

TEXTILE INDUSTRY AT THE VIENNA EXHIBITION.—No. XIX.

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SCHOENHERR'S LOOMS.—(Continued).

THE arrangement of the weft-catcher, referred to at the end of our last article, was stated to offer several disadvantages, which are obviated in Schoenherr's new patented apparatus, full illustrations of which we publish on the present page. The advantages of a weft-catcher are only fully attained if by its means the loom is stopped in such a position that the shed is fully opened thus before the for-

of the pin takes place the loom is stopped as we shall explain presently, and thus a stoppage takes place each time a thread is missed.

In Figs. 1 and 2 on the present page, the needles *a* are arranged on both sides of the stuff, and it will be seen how on the right-hand side the thread presses the needle against the list of the fabric. The needle is fastened to the spindle *c*, which is connected at the other end with a lever *b*; this latter is drawn inwards towards the selvage of the stuff through the twisting of the pin in such a manner that it comes into contact at B with the screw *d*, which is pushed forwards through the spring *g* at the lower end of

of a shuttle, and is thus not drawn towards the list of the stuff, nothing will prevent the roller of the lever *h* from coming into contact with the curved part of the lever *i*, whence, as stated above, the working of the loom is stopped. This weft-catcher is the best and most trustworthy apparatus of this kind now in use, and it deserves the full attention of the manufacturer.

Schoenherr's shuttle for cloth looms is made in a very ingenious manner of steel, so that it takes in a compact form a large spool; this shuttle is shown in Figs. 10, 11, and 12 of the two-page engraving published with our number of January 30th. In

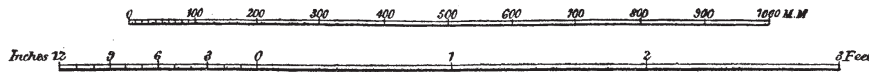


Fig. 1.

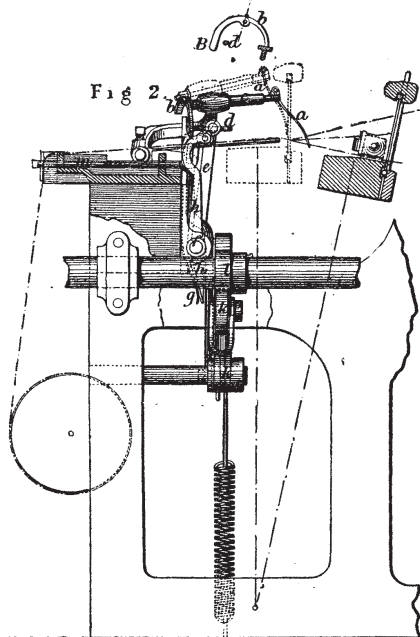
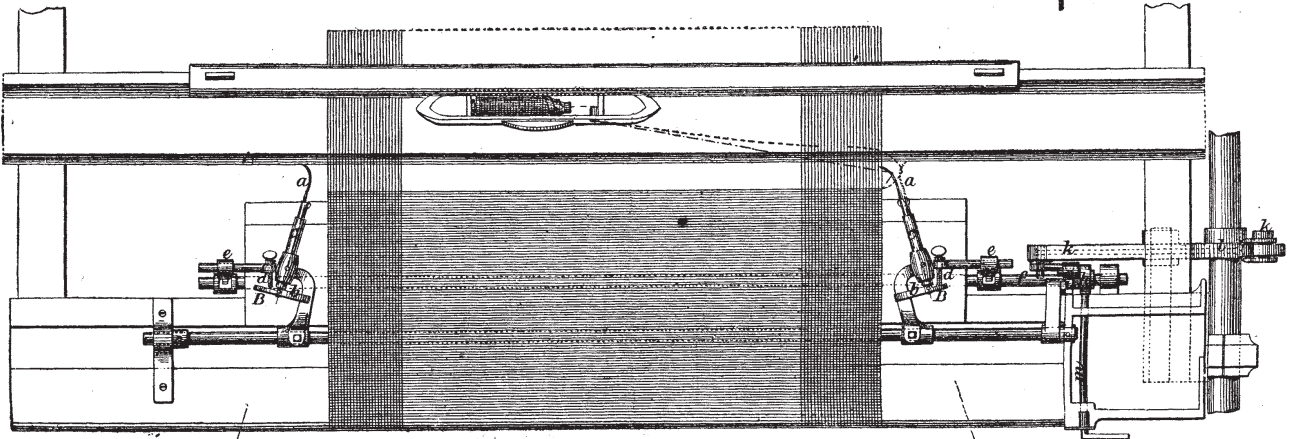


Fig. 2.

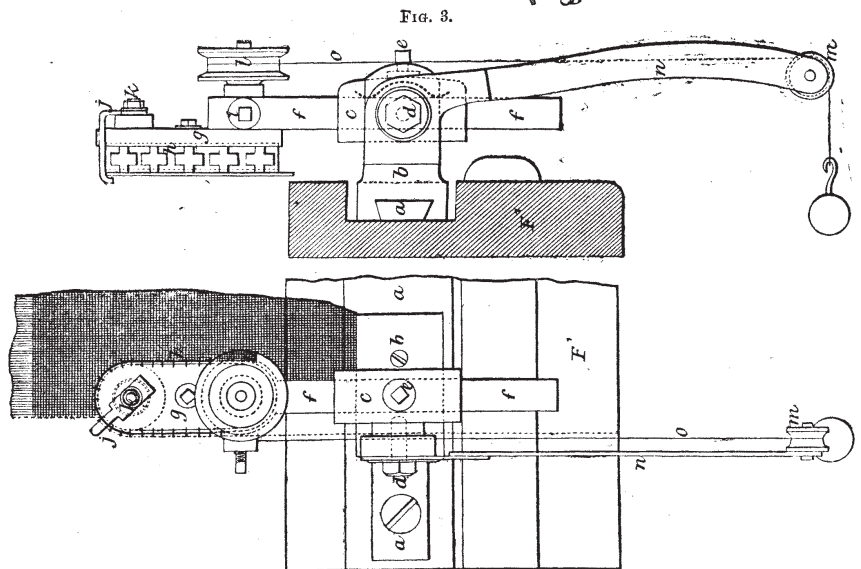


Fig. 3.

Fig. 4.

ward motion of the batten. This end is attained by the new weft-catcher, whether the loom is provided with one or with several shuttles.

The new weft-catcher consists of a needle *a* (a bent wire), Fig. 1, movable in two directions, this needle being (by suitable mechanism drawn from the main shaft) brought into such a position during the backward motion of the batten—but still before the shuttle has finished its travel—that it catches the thread of the shuttle. By this thread it is drawn to the list of the stuff, that is to say, through a distance of about three centimetres, the consequence being that the pin to which the needle is fastened, is slightly twisted. Unless this twisting

the lever *h*, and which acts as soon as the rod *i* is lowered through the lever *k*, and the disengaging of the cam *l*. By means of the shaft *f*, which connects the lever *h* and the arm *e*, spring *g* acts also upon the latter, the upper end of which carries the screw *d*. The screw *d* acting against B, the roller at the upper end of the lever *h* is prevented from coming into contact with the curved and tapered part of the lever *i*, otherwise the central part of the lever would touch the end of the disengaging pin *m*, which falling upon the pawl of the ratchet wheel, would stop the working of the loom. If now one or the other of the needles *a* does not catch a thread at the commencement of the travel

this engraving Fig. 10 is a vertical longitudinal section, Fig. 11 a vertical cross section, and Fig. 12 a plan of the shuttle. The vertical sides *aa* are 2½ millimetres (0.09 in.) thick, and are connected with the bottom part *b*—which forms at the ends the hollow partitions *c*—by means of the bolts *d*, as shown in Figs. 10 and 11. The partition *c* has rivetted to it an iron hoop *e*, carrying the spool-holder *f*, the point of which presses against the inner side of the partition. A pressure upon the feathering joint *g* facilitates the putting on and taking off of the spool. Each point of the shuttle is provided with a strong annular piece of vulcanised caoutchouc *h*, and the piece *lm* moving round the

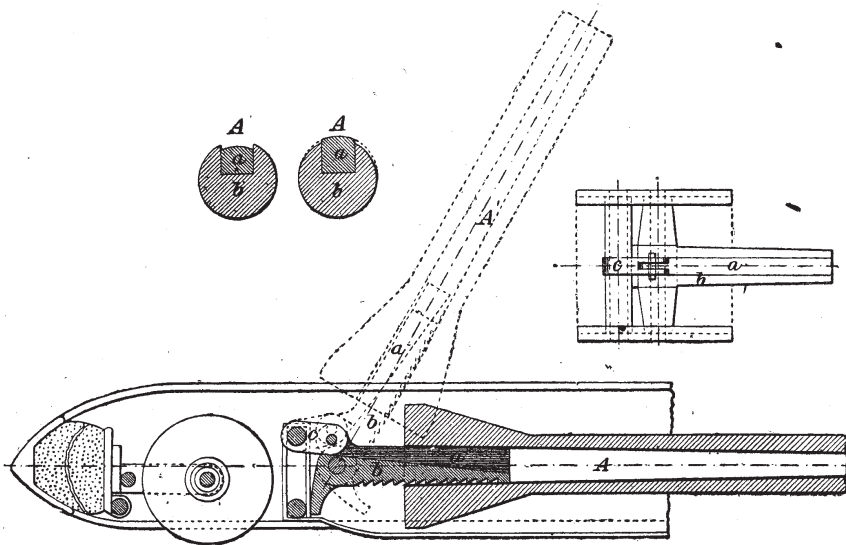
joint *l*, which touches the back *n* of the fork *o* turning round the axle *p*. The arms of the fork carry the roller *q*, made of leather and brass discs. The front side of the shuttle is provided with a curved projection *r*, which acts upon the movable front part of the shuttle-box, and by means of which the shuttle may either be arrested in its travel, or, if the shuttle does not arrive at its place, the working of the loom is stopped through the pin of the shuttle-catcher.

Recently the Sächsische Webstuhlfabrik has designed another new shuttle, the construction of which is shown by Fig. 5 annexed. A peculiarity of this shuttle is the body *b* provided with serrations like those of a saw; this body *b* facilitates greatly

tion near to the reed by the screw *k*; by means of the end of this hook the list of the cloth, which is bent upwards, is brought into contact with the chain, and is drawn off in the manner indicated by the dotted line. The axis of the back roller is extended, and carries the small rope pulley *l*, whence is led the string *o*, which passes over the roller *m* at the end of the lever *n*, and which being stretched by a weight, produces a turning of the rope pulley, and thus facilitates the moving forward of the warp.

Having now concluded the description of Schoenherr's loom, we may state that on account of its regular and safe manner of working, of the small amount of wear and tear of the material to be woven, and of the uniform finish of the stuff, we

FIG. 5.



the fastening of the spool, and it forms, together with *a*, the spit of the spool *A*. The arrangement of connecting *a* *b* and *c* into one joint is very ingenious, as it facilitates, as shown in dotted lines, the fastening of the spool. For *a* and *b* being wedges, and sliding upon each other, they only fill the bore of the spool *A*, when the latter occupies its proper place in the shuttle, whilst the spool becomes loose at once, when it is in the position shown in dotted lines.

Motion is given to the shuttles by the arrangement shown in Fig. 9 of the two-page engraving already referred to. The arms or levers *i*, there shown, run loose in the bearings *T*, fastened to the central wooden partition, but they are firmly connected with the bell-crank levers *W W'*, the one of which *W* pulls, and the other *W'* pushes the lever or arms *i*. The bell-crank levers *W W'* are connected with each other by the rod *v'*, which communicates through the rod *u'* with the crank *x* fastened to the pin *c''*. Two pawls *a'* and *b'* are also fastened to the wooden partition, and if the crank *x* moves the arms *W* towards the one or the other side, the one of the arms *i* approaches the pawl *a'* so far, that, as shown in the figure, the latter catches the pin *b''* at the back of the lever *i*, whence each lever acts as a fixed point of attachment for the spring *g'* alternately. Simultaneously, however, the other lever *W'* has raised the pawl *b'* by means of the pin *z*, whence the second lever *i* is disengaged, and pushes the shuttle through the shed on account of the action of the spring, and by means of the belts *Z* and *Z'*.

According to the quality of the stuff, Schoenherr's looms are provided with various temples. For cloth with long and strong lists, and especially for the list of the left-hand side, the temple shown in plan in Fig. 3, and in elevation in Fig. 4 on the preceding page has been adopted. This temple consists of the rail *a*, which is screwed to the breastpiece *F'*, and which serves for the fastening of the adjustable slide *b*, to which the bush *c* is connected by means of the screw *d*. The bush *c* receives the pin *f*, which can be fixed by the screw *e*, the end of this pin *f* carrying a casing *g*, with two rollers for the chain *h*, the links of which are made of brass with projecting steel points. The boss of the front roller carries a hook *j*, which can be fixed in a corresponding posi-

tion near to the reed by the screw *k*; by means of the end of this hook the list of the cloth, which is bent upwards, is brought into contact with the chain, and is drawn off in the manner indicated by the dotted line. The axis of the back roller is extended, and carries the small rope pulley *l*, whence is led the string *o*, which passes over the roller *m* at the end of the lever *n*, and which being stretched by a weight, produces a turning of the rope pulley, and thus facilitates the moving forward of the warp.

Having now concluded the description of Schoenherr's loom, we may state that on account of its regular and safe manner of working, of the small amount of wear and tear of the material to be woven, and of the uniform finish of the stuff, we

consider Schoenherr's loom to be one of the best, if not the best, mechanical looms now in use, an especial advantage which it possesses being the facility with which it may be adopted for various materials.