

UNITED STATES PATENT OFFICE.

TALBOT C. DEXTER, OF PEARL RIVER, NEW YORK, ASSIGNOR TO DEXTER FOLDER COMPANY, OF PEARL RIVER, NEW YORK, A CORPORATION OF NEW YORK.

SHEET-CONVEYING MACHINE.

957,043.

Specification of Letters Patent.

Patented May 3, 1910.

Application filed August 13, 1909. Serial No. 512,708.

To all whom it may concern:

Be it known that I, TALBOT C. DEXTER, a citizen of the United States, residing at Pearl River, county of Rockland, State of New York, have invented certain new and useful Improvements in Sheet-Conveying Machines, of which the following is a specification.

The present invention is an improvement upon the sheet conveying mechanism covered by an application filed by me February 5th, 1909, Serial No. 476,296. In the machine of said application, the sheet conveying surfaces for carrying successive sheets of paper from an automatic paper feeding machine to a printing press or other machine designed to operate upon them are driven by a frictional driving mechanism comprising a disk and an automatically adjustable wheel which is intermittently moved inwardly and outwardly over the surface of the driving disk for the purpose of effecting the rapid movement of the sheets during the main part of their travel from the feeder to the press and the slowing down and quiet delivery of the sheets to the gages of the press.

In machines of this type, it will be understood that sheet engaging and conveying devices retain hold of the sheet during the entire travel of the sheet from the feeder to the press, a feature of very great importance in accurately feeding sheets at the rapid speed required for printing machinery of today.

In my present invention, I have devised a modified frictionally driven slow down feeding mechanism in which change of speed of the sheet conveying mechanism is effected by providing on the driving shaft, two friction wheels mounted upon an adjustable section of the shaft and controlled by mechanism which intermittently and alternately moves said friction wheels into engagement with the frictional driving disk, one of said wheels engaging the disk near the outer periphery for effecting the rapid motion of the sheet conveying mechanism, while the other of said wheels engages the driving disk near its center of rotation for effecting the slow movement of the sheet conveying mechanism.

In order that my invention may be fully understood, I will first describe the same

with reference to the accompanying drawings, and afterward point out the novelty more particularly in the annexed claims.

In said drawings: Figure 1 is a side elevation of my improved sheet conveying mechanism representing it in operative position between an automatic feeding machine and a printing press. Fig. 2 is a plan view of the same. Figs. 3 and 4 are enlarged detail plan views showing the adjustable frictional driving mechanism in its two positions. Fig. 5 is a side elevation of the mechanism shown in Figs. 3 and 4. Fig. 6 is a detail side elevation, partly broken away, of one of the frictionally driven wheels. Fig. 7 is a detail sectional view of the frictional driving disk. Fig. 8 is a detail transverse sectional view of a part of the mechanism for changing the speed. Fig. 9 is a detail side elevation of part of the slow down mechanism, and Fig. 10 is a vertical longitudinal sectional view of the same.

In the drawings, 1 represents a part of the feed board of an ordinary printing press mounted upon any suitable frame, such as indicated at 2, 3 a part of the impression cylinder, and 4 the ordinary press gages. Supported in rear of the press feed board 1, are the side frames 5 of an automatic paper feeding machine, which is designed to separate and deliver sheets successively from a bank or pile. This automatic feeding machine of the type illustrated has a power shaft (not shown), and a main cam shaft 10, which is driven from the power shaft by suitable gearing (not shown). The cam shaft 10 and the several cams carried thereby for operating the parts of the automatic feeding machine, are fully explained in my applications Serial No. 436,637, filed June 4th, 1908, and Serial No. 442,114, filed July 6th, 1908.

The main power shaft drives a train of gears (not shown), suitably journaled upon the machine frame, and arranged to operate the frictional driving mechanism of my improved sheet conveyor in the manner which will hereinafter be pointed out.

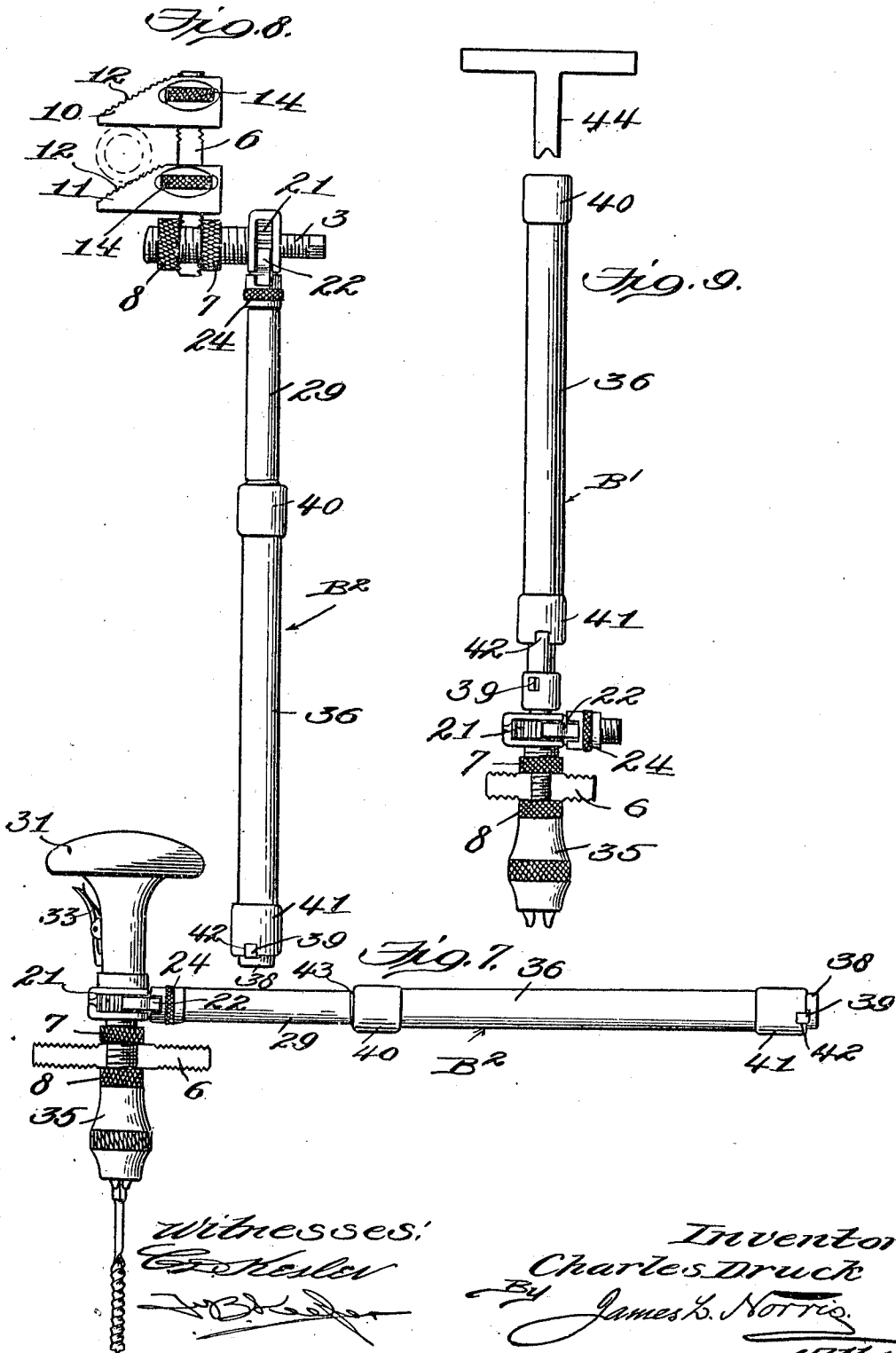
The conveyor frame proper comprises suitable longitudinal side bars 15 rigidly connected at their ends with corner brackets 16 and 17, said bars being connected and made into a skeleton frame by the usual transverse tie rods and shafts, some of which,

C. DRUCK.
COMBINATION TOOL.
APPLICATION FILED JULY 2, 1909.

957,044.

Patented May 3, 1910.

2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

CHARLES DRUCK, OF SHAW, OREGON.

COMBINATION-TOOL.

957,044.

Specification of Letters Patent.

Patented May 3, 1910.

Application filed July 2, 1909. Serial No. 505,700.

To all whom it may concern:

Be it known that I, CHARLES DRUCK, a citizen of the United States, residing at Shaw, in the county of Marion and State of Oregon, have invented new and useful Improvements in Combination-Tools, of which the following is a specification.

The present invention relates generally to improvements in combination tools, and more particularly in the head or carrier to which the tool proper is connected, and its object, broadly stated, comprehends the production of an extremely simple and effective tool-head constructed in such a manner as to permit the attachment thereto of various forms of handles, and of tools, so that the implement may be utilized as a ratchet or a pipe wrench, or as a drill or auger.

The invention further resides in the production of a notched collar arranged for co-operation with the pair of dogs which in turn engage the ratchet, the collar being fitted upon the stem of the cap wherein said dogs are pivoted and being so constructed as to act upon either or both of the dogs and hold the same in inoperative position.

Briefly described, the tool-head, in which, as above stated, the invention primarily resides, comprises a threaded split shank between the legs of which is frictionally held a threaded cross-bar, held in place by means of a pair of collars disposed upon opposite sides thereof. The shank is further formed with a reduced threaded stem to which is attached the above-mentioned cap, the latter inclosing the ratchet rigidly fastened to said stem and carrying the two dogs which engage the ratchet. When the implement is operated as a wrench, the jaws are attached to the arms of the cross-bar. The operating handle, according to its nature, may be connected either to the stem or to the cap, and the free end of the shank is designed for connection with a chuck, in which latter a bit or similar tool may be inserted.

The preferred embodiment of the invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a side elevation of the improved combination tool designed for employment as a ratchet wrench. Fig. 2 is an enlarged detail view of the tool head and its attendant parts, the view being partly in horizontal section and partly in plan. Fig. 3 is a side elevation, partly in section, of Fig. 2. Figs. 4 and 5 are detail views,

respectively, of one of the wrench jaws, and of the notched collar. Fig. 6 is a side elevation showing the implement adapted for operation as a drill and having a reciprocatory handle, portions of which are broken away. Fig. 7 is a side elevation of the implement adapted for use as a ratchet drill. Fig. 8 is a side elevation of the implement converted into a pipe wrench. Fig. 9 is a side elevation of the implement designed for operation as a drill by a further modified arrangement of parts, the supplemental handle employed in this connection being likewise shown.

Reference being had to said drawings, and more particularly to Figs. 1 to 5, inclusive, A designates in a general manner the improved tool head, in which the principal features of the invention are presented, and B the handle by means of which the head is rotated.

The element A comprises essentially a member 1 having a threaded shank or body portion 2 and a reduced stem 3 formed in axial alinement with the first-mentioned portion, said shank or body portion being split or bifurcated longitudinally throughout the greater portion of its length, as indicated by the numeral 4. Between the legs so formed is passed a cross-bar 6 which is held against endwise movement by the spring pressure of the legs, and in adjusted position by means of a pair of milled locking collars 7 and 8 disposed upon opposite sides thereof. The two arms of the cross-bar are designed to be inserted through the transverse passages 9 formed in the jaws 10 and 11, each of which has a portion of one of its faces inclined and serrated, as indicated by the numeral 12. The two jaws are each formed with an additional passage 13 which is arranged at right angles to and intersects the corresponding first-mentioned passage. Each passage 13 is designed to receive a milled nut 14 which is threaded upon the corresponding arm of the cross-bar and is adapted to be turned thereupon, thereby effecting the movement of the jaws with respect to each other. Access to the nuts is facilitated by cutting away a portion of the side faces of the jaws. Upon the shoulder which results from the formation of the reduced stem 3, there rests a cap 16 having a transverse opening through which the stem projects. The cap is further provided with a transverse passage 17, which is formed at

right angles to and intersects the stem opening, and with a lateral extension or stem 18, having a pair of steps 19 and 20 of different diameters, the smaller step being threaded.

5 Within the passage 17 is disposed a ratchet 21 rigidly secured in any suitable manner to the stem, the teeth of the ratchet being normally engaged by a pair of dogs 22, likewise pivoted within the passage, under the influence of a pair of springs 23. These dogs are

10 arranged on opposite sides of the ratchet, and the springs which bear against the tail portions thereof are arranged in seats opening into the passage. The collar 24, shown in

15 detail in Fig. 5, is fitted loosely upon the step 19, and is designed for cooperation with the dogs, across whose tail portions the side wall of the collar extends. This wall is formed with two notches 25 and 26 of different widths. When either notch is opposite

20 one of the dogs, the tail portion of that dog will move outwardly under the influence of the adjacent spring 23, so as to engage the other end thereof with the ratchet, but when

25 the solid portion of the wall is in contact with the tail portion of either dog, such portion is forced inwardly, and the dog thereby rendered inoperative. Thus it will be apparent that either or both of the dogs may

30 be rendered operative or inoperative, according to the use to which the implement is put. When operated as a ratchet wrench, only one of the dogs is operative, as will be understood. The collar is held against displacement by means of a washer 27 fitted upon

35 the step 20. The handle B, shown in Fig. 1, comprises essentially, two members 28 and 29. The member first mentioned is L-shaped, and has one arm thereof provided with a

40 grip 30, and the other arm with a breast-plate 31, the latter element being removably attached to the bent terminal of the corresponding arm by means of a sliding catch 32 operated by a spring-pressed finger-lever 33

45 pivoted to the stem of the breast-plate. The member 29 of the handle is in the form of a hollow rod or tube whose opposite ends are internally threaded. The inner end of this member is designed to receive a reduced

50 threaded extension 34 formed upon the laterally-bent free end of the grip-carrying arm of the member 28, while the outer end thereof receives the threaded step 20. It will thus be apparent that the connection of the tool-head

55 A to the handle is effected by means of the cap 16, and since the latter carries the two dogs which engage the ratchet secured to the stem 3, the head, and with it the jaws, may be either rotated or oscillated, according to the manner in which the handle is operated. Further description of this form of the invention is considered unnecessary, it being noted, however, that the invention resides primarily in the construction of the tool-head, and in the manner in which the same

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is connected to an operating handle, rather than in the employment of any particular form of handle in connection with the tool-head, since the type of handle used depends solely upon the use to which the implement

70 is intended to be put, and upon the manner in which it is to be operated. For instance, when it is desired to use the implement as a drill, the handle B¹ shown in Fig. 6 is employed in lieu of the handle B, the jaws 10

75 and 11 are detached from the cross-bar 6, and a chuck 35 is attached to the free or outer end of the shank 2. The member 29 is disengaged from the member 28 and is utilized as a brace or supplemental handle. 80

The main handle B¹ consists of two tubular members 36 and 37, having a pin-and-spiral-groove connection of the usual type with each other, so that when the member 36 is moved endwise by hand, a rapid rotary

85 movement will be imparted to the head A and to the chuck, both dogs being held against operation by turning the collar 24 in the proper direction. The outer end of the inner handle member 37 is formed with an

90 internally-threaded collar 38 designed to receive the free end of the stem 3, said collar having a tooth 39 formed on its outer surface. Both ends of the outer handle member terminate in internally-threaded collars 40

95 and 41, the latter of which has a notch 42 cut therein.

When it is desired to transform the implement into a ratchet drill, the two members of the handle are locked together by engaging the tooth 39 in the notch 42, after which the handle is detached from the head, reversed, and subsequently attached to the member 29, the threaded end 43 of which is fitted in the bore of the collar 40. See Fig. 105

7. The breast-plate 31 is then attached to the free end of the stem 3. In this construction, the interlocked members 36 and 37 and the member 29, unite in forming the handle B². Either dog is free to operate

110 upon the ratchet.

When the implement is to be operated as a pipe wrench (Fig. 8), the cross-bar 6 is shifted lengthwise through the bifurcation 4 until the length of one arm is sufficiently

115 great to permit the attachment of both the jaws 10 and 11 thereto, the jaws being so arranged with respect to each other that the inclined gripping face 12 of one jaw is opposite the plane gripping face of the other

120 jaw. The rigid compound handle B² is employed, and the collar 24 is turned in the proper direction to release both dogs and leave them free to operate.

In Fig. 9, the reciprocatory handle B¹ and the chuck 35 are employed, and the handle member 29 and the jaws are omitted. The handle is operated by the application of a direct downward pressure upon the member

125 36, the upper end of which is designed to re-

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ceive the stem of a T-shaped supplemental handle 44.

The operation of the various forms of the invention is thought to be obvious from the foregoing, and an extended description thereof is accordingly omitted. It will be seen, however, that the cross-bar 6 is retained in all forms, irrespective of whether the implement be utilized as a wrench or drill. In the former instance, this element carries the two jaws, and in the other instance, it may serve as a brace, to permit the bit or other tool to be loosened prior to its detachment from the work.

15 What is claimed is:

1. In an implement of the class described, the combination of a tool-head comprising shank and stem portions, the shank having a longitudinal slot formed therein; a cross-bar 20 inserted through said slot and arranged for endwise and sidewise adjustment bodily in the same; means carried by said shank and arranged upon opposite sides of said bar, for retaining the latter in adjusted position; and 25 an operating handle connected with the stem of the tool-head.

2. In an implement of the class described, the combination of a tool-head comprising a stem and a threaded longitudinally-slotted 30 shank; a cross-bar inserted through said slot and arranged for endwise and sidewise adjustment bodily therein; a pair of collars

threaded upon the shank on opposite sides of said bar, for retaining the latter in adjusted position; and an operating handle connected 35 with the stem of the tool-head.

3. In an implement of the class described, the combination of a tool-head comprising stem and shank portions, the shank having a longitudinal slot formed therein; a cross-bar 40 inserted through said slot and arranged for endwise and sidewise adjustment bodily therein; means carried by said shank and arranged upon opposite sides of said bar, for retaining the latter in adjusted position; 45 a cap mounted upon the stem and formed with a pair of intersecting passages through one of which said stem extends; a ratchet secured to said stem and arranged within the other passage; a pair of dogs mounted 50 within said other passage and arranged for engagement with said ratchet; a shiftable member carried by said cap and arranged for movement into position to release or engage either or both of said dogs; and an op- 55 erating handle connected with said cap.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES DRUCK.

Witnesses:

T. J. ARTHUR,
W. P. GILBERT.