

(No Model.)

3 Sheets—Sheet 1.

M. SELLER.
STRAW CONVEYER.

No. 452,806.

Patented May 26, 1891.

FIG. 1-

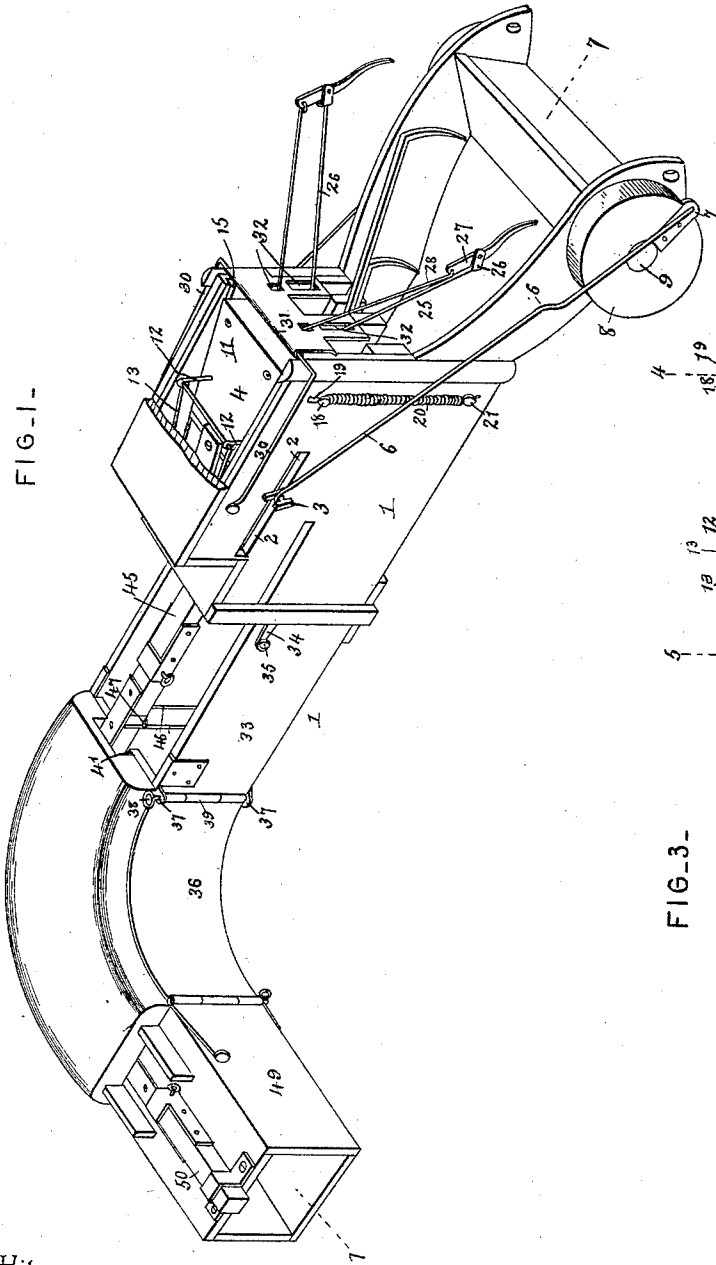
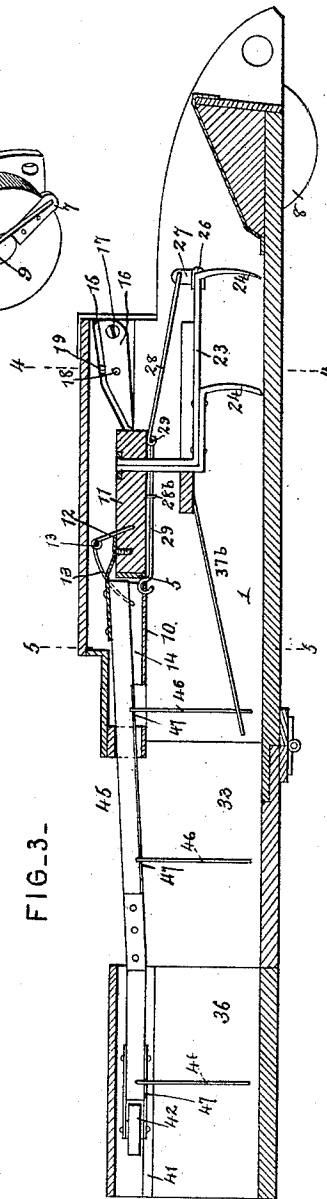


FIG. 3-



Witnesses

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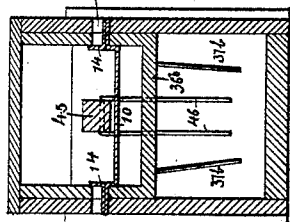


FIG. 5.

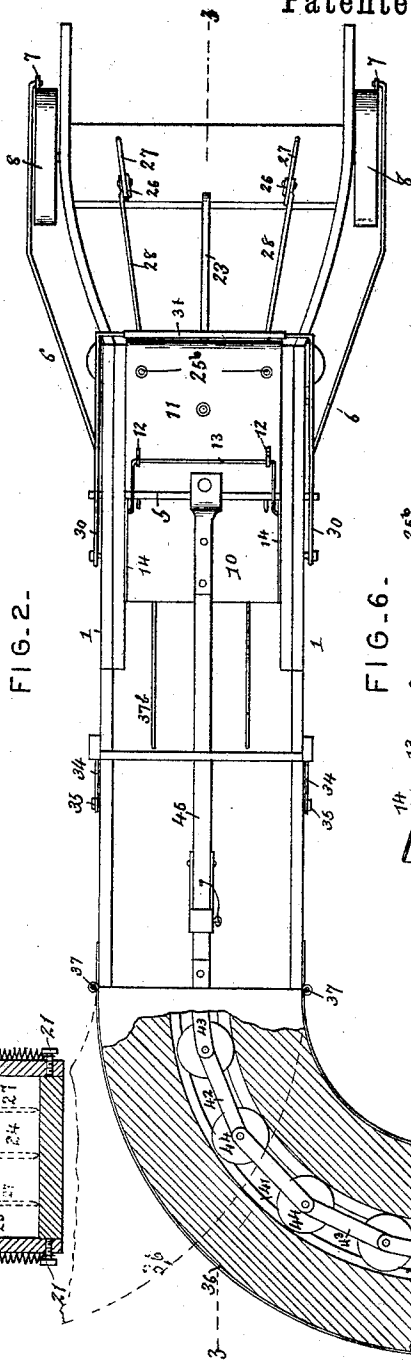


FIG. 2.

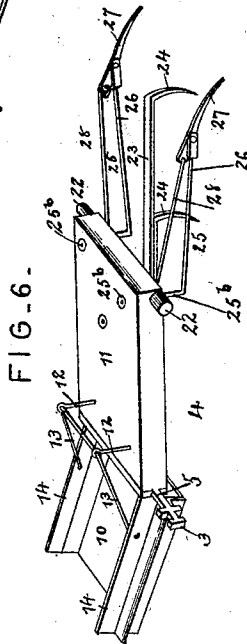


FIG. 6.

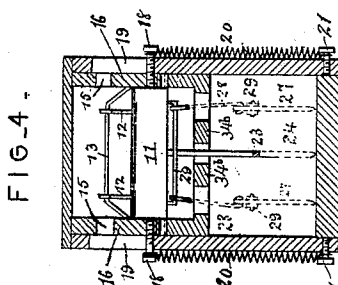


FIG. 4.

Witnesses

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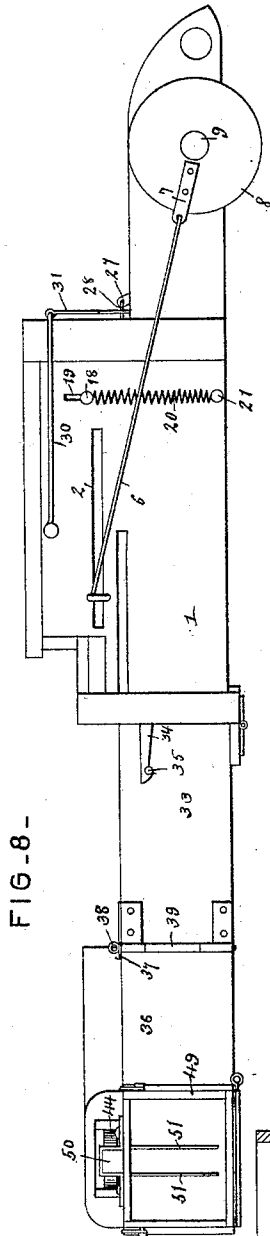


FIG. 8 -

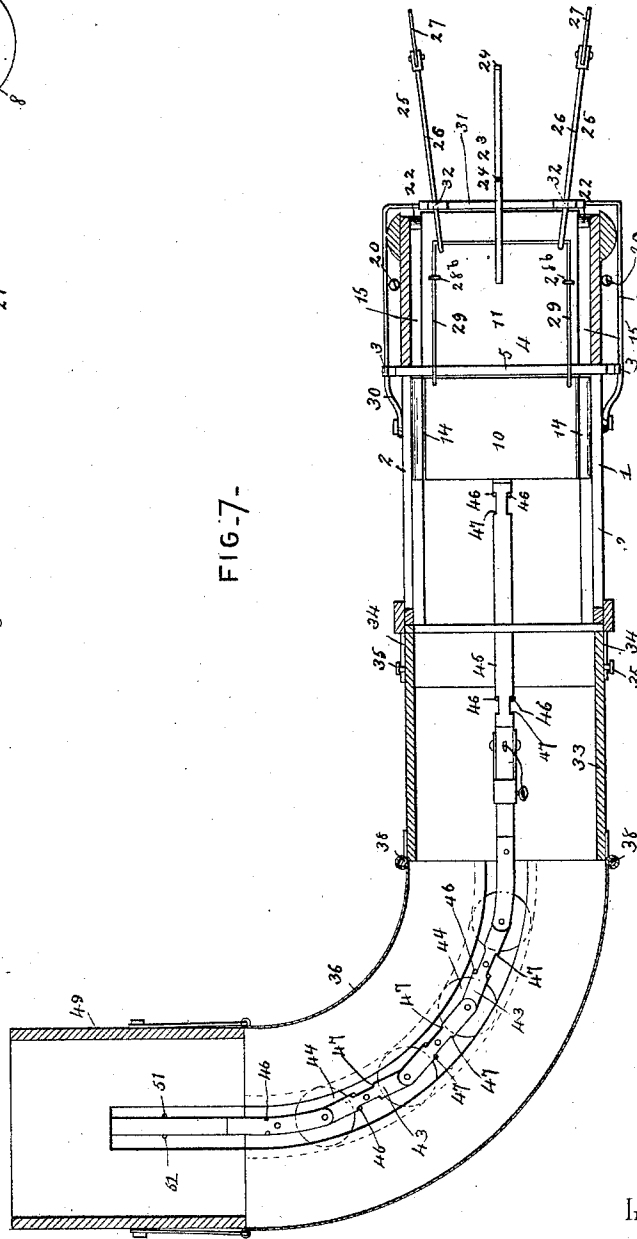


FIG. 7 -

Witnesses

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UNITED STATES PATENT OFFICE.

MONROE SHELLER, OF PERRINTON, MICHIGAN.

STRAW-CONVEYER.

SPECIFICATION forming part of Letters Patent No. 452,806, dated May 26, 1891.

Application filed June 12, 1890. Serial No. 355,225. (No model.)

To all whom it may concern:

Be it known that I, MONROE SHELLER, a citizen of the United States, residing at Perrinton, in the county of Gratiot and State of Michigan, have invented a new and useful Straw-Conveyer, of which the following is a specification.

This invention relates to straw-conveyers for thrashing-machines; and it has for its object to construct a device of this class which shall possess superior advantages in point of simplicity and general efficiency.

With these ends in view the invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of my improved straw-conveyer, parts of the casing of the same having been broken away for the purpose of illustrating the construction more clearly. Fig. 2 is a top view of the same, parts of the casing having been broken away, and the side conveyer being shown extended to opposite sides in full and in dotted lines, respectively. Fig. 3 is a longitudinal sectional view taken on the line 3 3 in Fig. 2. Fig. 4 is a transverse sectional view on the line 4 4 in Fig. 3. Fig. 5 is a transverse sectional view on the line 5 5 in Fig. 3. Fig. 6 is a perspective detail view of a portion of the carrier. Fig. 7 is a horizontal sectional view taken on the line 7 7 in Fig. 1, and looking in an upward direction. Fig. 8 is a side elevation of the conveyer.

Like numerals of reference indicate like parts in all the figures.

1 designates the main conveyer-trough, which is in practice adapted to be suitably connected with the discharge end of a thrashing machine or separator to receive the straw and chaff, which is being discharged at the tail end of the same. The sides of the trough 1 are provided with suitable slots or openings 2 2, forming bearings for a longitudinally-reciprocating slide 4, which is provided with a transverse rod or bar 5, the ends of which extend through the slots 2, and are connected by pitman 6 with wrist-pins 7 upon the wheels or disks 8 that are mounted upon the ends of a transverse shaft 9 near the front end of the

trough. Motion may be imparted to the shaft 9 in any suitable manner from the drive mechanism of the thrashing-machine, and from the said shaft a reciprocating movement is in turn imparted to the slide 4.

The slide 4 is composed of two separate and independent portions 10 and 11, the former of which simply reciprocates in suitable bearings in the sides of the trough. The front portion 11 of the slide consists of a plate having upwardly-extending eyebolts 12, in which is pivotally mounted a bail 13, the ends of the arms of which are mounted pivotally in flanges 14, extending upwardly from the sides of the plate or rear portion 10 of the reciprocating slide. The rod or bar 5, to which reference has hereinbefore been made, is secured to the rear edge of the plate 11 of the reciprocating slide. It will thus be observed that the latter is practically constructed of two parts, which are hinged together. The sides of the trough 1 are provided on their inner sides with recesses 15, in which tongues 16 are pivotally mounted by means of pins or bolts 17 near the front ends of said recesses. The tongues 16 are provided with pins 18, extending through the vertical slots 19 in the sides of the trough and connected with the upper ends of coiled springs 20, the lower ends of which are connected to permanent studs 21. In this manner the pointed rear ends of the tongues are normally forced in a downward direction into contact with the lower sides of the recesses 15.

The front plate 11 of the slide 4 is provided near its front end with laterally-extending pins or studs 22, upon which anti-friction rollers may be mounted. It will be seen that when the slide is moved in a forward direction the pins or rollers 22 will ride upwardly upon the pivoted tongues 16. When the front end of the movement has been reached, the pins or rollers 22 will ride downwardly over the front ends of the said pivoted tongues, impelled by the weight of the front plate 11 of the slide. On the rearward movement of the reciprocating slide the pins or rollers 22 will pass under the tongues 16, which will be forced upwardly against the tension of the springs 20 until the rearward limit of the movement has been reached, when the pins or rollers 22

will pass from under the tongues 16, which latter will then be instantly restored to normal position by the springs 20.

To the underside of the vibrating plate 11 are attached a series of rakes. One of said rakes, which is rigidly secured centrally to the under side of the plate, consists simply of a rod or bar 23, having downwardly-extending prongs 24. The rakes 25, which are mounted at the sides of the plate 11, consist each of a rod 26, extending forwardly from a vertical pivot 25^b, bifurcated at its front end and having a pivoted tooth 27, the upper end of said tooth being connected by a pivoted rod 28 with a yoke or bail 29, arranged and attached by means of eyebolts 28^b under the plate 11, and the ends of the arms of which are attached to the front end of plate 10.

30 designates a yoke or bail which is pivoted to the outer sides of the side pieces of the conveyer-trough. Said yoke or bail is provided at its front end with a guide-plate 31, having vertical slots 32, through which extend the front ends of the pivoted rods 26 and 28. These slots are farther apart than the rear ends of the rake-bars 26 and 28, respectively, and they therefore serve as guides to cause the outer pivoted rakes on the forward movement of the slide or carrier to be spread apart for the purpose of taking in the entire width of the trough or carrier. It will be observed that on the forward movement of the reciprocating slide the plate 11 of the latter is vibrated in an upward direction, thus causing the front ends of the several rakes to be elevated, so as to readily engage the straw which is delivered into the conveyer-trough from the discharge end of the thrashing-machine.

The casing is provided with horizontal longitudinal slats 34^b to separate the several rakes from each other and from the sides of the casing, as clearly shown in Fig. 4 of the drawings. These slats extend forwardly from a horizontal partition-plate 36^b, from which a pair of flexible rods 37^b extend downwardly and rearwardly to hold the straw and to keep it from working forwardly in the casing.

To the rear end of the trough 1, at the bottom of the latter, is hinged an extension-trough 33, which when the device is in use will be retained in an approximately horizontal position by means of hooks 34 engaging pins or studs 35, that extend laterally from the sides of the extension-trough. This device may sometimes be found desirable when the straw is to be delivered directly onto a low stack. When the stack grows in size, further extensions are to be used, as will be presently more fully described.

36 designates an extension-trough which is curved or segmental in shape, said extension-trough occupying the one-fourth of a circle. The sides of said extension-trough are preferably constructed of sheet metal and are provided at their front and rear ends with lugs or ears 37, adapted to receive pins or

bolts 38, by means of which the said extension-trough may be secured to perforated lugs 39 at the rear ends of the sides of the extension-trough 33. The extension-trough 36 is capable of being turned end for end, as will be readily seen in Fig. 2 of the drawings, so that by the carrying mechanism, which is to be now described, it may be made to deliver the straw either to the right or to the left, as may be desired. The upper side of the curved conveyer-trough 36 is provided with guide-flanges 41 to support a chain 42 composed of a series of links 43, each of which is provided with a friction-roller 44 to ride upon the supporting flanges or shoulders 41. One end of said chain is connected by a rod or bar 45 with the rear end of the vibrating plate 11 of the slide 4, the said chain and bar being separably connected in order that the parts may be readily disconnected when desired. The rod or bar 45 and the links of the chain 42 are provided with hinged or pivoted downwardly-extending prongs 46, which are capable of swinging in an upward and rearward direction. Lugs or shoulders 47 are provided to prevent the said prongs from swinging in an upward and forward direction. It will be seen that by this construction on the forward movement of the carrier the prongs will ride over the straw contained in the carrier trough or casing, while on the rearward movement of the carrier the said prongs will engage the contents of the trough or casing and force it in a rearward direction.

To the discharge end of the curved trough or casing 36 may be attached a supplementary trough or casing 49, which may be of any desired length, and the top of which is provided with guides or bearings for the longitudinally-movable rod 50, having pivoted prongs 51, similar in construction and arrangement to the rods 46, and extending through slots in the top of the casing to engage the contents of the latter. The front end of the rod 50 is to be coupled or connected detachably with the rear end of the chain 42.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of my invention will be readily understood.

The device may be readily connected to any thrashing-machine of ordinary construction, and it will deliver the straw at any desired distance from the machine more easily and efficiently than the ordinary endless straw-carriers now in common use.

It will be particularly observed that my improved conveyer-trough is closed throughout its entire length, and it will therefore deliver the straw with or against the wind with equal efficiency. Owing to the curved section with which the conveyer-trough is provided, the straw may be delivered to either side of the machine and at any desired distance there-

from, it being possible to add extensions of any desired length to the discharge end of the conveyer-casing.

While I have herein described the preferred construction of my improved straw-conveyer, I desire it to be understood that I do not limit myself to the details of construction herein described, but reserve the right to any changes and modifications which may be resorted to without departing from the spirit of my invention.

Having thus described my invention, I claim—

1. In a straw-conveyer, the combination, with a trough or casing, of a reciprocating slide having pivoted rakes, and mechanism for vibrating the said rakes vertically and laterally, substantially as set forth.

2. In a straw-conveyer, the combination, with the trough or casing, of a reciprocating slide having a pivoted leaf, rakes attached pivotally to the said leaf, and operating mechanism for vibrating the said leaf and rakes, substantially as set forth.

3. The combination of the conveyer-trough, the reciprocating slide having a hinged or pivoted leaf, the rakes attached to the said leaf, a rod or bar attached to the rear edge of the latter and extending through slots in the sides of the casing, pitmen connecting the ends of said shaft with eccentric wheels, and mechanism for vibrating the rakes laterally and vertically, substantially as set forth.

4. The combination of the trough or casing, the reciprocating slide, the leaf pivoted to the latter and having laterally-extending pins or rollers, and the spring-actuated guide-tongues mounted pivotally in recesses in the sides of the casing, substantially as set forth.

5. The combination of the trough or casing, the reciprocating slide or carriage, the leaf pivoted to the latter and having laterally-extending pins or rollers, the pivoted spring-actuated guide-tongues, and the rakes attached pivotally to the said leaf, substantially as set forth.

6. The combination of the trough or casing, the reciprocating slide having a hinged leaf, the pins or rollers extending laterally from the latter, the pivoted spring-actuated guides, the rakes connected pivotally to the hinged leaf, and a slotted guide-plate for said rakes, substantially as set forth.

7. The combination, with the reciprocating slide having the hinged leaf, of the rakes connected pivotally with said leaf, a yoke or bail attached pivotally to the sides of the casing, and a plate attached to the front end of said yoke and having slots through which the said rakes extend, substantially as set forth.

8. The combination of the reciprocating slide, the yoke mounted pivotally in flanges at the sides of said slide, the leaf or plate having eyebolts mounted upon the said yoke, the shaft secured at the rear edge of said leaf

and extending through slots in the sides of the casing, the rakes attached pivotally to said hinged leaf, the yoke hinged or pivoted to the sides of the casing, and the guide-plate at the front end of said yoke having slots through which the pivoted rakes are extended, substantially as set forth.

9. The combination of the reciprocating slide, the hinged leaf, the rake-bars attached pivotally to the latter, the prongs hinged at the front ends of said rake-bars, the rods connecting the upper ends of said prongs with the reciprocating slide, and suitable operating mechanism, substantially as set forth.

10. The combination of the trough or casing, the reciprocating slide, the leaf hinged to the latter and having laterally-extending pins or rollers, the spring-actuated guide-tongues, the rakes attached pivotally to the hinged leaf, the yoke attached pivotally to the sides of the casing, the guide-plate secured to the front end of said yoke and having slots through which the rakes are extended, and suitable operating mechanism, substantially as set forth.

11. The combination of the trough or casing, the hinged extension, the reciprocating slide having rakes or carriers, a rod or bar attached to the said reciprocating slide and having pivoted prongs, and an extension connected detachably with the said rod and provided with pivoted prongs, substantially as set forth.

12. The combination of the trough or casing having the reciprocating slide or carrier, the hinged extension-trough, a rod extending through the latter and connected detachably with the slide or carrier, and prongs attached pivotally to the said rod and capable of swinging in an upward and rearward direction, said rod being provided with lugs or shoulders to limit the swinging movement of said prongs in a forward direction, substantially as set forth.

13. In a straw-conveyer, a curved trough or casing having a flexible reciprocating carrier, substantially as set forth.

14. In a straw-conveyer, a curved trough or casing provided with suitable supporting flanges or shoulders, in combination with a reciprocating flexible carrier, substantially as set forth.

15. In a straw-conveyer, a curved trough or casing having supporting flanges or shoulders, in combination with a reciprocating carrier composed of a series of links flexibly connected and having pivoted downwardly-extending prongs, substantially as set forth.

16. In a straw-conveyer, a curved trough or casing having supporting flanges or shoulders, in combination with a reciprocating flexible carrier comprising a series of links provided with friction-rollers to ride upon the supporting flanges or shoulders, substantially as set forth.

17. In a straw-conveyer, a curved trough or

casing having supporting flanges or shoulders, in combination with a reciprocating flexible carrier comprising a series of links having friction-rollers to ride upon the said shoulder
5 and pivoted downwardly-extending prongs and lugs or shoulders to limit the upward and forward swinging movement of the prongs, substantially as set forth.

18. In a straw-conveyer, the combination of
10 the trough or casing, the reciprocating slide having pivoted rakes, the curved extension-trough connected detachably with the rear end of the main trough or casing, the reciprocating flexible carrier mounted in said trough,
15 and a coupling-rod connecting the said flexible carrier with the reciprocating slide, substantially as set forth.

19. In a straw-conveyer, the combination, with the trough or casing having a reciprocating slide or carrier, of the extension-trough
20 hinged to the bottom of said casing, the curved extension-trough connected detachably and reversibly to the said hinged extension, and the reciprocating flexible carrier mounted in said extension and connected
25 separably with the reciprocating slide, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

MONROE SHELLER.

Witnesses:

F. E. DURFEE,
ELMER E. CASSADA.