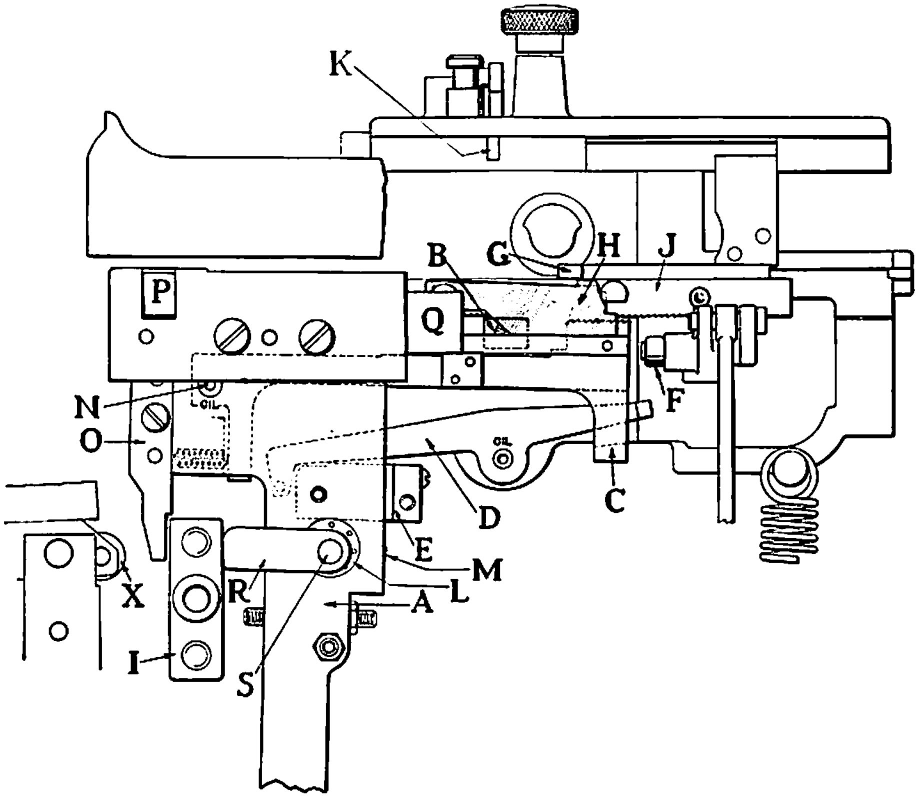


Fig. 114. Rear View of the Justified Quadding Attachment. The first elevator has descended to the vise cap and the right vise jaw rack *J* has moved the line of matrices and spacebands against the left vise jaw. The projection on pawl *H* has been carried under gage *G* by the movement of rack *J*. The vise closing lever has risen preparatory to first justification.

Fig. 113. The cam controls the position of vise jaw rack pawl lever *A*, Fig. 114, and consequently fixes the position of the vise jaw rack pawl *C*. The pawl rest *PQ* is provided to take the place of rest *B* when the justified quadding attachment is being used. The line spread pawl *H* and the indention pawl gage *G* control the engagement of pawl *C* with the right vise jaw rack *J*.

When Using the Regular Autospacer Feature without justified quadding, operating lever *A*, Fig. 113, is moved to the right. This withdraws the high point of cam *R*, Fig. 114, away from the mold disk locking stud block *I*. Lever *A*, cam *O* and pawl *C* then move to the left and assume the positions they normally occupy on the regular autospacer. Cam *O* moves into line with roll *X* on the vise justification bar and pawl *C* is engaged under rest *B*. The actions of the machine, under these conditions, are exactly as outlined in the description of the ordinary quadding and centering device.

When Using the Justified Quadding Attachment, the operating lever is moved to the left. This causes the high point of cam *R* to bear against block *I*, as shown in Fig. 114. Lever *A* is thereby moved to the right until cam *O* is out of line with roll *X* on the vise justification bar. Consequently, the justification block will be permitted to make a full upstroke during first and second justification, because roll *X* will not contact cam *O*. This explains how the lines are justified when using the justified quadding attachment. The movement of lever *A* to the right, of course, disengages pawl *C* from rest *B*. The pawl rest *PQ* takes the place of rest *B* when the justified quadding attachment is in use. The rest *Q* engages an auxiliary lug on pawl *C* and holds the pawl down until it is to be released. *The main operating lever or control knob is always placed on flush left position when setting justified composition with indentions.* As explained in the description of the quadding and centering device, flush left is the normal position of the control knob for composition which is to be justified.

As explained previously, knob *B*, Fig. 113, controls the movement of pointer *C* along the justified indention scale and the normal scale. As the knob is turned to shift the pointer from one measure to another, indention gage *G*, Fig. 114, is also moved a corresponding distance to the right or to the left. When the knob is dropped, both the pointer and the indention gage are locked in position. The indention gage *G* is a banking point for pawl *H*, which controls the engagement of pawl *C* with rack *J*.

In Fig. 114, the parts of the justified quadding attachment are shown just after the first elevator has descended to the vise cap. The vise jaw release latch has been tripped, permitting the vise jaw lever to pull rack *J* to the right. The right vise jaw and the line of matrices and spacebands have been moved against

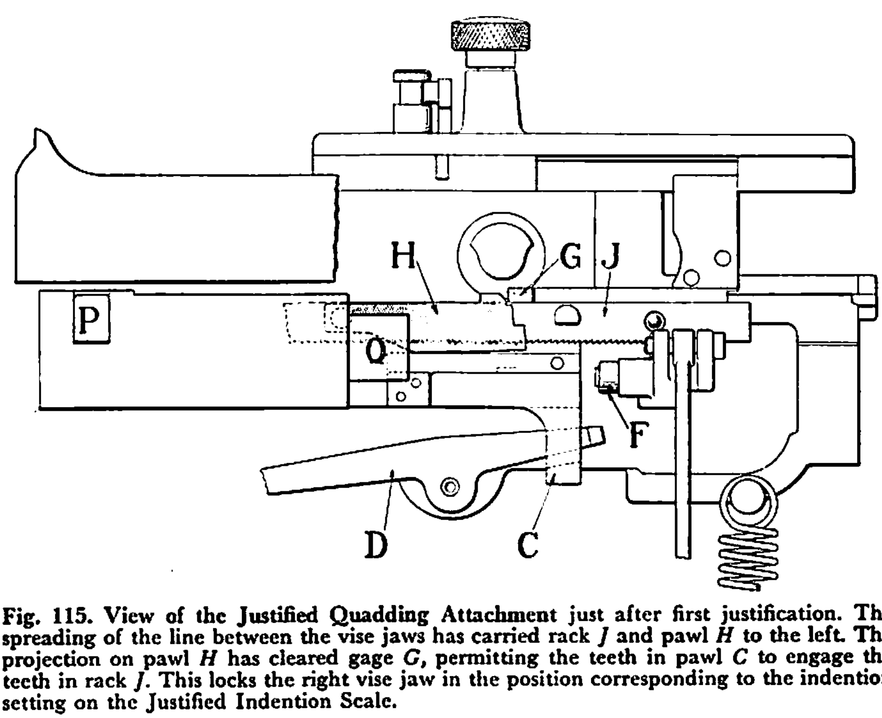


Fig. 115. View of the Justified Quadding Attachment just after first justification. The spreading of the line between the vise jaws has carried rack *J* and pawl *H* to the left. The projection on pawl *H* has cleared gage *G*, permitting the teeth in pawl *C* to engage the teeth in rack *J*. This locks the right vise jaw in the position corresponding to the indention setting on the Justified Indention Scale.

the left vise jaw. Since the assembled line has been set to within 3 ems of the full measure, rack *J* has moved just far enough to the right to carry the projection on pawl *H* under gage *G*. *This basic relationship between pawl H and indention gage G is positive, no matter what indention is being set on the right of the line.* If the assembled lines are of the proper length, the projection on pawl *H* will always be carried under gage *G* by the vise jaw rack *J*.

When the mold disk advances, it contacts block *P*, which releases rest *Q* from engagement with the lug on pawl *C*. The teeth in pawl *C*, however, do not engage the teeth of rack *J* at this time. The line spread pawl *H*, banking at its upper end under gage *G*, holds pawl *C* down out of engagement with rack *J*. As the spacebands are driven up during first justification, however, the right vise jaw and rack *J* are moved to the left by the spreading of the line. The projection on pawl *H* then moves up in front of gage *G*, as shown in Fig. 115, permitting pawl *C* to engage the teeth on rack *J*. As soon as the pawl engages the rack, the movement of the right vise jaw toward the left is halted and the jaw is locked in the position required for the desired indention on the right of the line. *No matter what indention is being set on the right, this basic sequence of actions is always the same.* The line is spread out towards the left, pawl *H* is moved past gage *G* and pawl *C* engages the teeth of rack *J*, locking the right vise jaw in the position required for the desired indention. The parts of the justified quadding attachment are shown in these positions in Fig. 115.

If a line is more than 3½ ems short of the length indicated on the assembler slide scale, the projection on pawl *H* is carried past indention gage *G* when rack *J* makes its operating stroke. When the mold disk advances and contacts block *P*, therefore, pawl *C* rises immediately and engages the teeth of rack *J*. This locks the right vise jaw in position and quads out the matrix line, which is held tightly between the vise jaws during first and second justification. If there are at least two spacebands of ordinary thickness in the line, the machine will cast. It should be noted that in the case of a justified line the projection on pawl *H* rises to the left of gage *G*, as shown in Fig. 115. In the case of a quadded line, the projection rises to the right of gage *G*. If there is an insufficient number of spacebands in the line for the amount of expansion required, pawl *H* will not pass gage *G* at the left and the result will be a loose line which will not cast.

Between first and second justification, the matrix line is loosened for vertical alignment. As the vise closing link descends, the left vise jaw is permitted to open slightly. The link continues its downward movement until roll *F*, Fig. 115, carries latch *D* down on pawl *C*. Pawl *C* is then depressed slightly to permit approximately .020″ freedom between the teeth of the pawl and rack *J*. After the matrices have been aligned vertically and facewise the vise closing link rises, closing the left vise jaw. The teeth of pawl *C* engage the teeth of rack *J* tightly and second justification takes place. The matrix line is spread out fully between the vise jaws, then the pot locks against the back of the mold and the slug is cast. The line is held tightly between the vise jaws during the withdrawal of the slug by the wedging action of the spacebands and the inward pressure of the vise closing screw. After the slug has been ejected from the mold, the vise closing link descends sufficiently to latch pawl *C* under rest *Q*. The rack *J* and the right vise jaw are returned to normal position by the vise jaw lever.

Adjustment of Shifting Cam Bushing. The shifting cam bushing *L*, Fig. 114, is the only part of the first style justified quadding attachment which requires adjustment. *The setting of the bushing, however, is highly important* because it determines within very positive limits the accuracy of the right-hand indention. The hole in the bushing through which shaft *S* passes is eccentric. Turning the bushing will move lever *A* slightly to the right or to the left when the high point of cam *R* is banking against block *I*, as illustrated. Since pawl *C* is pivoted on a hinge pin *N* in lever *A*, the pawl will also move a corresponding distance to the right or to the left. The relationship of pawl *C* to rack *J* and consequently the accuracy of the indentions made by the right vise jaw are thus controlled by the bushing *L*.

If there is an error in the right-hand indention, it can be eliminated very easily by adjusting the bushing. Before adjusting the bushing, however, the setting of the right vise jaw stop screw should be checked. This screw determines the position of the character at the extreme right of the slug with respect to the right end of the slug body. When fully justified lines are being cast with lever *A*, Fig. 113, to the right, the screw should be adjusted so that the extreme right character will be flush with the slug body. This setting is basic and should always be checked before attempting to adjust the bushing.

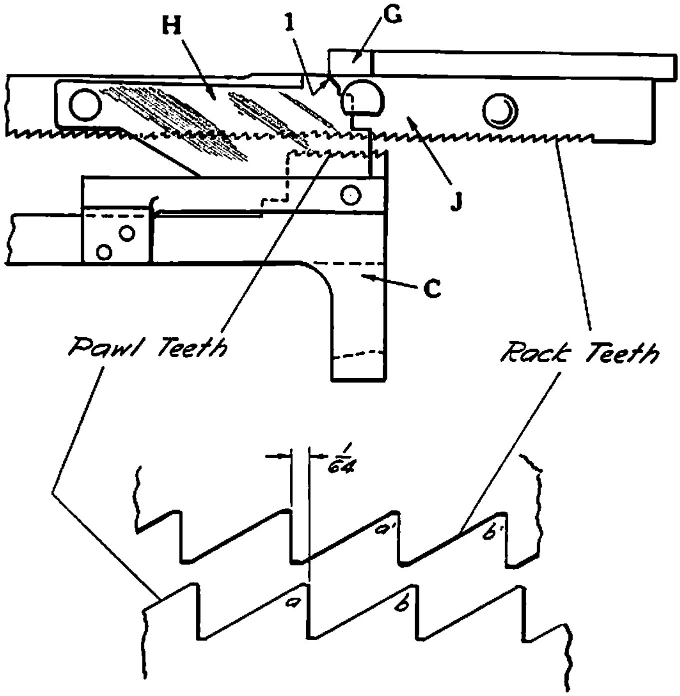


Fig. 116. Detail view, showing the position of the justified quadding parts when the line spread and indention rack gear lock is doweled in position.

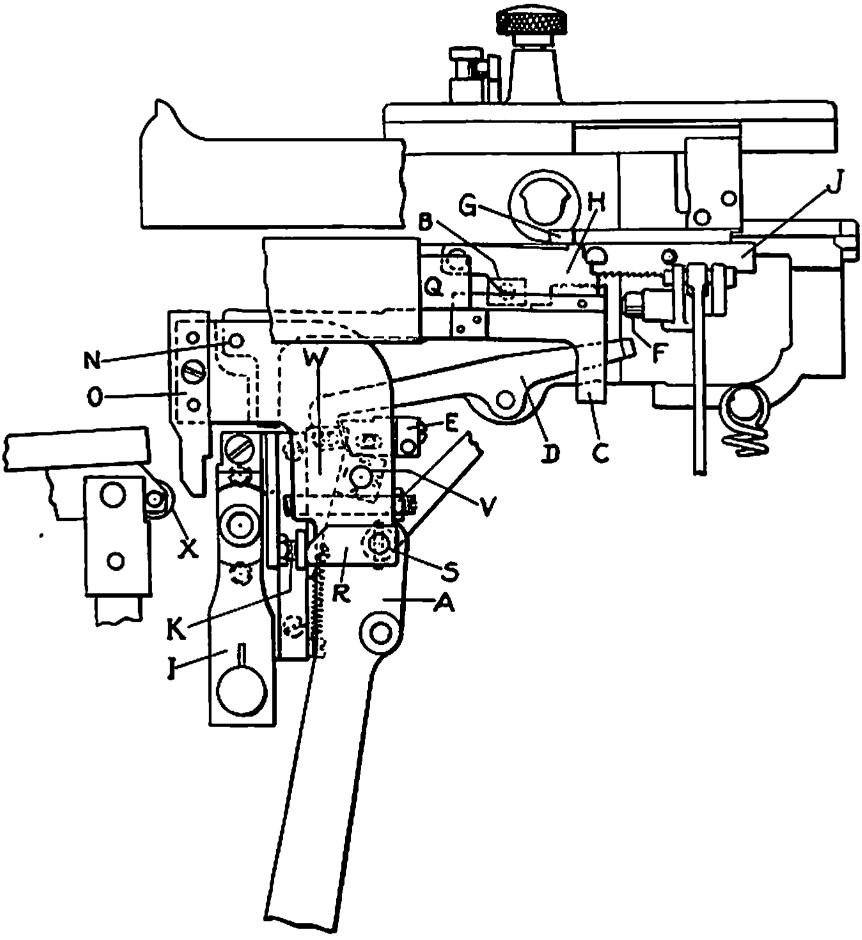


Fig. 117. The Justified Quadding Attachment with the Improved Wedge Locking Device. Wedge *W* and block *V*, as described in connection with the quadding and centering device, hold the matrix line more firmly between the vise jaws during the breakaway and prevent slurring of type characters on the slug.

After the stop screw setting has been verified, move the operating lever *A*, Fig. 113, to the right and turn knob *B* until pointer *C* registers with zero on normal scale *E*. Place a strip of thin paper measuring approximately .002″ between the right vise jaw and its stop screw and make sure that the jaw is pushed all the way over to the right against the paper. Trip block *P*, Fig. 114, so that pawl *C* will rise and engage the teeth of rack *J*. Loosen set screw *M* and turn bushing *L* until the paper binds slightly as it is pulled up from between the jaw and the stop screw, then tighten screw *M*. After this basic relationship has been established, a slightly finer adjustment may have to be made. Cast two slugs with an indention of 1 em on the right and 1 em on the left. Place the slugs back to back to see whether the extreme characters on each end of the slugs coincide in position. The shifting cam bushing adjustment will be correct when the characters coincide exactly.

An improved wedge lock, described previously on page 177 in connection with the quadding and centering device, has been developed to hold the matrix line more firmly between the vise jaws while the slug is being withdrawn from the matrices. The wedge lock device is applied also to the justified quadding attachment. The device requires a number of changes in the justified quadding parts, the most important of which is the replacement of the shifting cam bushing *L*, Fig. 114, with a slightly different means of adjustment.

The justified quadding attachment with the improved wedge lock is shown in Fig. 117. Instead of the shifting cam bushing formerly used, an adjusting screw *K* is provided to set the right-hand indention accurately. The procedure for making the adjustment is exactly as outlined in the description of the shifting cam bushing. The effect of adjusting the screw is the same as was obtained by turning the bushing.

Line Spread and the Indention Rack Gear Lock. The indention gage *G*, Fig. 114, and the line spread pawl *H*, as outlined before, control the engagement of the vise jaw rack pawl *C* with the vise jaw rack *J*. The relationship of the pawl to the rack is highly important. If the teeth of the pawl do not engage the proper teeth of the rack, there will be an error of one-half em in the right-hand indention. The meshing of the pawl teeth with the rack teeth can be delayed or advanced slightly by shifting gage *G* to the right or to the left with respect to the projection on pawl *H*. The position of gage *G* is controlled by the line spread and indention rack gear lock *K*, Fig. 114, which locks the gage and pointer *C*, Fig. 113, in position when knob *B* is dropped. The rack gear lock is set at the factory and is doweled in position.

In setting the rack gear lock, operating lever *A*, Fig. 113, is moved to the left and pointer *C* is moved to the justified indention scale. The pointer can be set on any desired measure while making this adjustment. Next, the vise jaw release latch is tripped and rack *J*, Fig. 114, is pulled to the right until the projection on pawl *H* is carried under gage *G*. Then block *P* is pushed in to raise rest *Q* off the auxiliary lug on pawl *C*. When the parts are moved in this way by hand, they are placed in the positions that they would assume just before first justification. The vise jaw rack *J* is then moved slowly to the left until the projection on pawl *H* is just about to drop off gage *G*, as shown in Fig. 116. This precise relationship is indicated by the arrow *I*. When the parts are in this position, the rack teeth which are *not* to engage with the pawl teeth should be 1/64″ in advance of the pawl teeth as shown in the detail drawing. Thus, when pawl *H* drops off gage *G* and permits pawl *C* to rise toward the rack *J*, tooth *a* will engage tooth *a′*, tooth *b* will engage tooth *b′*, etc. To obtain this 1/64″ relationship, gage *G* is moved slightly to the right or to the left in relation to pawl *H*. The gage is moved by shifting the rack gear lock *K*, Fig. 114, toward the front or the back of the machine. Moving gage *G*, Fig. 116, to the right will advance the engagement of pawl *C* with rack *J*. After the 1/64″ relationship of the pawl teeth to the rack teeth has been obtained and pawl *H* is just ready to drop off gage *G*, the rack gear lock is

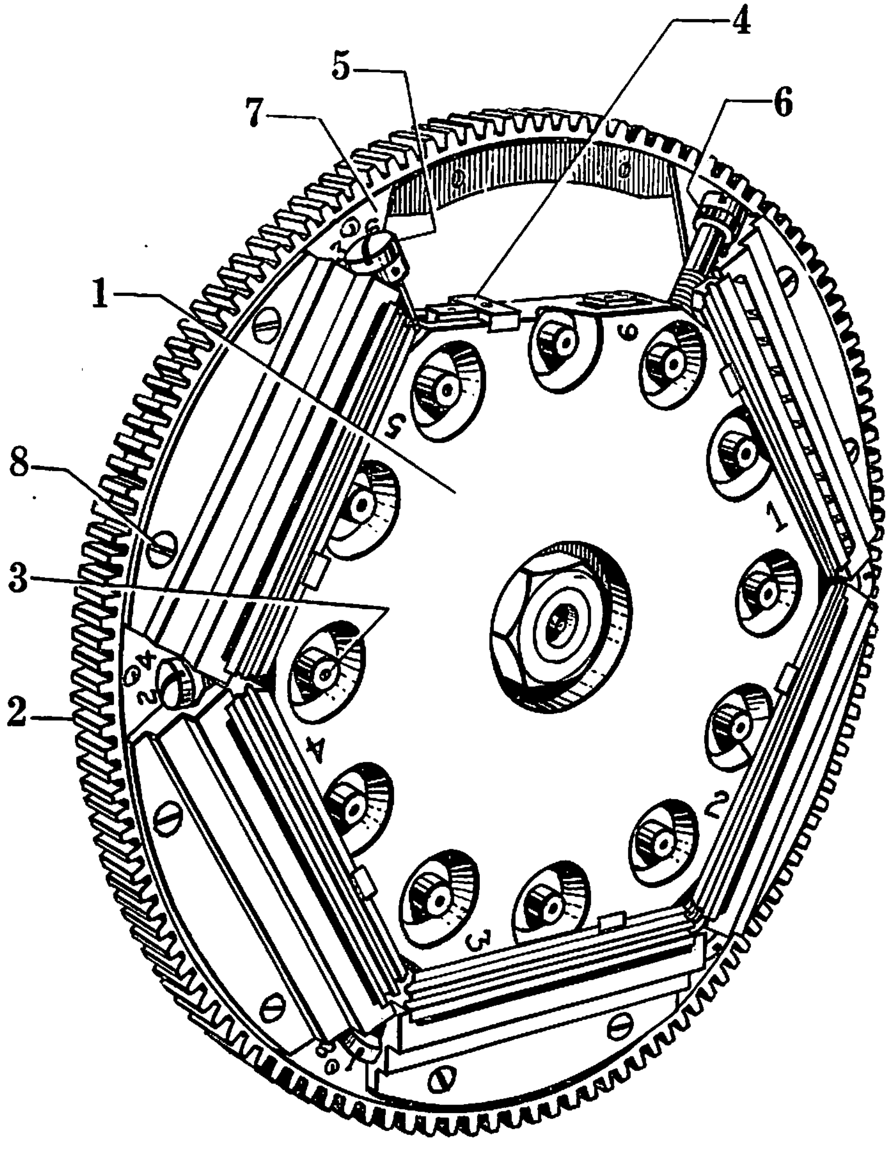


Fig. 118. Perspective View of the Six-Mold Disk. One of the molds has been removed to show the means provided for locating and fastening the molds in position.

doweled in position. One setting of the lock is all that is required. When the lock is positive for an indention of one length on the right, it is positive for indentions of all other lengths.

The Six-Mold Disk and Automatic Ejector Blade Selecting Mechanism

The Intertype Six-Mold Disk combines the strength and reliability of the four-mold disk with the added advantages of increased mold capacity and centralized control of the mold and ejector selecting mechanism. The new disk is of the *same size* as the four-mold disk and it can accommodate *six full-length 30-em* molds or any in between assortment desired. The parts of the disk are manufactured under rigid standards of precision which insure accuracy in construction and dependability in performance.

From the operator's viewpoint, the outstanding advantages of the six-mold disk are (1) increased mold capacity, (2) centralized control of the mold and ejector selecting mechanism, (3) automatic ejector blade selecting mechanism and (4) safety devices designed to prevent damage to the molds and disk. From the machinist's viewpoint, the main advantages are (1) precise alignment of parts, (2) simplicity of design, (3) complete accessibility of operating mechanisms and (4) fewer mold and liner changes.

Construction of the Mold Disk

The basic construction of the six-mold disk provides strength and rigidity at the points of greatest stress. The disk consists of a hexagon-shaped mold disk *1*, Fig. 118, upon which the molds are mounted, and a mold disk gear *2*, which is fastened to the mold caps. The mold disk is mounted in the regular way on the mold disk stud. A left-hand nut on each end of the stud holds the disk securely to its bearing in the mold disk slide arm. There are twelve mold disk locking studs *3* on the disk, one pair for the casting and one pair for the ejecting position of each mold. These studs are of new design, insuring a positive location of the molds at casting and ejecting position.

The molds are mounted on the six flats of the mold disk. The flats of the disk are carefully ground and finished, providing straight and accurate surfaces for the seating of the mold bodies. The accuracy of the disk and its parts is due to the separation of the mold disk gear from the mold disk core, which makes it possible to adhere to manufacturing limits heretofore unobtainable. Every mold body is held rigidly and accurately in position by three keys in each flat of the disk, one mold locating key *4* and two mold aligning keys. These keys engage keyways in the base of each mold body and fix the position of the molds on the disk with precision. The mold locating key aligns the mold endwise on the flat, and the two mold aligning keys align the mold in relation to the front and back of the disk. In this respect, the mold bodies are self-aligning because they can assume only the one definite position provided for by the keys.

The mold cap, Fig. 121, is aligned accurately with the mold body by a lug on each end of the body. These lugs serve as projecting keys which fit slots in each end of the mold cap. The cap is held down firmly on the mold body by a mold screw *5*, Fig. 118, on each side of the cap. These screws are threaded into the mold disk and each screw serves to hold the ends of two adjoining molds in position. Washers *6* under each screw bear on seats formed on the ends of the mold caps. When the mold screws are turned down firmly on the mold cap, a rigid and precisely aligned mold assembly is formed on the mold disk.

Six triangular mold disk cover plates *7* are fastened to the mold disk gear between the molds. These plates indicate the thickness and length of slug for which each mold is made. When the machine is in normal position, the plate corresponding with the mold in operating position is uppermost and indicates which mold is "up." Two holes are provided in each mold cap for the mold cap screws *8*, which fasten the mold disk gear in position. These holes are accurately drilled and bored to insure a correct alignment of the mold disk gear with other parts of the assembly.

The Mold and Liner Insert

The molds are made of special mold steel, which is carefully heat-treated and hardened to insure durability and accuracy in continuous use. The parts of the mold are ground within very close limits, resulting in a high degree of accu-

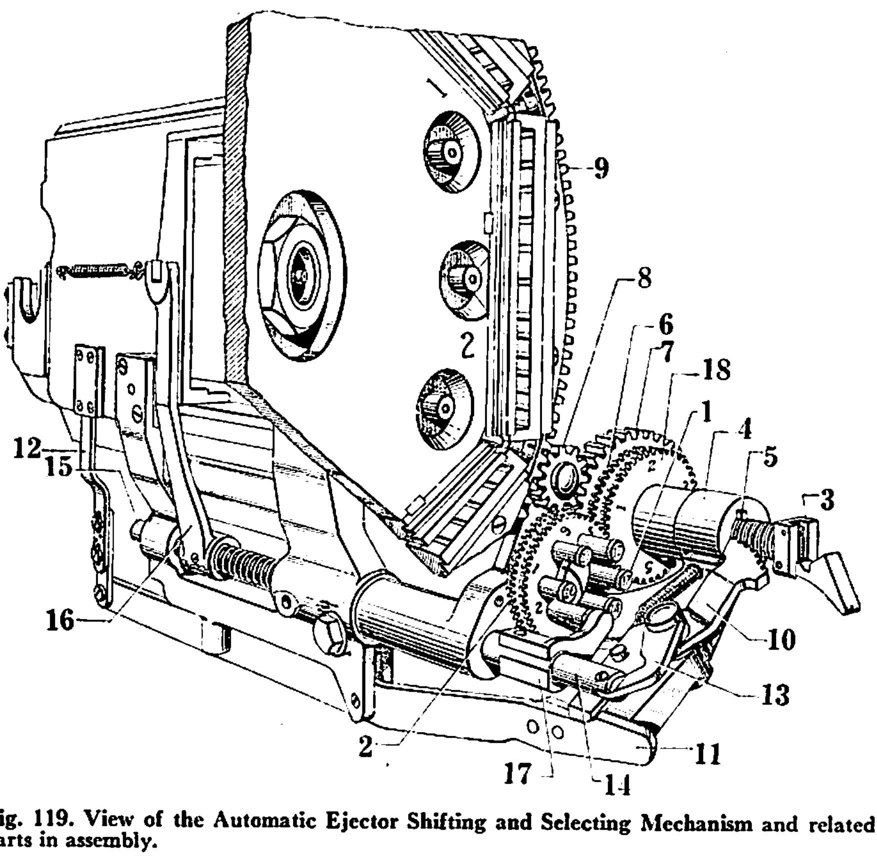


Fig. 119. View of the Automatic Ejector Shifting and Selecting Mechanism and related parts in assembly.

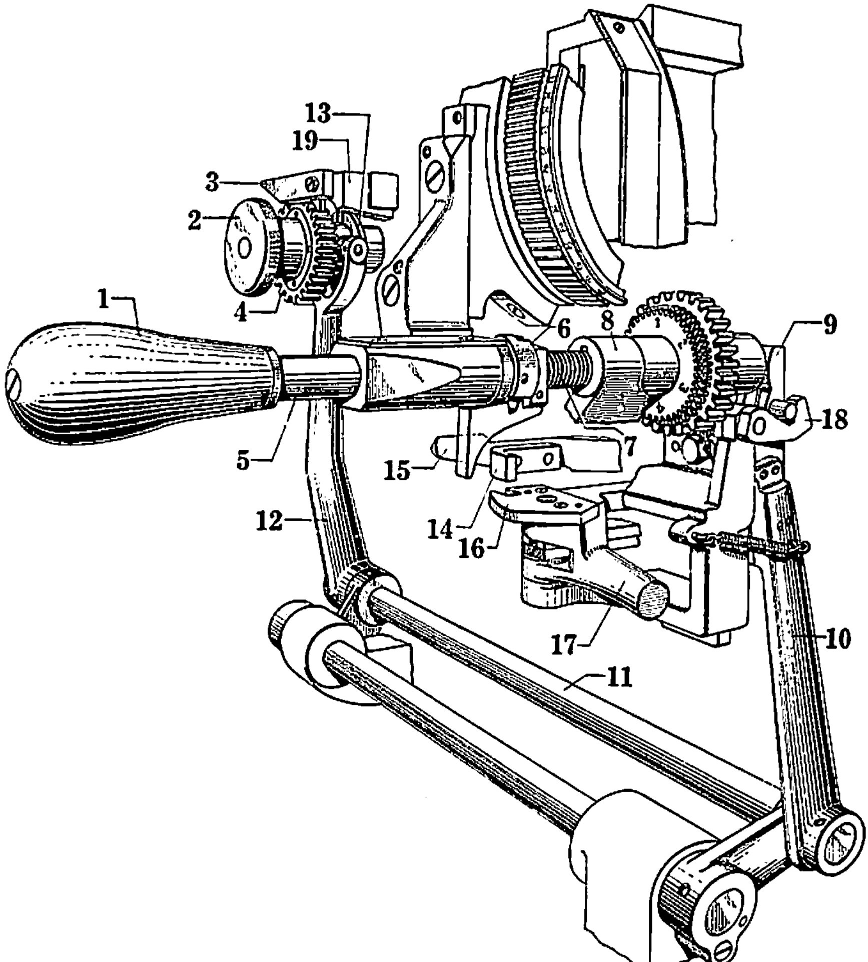


Fig. 120. Perspective View of the Mold Disk Pinion Operating Mechanism and the Mold Turning Mechanism.

racy in the alignment and dimensions of the parts. The finished molds are put through a special process which produces a beautiful ebony finish on the steel. This finish penetrates the metal and protects it from moisture, preventing the formation of rust and minimizing the accumulation of type metal on the mold.

The molds applied to the six-mold disk are of an entirely new type. They are short and compact and therefore less subject to distortion. Triangular shelf molds are made for slugs from 18 to 48 points in body thickness. The length and thickness of solid slugs from 5 to 14 points and recessed slugs from 10 to 14 points can be varied by means of special liner inserts *U-4077, U-4079.* Triangular shelf mold caps in sizes 18 to 48 points are made to suit the measures desired and require no liners. Different triangular shelf molds or mold caps can be applied to the disk whenever necessary to secure slugs of different lengths and thicknesses.

Liner inserts, as stated previously, are used to vary the length and thickness of slugs. Liner inserts *U-4077* are made for solid slugs from 5 to 14 points and for any length from 4 to 30 ems. Liner inserts *U-4079* are made for recessed slugs from 10 to 14 points. The inserts are aligned positively with the mold body and cap by aligning lugs, as shown in Fig. 121. The mold cap is machined accurately for the insert and holds it rigidly in position. To place an insert in the mold or to remove one, it is necessary only to loosen the two mold cap screws *8* and the two mold screws *5*, Fig. 118. The trim ribs in all mold caps are similar in design to those used in the advertising figure caps. The lip *X*, Fig. 121, on the liner inserts and mold caps is of maximum width. These two features make it possible to cast advertising figure work on any of the six-pocket molds. There is no limit to the variety of work obtainable by means of the molds on the six-pocket disk.

Mold Changes

Changing from one mold on the disk to another is controlled by a single handle *1*, Fig. 120, placed within easy reach of the operator. When the handle is pushed in, the mold disk pinion is disengaged from the mold disk gear and the ejector blade magazine is shifted to position in preparation for the selection of the ejector blade. When the handle is turned to bring the desired mold to operating position, the proper ejector blade selecting stop is also moved into position. When the handle is pulled out, the mold disk pinion meshes again with the mold

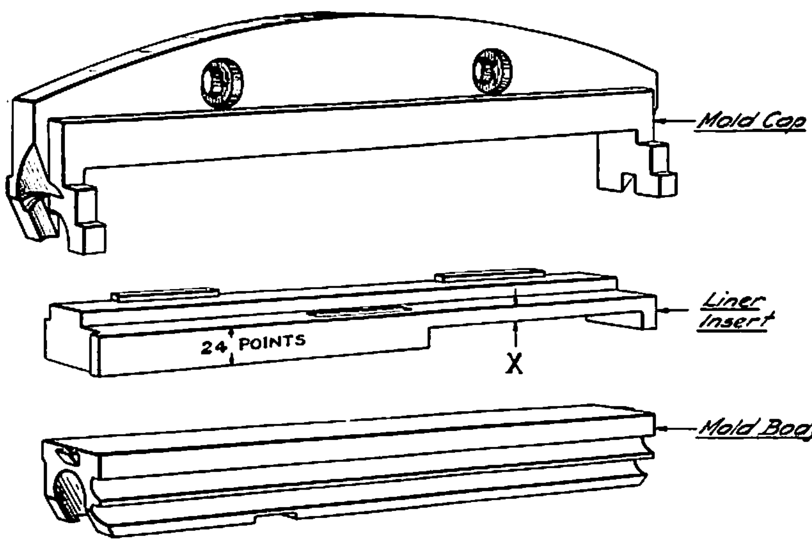


Fig. 121. Liner Insert Mold for Six-Mold Disk. Inserts are made for casting solid slugs from 5 to 14 points and recessed slugs from 10 to 14 points in any length up to 30 ems. The liner inserts are interchangeable and are removed simply by loosening the mold screws sufficiently to raise the mold cap about 1/16". The lip *X* on the insert is sufficiently thick for casting overhanging characters up to 24 points in height.

disk gear and the ejector blade magazine moves until the proper ejector blade for the selected mold comes to position. The operation of the mold disk pinion and the selection of the ejector blade are wholly automatic. All the operator has to do is to place the desired mold in operating position. The starting and stopping lever must be pushed in before the mold change can be made. The machine cannot be started until the mold change is fully completed.

Whenever a change is made in the length of slug cast from a particular mold, a corresponding change must be made in the ejector blade selecting stop for that mold. The stops *1*, Fig. 119, are held by friction on short posts on the ejector blade selecting gear 2. They can be pulled off the posts and replaced easily whenever necessary. The size of the ejector blade which each stop will bring into operating position is stamped on the head of the stop. After the necessary change has been made, of course, the operation of the ejector blade selecting mechanism is completely automatic.

The mold disk can be turned in the conventional way by means of a knob *2*, Fig. 120, fastened to the mold disk pinion. When the disk is turned by means of this knob, however, the ejector blade selecting gear is not operated. Consequently, the ejector blade originally in use is still left in operating position, and the size of this blade might not correspond with the mold placed in position. A safety latch *3* is therefore attached to the mold disk guide to remind the operator to check the ejector blade setting with that of the mold whenever he turns the disk by means of the mold disk pinion knob. The latch rests normally in front of the mold disk pinion and must be raised before the pinion can be disengaged from the driving shaft.

Mechanism of the Six-Mold Disk

The mechanism of the six-mold disk is so arranged that four separate operations are controlled centrally by one main operating handle. The mold disk pinion is disengaged from the mold disk gear, the ejector blade magazine is shifted preparatory to the selection of the ejector blade, the desired mold is placed in operating position and the proper ejector blade is selected. All of these operations are performed automatically as the desired mold is placed in operating position.

Fig. 120 shows the mold disk pinion operating mechanism and the mold

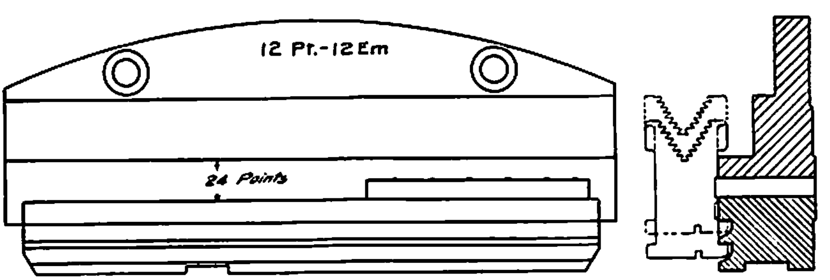


Fig. 122. Mold for Solid Slugs. Molds of this type are made to suit the measures desired and require no liners. These molds are designed for casting sold slugs from 5 to 14 points in any length up to 30 ems. Only one point size and length can be cast with a mold cap.

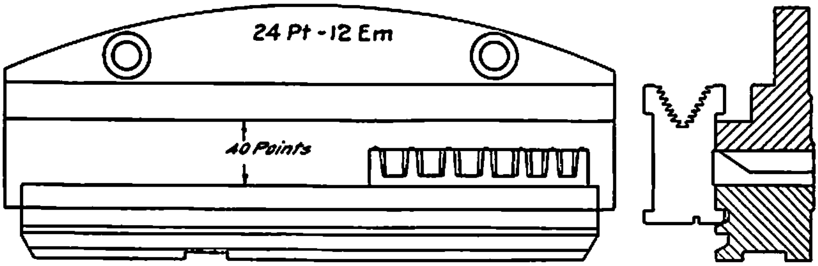


Fig. 123. Headletter Recessed Mold. Molds of this type are made to suit the measures desired and require no liners. These molds are designed for casting recessed slugs in 16, 18, 24, 30 or 36 point sizes. Molds similar to that shown but with a high alignment mold body are made for casting 42 or 48 point slugs. Any length up to 30 ems can be provided. Only one point size and length can be cast with a mold cap.

turning mechanism. The mold disk pinion *4* is disengaged from the mold disk gear when the main operating handle *1* is pushed in. On the end of shaft *5* is a coupling *6* which bears against the mold selecting pinion shaft *7* in bracket *8*. When the mold selecting pinion shaft is moved in by the operating handle, the end of the shaft bears against a shoe *9* on lever *10*, moving the lever towards the back of the machine. This movement is transferred through shaft *11* to lever *12*, the upper end of which engages the mold disk pinion sleeve *13*. The pinion is thereby moved back and out of engagement with the mold disk gear.

The mold turning mechanism is engaged by the same inward movement of the main operating handle. The mold selecting pinion shaft *3*, Fig. 119, is keyed in its supporting bracket *4*. The key *5* in the shaft aligns with keyways in gears *6* and *7*. When the shaft is moved in by the main operating handle, the key in the shaft enters the keyways in the gears, engaging the gears with the shaft. The gear *7* meshes with idler gear *8*, which in turn meshes with the mold disk gear *9*. When the main operating handle is turned, therefore, the mold disk is turned by the series of gears outlined above. One complete turn of the main operating handle will bring an adjacent mold into position.

Fig. 119 shows the ejector shifting and selecting mechanism. The ejector blade magazine is shifted to position in preparation for the selection of the ejector blade by the same inward movement of shaft *3*. There is a small toothed segment at the upper end of lever *10* which meshes with a circular rack on the mold selecting pinion shaft *3*. When the shaft is moved in, the segment follows the rack and moves lever *10* through a small arc. The lower end of the lever depresses locating lever *11*, causing plunger *12* to enter the ejector holder lock. At the same time, the pin in the lower end of lever *10* bears against lever *13*, causing link *14* and rod *15* to move forward. This movement shifts fork *16*, which moves the ejector blade magazine until the smallest blade is in position. This action is only preparatory to the selection of the proper ejector blade.

The selection of the ejector blade is controlled by the length of the ejector blade selecting stop *1* which is brought to position. The stops are mounted on gear *2*, which is timed in relation to the mold disk. As the desired mold is turned to operating position, gear *6* turns gear *2*, which positions the correct ejector blade selecting stop in front of the ejector shifter rod stop *17*. When the main operating handle is pulled out at the end of the mold change, stop *17* banks against the ejector blade selecting stop *1*, which halts the movement of the ejector blade magazine when the proper ejector blade comes to position.

Six numbers are stamped on gear *18*, which correspond with the numbers of the ejector blade selecting stops and the mold numbers. The numbers on the gear register with a small window in the gear guard. As a mold is placed in operating position, the number of the ejector blade selecting stop which is brought into position is indicated by the corresponding number on the indicator gear through the window in the gear guard. This makes it unnecessary to remove the guard in order to check the number of the ejector blade selecting stop with the number of the mold.

Two safety devices are applied to the six-mold disk. The first of these devices, as previously described, prevents the operation of the machine while a mold change is in progress. The device consists simply of a safety hook *14* on lever *15*, Fig. 120, which aligns with a slot in block *16* only when lever *17* is pushed in. The hook enters the slot in the block as a mold change is begun and remains in the slot until the change is completed.

The second safety device prevents the mold disk pinion *4* from being disengaged inadvertently from the mold disk gear. The device consists of a hook *18*, which engages a pin on shoe *9*. The hook is disengaged from the pin in the course of a mold change, but it engages the pin as soon as the change is completed. This prevents the mold disk pinion from being moved back out of engagement with the mold disk gear.

Removal of Mold Disk

In order to remove the mold disk from the mold disk slide at casting position, it is necessary to remove the ejector blade selecting gear *2*, Fig. 119, and the mold disk guide *19*, Fig. 120. In replacing the parts, the following procedure should be used:

Place the mold disk on the mold disk slide with any mold approximately in

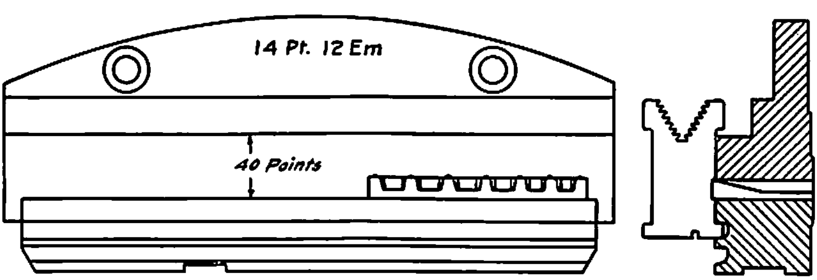


Fig. 124. Headletter Advertising Figure Mold. Molds of this type are made to suit the measures desired and require no liners. The mold shown in the illustration is designed for use with type faces punched in the headletter or auxiliary position only, casting 5 to 14 point solid slugs in any length up to 30 ems. Only one point size and length can be cast with the mold cap. The mold illustrated is suitable for casting overhanging characters up to 40 points in height punched in headletter position. Mold assemblies similar to this type are made for casting other ranges of advertising figure work.

normal and ejecting position. Do not fasten the nut on the mold disk stud at first because the mold must be positioned accurately in relation to the ejector blade. Push shaft 3, Fig. 119, in all the way until the lug on the shaft banks against bracket *4*. While holding the shaft in, push the mold disk back into engagement with gear *8*. Make sure that the mold in ejecting position is in proper relationship to the ejector blade by holding a light in front of the mold and looking through the mold at the blade. *The mold body must be perfectly straight in relation to the ejector blade.* When the mold is in this position, place the nut on the back of the mold disk stud and tighten it. Next, turn gear *18* by hand until the number 1 is directly in line with the keyway in bracket *4*. While holding shaft *3* in, place gear *2* in position with ejector blade selecting stop number 1 directly in front of stop *17*. In meshing gear *2* with gear *18*, make sure that the timing marks on both gears are matched. Replace the guide *19*, Fig. 120. Next, turn mold number 1 to the horizontal casting position by revolving the mold disk directly: do *not* turn the disk by means of the mold selecting pinion shaft. Push the mold disk gear back into engagement with the mold disk pinion, and time the gear with the pinion by matching the timing mark in position on the gear with the timing mark on the pinion. When the parts are replaced in this manner, they will be properly timed.

Ejector Blade Selecting Stops

In the description of the six-mold disk mechanism, it was pointed out previously that the selection of the ejector blade is controlled by the length of the ejector blade selecting stop which is brought to position. The relationship between the ejector blades and the selecting stops is shown in diagrammatic form, Fig. 125. The standard series or combination of ejector blades is represented in the illustration. Beginning with the longest blade (30 ems) at the left, the blades decrease successively in length toward the right. For convenience of reference, the twelve blade positions of the ejector blade magazine have been designated by letters from *A* to *L* inclusive. In the diagram, therefore, a 30-em blade is in position *A*, a 22-em blade in position *E*, a 6-em blade in position *L*, etc.

The selection of the ejector blade, as stated above, is controlled by the length of the ejector blade selecting stop which is brought to position. Since the ejector blade magazine contains twelve blades, twelve selecting stops of different lengths are provided for their selection—*one stop for each blade position of the magazine.* In Fig. 125, therefore, the blade in position *A* is selected by stop *A*, which is .468″ long; the blade in position *B* is selected by stop *B*, which is .543″ long, etc. If the blade in position *L* is to be used, stop *L* (1.293″) would be required to bring the blade into operating position.

The examples just cited indicate, therefore, that the ejector blade selecting stops control the twelve blade *positions* of the ejector blade magazine. If a 20-em blade is in position *F*, as in the standard layout, selecting stop *F* (.843″) will bring that blade into position. If a special layout has been specified, however, with a 21-em blade in position *F*, the same selecting stop *F* (.843″) will bring the 21-em blade into position. To cite another example, a 17-em blade is inserted in position *G* in the standard ejector blade magazine layout. To select this blade, stop *G* (.918″) is required. If a 16-em blade is inserted in position *G* in a special layout, however, the same selecting stop *G* (.918″) will bring the 16-em blade into position. ***The ejector blade selecting stops, therefore, select the ejector blades according to the positions they occupy in the ejector blade magazine. This rule holds true for all ejector blade layouts, no matter what combination of blades is provided in the ejector blade magazine.*** The ejector blade selecting stops are of ***standard lengths*** because, as previously stated, they select only the twelve ***positions*** of the ejector blade magazine. Each position of the magazine, of course, is constant, thereby making it possible to standardize the lengths of selecting stops.

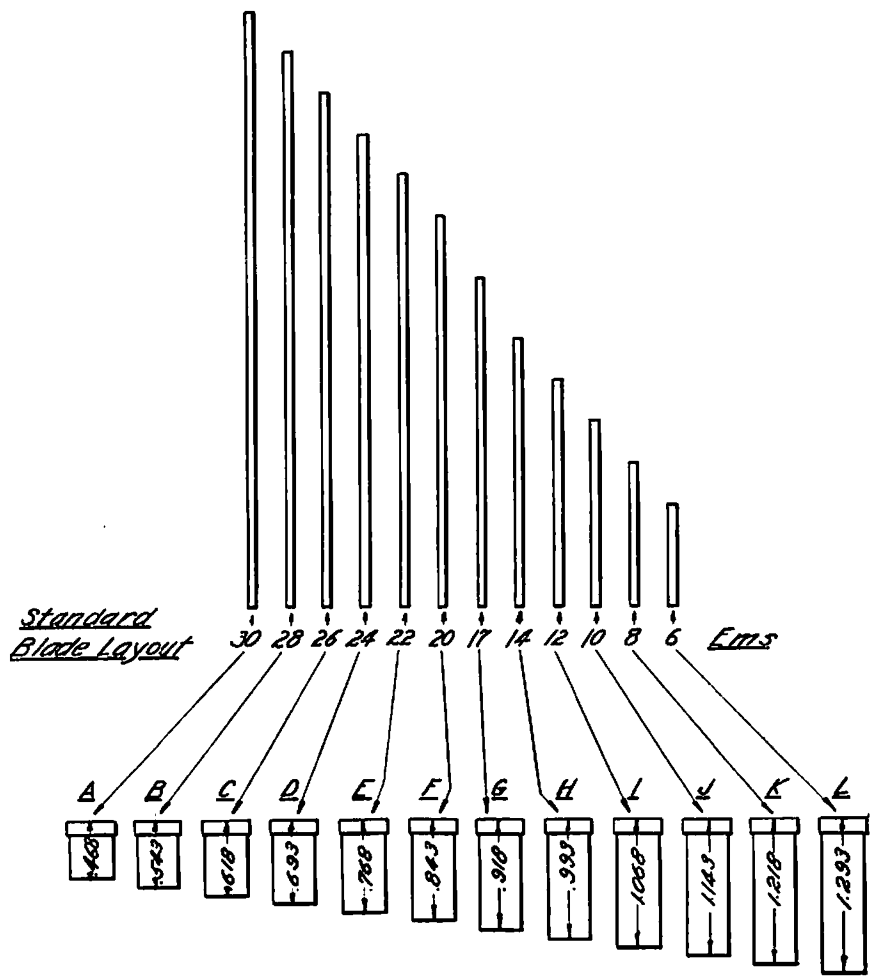


Fig. 125. Six-Mold Disk Ejector Blade and Selecting Stop Layout. The illustration shows in diagrammatic form the relationship between the ejector blade positions and the corresponding ejector blade selecting stops. Complete information for ordering selecting stops is contained in the text.

Since the ejector blade selecting stops select the blades by *positions,* it is possible in instances where slug lengths are duplicated to provide two ejector blades of the same length for alternate use in order to minimize the wearing of any one blade. Suppose, for example, that a six-mold disk installation specifies the following six slug lengths: 30 ems, 30 ems, 24½ ems, 24½ ems, 12 ems and 12 ems. In this instance, it would be possible to supply duplicate blades as follows:

Ejector Blade	*Position*	*Ejector Blade*	*Position*
30 ems.........	A	24½ ems.......	E
30 ems.........	B	12 ems.........	I
24½ ems.......	D	12 ems.........	J

If the 30-em blade in position *A* was originally in use, therefore, the 30-em blade in position *B* will be utilized when the second 30-em mold is used. The same selection of duplicate blades will occur, of course, in the case of the 24½ and 12-em molds. Through this arrangement, each mold has its own individual ejector blade and the wearing of each blade is minimized by the fact that six blades are being used instead of three.

Ordering Ejector Blade Selecting Stops. When ordering ejector blade selecting stops, the following information should accompany the order:

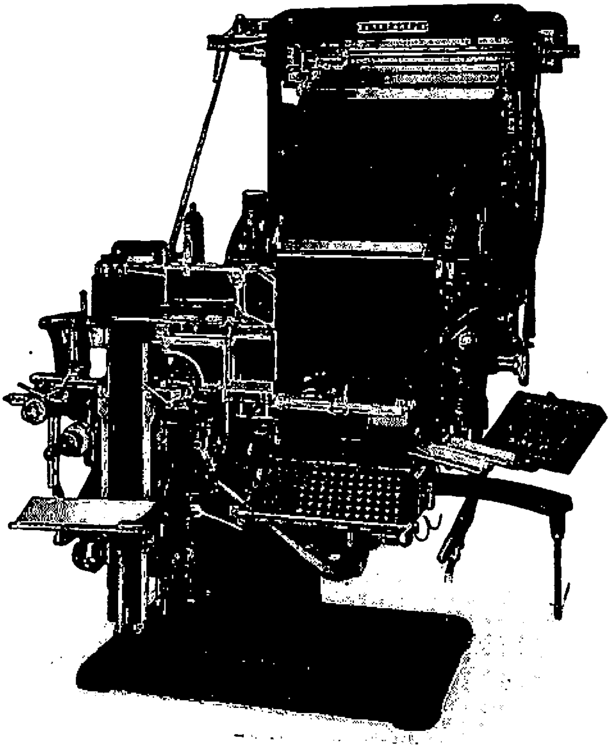
(1) Ejector Blade Position and Length. The twelve ejector blade positions, as shown in Fig. 125, are designated by letters from *A* to *L* inclusive. If a selecting stop is required for the 24-em blade (standard layout), the ejector blade *position* would be regarded as position *D.* The letters designating the blade positions are constant, no matter what series of blades is contained in the magazine. If a special blade layout has been provided, therefore, the letter positions shown in Fig. 125 still hold true.

The em length of the ejector blade for which the selecting stop is being ordered should be specified. This information is necessary in order that the em length can be stamped on the selecting stop for the convenience of the customer. This is advantageous to the user, of course, because it indicates immediately which blade the stop will select.

(2) Ejector Blade Selecting Stop. The ejector blade selecting stop should be designated by position letter, as indicated in Fig. 125.

When ordering a mold or a liner insert for a length of slug not previously cast, it is necessary, of course, to order an ejector blade selecting stop to select the required ejector blade.

If an ejector blade requires replacement, it is necessary only to specify the em length of the blade, as heretofore.



Model F4 Intertype

WITH CHAIN SHIFT

Mixer machine equipped with four 90-channel main magazines.
See the table on page 357 for complete list of Intertype
models and various equipment combinations.