

(No Model.)

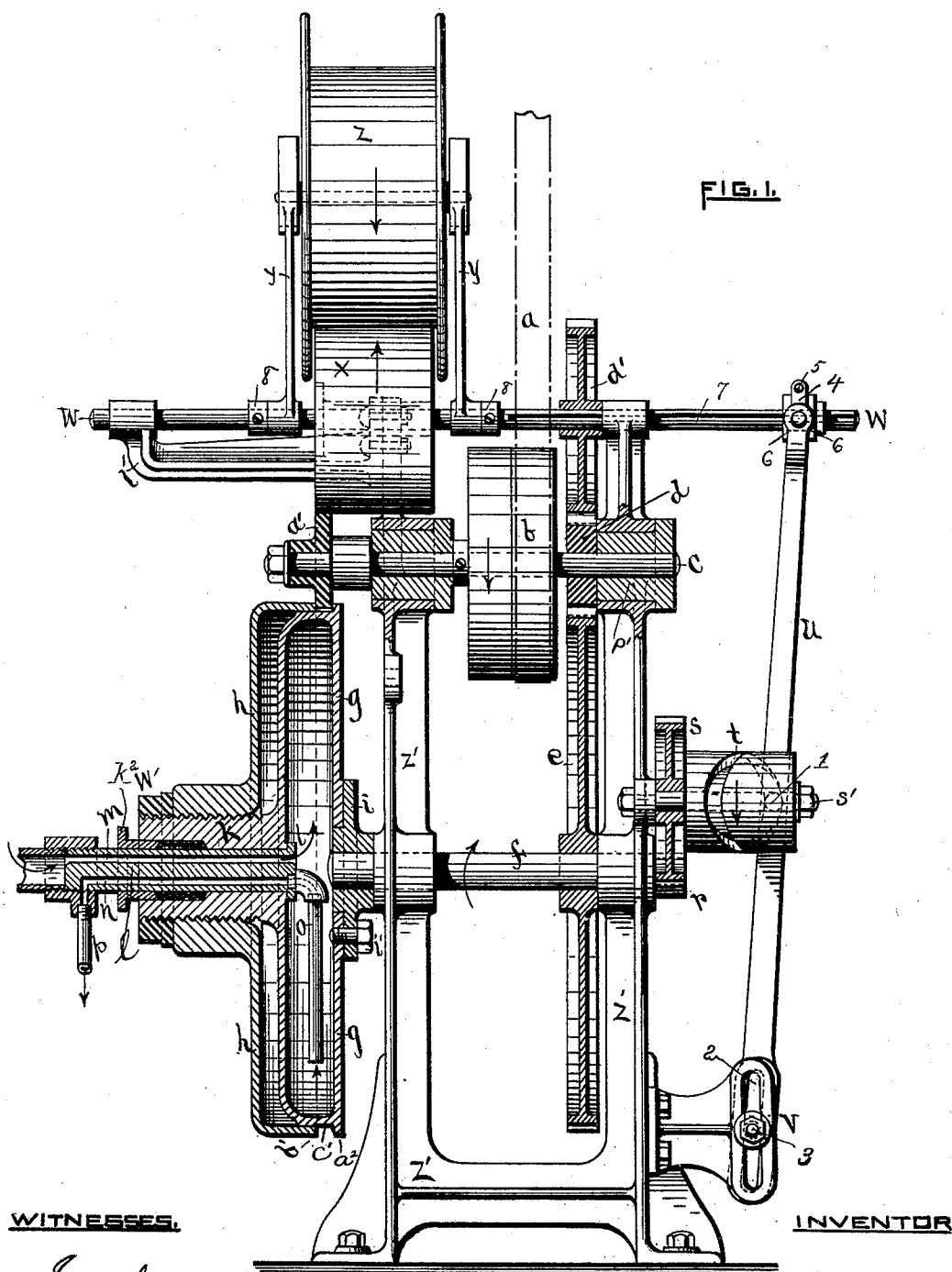
4 Sheets—Sheet 1.

D. BROWN.

MACHINE FOR GRADING AND REELING STRAW BRAID.

No. 395,734.

Patented Jan. 8, 1889.



WITNESSES.

INVENTOR

Joseph H. Quinn
St. Louis Benedict

Daniel Brown
By his Attorney,
Thos. P. Barnfield.

(No Model.)

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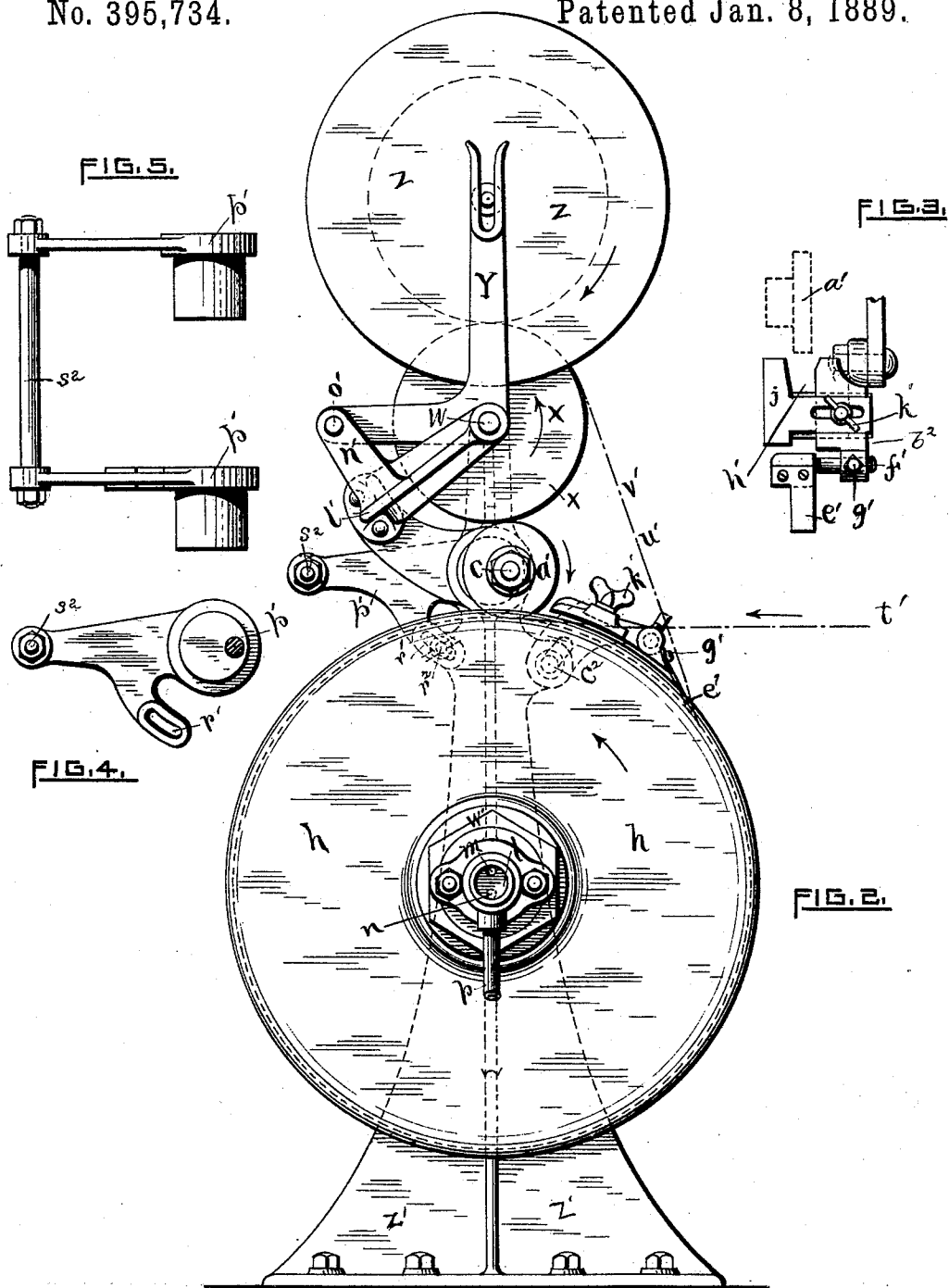


FIG. 4.

FIG. 2.

WITNESSES.

Joseph H. Paine
St. Lande Benedict

S. Gano Benedict

INVENTOR,

Daniel Brown,
By his Attorney,
Thos. P. Barnsfield

By his Attorney,
Thos. B. Barnsfield

Attorney,
Thos. F. Barnsfield

(No Model.)

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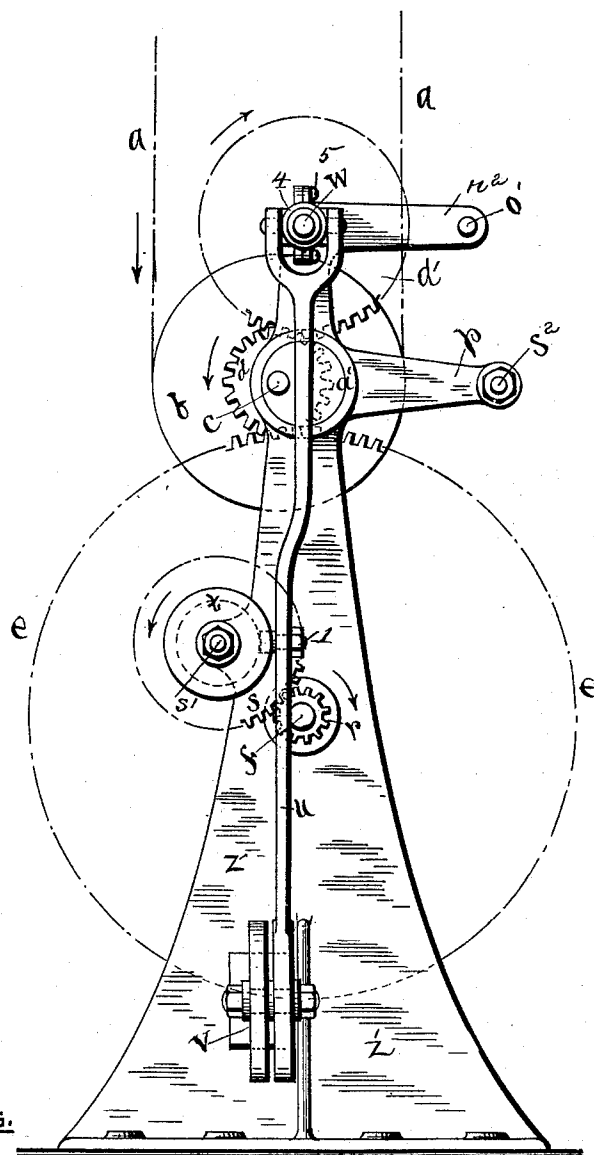


FIG. 6.

WITNESSES.

INVENTOR

Joseph H. Thine
J. Gano Benedict

Daniel Brown,
By his Attorney,
Thos. P. Banfield

(No Model.)

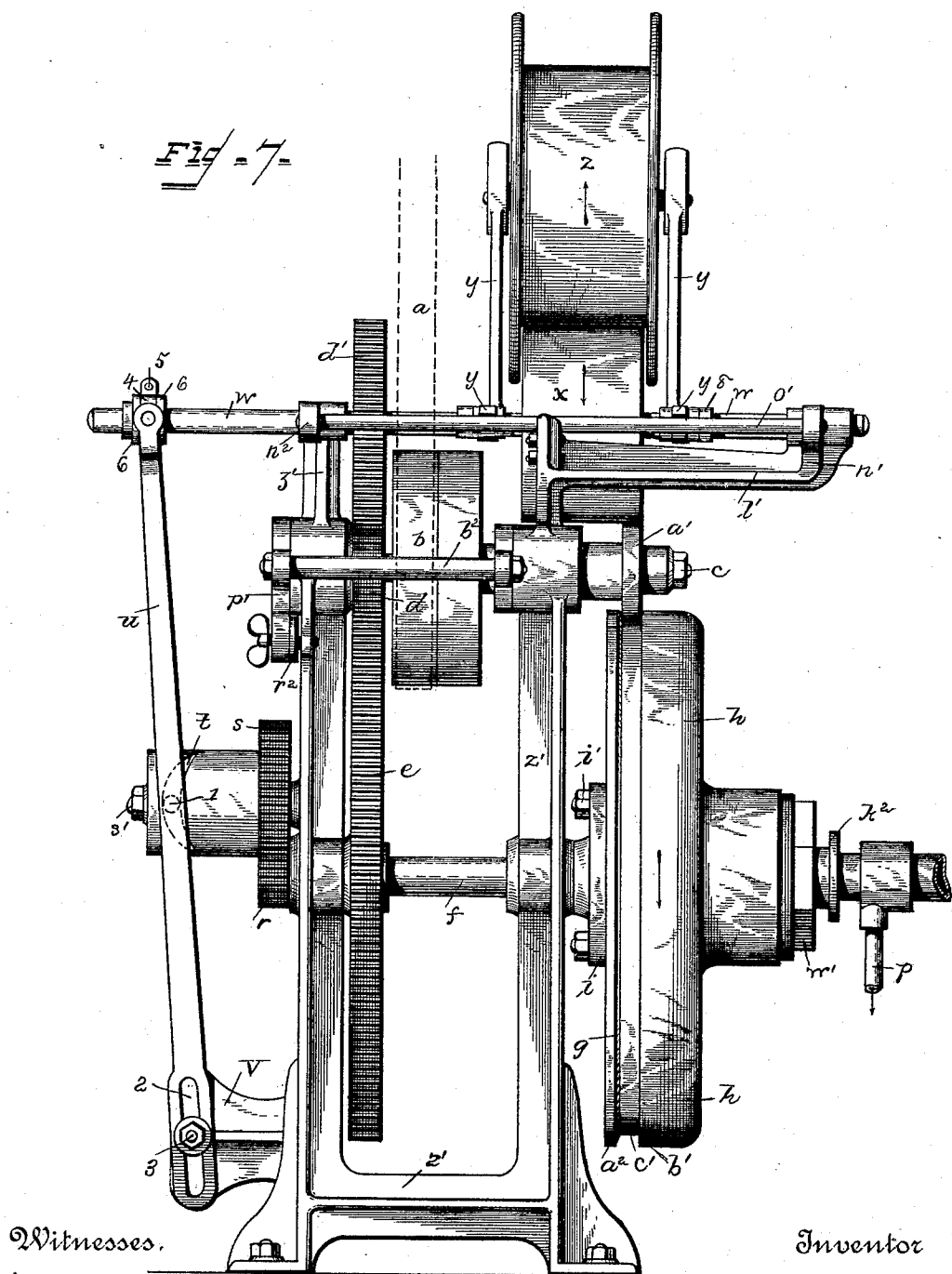
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Witnesses.

Albert E. Spinden.
Ross Head.

Inventor

Daniel Brown.

By Anderson & Myers,
Associate Attorneys.

UNITED STATES PATENT OFFICE.

DANIEL BROWN, OF WRENTHAM, MASSACHUSETTS.

MACHINE FOR GRADING AND REELING STRAW BRAID.

SPECIFICATION forming part of Letters Patent No. 395,734, dated January 8, 1889.

Application filed November 7, 1887. Serial No. 254,455. (No model.)

To all whom it may concern:

Be it known that I, DANIEL BROWN, a citizen of the United States, residing at Wrentham, in the county of Norfolk and Commonwealth of Massachusetts, have invented a new and useful Machine for Grading and Reeling Straw Braid, of which the following is a specification.

My said invention relates to a machine for grading and reeling straw braid; and it consists of a steam drum or cylinder exteriorly formed with a variable groove to receive the braid, having a roll fitted to be used with said variable groove for the purpose of evening and finishing the same, with connected devices for delivering and winding the braid on reels provided therefor.

The accompanying drawings are hereby made part of this specification, similar letters of reference thereon indicating corresponding parts.

In said drawings, Figure 1 is a side elevation of my said machine, partially in section to show the construction and relation of certain of its parts. Fig. 2 is an end elevation showing ends of the steam-drum, roll, revolving guide, and reel, with details of smaller parts connected therewith. Fig. 3 is a detached view of the guide and lift used to lead the stock to the variable groove and to separate the finished braid from the drum. Fig. 4 is a detached view of one of the eccentrics governing the relation of the roll to the groove in the periphery of the drum. Fig. 5 shows both of said eccentrics in perspective and connected with each other. Fig. 6 is a view of the end of the device opposite to that shown in Fig. 2. Fig. 7 is a rear elevation of the machine.

a represents a belt leading from any suitable motor to the driving-pulley b on the main shaft c , journaled in eccentrics p' mounted in the frame-work z' , the eccentrics being connected by a rod, s^2 , as seen in Figs. 5 and 6. Shaft c also carries a gear-wheel, d , and a pressure-roll, a' , the said roll working in the groove c' in the drum and being adjustable up and down in said groove by means of the eccentrics in which the main shaft is mounted, said eccentrics being held in the desired adjustment by means of a screw, r^2 , passing

through slot r' in an arm of the eccentrics and taking into the frame-work of the machine. The gear-wheel d meshes with a larger gear-wheel, e , secured on the drum-shaft f .

g represents a steam drum or cylinder, over which the straw braid is passed and on which it is ironed or pressed. It is secured to the drum-shaft by means of bolts i' , which pass through a hub, i , secured to the shaft and take into the drum. The drum is provided on one side with a rim, a^2 , rising a short distance above its periphery, and on the other side with a hollow projection, k , screw-threaded exteriorly for the reception of an outer shell, h , which shell is thus adjustable on the drum, to leave a groove, c' , of greater or less width between its front edge, b' , and the rim a^2 , the purpose of which groove will hereinafter appear. The shell is secured in its adjusted position by a check-nut, w' .

l represents a double-duct pipe, passing through the projection k and opening out into the interior of the drum. The duct m is for admitting steam to the interior of the drum, and the duct n is designed to conduct away the water of condensation, and for this purpose the pipe l is provided with drain-pipes $o p$ in communication with duct n . A gasket, k^2 , let into the projection k , serves to prevent the escape of steam around pipe l .

r represents a pinion secured on the end of drum-shaft f and meshing with a gear-wheel, s , mounted on a stud, s' , secured in the frame-work z' . This gear-wheel carries a cam, t , with which interlocks a pin, 1, on a lever, u , the lower end of which lever is slotted, as at 2, and is adjustably pivoted on a bolt, 3, passing through the lever and a slotted bracket, v , secured to the frame-work. The upper end of this lever is bifurcated, and is secured to a metal band, 4, which loosely surrounds the shaft w , the ends of the band being held together by a screw or rivet, 5, as clearly shown. A washer, 6, is rigidly secured to the shaft on each side of the band 4.

Shaft w , which is mounted in the upper part of the frame-work z' , its outer end being supported in a curved arm, l' , extending out from the frame-work, is driven by a gear-wheel, d' , through whose hub passes a pin, (not seen,) which takes into a longitudinal

groove, 7, in the shaft, thus permitting the shaft to be moved laterally by lever *u*.

z represents a reel, hung in right-angular supports *y*, mounted loosely on shaft *w* and held in place on said shaft by bosses 8, secured to the shaft. The rear extensions of these supports *y* are bifurcated, as seen in Fig. 7, and the bifurcations pass over a rod, *o'*, rigidly secured in a projection, *n'*, from arm *l'*, and a rearward projection, *n''*, from the frame-work. By this means the reel is steadied in its movements back and forth with the reciprocating shaft *w*.

x represents a transfer-roll rigidly secured to shaft *w*. This roll is designed to convey the braid from the drum to the reel; but as both the reel and roll are carried back and forth by the shaft, it is apparent that they are constantly changing position with relation to the drum, so that as the braid leaves the latter it will be delivered to the reel by the roll in such a manner as to be evenly and smoothly wound.

e' is a thin steel lifting-finger, adapted to lie in the groove of the drum and lift the finished braid. This finger is secured to a small rod, *f'*, which is adjustably held in a bracket, *b''*, on frame *z'* by a set-screw, *g'*, the bracket being secured at *c''* to the frame.

j represents a guide for the braid at *h'* in its passage to the drum, as seen at *h'*, in Fig. 2. It is adjustably secured to the bracket *b''* by means of a thumb-screw, *k'*, passing through a slot in the guide, and the guide is so located that it lies just outside of the pressure-roll, as seen in Fig. 3.

Straw braid as usually received by the manufacturer of straw goods is of uneven width and thickness, owing to the irregularities in the straw as prepared for braiding and to the differences in the manner of braiding.

The object of my invention is to so prepare and finish the braid that it shall be of uniform width and thickness, and from the same general stock to finish the braid of the width and thickness that may reasonably be required. To this end I first submit the raw braid to a steam-bath or like treatment, and in this moistened and plastic condition convey it to the steam drum or cylinder *g g*, as seen at *h'* in Fig. 2. Here it passes under the pressure-roll *a'* into the groove *c'*, where, by the internal heat of the drum and the adjusted pressure of said roll, it is pressed or ironed into the width of said groove and into the thickness represented by the space between the edge of the roll and the bottom of the groove. As the braid is carried along over said drum and pressed and finished, as aforesaid, the finger *e'* lifts it out of the groove, and it is thence conducted over the guide-roll *x* and onto the reel *z*.

The width of the braid may be varied by widening or narrowing the groove *c'*. This is done by moving the shell *h*, which is adjustable on the periphery of the drum, by means of the threaded projection *k* and check-nut *w'*. The thickness of the braid may be varied by adjusting the pressure of the roll *a'* thereon, and this is done by raising or lowering said roll by means of the eccentrics governing the relative position of the roll, as seen at *p' p'* in Figs. 2, 4, and 5.

The operation of the attached devices for reeling the braid will be apparent from the drawings and the foregoing description of said parts.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the drum provided with a raised rim on one side, of a shell adjustable on said drum with relation to the rim, for the purpose set forth, and devices, substantially as described, for heating the drum.

2. The combination, with the drum provided with a raised rim on one side and a screw-threaded projection on the other side, of a shell screwed onto said projection, and thereby adjustable on the drum with relation to the rim, for the purpose stated, and devices, substantially as described, for admitting steam to the interior of the drum for the purpose of heating it.

3. The combination, with the drum having a peripheral groove, as described, of a shaft journaled in eccentrics mounted in the main frame, means for holding the eccentrics in adjusted position, a pressure-roll secured on said shaft and working in the groove in the drum, and mechanism for driving the shaft, for the purposes set forth.

4. The combination, with the drum having a peripheral groove, as described, and a pressure-roll working in said groove, of a reciprocating shaft journaled in the main frame above said roll, a delivery-roll rigidly secured on said shaft, a reel journaled above the delivery-roll in supports loosely mounted on said shaft but reciprocating therewith, and means, substantially as described, for rotating and reciprocating the shaft.

5. The combination, with the drum having a peripheral groove and a pressure-roll working in said groove, of a guide for directing the straw braid under the pressure-roll, and a lifting-finger lying in the groove in the drum in rear of said roll for lifting the braid from the drum, substantially as described.

DANIEL BROWN.

Witnesses:

THOS. P. BARNEFIELD,
JOSEPH H. PAINE.