

No. 863,080.

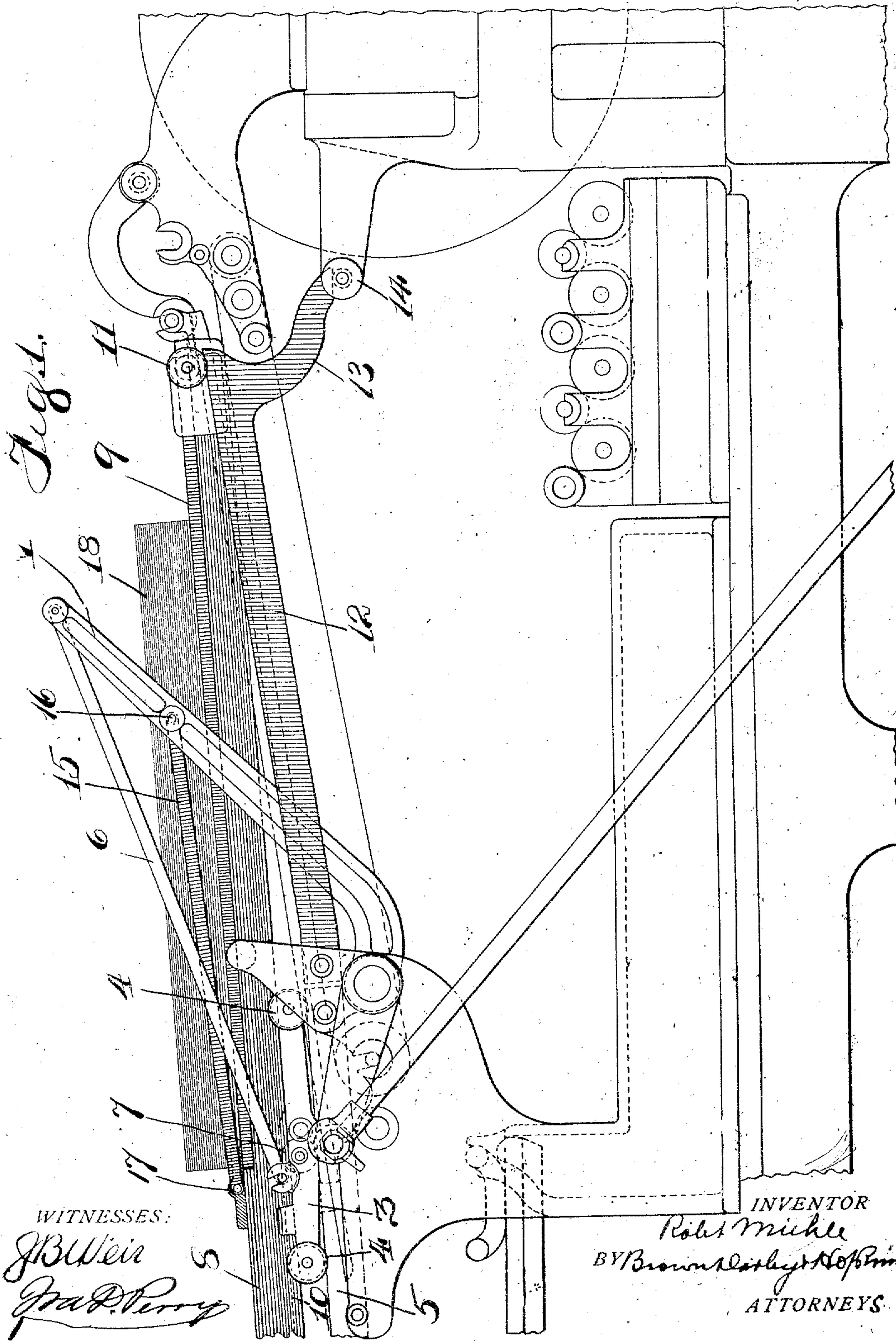
R. MIEHLE.

PATENTED AUG. 13. 1907.

SMUT SHEET ATTACHMENT FOR SHEET DELIVERY MECHANISMS.

APPLICATION FILED JULY 31, 1906.

3 SHEETS—SHEET 1.



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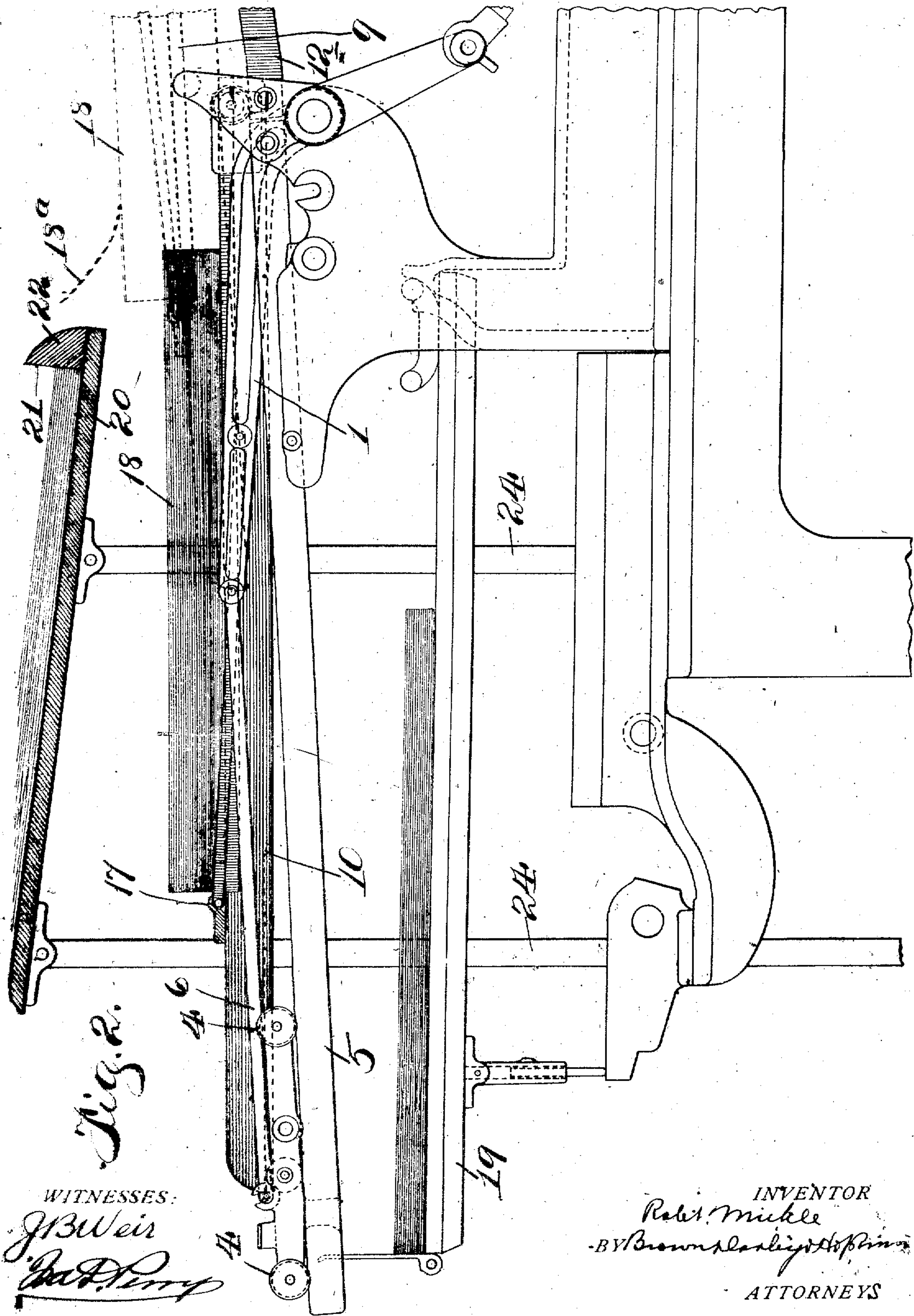
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3 SHEETS—SHEET 2.



WITNESSES:

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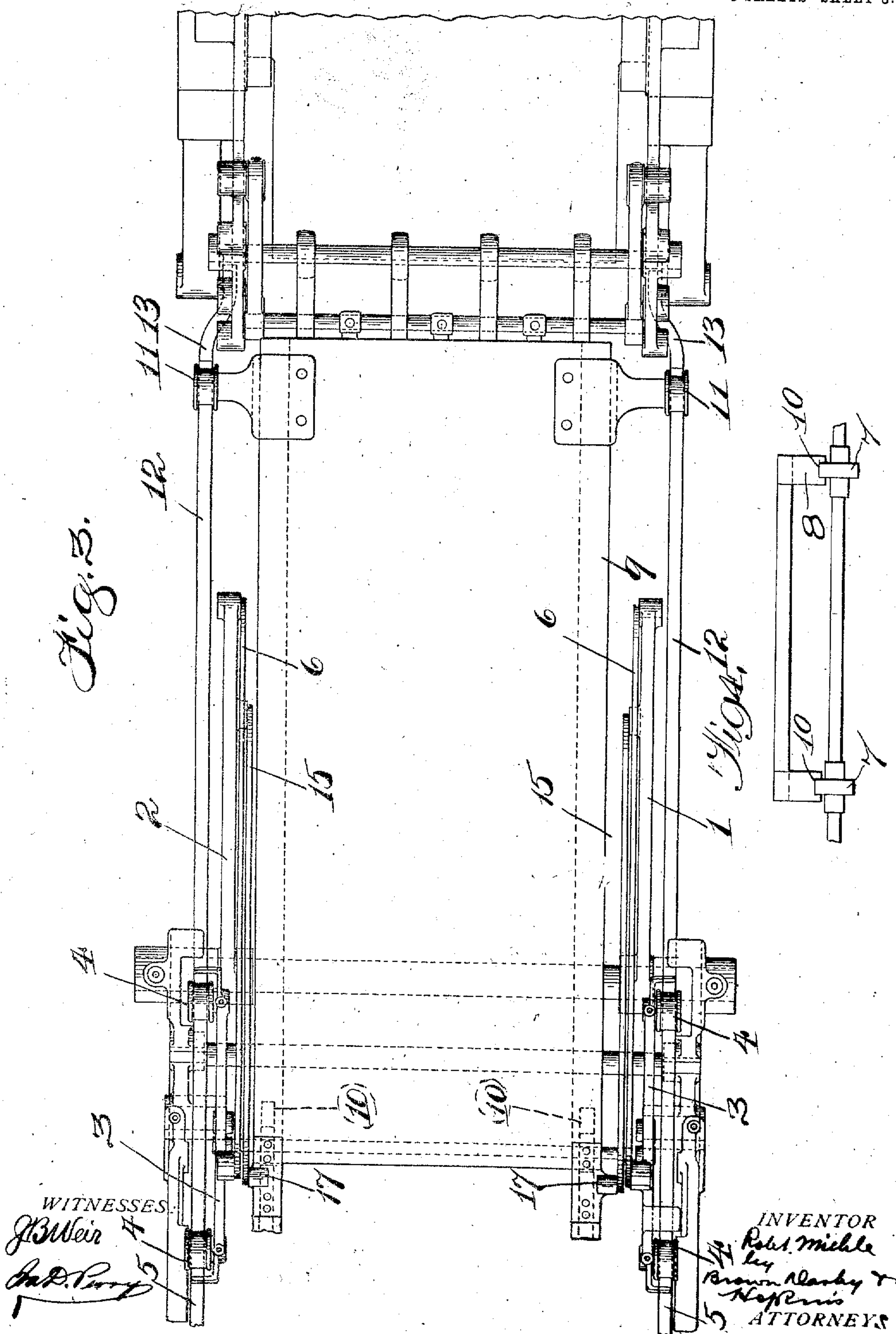
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3 SHEETS—SHEET 3.



UNITED STATES PATENT OFFICE.

ROBERT MIEHLE, OF CHICAGO, ILLINOIS.

SMUT-SHEET ATTACHMENT FOR SHEET-DELIVERY MECHANISMS.

No. 863,080.

Specification of Letters Patent.

Patented Aug. 13, 1907.

Application filed July 31, 1905. Serial No. 271,919.

To all whom it may concern:

Be it known that I, ROBERT MIEHLE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Smut-Sheet Attachments for Sheet-Delivery Mechanisms, of which the following is a specification.

This invention relates to means for carrying a supply of smut sheets on the sheet delivery mechanism of a printing press or other apparatus where such an arrangement would be useful, and it has more special reference to that type of smut sheet devices which are connected directly with reciprocating sheet deliveries and move back and forth with the delivery as the latter performs its function of receiving and delivering the printed sheet.

The invention has for one of its important objects to provide an improved and efficient means for preventing the pile of smut sheets from shifting or sliding out of place as the same is moved back and forth with the sheet delivery.

Another object of the invention is to provide improved and efficient means whereby smut sheet attachments for large sheets will be given adequate support upon the apparatus. And a still further object of the invention is to provide improved means whereby the pile of printed sheets with the smut sheets alternating therewith may be replaced upon the smut sheet table or attachment and the dry printed sheets conveniently removed from such pile each time the table makes a reciprocation, leaving the smut sheet accessible to the hand of the operator or feeder in readiness to be removed and placed upon the printed sheet last delivered upon the piling table of the sheet delivery mechanism.

The invention consists in certain features of novelty in construction, combination and arrangement of parts by which these objects and certain other objects which will hereinafter appear are attained, all as fully described with reference to the accompanying drawings, and more particularly pointed out in the claims.

In the said drawings,—Figure 1 is a side elevation of a portion of a printing press and sheet delivery mechanism embodying this invention and showing the delivery at the limit of its return stroke; Fig. 2 is a similar view showing the delivery at the limit of its delivery stroke; Fig. 3 is a plan view showing the parts as in Fig. 1; and Fig. 4 is a detail view of the end of the smut sheet table and the supporting rollers therefor.

In illustrating the invention and as an example of one of the uses to which it may be put, it is shown in connection with a reciprocating sheet delivery of a printing press, but so far as the function of the parts of the appa-

ratus which constitute this invention is concerned, the portion of the printing press shown may represent any other apparatus by which sheets of paper or other material are treated, printed, or coated in such a way as to make it necessary or desirable that when they are delivered therefrom upon a piling table they should be separated by smut sheets to prevent them from sticking together.

1, 2 are the arms which operate the sheet delivery mechanism, and which mechanism in this example of the invention comprises a reciprocating carriage 3, having rollers 4 running upon tracks 5 at the sides of the apparatus, and which carriage supports the fingers or any other means not necessary to illustrate for receiving and supporting the sheet during the delivery operation, the carriage 3 being connected to the arms 1, 2 by rods or links 6. The carriage 3 is also provided with anti-friction rollers 7, upon which rest the forward ends of two rails 8, upon which is supported the smut sheet table 9, the lower edges of the rails 8 being formed of longitudinal grooves 10, as shown in dotted lines in Figs. 1 and 2, in which the anti-friction rollers 7 engage, as shown in full lines in Fig. 4. The carriage 3 is thus made to support the forward end of the smut sheet table 9, and the rear end of this table is supported by rollers 11 running on supplemental tracks 12 extending rearwardly from the usual tracks 5 ordinarily employed in this class of sheet delivery mechanisms for supporting the carriage 3. The rear ends of the tracks 12 may be supported in any suitable way, as by feet 13 resting upon brackets 14.

The smut sheet table 9 derives its reciprocating motion also from the arms 1, 2, by means of links 15, pivoted at 16 to the arms, and at 17 to the table 9, but it will be seen that the links 15 are considerably shorter than the links 6, so that while the table 9 will reciprocate in unison with the carriage 3, its travel will be slower and less in length than that of the sheet delivery, and as a consequence the tendency of the pile of smut sheets 18 supported upon the table 9, to shift or slide off the table by the momentum acquired will be prevented. As the arms 1, 2 move forwardly the table 9 moves with the carriage 3, and as the motion of the table 9 decreases and that of the carriage 3 continues to the end of the sheet delivery stroke, the rollers 7 which support the rails 8 of the table, move forwardly in the grooves 10 of said rails, thereby permitting the table 9 to come to rest without interfering with the operation of the sheet delivery mechanism.

It will also be seen that the rear ends of the supplemental rails or tracks 12 are considerably elevated, so that as the smut sheet table moves to the limit of its return stroke its rear end is elevated above the horizon-

tal, and the tendency of the sheets 18 thereon to slide off is thereby prevented. The usual rails or tracks 5 of the sheet delivery mechanism are ordinarily inclined downwardly from the press and they are so shown in this exemplification of the invention, but in order that the smut sheet table 9 may not also partake of this downward inclination which would be apt to encourage the sheets 18 to slide off, the forward end of the table is elevated with respect to the tracks 5, as more clearly shown in Fig. 2. This elevation is simply the result of locating the rollers 11 at a higher elevation than the anti-friction roller 7 with respect to the lower edge of the rails 8, and consequently it will be seen that as the rollers 11 move forwardly on their tracks 12, the table 9 is gradually changed from a position of inclination with the highest point at its rear end to a position of inclination with the highest point at its forward end, or a strictly horizontal position, accordingly as the rollers 11 are placed higher or lower with respect to the rails 8.

In this example of the invention the arrangement is such that the table assumes a substantially horizontal position when at the limit of its forward stroke, but its forward end is elevated with respect to the rails 5 more than its rear end.

In the use of smut sheets it is desirable to leave the smut sheets between the printed sheets until the smut sheets are again needed for use, so as to avoid double handling. It is the practice, therefore, to place the pile of alternating smut and printed sheets in a position convenient to the press feeder and remove the smut sheets therefrom and place them between the newly printed sheets on the piling table 19 while laying the dry printed sheets aside. In order that this practice may not be departed from when this invention is used, and that the dry, printed sheets may be conveniently handled and piled as they are removed from the smut sheet table 9, a second piling table 20 is employed at a position over the side of reciprocation of the smut sheet table and preferably over such table while the latter is at substantially the limit of its outward stroke, so that when it is at the limit of its inward stroke the forward end of the pile of sheets 18 will be from under the rear end of the second piling table 20, as shown in Fig. 2, so that the operator may lift the printed sheets with the forward end and drag it upwardly onto the table 20 as the smut sheet table 9 makes its next forward movement. As shown in dotted lines in Fig. 2, the dotted line 18^a representing the dry printed sheet.

In order that the dry printed sheets on the table 20 may stack evenly, the table is inclined and has a rim or flange 21 at its lower edge; and in order that the sheets 18^a may pass over this flange without undue friction, it is rounded, as shown at 22. In using the device in this manner, it is preferable that it be managed by two operators, one at a position convenient to the lower edge of the table 20, and the other at a position convenient to the outer end or forward end of the smut sheet table 9, when the latter is at the limit of its forward stroke, so that the smut sheets may be pulled therefrom as the table 9 recedes and allowed to drop upon the piling table 19. The additional piling table 20, may, of course, be supported in any suitable way, as by standards 24.

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

1. In a device for the purpose described, the combination of a reciprocating sheet delivery, a track or way therefor, a smut sheet table supported at one end by said sheet delivery, and a supplemental track or way supporting the other end of said table.
2. In a device for the purpose described, the combination of a reciprocating sheet delivery, a track or way therefor, a smut sheet table supported at one end by said sheet delivery, and a supplemental track or way supporting the other end of said table and being inclined with respect to the first said track or way.
3. In a device for the purpose described, the combination of a reciprocating sheet delivery, a track or way therefor, a smut sheet table operatively connected with said delivery and movable therewith, and a supplemental track or way supporting one end of said table independently of its connection with said delivery.
4. In a device for the purpose described, the combination of a reciprocating sheet delivery, a smut sheet table, and means for reciprocating said delivery and table together at different speeds.
5. In a device for the purpose described, the combination of a reciprocating sheet delivery, a smut sheet table, and means for reciprocating said delivery and table together different distances.
6. In a device for the purpose described, the combination of a reciprocating sheet delivery, a smut sheet table supported in conjunction with said delivery and movable independently thereof a limited distance, means for operating said delivery, and means operatively connected with the first said means for reciprocating said table.
7. In a device for the purpose described, the combination of a reciprocating sheet delivery, a smut sheet table having a sliding support at one end upon said delivery, and means for reciprocating said table and delivery different distances.
8. In a device for the purpose described, the combination of a reciprocating sheet delivery, rails having sliding support upon said sheet delivery at the sides thereof, a smut sheet table supported on said rails at a distance from their forward ends, and means for reciprocating said sheet delivery and rails different distances.
9. In a device for the purpose described, the combination of a reciprocating sheet delivery, anti-friction rollers supported in connection therewith, a smut sheet table arranged above the delivery and having extensions provided with grooves in their under sides fitting over said anti-friction rollers, and means for reciprocating said delivery and table different distances.
10. In a device for the purpose described, the combination of a reciprocating sheet delivery, an oscillatory arm for reciprocating the same, a smut sheet table movable with said delivery, and links connecting said table and delivery with said arm at different points in the length of the arm whereby the table and delivery will move different distances.
11. In a device for the purpose described, the combination of a reciprocating sheet delivery, a track or way therefor, a smut sheet table supported in connection with said delivery in a plane at an angle with respect to the plane of said track or way, and means for reciprocating said delivery and table together.
12. In a device for the purpose described, the combination of a reciprocating sheet delivery comprising a carriage, a track or way on which said carriage travels, a smut sheet table supported above and movable with said delivery, a supplemental track or way extending rearwardly from said first track or way, and means for supporting said table upon said supplemental track or way.
13. In a device for the purpose described, the combination of a reciprocating sheet delivery, a smut sheet table supported in connection with said delivery, and movable therewith, and a dry sheet piling table arranged above said smut sheet table.

14. In a device for the purpose described, the combination of a reciprocating sheet delivery, a smut sheet table supported in connection with said delivery and movable therewith, a piling table for the printed and smut sheets arranged below the delivery, and a piling table for the dry sheets arranged above the plane of the smut sheet table.

15. In a device for the purpose described, the combination of a reciprocating sheet delivery, a smut sheet table supported thereover and movable therewith, and a dry sheet piling table supported above the plane of the smut

sheet table at a point in the length of the stroke thereof at the end of the smut sheet table when the latter is at the limit of its receding or return stroke.

In witness whereof, I have hereunto set my hand this 27th day of July 1905, in the presence of the subscribing 15 witnesses.

ROBERT MIEHLE.

Witnesses:

FRANCIS A. HOPKINS,
CHAS. H. SEEM.