No. 677,496. Patented July 2, 1901.

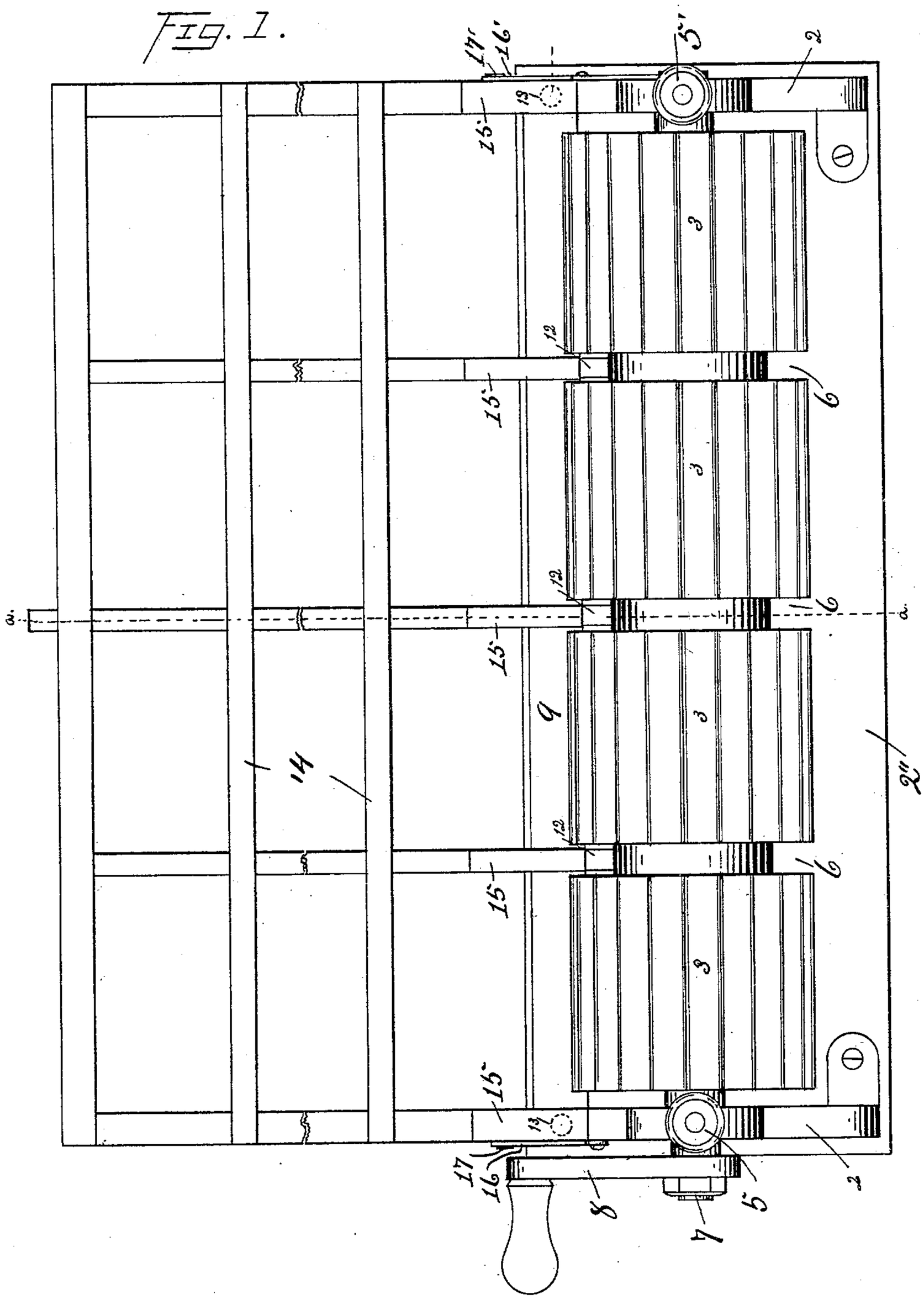
H. S. BROWN.

PLAITING MACHINE.

(Application filed Feb. 4, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



Witnesses.
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Thos. F. Ross.

Inventor.
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Fig. 2.

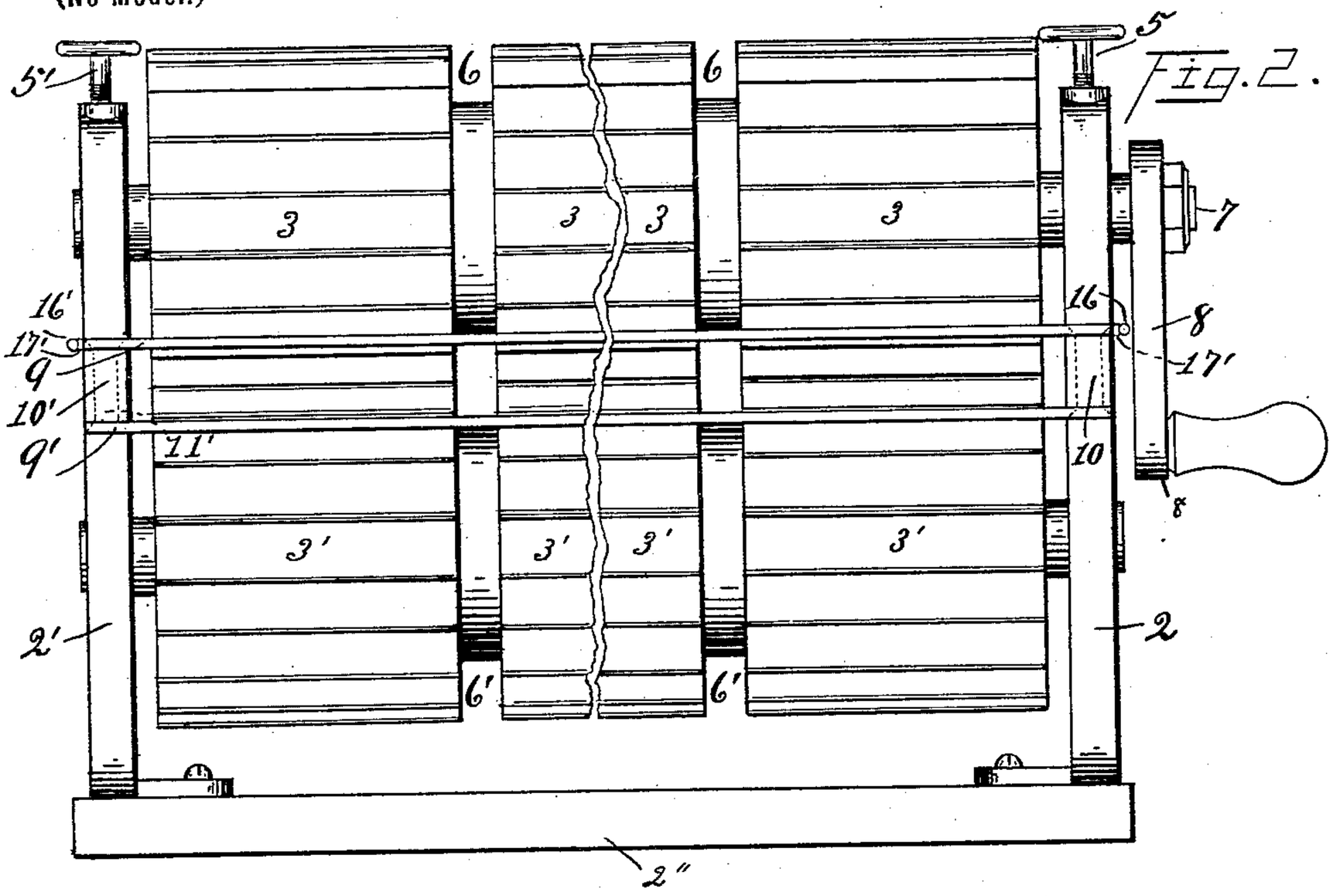

Fig. 4.

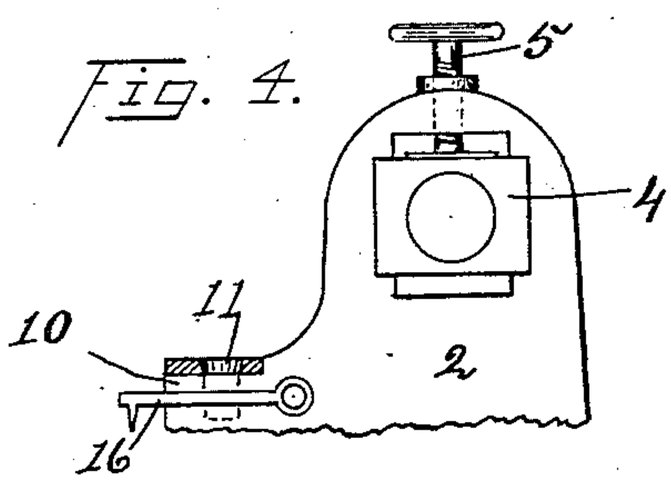

Fig. 3.

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UNITED STATES PATENT OFFICE.

HENRY S. BROWN, OF NEW YORK, N. Y.

PLAITING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 677,496, dated July 2, 1901.

Application filed February 4, 1901. Serial No. 45,885. (No model.)

To all whom it may concern:

Be it known that I, HENRY S. BROWN, a citizen of the United States, residing at New York, Manhattan borough, in the county and State of New York, have invented certain new and useful Improvements in Plaiting-Machines, which improvements are fully set forth in the following specification and accompanying drawings.

In the drawings, Figure 1 is a top plan view of a plaiting-machine embodying my said improvements. Fig. 2 is a rear elevation view of said machine, the storage-crate therefor being removed. Fig. 3 is a vertical section of said machine, the section being taken along the line *a a* of Fig. 1. Fig. 4 is a detail elevation view illustrating features whereby either of the rollers comprised in my said machine may be rendered adjustable upwardly and away from the other roller.

Similar reference-numerals denote like parts throughout the several views of the drawings.

This invention relates to improvements in mechanical structures of that class commonly known as "plaiting-machines," and particularly to plaiting-machines capable of being utilized in the production of so-called "accordion-plaiting," as by folding or reefing flexible material, such as fabrics, paper, and the like.

The object of this invention is to provide a plaiting-machine of the character above indicated which shall be simple, inexpensive, and novel as regards construction, which shall embody in its construction oppositely-arranged intermeshing corrugated rollers, and into or between which rollers reefed or plaited paper or analogous material may be fed, and which shall possess certain well-defined advantages over prior analogous structures.

The invention consists in the employment of certain parts, novel as to form, in the novel disposition and arrangement of the various parts, in certain combinations of the latter, and in certain details of construction, all of which will be specifically referred to hereinafter, and set forth in the appended claim.

Having reference to the accompanying drawings, 2 2′ are oppositely-arranged standards, suitably fastened at their lower ends to a bed 2″, which standards and bed constitute the frame portion of my improved machine.

3 3′ are rollers rotatably mounted in the standards 2 2′, one of said rollers being provided with bearing parts 4 4′, adapted to be moved upwardly and downwardly with respect to said standards, as by means of the adjusting-screws 5 5′. Each of the rollers 3 3′ is provided with a plurality of continuous annular recesses 6 6′, and the respective portions of each of said rollers intermediate of any two of said recesses and at the ends of said rollers are longitudinally corrugated, the corrugations of any one of said intermediate portions as regards each of said rollers alining with the corrugations of all of its neighbors. The rollers 3 3′ intermesh after the manner of spur-gearing, so that upon motion being imparted to one of said rollers such motion will be reversely communicated to the opposite roller, and to the end that such motion may be applied to one of said rollers I have in the accompanying drawings shown the roller 3 as provided with an extended axis 7, to which is applied a crank 8. It will be understood, however, that a fixed pulley or other analogous medium may be substituted for the crank 8 and duly mounted upon the extended axis 7 for the purpose above stated.

At the rear of the rollers 3 3′ I dispose the rigid finger-strips 9 9′, one arranged above the other and both arranged parallel with the rollers 3 3′.

To the end that the strips 9 9′ may be duly mounted I have shown the standards 2 2′ as provided with rearwardly-extending studs 10 10′, one for each standard, and thereto said strips are secured by any suitable fasteners, as the screws 11 11′.

At intervals along the strip 9 there are located forwardly-projecting fingers 12, one opposite and lying in each of the recesses 6, and at corresponding intervals along the strip 9′ there are located like fingers 12′, which correspondingly lie in the recesses 6′. It will be observed that the series of fingers 12 and also the series of fingers 12′ project forwardly intermediate of the rollers 3 3′ beyond the axis of said rollers, and that the former series of fingers are curved upwardly, while the latter series of fingers are curved downwardly. It

will be further understood that the respective fingers 12 12′ may be formed integral with the respective strips 9 9′ or may comprise separate parts attached to said strips by means of any suitable fasteners.

Attention is here called to the fact that each of the series of recesses 6 is given a greater depth than the depth of the corrugations with which the adjacent portions of the roller 3 are provided, and these remarks likewise apply to the series of recesses 6′ and the corrugated portions of the roller 3′. This construction is adopted to the end that the fingers of each strip 9 9′ may at all times, if desired, lie sufficiently close to the base of the respective recesses 6 6′ to avoid engagement thereof with the cloth or other material which may be fed into or between the rollers 3 3′. With this construction it will be observed that a section or piece of, say, paper which has already been reefed or plaited may be again fed into or between the rollers 3 3′, and in the operation of my machine it is the practice to take such a piece or section of paper or analogous material, fold or double it upon itself, place therebetween the fabric or other material which it is desired to reef or plait, and then feed the paper and material thus arranged into and between the said rollers 3 3′, the same being ordinarily caught by the rollers at the particular fold formed by doubling the paper upon itself and fed into or between said rollers by imparting a rotary movement to one of them, as by means of crank 8. During this operation the fingers 12 12′ serve to dislodge the paper and material as they emerge from the rollers 3 3′ at the rear side thereof, and further serve, in connection with the strips 9 9′, to guide the material into any desired receptacle.

For the purpose of receiving the plaited material and storing the same, if desired, for further treatment I have shown the detachable crate 14. This comprises upper and lower portions each made up of suitable cross-pieces and side and end pieces, substantially as shown in the drawings, the whole being assembled and fastened together in any desired manner and the crate 14 as a whole being arranged at its receiving end to engage the strips 9 9′, to the end that the latter may duly feed the reefed or plaited material coming from the rollers 3 3′ into said crate. The crate 14 is here shown as provided with cleats 15 15′, which overlap, respectively, the strips 9 9′, and said crate may be held to position for service, as described, by means of hooks 16 16′, pivotally attached to the standards 2 2′ and engaging staples 17 17′, with which said crate may be provided. Other well-known and approved means, however, may be employed for thus holding the crate 14 in position at the strips 9 9′. The crate 14 ordinarily occupies a horizontal position, and the rear portion thereof may be held against downward displacement by means of any well-known or approved supporting medium, as the leg 18, (here shown as pivotally attached to said crate,) to the end that the same may be readily folded down upon the crate when desired.

In Fig. 3 the two members of the plaited or reefed material are represented by the numerals 19 19′ and the material to be reefed by the numeral 20.

Ordinarily the width of the plaits of the plaited material corresponds substantially with the depth of the corrugations with which the rollers 3 3′ are provided. In this connection, however, it will be noticed that the adjustability of the roller 3 is of advantage, and, further, that with my improved machine the plaited material 19 19′ may be used indefinitely.

It will be observed that my improved machine is particularly well adapted for the purpose for which it is designed, and, further, that the same may be modified to some extent without material departure from the spirit and principle of my invention.

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

A machine of the class herein described comprising a pair of longitudinally-corrugated, meshing rollers; finger-strips arranged at the rear of said rollers and provided with fingers, the fingers of one of said strips extending forwardly and coöperating with one of said rollers, and the fingers of the opposite strip extending forwardly and coöperating with the opposite roller; a storage-crate detachably fastened at said strips to receive the material passing between such strips; and means for imparting a rotary movement to one of said rollers.

HENRY S. BROWN.

Witnesses:
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