H. G. FRANCIS.

ROLLER SCRAPER BAR FOR GLUE SPREADING MACHINES.

APPLICATION FILED OCT. 20, 1919.

1,333,968.

Patented Mar. 16, 1920.

2 SHEETS—SHEET 1.

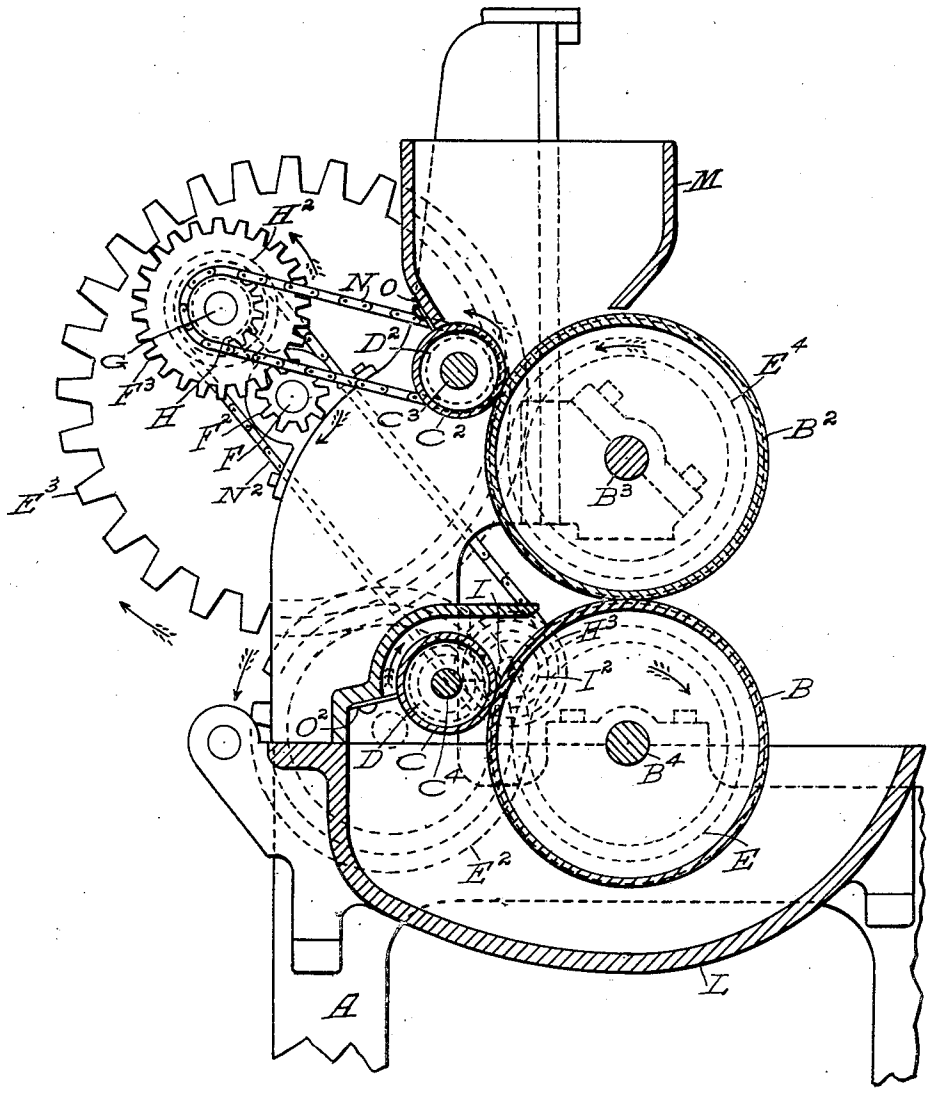


Fig. 1.

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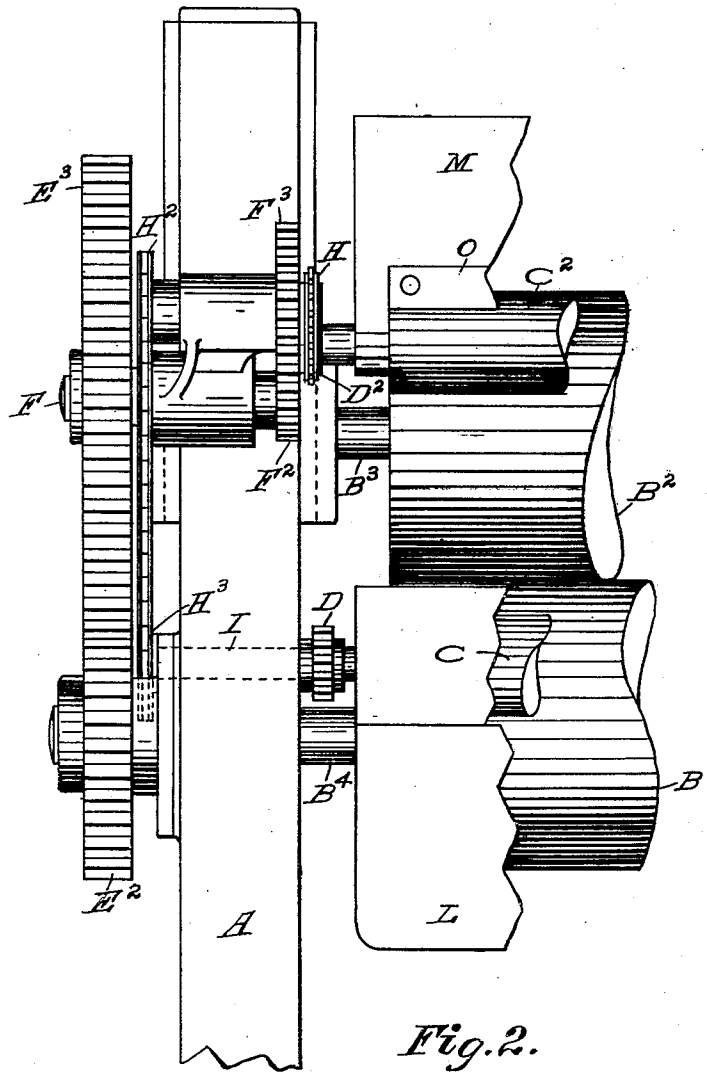


Fig. 2.

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ROLLER SCRAPER-BAR FOR GLUE-SPREADING MACHINES.

1,333,968. Specification of Letters Patent. Patented Mar. 16, 1920.

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To all whom it may concern:

Be it known that I, HARRY GRANT FRANCIS, a citizen of the United States of America, and resident of 820 North Harrison street, Rushville, in the county of Rush and State of Indiana, have invented certain new and useful Improvements in Roller Scraper-Bars for Glue-Spreading Machines; and I do hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings making a part of this specification.

My invention relates to roller scraper bars for glue-spreading machines, and it has for its object the improvement in construction of such devices whereby they are simplified and rendered more efficient in action.

The novelty of my invention consists in the combination and sub-combination of the parts as will be hereinafter set forth and specifically pointed out in the claims.

In the drawings, Figure #1 is a transverse section through a machine embodying the improvements.

Fig. #2 is a side elevation at one end of a machine showing how the scraper rolls are driven. A is one end of a frame, B, the lower glue roll, B^2, is the upper glue roll, C is the lower scraper roll, and C^2 is the upper scraper roll. D is a gear that drives the lower scraper roll, D^2 is a sprocket wheel that drives the upper scraper roll, B^3 is the shaft of the upper roll B^2, B^4 is the shaft of the lower roll B, C^3 is the shaft of the upper scraper roll C^2, C^4 is the shaft of the lower scraper roll C. Attached to the end of the shaft B^4 is a gear E, which meshes with the gear E^2, it in turn meshes with gear E^3, and gear E^3 meshes with gear E^4, which is attached to the end of the shaft B^3 and drives the upper roll B^2. The gear E^3 is attached to the shaft F, which has secured to its other end a gear F^2, the gear F^2 meshes with gear F^3, which is attached to shaft G, the shaft G has sprocket wheels H and H^2 secured to the outer ends. Shaft I has a sprocket wheel H^3 secured to one end and a gear I^2 secured to the other end. A pan L is placed beneath the lower roll B for feeding glue to the lower roll. The upper roll B^2 has a pan M placed above it for providing glue for the upper roll. The glue roll B revolves in the same direction as the scraper roll C, also the glue roll B^2 revolves in the same direction as the scraper roll C^2. The surface speed of the scraper rolls C, C^2 is much less than that of the glue rolls B, B^2. Sprocket chains N, N^2 are provided for transmitting power from shaft G to shafts C^3 and I. The operation of my device is as follows: Power is applied to the opposite end of the lower glue roll B, to that which is shown, through gears E, E^2, E^3, and E^4 the power is transmitted to the upper roll B^2, through gears E^3, shaft F, gear F^2, and gear F^3 power is transmitted to shaft G. The shaft G having sprocket wheels H, H^2 attached to it, power is transmitted through sprocket chain N to the upper scraper roll C^2, and through sprocket chain N^2 to shaft I, through shaft I to gear I^2, which meshes with gear D, which is attached to the end of shaft C^4 on which the lower scraper roll C is secured, thereby revolving scraper roll C when the train of gears are operated. The scraper rolls C and C^2 revolve continuously and not intermittently when in operation. Attached to the rear and lower side of the upper trough and above the upper scraper roll is a thin piece of steel O, the edge of which is placed very close to the surface of the scraper roll and extends the entire length of the roll. A similar steel strip O^2 is provided for the lower scraper roll. These steel scrapers are provided to prevent the glue working out at the rear side when the scraper roll forces the glue toward the back side of the troughs. These steel scrapers serve another purpose also; when the glue spreader is not in operation and has remained idle for several days with glue in the troughs, the glue hardens and holds the spreader roll to the trough and if it was not for the elastic strip of steel some part of the machine would break when the machine is started. It has been proven in practice that the gears are the parts that are apt to break when these elastic strips are not provided. This scraper roll was designed to regulate the application of heavy glues to stock where the controlling of the amount applied to the surface of the stock was an essential point in making a good glue joint. In trying to overcome the objectionable features in the use of a continuously revolving scraper roll, it was found that by revolving the scraper roll in the same direction as its glue roll, less friction and a closer adjustment and more even distribution of glue resulted.

The surface speed of the scraper roll should be much less than that of the glue

roll. The operation of my scraper roll is as follows: Glue is placed in the upper and lower troughs M and L. The scraper rolls are placed in the right relation to the glue rolls, power is applied to the machine, causing the glue rolls and scraper rolls to revolve. The glue rolls being in contact with the glue in the troughs owing to the direction in which they revolve tend to carry the glue that adheres to the surface of rolls out of the troughs. The scraper roll owing to the direction it revolves tends to carry the glue back into the troughs, thus the thickness of the glue deposited on the stock will be determined by the relation of the scraper roll to the glue roll.

Having now described this invention and explained the mode of its operation, what I claim is:

1. The combination of upper and lower rolls, troughs for applying glue to the upper and lower rolls, scraper rolls for regulating the amount of glue which adheres to glue rolls, means for revolving each scraper roll in the same direction as that of its glue roll, all substantially as described.

2. The combination of upper and lower rolls, troughs for applying glue to the upper and lower rolls, scraper rolls for regulating the amount of glue which adheres to the glue rolls, means for revolving the scraper rolls in the same direction as their glue rolls, the surface travel of the scraper rolls being much less than that of their glue rolls, all substantially as described.

3. The combination of upper and lower rolls, troughs for applying glue to the upper and lower rolls, continuously revolving scraper rolls for regulating the amount of glue which adheres to glue rolls, means for revolving the scraper rolls in the same direction as that of their glue rolls, all substantially as described.

4. The combination of upper and lower rolls, troughs for applying glue to the upper and lower rolls, continuously revolving scraper rolls for regulating the amount of glue which adheres to glue rolls, means for revolving the scraper rolls in the same direction as that of their glue rolls, with the surface speed of scraper rolls much less than that of the glue rolls, all substantially as described.

5. The combination of upper and lower rolls, troughs for applying glue to the upper and lower rolls, scraper rolls provided with an elastic steel strip scraper, the scraper rolls revolving in the same direction as that of their glue rolls, all substantially as described.

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Witnesses:
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