stud J. The latter screws into the sliding stud G, and when arranged at the proper height is locked in its position by the nut G. The stud G projects into the shank of the journal and can be screwed to receive a nut to regulate the height and fit into the slide. The lower end of the stud G projects through the socket F and is fitted with an inclined surface against which the working surfaces of the flats come in contact as they are being ground. This surface which constitutes the essence of the invention is formed on the under side of the plate I securely attached to the slide G. This surface has two inclines, one in each direction from a point marked I placed about half an inch in front of the centre of the grinding roller. The inclination in the direction from which the flats approach is of about 2½ deg. from the horizontal, and the second in which they recede is about 1½ deg., forming an angle of about 176 deg. at the point I. Hitherto the aim has been to cause the card wire surface of the flats to travel in a plane at right angles to a radial line from the centre of the grinding roller, and herein lies the error of the ordinary methods, as to get perfect grinding it is requisite that each row of wires shall be presented for grinding with their bases at an equal distance from the centre of the grinding roller. In this arrangement the inclination of the surfaces must on their passage perforce be adjusted to correspond with the inclination of the flats to be ground.

The lower part of the bracket E at its upper edge, forms an inclined guide J over which the flats successively pass, the back of the flat at the point c where it is curved to receive the link stud resting upon it. Upon this guide for a short space near its centre is formed a specially raised surface J, which lifts each flat as it passes up into contact with the grinding roller. When not required to grind, provision is made for raising the grinding roller clear of the flats, the pin K being lifted into the slot L, the whole forming a bayonet joint.

It now only remains briefly to describe the movements when the card is in operation. The flats travel their usual course. As they approach the grinding roller, they move up the inclined guide J, the raised under part resting upon it; on nearing the centre of the guide they mount upon the raised surface J, which brings their working surfaces into contact with the inclined surface I of the slide G. The several parts having been properly adjusted, each flat as it passes between it, and the guide surface J must raise it, and so cause each flat to bear lightly against the surface I. This necessitates that the distance between the working surface of each flat and the grinding roller shall be equal, and that the grinding of the flats shall be all alike, all the wires being ground to an uniform length with a level surface.

This invention has been tested for some time in the Gorton mills with the most satisfactory results, and really appears to have solved in a very satisfactory manner a most difficult problem.

Our readers who wish to have such further particulars as we cannot give may apply to the inventor at the above address.

News in Brief,

FROM LOCAL CORRESPONDENTS AND CONTEMPORARIES.

ENGLAND.

Bolton.

A new company is in course of formation, to be known as the North End Spinning Company. The promoters contemplate building a fire-proof mill to contain 70,000 spindles, on land near Messrs. Barlow and Jones', Cobden mill.

The quilt, which is to be presented to Mr. Gladstone from the working-men Liberals of Bolton, has been on view in the window of Mr. Thomas Bromley, Bradshawgate, and has attracted large crowds. A complete set of mats, etc., are to be given along with the quilt. They have all been manufactured at Messrs. Barlow and Jones'.

The Bolton Union Spinning Company has declared a dividend of five per cent. per annum on the last half-year's working. Mr. Charnock, one of the directors, intended retiring from the directorate, but owing to the usual nomination notice not having been given, the three retiring directors (two of whom offered themselves for re-election) will have to continue in office until the end of the year.

Farnworth.

Mr. Josiah Phethean, third son of the late Josiah Phethean, one of the founders of the extensive quilt manufacturing firm of John Phethean and Co., Limited, was presented recently with a magnificent writing cabinet of rosewood, inlaid and mounted with silver, together with an ivory handled umbrella mounted with silver bands. The presentation was made by the workpeople of the firm as a memento, Mr. Phethean attaining his majority.

Halifax.

Notices have been posted in the works of Messrs. Dickinson and Co., cotton spinners and doublers, Haly Hill, to the effect that the mills will be closed in 14 days. There are about 24,000 spindles.

The strike of the settlers employed at the mills of Messrs. John Crossley and Sons, Limited, has terminated, a mutually satisfactory compromise having been arranged. About 150 operatives, chiefly women, were affected.

Leicester.

A receiving order has been granted against the estate of Mr. C. H. Humberstone, hosiery manufacturers' agent.

Mr. W. T. Rawlett has been nominated as a candidate for the vacant seat (St. Martin's Ward) in the Town Council.

Messrs. W. E. and F. Brown (who are retiring from business) have definitely decided to sell the whole of their hosiery machinery and plant by auction on the 29th and 30th inst.

We regret to announce the decease of Mr. Walter Whitmore, yarn agent, &c., which took place suddenly at his residence, on Tuesday night. Up to the evening in question he had been actively engaged in his business, having recently returned from a voyage taken for the benefit of his health. For many years past he represented the Ovenden Worsted Spinning Co. in this town.

Liverpool.

The failure of Messrs. Bradbury and Twentyman, the Liverpool cotton brokers, seriously affects one or two firms engaged in the cotton trade in East Lancashire. One firm at Blackburn is said to be involved to the extent of £4,000, and an Accrington limited company has lost nearly £3,000 by the crash. From a statement addressed to the shareholders by the chairman of the Accrington Cotton Spinning and Manufacturing Company it seems that Mr. Bradbury was a man of great commercial reputation, and had the full confidence of the directors, who had extensive dealings with him. The directors regarded him as a substantial man, and even made him into a kind of banker for them. When they received a large cheque for cloth sold it was their custom to forward it direct to Mr. Bradbury towards the next account for cotton, Bradbury paying them 5 per cent. interest for money in hand, and the company being debited with similar interest in case of the balance being on the wrong side; but that seldom happened. The balance in his hands at the present time amounts to £2,659, and recent inquiries elicited the information that he was not to be found. The company has been very successful of late. Six months ago a dividend of 9 per cent. was declared, and the dividend for the half-year just closed was 10 per cent. This, however, is not to be paid, the shareholders having agreed to the suspension of the dividend pending further inquiries. Messrs. Bradbury and Twentyman carried on business under the style of Coddington Brothers, a well-known firm.

Macclesfield.

On Saturday, Mr. Cockburn, manager of the shirt factory, was presented with a handsome marble timepiece by the employes on the occasion of his silver wedding.

Messrs. Hambleton and Brown, silk manufacturers, conveyed their workpeople in wagonettes to Ruddyard Lake last Saturday, who were regaled with abundant refreshments. Votes of thanks were given for their employers' hospitality, and reference was also made to the good feeling that existed between masters and employes.

American papers announce the death, at the age of 67, of Mr. George Broadhurst, at his home in Mansfield, Conn. "He came to this country," says a contemporary, "from Macclesfield, England, with his father and brother in 1851, to engage in the manufacture of silk dress goods, but found competition hard with foreign manufacturers in those days, and finally gave it up. He was an employe of the Cherey Bros., Manchester, Conn., for 27 years as superintendent and otherwise. Having by industry and economy acquired a competence, he returned to Mansfield about twelve years ago, purchased a small farm, and has enjoyed with his wife the quiet of their rural home."

Manchester.

The marriage of Professor Bryce, M.P. for South Aberdeen, Regius Professor of Civil Law at Oxford, and Fellow of Oriel College, to Miss Elizabeth Marion Ashton, second daughter of Mr. Thomas Ashton, of Ford Bank, Didsbury, and ex-High Sheriff of Lancashire, was solemnised at Gee Cross Unitarian Chapel, Hyde, on Tuesday last. The pair afterwards left for the North, whence they would proceed to the Continent.

The will of the late Mr. Richard Peacock, of Gorton Hall, member of Parliament for the Gorton division of Lancashire, has been proved at the Manchester District Registry. The gross personal estate amounts to £204,157, and the net personal estate to over £202,000, including leaseholds. The testator has left the bulk of his real and personal property to his two sons, Mr. Ralph Peacock and Mr. Frederick William Peacock, and other relatives. He gives £2,000 to his housekeeper and smaller sums to other servants. There are no public bequests.

Shortly after six o'clock on Thursday morning an outbreak of fire occurred in the mixing room of O'Connell's Mill, Ancoats. The chief fire station was immediately communicated with, and Mr. Superintendent Tozer turned out with the full strength of the brigade, which, with one of the nine sprinklers, with which the room was furnished, materially helped to subdue the fire. A portion of the contents of the room, in a smouldering state, was turned out into the street, and just after this had been done the remainder of the stuff ignited, but was speedily quenched by another sprinkler being set in action, and by the energetic efforts of the brigade. The damage is not very serious, and the origin of the fire is unknown.

A New York paper says:—Mr. McConnel, who is agent for the famous calico printing house of Edmund Potter and Co., of Manchester, England, has just returned from a trip to the several large cities of the West. His samples of satines, shirtings, turkey reds, handkerchiefs and other specialties were greatly admired by the houses to whom they were shown. Some orders were procured and the styles of work, colouring and execution are so novel and superior that the business with this country will doubtless be largely increased, especially in the better grade of goods. It will enable houses to have patterns and styles not common in the market, which will be quick sellers and at a satisfactory profit.

The principal topic of conversation in dry goods circles during the week has been the changes recently announced in the directorate of the old established firm of J. P. Westhead and Co., Limited. Mr. S. I. Thomson, the new managing director, is well known amongst shippers in connection with the business of linen manufacturers' agent which he carried on for some years at 35, Back Piccadilly, and afterwards at 35, Piccadilly. Mr. Thomson is a good man of business, and is liberally endowed with that species of nervous energy which Americans denote by the single word "vim." It may not be generally known that Westhead's have a fair shipping connection. This branch of the company's business will no doubt be extended under Mr. Thomson's management. We understand that several changes will be made in the personnel of the establishment, and applications have already been invited for the post of counting house manager, a position which in such a concern as that of Messrs. Westhead calls for a large amount of practical knowledge of the wholesale drapery trade, and no mean power of organisation.