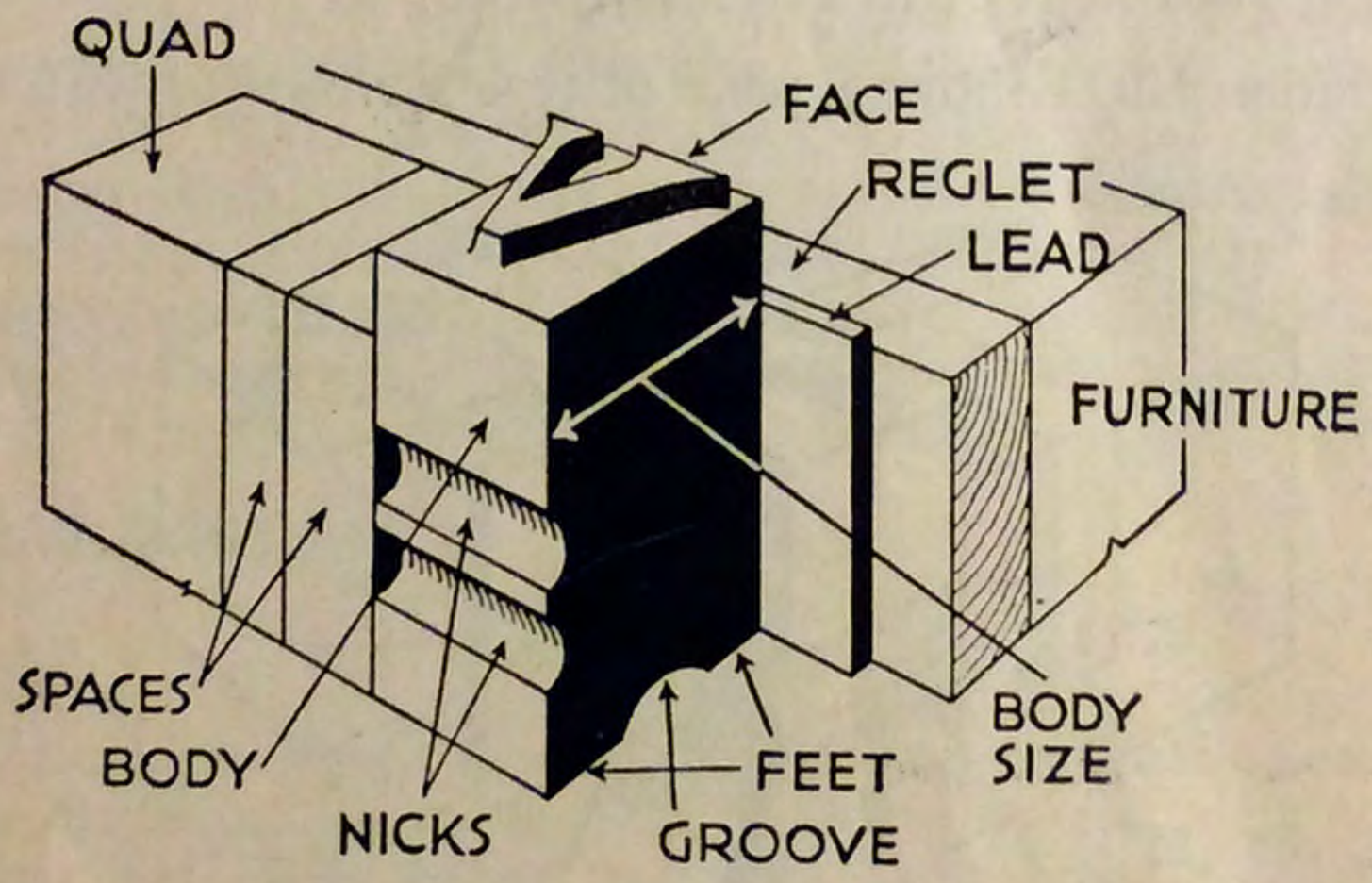
TYPE

AND

TYPESETTING

(This booklet is an abstract from "Printing Made Easy", which is no longer issued)



FOR USERS OF ADANA

PRINTING MACHINES

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CHAPTER I

PRELIMINARY

BEFORE the operation of setting type is described, it is necessary to have some brief knowledge of the materials and terms used. This information will be a considerable aid to the beginner when he reads the following chapters, as of course certain technical terms will be referred to.

Most of you will be familiar with the ordinary printers' type which is a mixture of lead, antimony and tin, but there is another type used for larger work (such as small posters) which is made of hard wood. Apart from the usual capital letters and small letters you will of course understand that all the signs and symbols which are of ordinary use have to be added to the complete alphabet. This alphabet, including the additional signs, is made up with certain proportionate numbers of characters, and this constitutes a " fount "—sometimes shortened to the word font. Thus we refer to a fount of type.

Illustration No. 1 shows a piece of type surrounded with a selection

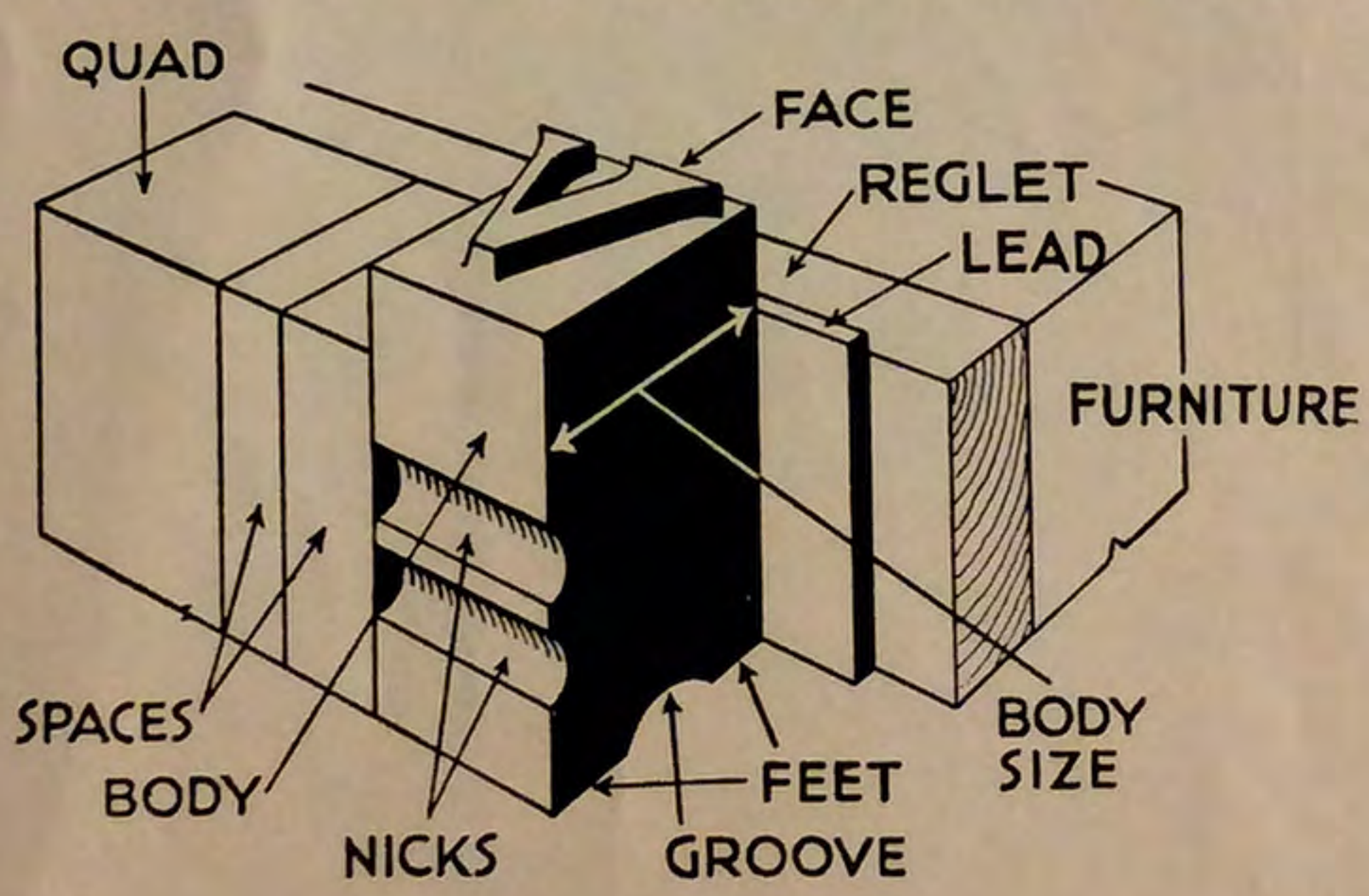

Illustration No. 1.

of different kinds of spacing material. This spacing material will be referred to and described later, but take the piece of type itself and note the names of its different characteristics. It will be valuable to you to memorise these names.

Firstly is shown the face—that is the part of the type which actually collects the ink and prints. Note that the face is shorter than the body. There are occasions when the whole of the body is used for the face of the type but they are exceptions.

The flat surface on the top of the body above which the face is raised is known as the shoulder. The type stands on feet between which there used to be a groove cut, so if you have type of this nature it was cast not by the latest methods but by older founding machines. Present-day type has no groove at foot.

You will notice that on one of the upright sides of the metal body there is a nick cut. This is for the compositor so that he will easily recognise the bottom of the letter and when composing, as is done upside-down, the nicks will appear as a continuous line. (See illustration No. 1.) It will then easily be noted if one or more of the characters have been set wrongly.

The height of a piece of type from the foot to face is 0.918 of an inch. This is the British Standard, but some foreign types differ in height.

As it is imperative that the type face when printing must all be of a consistent height, you will readily appreciate that you should always purchase replacements and additions to your type from one founder, more especially of the same series of type. There may be the possibility of a differing height should you purchase type from one founder and then go to another, and uneven wear will occur if density of the metal is not identical to the original. Should one type cast by a certain firm be softer than another in the least degree, you will understand that this, with wear, is likely to condense, and naturally irregularity of impression must result.

The Measurement of Type

Although all type is one height, the sizes vary considerably in order to carry large or small characters. The one and only measurement which concerns you is that of the "body" size. (See Fig. 1.)

The printer uses for the measurement of type a unit known as the "Point", which to all intents and purposes measures 1/72 of an inch. This is applied to the size of the metal shank or body, and has no definite relation to the size of the printing character it carries.

The sizes which you will need to remember are 6, 8, 10, 12, 14, 18, 24, 30, 36 and 48 point, as these are the sizes which you will be using.

It is easy to ascertain how many lines of any size type will be set in 1 inch depth of a page by dividing 72 by the point size of the type to be used. Thus $72 \div 6 = 12$ lines, $72 \div 8 = 9$ lines, $72 \div 12 = 6$ lines, etc.

The "Em" Defined

We must first get firmly into our minds the fact that the word Em is used in two entirely distinct and unrelated ways.

The first, and simplest, is one that can be quickly memorised in that it indicates simply a square space, and as every point size has an Em space, it may be of any size from 6 point upwards. It can always be recognised, as in this sense it is always prefixed by a Point size, such as a 6 Pt. em.

The second use is the printers' standard of measurement of width and depth of a printed page, and in this use it is always one-sixth of an inch in linear measurement. (The fact that 12 point is also one-sixth of an inch need not trouble you.)

Thus the printer, in describing a printed page, or deciding the width he will set type to, even when using an inch ruler in his hand, converts the measurement to EMS. For example, the man in the street would say the type on this page is $4\frac{1}{3}$ inches wide, while you as a printer mentally multiply by 6 and say 26 ems.

REMEMBER: The size of type depends upon the size of the body, and is measured in points, there being 72 points to one inch.

The width of type matter is measured in 12 point ems, there being 6 ems to one inch.

Spacing and Other Material

In order that words may be properly spaced out and short lines filled up, *spaces* and *quads* of varying width, but of the same depth as the type, are employed. They are lower in height than the type itself and so they do not print.

There are five different widths of space. They are:—

Em space, as explained above, equivalent to the square of the type size.

En space, equal to half the em space. (Sometimes called a nut.)

Thick space, equal to one-third the em space.

Mid (or middle) space, one-fourth the em space.

Thin space, one-fifth the em space.

Quads are made in multiple widths of the em and are usually supplied in three sizes: 2-em, 3-em and 4-em. Spaces are cast for all sizes of type, quads from 6 to 18 point only.

In order to separate or space out between lines of type *leads* are used. They are supplied in thicknesses of 1-pt., $1\frac{1}{2}$-pt., 2-pt. and 3-pt. The process of spacing the lines by means of these leads is known as leading out.

Thicker spacing material is of two varieties, *reglet* and *furniture*. It is made of hard wood, such as oak or beech, and is supplied in strips accurately planed to various thicknesses. Reglet is the thinner kind, being six, eight, ten, twelve and eighteen points thick. Furniture is the term applied to spacing material thicker than eighteen points.

CHAPTER II

HOW TO SET TYPE

ALTHOUGH the professional method of setting type is with a composing stick and which is dealt with in detail here, it is convenient to know of other ways which can be used by the beginner, though it is emphasised here that directly one becomes used to the stick then it will be found quicker and easier in the majority of cases.

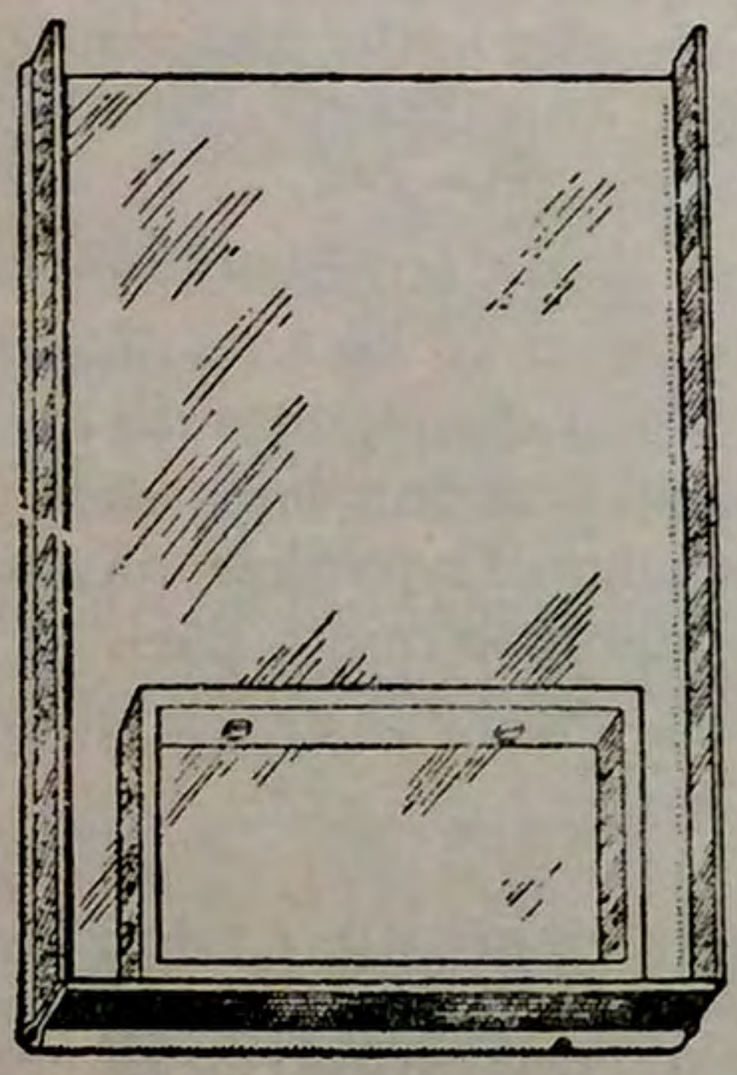

Fig. 6. A chase resting on a galley.

The beginner with a small machine such as the Adana High-Speed No. 1 may profitably set his type straight into the bed of the machine or in a chase resting on a galley.* (See appropriate section.)

Both these methods are fully described later in this chapter. They are indeed adaptations and modifications of the composing stick method. They are useful to the beginner because they familiarise him with the handling of type.

Using the Composing Stick

The Adana Composing Stick is illustrated in Fig. 7.

To use the composing stick it is necessary to make it up to the size required by using some fixed and absolute unit. Beginners are apt to use leads, rules, furniture, or anything else handy as a unit of length for the stick. This is a thoroughly bad practice and should be avoided.

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* The chase is a metal frame into which the type is set and the whole placed in the machine bed. As will be explained, it is possible to set the type direct into the bed of the High-Speed Machines, Models Nos. 1 and 2; but it is quite impossible to set direct into the bed of other models. In any case one of the great advantages of the chase is that type set up for a job which must be continually repeated can be kept set ready to slip into the machine and run off at any time.

A galley is a flat tray with three sides—not unlike the inverted lid of a biscuit-tin with one side removed. It is used for carrying typeset matter and is also used for storing type that is tied up and required for a further job at a later date. A No. 1 High-Speed chase and a galley are illustrated in Fig. 6.

Suppose that it is necessary to set the lines three inches long. You will remember that this measure, three inches, if changed into terms of ems, will represent 3 x 6 ems, that is, 18 ems.

So, set the stick to three inches. The best method is to place pieces of type in the stick—in our particular case six pieces of 36-pt. type—or twelve pieces of 18-pt., or 18 pieces of 12-pt., and so on, to make up 18 ems. Capitals (upper case) should be set up body-wise in the stick and a piece of thin paper inserted at the end (see Fig. 8), so that the leads used for spacing the lines will not bind.

The composing stick should be held as shown in Fig. 9. Sometimes matter is to be set solid, that is without spacing between the lines. As it is almost impossible to set one line of type direct on another, compositors use a piece of brass rule, cut to shape, as shown in Fig. 10.

Fig. 7. Composing Stick.

These rules are known as composing rules or setting rules, and sets already cut to various standard em lengths may be purchased. It will be noticed that there are small ears at each end; these ears aid the compositor to lift the rule out of the stick after setting each line.

How to Start Type-setting

Before you start setting, read your copy carefully, noting particularly spelling, capitalisation and punctuation. Where the copy demands different sizes and styles of type, make sure that you have the cases of the various types by you so that no time will be lost searching for odd letters. Read a few words at a time and proceed setting up the type nick uppermost from the left-hand corner of the stick.

When setting, look at the letter as it lies in the case, and in picking it up turn it in the fingers so that the nick comes outward and uppermost in the stick. Do not look at the letter once you have picked it up, but look for the nick of the next letter whilst placing the first one in the stick. No attention need be paid to placing spaces and quads nick uppermost. Indeed, the majority of spaces are cast without nicks.

How to Justify Lines of Type

To keep the line under perfect control while composing, the thumb of the left hand should always be held against the last letter of the line, the end of the thumb being slightly raised as each letter is placed in the stick, when the thumb automatically will press the letter down. Continue setting until you have placed in the line as many words as possible.

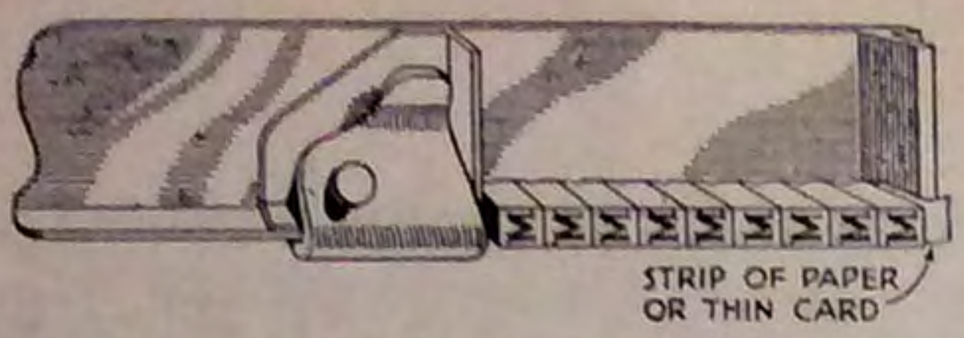

Fig. 8. Making up the composing stick.

If the final word in the line will not fit in, and it is a word of more than one syllable, it may be divided with a hyphen. If the line does not exactly fill the measure it is necessary to increase the spacing between words until the line is tight enough to stand alone when pushed up from the bottom of the stick.

Remember: *Never ram spaces home nor leave a line insufficiently spaced so that the type characters are loose.*

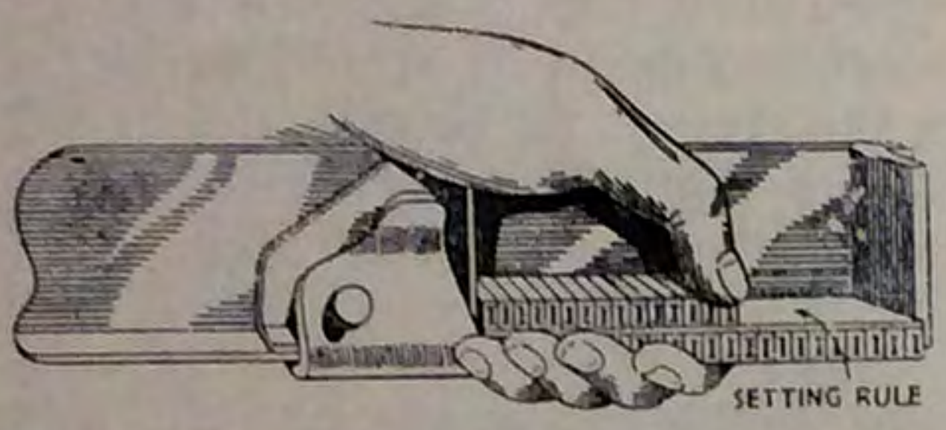

Fig. 9.
The composing stick in use.

Both these mistakes are common in the setting of beginners and both lead to endless trouble in later stages of the job. A line should be tight—no more and no less. This process of inserting extra spaces is called justifying the line.

When setting, do not stand stiffly at the case, but assume an easy position and carry the stick in the direction of the compartment from which the next piece of type is to be taken, moving the left hand from compartment to compartment throughout the operation.

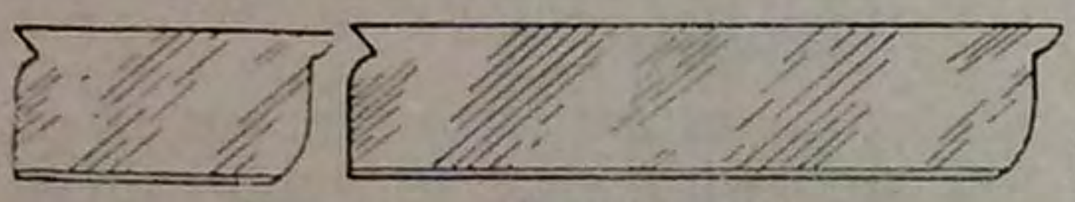

Fig. 10. Setting Rules.

Proceed setting each line in the same manner, justifying each line until the stick is full.

A Job—Taken Step by Step

So much for general instructions. Realising however the pitfalls that perplex the beginner, we will now take an actual job and demonstrate the setting step by step. As an example we propose to print the following with its headings and border.

For the moment we ignore the border and the first thing is to measure the width of our paper and to decide the measure to set to.

We find the paper is 5 inches wide. We must have margins around the sheet and inside the border and decide that 2 ems will be needed in each case. Thus our measure is found by taking away from the paper size (30 ems) 2 + 2 + 2 + 2 plus 2 ½ ems for the border. leaving us 21 ems for our type width.

Set the composing stick to this measure and find our 21-em setting rule or cut a piece of lead or rule to this length. Place our copy in an easily readable position and we are ready to start.

For easy following we will assume that we have the No. 2 standard outfit with 18 and 10-pt. bold and 10-pt. light type.

It is obvious that the heading is most important so we use our 18-pt. bold capitals for this and taking the composing stick in our hand we take the first letter and place it in the stick at the left-hand side with the nick away from us. Continue letter by letter until the word is complete. As so often with headings the type is far too short to fill the line and as it is usual to "centre" short lines we place 18-pt. quads at either end in equal quantity and finally take up any small remaining space with 18-pt. spaces until the line is just nicely firm.

Now place the setting rule on this line and continue with the second one, which being a sub-title needs to be bold and for this we use our 10-pt. bold capitals. As capitals are used the spacing between the words must be greater than usual so we place En spaces there and justify in the same way as before. Bring your setting rule forward again.

Our next item is a short line for which we use brass rule but first place a 21-em length of lead in the stick. We decide that the rule should be 9 ems long and cut it accordingly and in addition 2 pieces of lead of the same thickness each 6 ems long to place at either end. Now another 21-em lead and we have finished the heading.

The remainder of our job is straight setting known as "body matter" and this calls for the use of our 10-pt. light type in capitals and small letters (or upper and lower), and our word spacing as a rule must be narrower than for the heading, so we find that the Thick space is required.

The first line starts a paragraph and is indented so we start by placing a 10-pt. Em space at the beginning. A capital A and W start the line and we set straight on until we reach the end of the last word that can be placed in the stick, when we find a small space over. This has to be avoided so that all lines of the body matter may be equal in length and we go back and study the words to see where it is possible to increase the spaces. Here we are fortunate as we find that by placing En instead of Thicks before capital letters the odd space is eliminated.

Bring the setting rule forward and carry on with the next line which we find with thick spaces between words exactly fills the stick and needs no adjustment.

The third line however we find is short and once again we have to study where we can put thicker spacing. This one is more awkward as we have no capitals, and no spaces where two straight letters come together. Our only course is to place these En spaces between the 2nd and 4th and the last 3 words where one straight letter ends or begins a word.

This process of re-spacing is known as justification and is always necessary in body setting, the rules being that where straight letters such as "l and b, d and h" come together the space can be greater if necessary than where round letters such as "c, e, o, s" are next to each other. Sometimes it is easier to reduce a few spaces in order to get another word completed in the line than to space out and in that case the next thinner space "Mid" is used and first the round letters are reduced as far as necessary. Carry on with the composing until the whole of the wording has been set up, when our next job is to transfer the type from stick to galley ready for spacing out.

We will now jump ahead a little and after the job is transferred to the galley and spaced out to the required depth we can deal with our border. First cut 24-pt. furniture to surround the type on all four sides and then place the pieces of border around all four sides by hand. As this border is all in square pieces it is unnecessary to reset the composing stick and use it for this operation, and your job is ready for insertion in the chase.

A piece of brass rule cut to the em measure as a setting rule may be used as a temporary expedient.

Removing Type from the Stick

We will now return, for the moment, from this particular case to the general principles of typesetting. When the stick is full, the type must be removed therefrom on to a flat tray or galley. The best method of performing this manoeuvre is to proceed as follows:—First place a piece of brass rule or the composing rule between the bottom of the stick and the set type, then place another piece of brass rule or several pieces of lead at the top so as to get a firm grip on the matter.

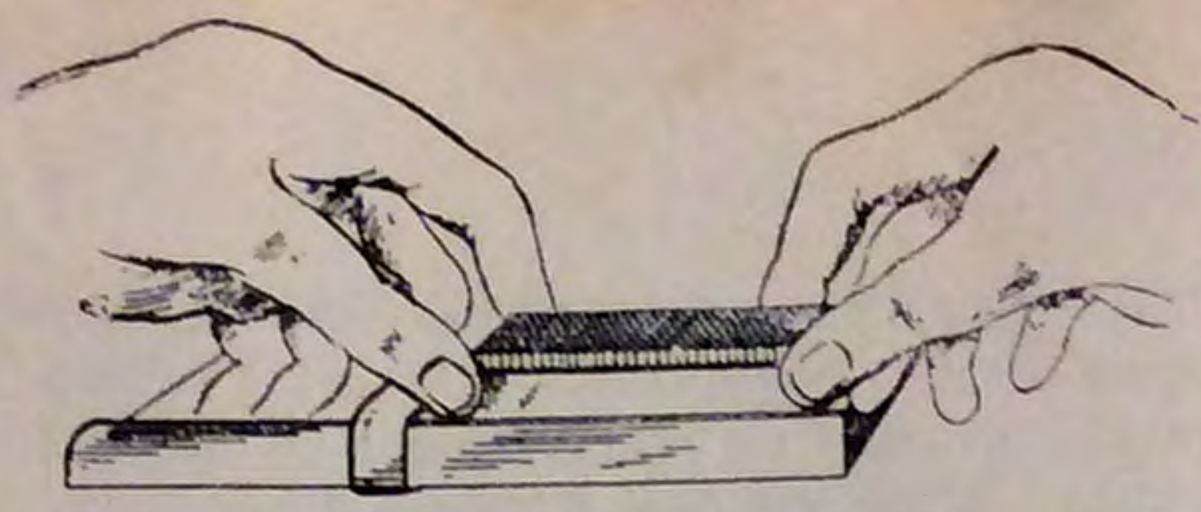

Fig. 11. Removing a "stickful" of type from the composing stick.

Place the stick firmly against the case or on the galley. With the thumb and forefinger grip the type set up between the two pieces of brass rule, using both hands, the left hand on the left side and the right hand on the right. Fig. 11 illustrates this better than mere words can describe it.

Place the second joint of the second finger against the side of the matter and withdraw the type from the stick, gradually sliding the balls of the thumbs down on the type, thus obtaining a firmer hold. The type matter can now be removed easily from the stick and placed on the galley. Place it in the position shown in Fig. 12, never in any other position.

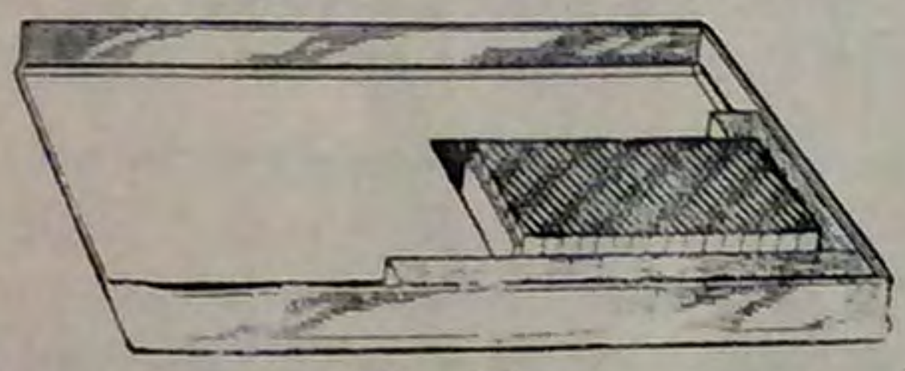

Fig. 12.
Type-matter on a Galley.

You will note that in Fig. 12 two pieces of furniture are placed in the galley on two sides of the type. The reason for this is two-fold—firstly, to enable the compositor to push the type away from the corner when tying up the job if the matter is bulky, and secondly, so that the type can be placed directly into the position it is to occupy in the chase.

Tying-up Type-matter

Sometimes it is necessary to have matter set and to leave it standing for future use. To leave standing matter loose is obviously very foolish, as it is likely to be knocked and deranged. Therefore, in such circumstances, it is necessary to tie it up.

Fig. 13 shows clearly the method of tying up a job. Using thin, strong twine, begin at the upper left-hand corner, and holding about half an inch of the twine between the thumb and forefinger of the left hand, pass the cord once round the job and cross the cord over the first layer to hold it fast to the corner.

Wind on two or three more layers, then move the job away from the corner of the galley and push the string down on the type. Do this carefully. Continue winding until five or six layers have been put on, then tuck the end in as shown in Fig. 13. Keep a firm hold on the matter

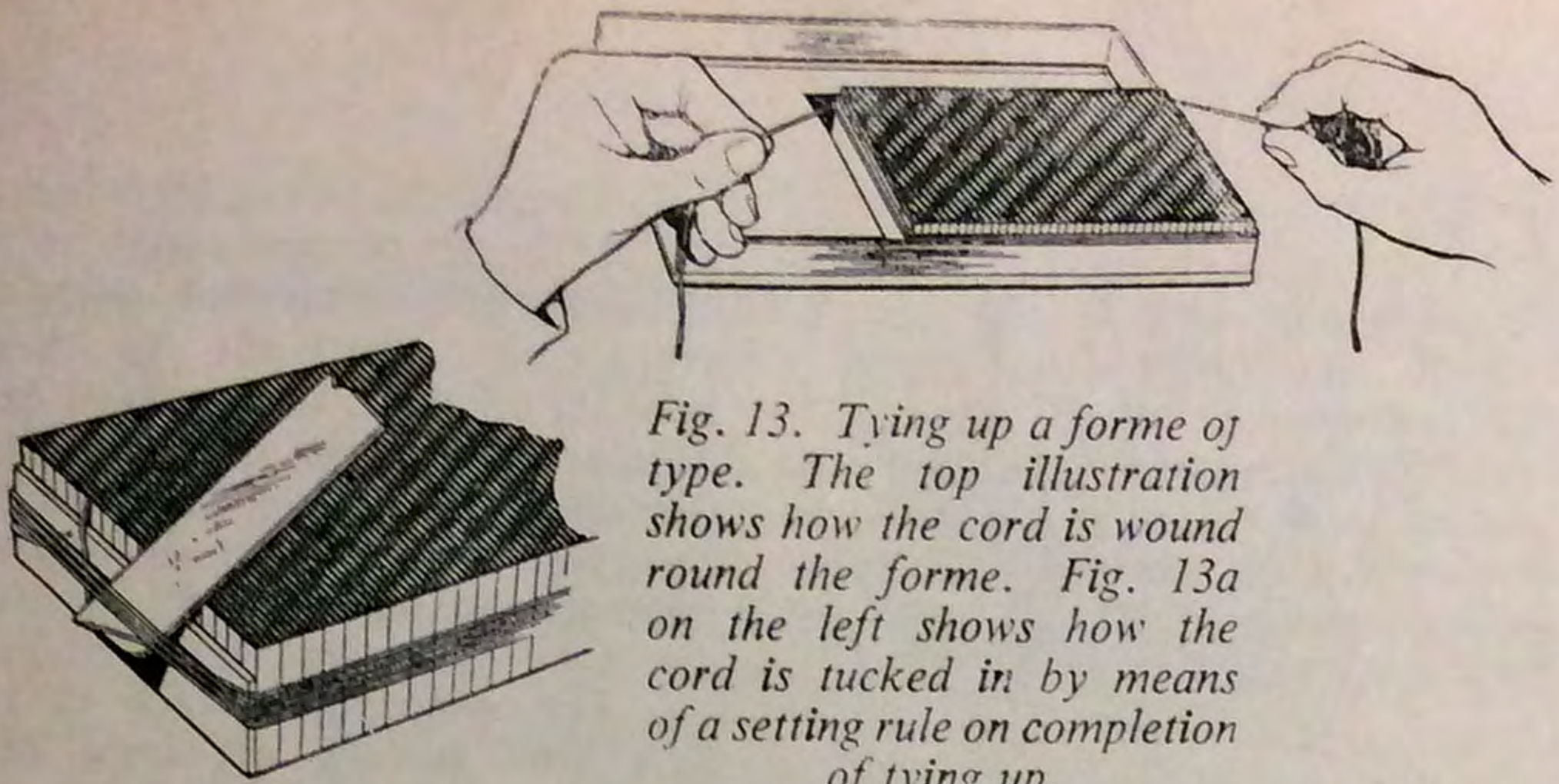

Fig. 13. Tying up a forme of type. The top illustration shows how the cord is wound round the forme. Fig. 13a on the left shows how the cord is tucked in by means of a setting rule on completion of tying up.

while tying it up, making sure that the cord is taut and that layers are not crossed over other layers. If this is done, the cord is likely to catch when being removed and is apt to cause the type to slip and tilt to one side, putting the job "off its feet".

Imposition and Locking-up

In many large printing shops it is customary to take proofs at this stage and make the necessary alterations before locking the type up in a chase. But the small printer will probably find it more convenient to reverse the order and to lock the matter in the chase before he takes a proof. Thus he will be able to proof his matter directly from the machine.

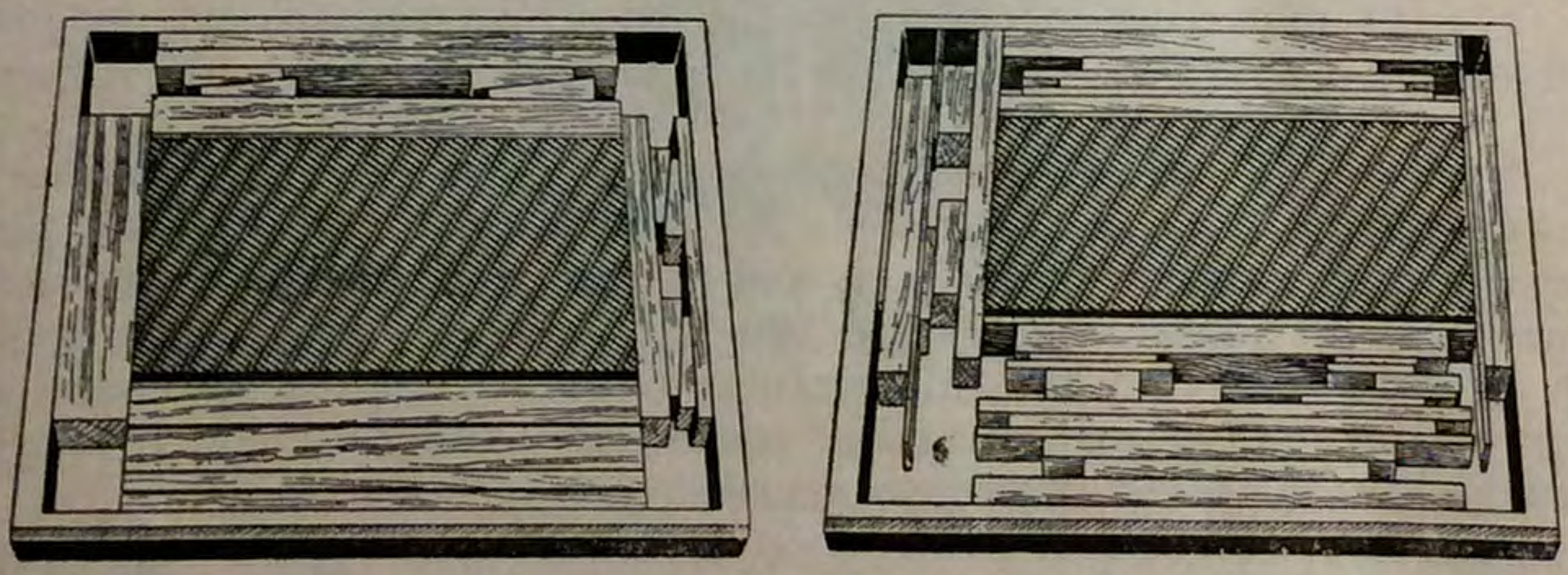

Fig. 14. The Right Way. *Fig. 15. The Wrong Way.*

How—and How NOT—to lock up a Forme of Typematter.

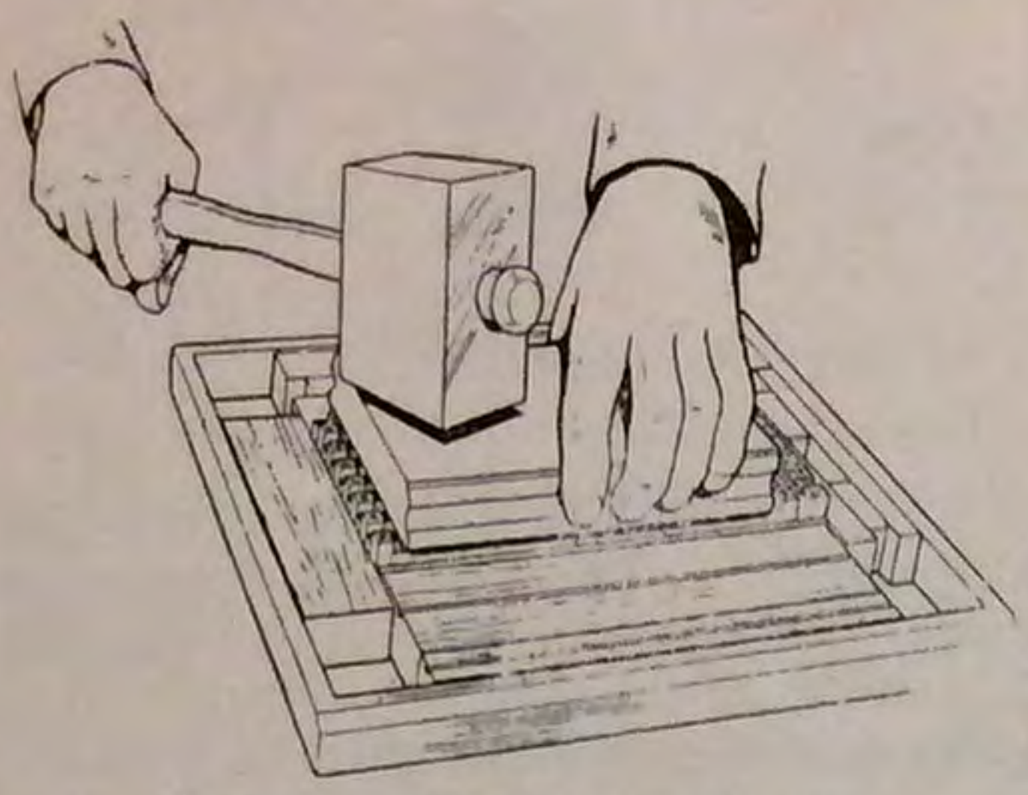

Fig. 16. Planing a Forme.

The general principles in locking up formes of type matter in a chase are practically the same in every case. Where the type has been set up in the stick, placed on a galley and tied up, as previously described, the tied-up matter is now very carefully slid on to the imposing surface.

The imposing surface is a flat, level surface of stone or metal, a good substitute being a piece of plate glass. (In professional shops the imposing surface is always referred to as *the stone*, and the men who attend to the business of imposition are known as stone-hands.)

Now take the chase and place it on the stone in such a way that the type is in the centre. Place wood furniture round the type to fill the vacant parts, leaving just enough room to insert the quoins or wedges which serve to lock up the job. (N.B.—Chases for No. 1 and No. 2 Adana High-Speed Machines are fitted with adjustable locking-screws, which obviate the necessity of using quoins, but with other models wedges must be used.)

The type matter should be placed as near the centre of the chase as possible, with furniture of suitable length on the four sides—two sides bearing close up against the side of the chase, the remaining sides being left open for driving in the quoins one against the other.

Fig. 14 shows the correct way of placing furniture around the job and locking it up. Fig. 15 shows the incorrect way of locking up a forme.

Note the advantages of the first method as against the disadvantages of the second. It is easily seen in Fig. 14 that both the job and the furniture are locked up by the action of the quoins at the same time and there is no likelihood whatever of the job working loose, whereas in Fig. 15 it is obvious that the only bearing which the furniture has is on the short end of the type matter and in consequence the job is apt to work loose and cause endless trouble in machining.

Having placed the furniture round the tied-up matter and left room for the quoins, carefully remove the cord from the matter and then tighten up the quoins, using only finger-pressure. The job is now ready for planing. This business of planing is very important and should be done carefully, as on it the even appearance of the finished print largely depends. Take the planer, a flat piece of wood, and, placing it face down on the type, tap the back gently with a small wooden mallet. (See Fig. 16.)

Fig. 17. Shooting Stick.

It is important to see that the stone is perfectly clean and free from grit, which would upset the whole purpose of the planing process. Do not slide the planer over the face of the type, but lift it each time you wish to tap a different portion of the surface. The object of planing is to ensure that the type is perfectly flat and level. Having planed the forme, the quoins are now driven tight with a shooting stick. (See Fig. 17.) If you have expanding mechanical quoins, these are tightened by using the quoin key provided.

Testing the Forme for Faults

Before lifting the chase from the imposing surface and placing it on the machine the forme should be tested to make sure that all the matter is firm and that there is no loose type or spacing material. To do this, gently raise one corner of the chase and then press on the surface of the type matter lightly with the fingers. Should everything feel nice and firm, the forme is securely locked up.

To make absolutely sure raise one side of the chase about an inch and then let it fall on the imposing surface, watching the type matter as the forme drops. If any of the type slips there is something wrong. The trouble will usually be found in a line improperly spaced and not fully justified or if some of the spacing material is shorter—or longer—than the type measure. This must be remedied at once by loosening the quoins or locking screws and putting the fault right.

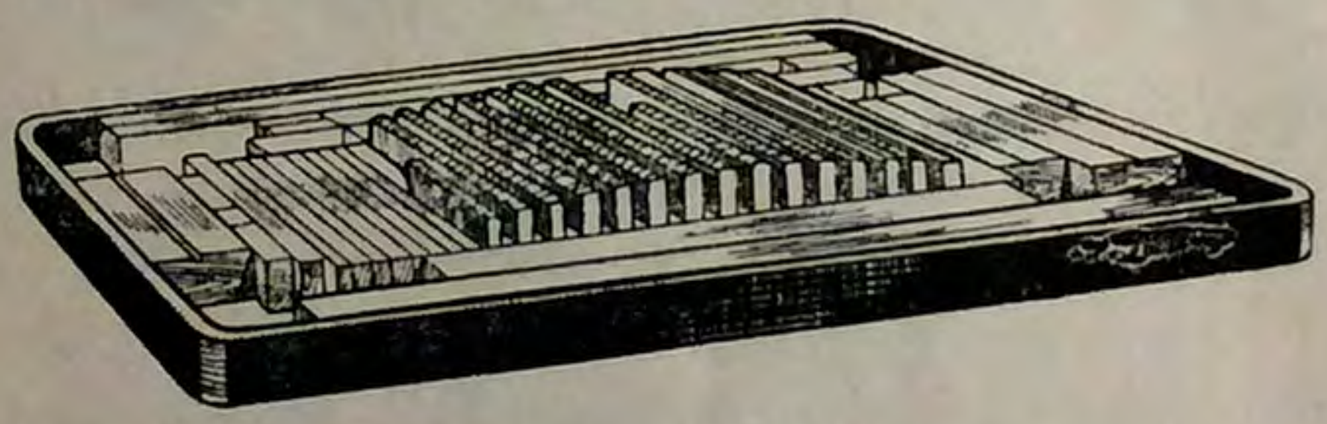

Fig. 18. Bulged Forme.

If a loose forme is put on the machine the type will drop out during the operation and ruin the whole job. An equally serious fault is locking the forme too tightly. The quoins or the locking screws should be so adjusted that the matter in the chase is held firmly. If they are driven up too tightly the matter in the chase is likely to bulge and result in endless trouble. The pressure of the machine on a bulged forme is likely to make it burst, and a burst on the machine means the retrieving of all the type and starting the whole job over again. A bulged forme is shown in Fig. 18.

Setting in the Chase

So we come to the second method of setting type—namely, setting into a chase resting on a galley.

The procedure for setting in a chase is practically identical with the method of setting direct into the bed of the machine. The only difference is that since the chase is an open frame, some kind of perfectly flat bottom is required on which to rest the chase. Hence the galley is used. In setting a chase commence by placing the chase on the galley and tilting the galley on the table upwards and slightly to the left. In the actual business of setting the type proceed in exactly the same manner as described for setting direct into the bed.

The series of illustrations (Figs. 19 to 26)* should be self-explanatory to those who have carefully studied the earlier instructions. The few brief following notes will, however, give some tips well worth observing.

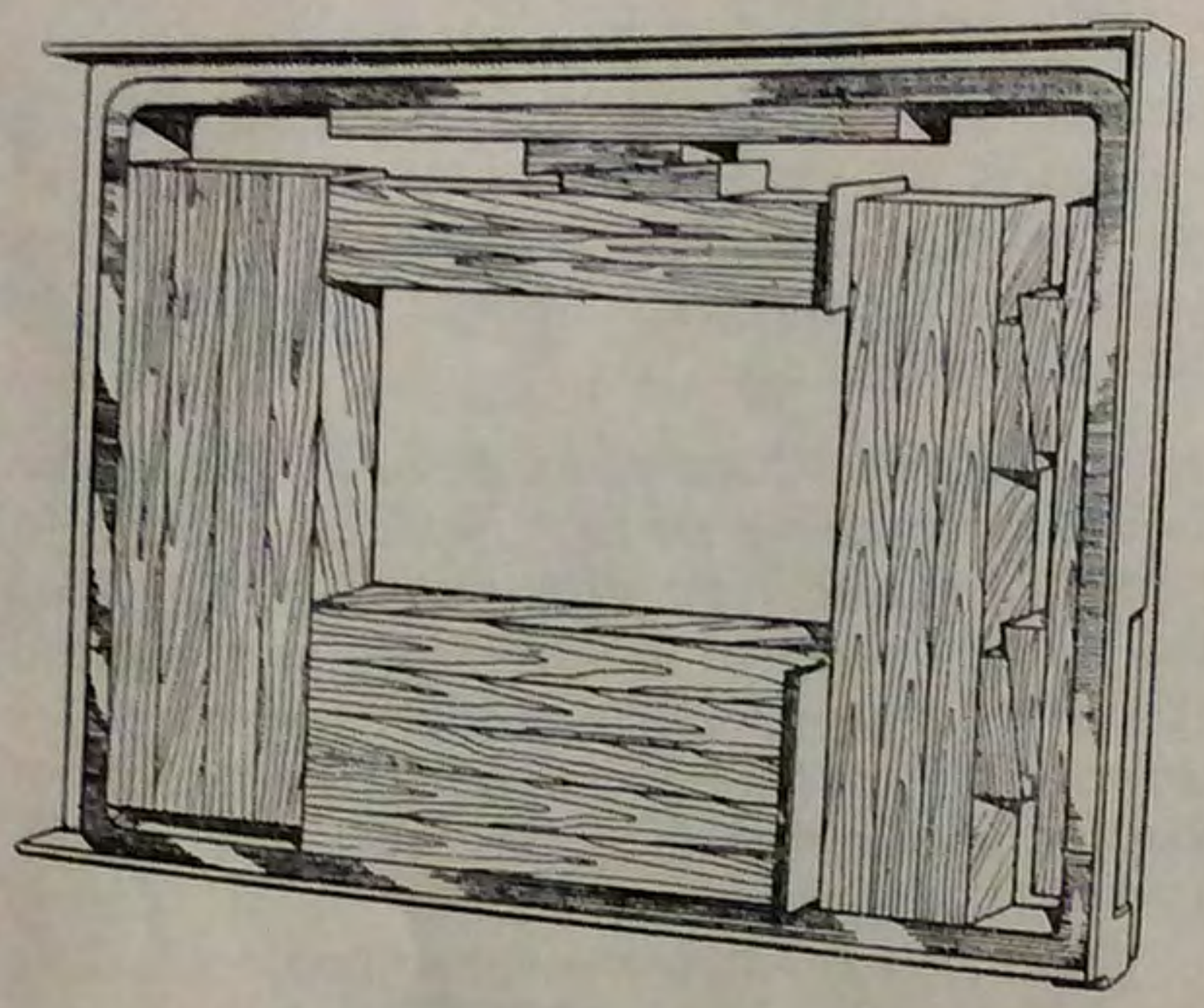

Fig. 19. Chase with furniture and reglet locked up with a vacant space in the centre.

Fig. 19 shows the chase with furniture and reglet locked up leaving a vacant space in the centre for type. Note here again the use of thin strips of card between the horizontal and upright furniture on one side of the chase. These strips are removed at the completion of setting before finally locking up.

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* You may be equipped with expanding mechanical quoins instead of the wooden wedges shown in the illustrations. The principles of locking up are not affected by this.

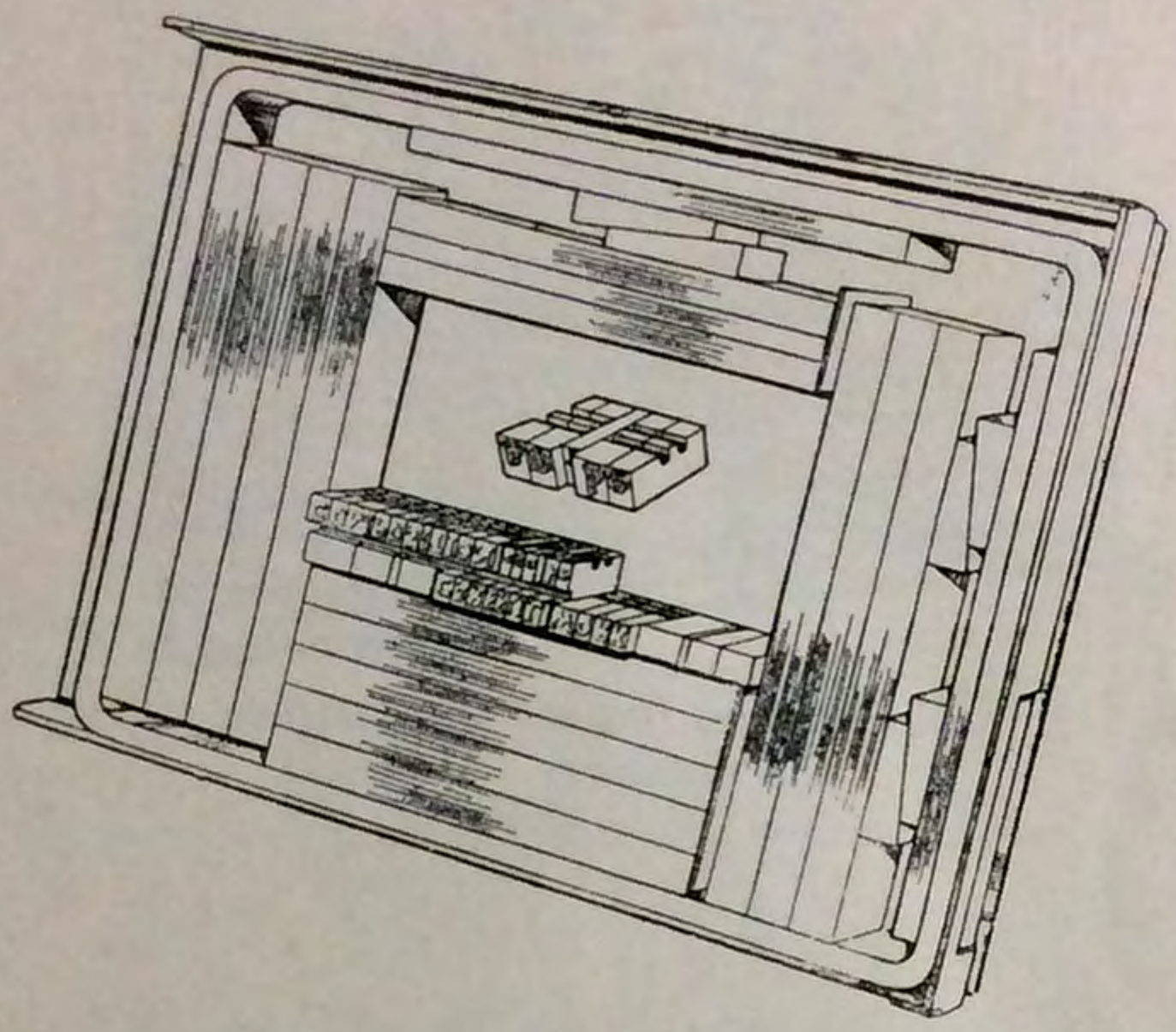

Fig. 20. Showing title line and part of first line set.

Fig. 20 is self-explanatory. Here we see the first line and part of a subsequent line already set in the chase. Inset is an enlarged close-up of typeset matter showing clearly the type characters set upside down with a space between. Imagine the chase tilted to the left.

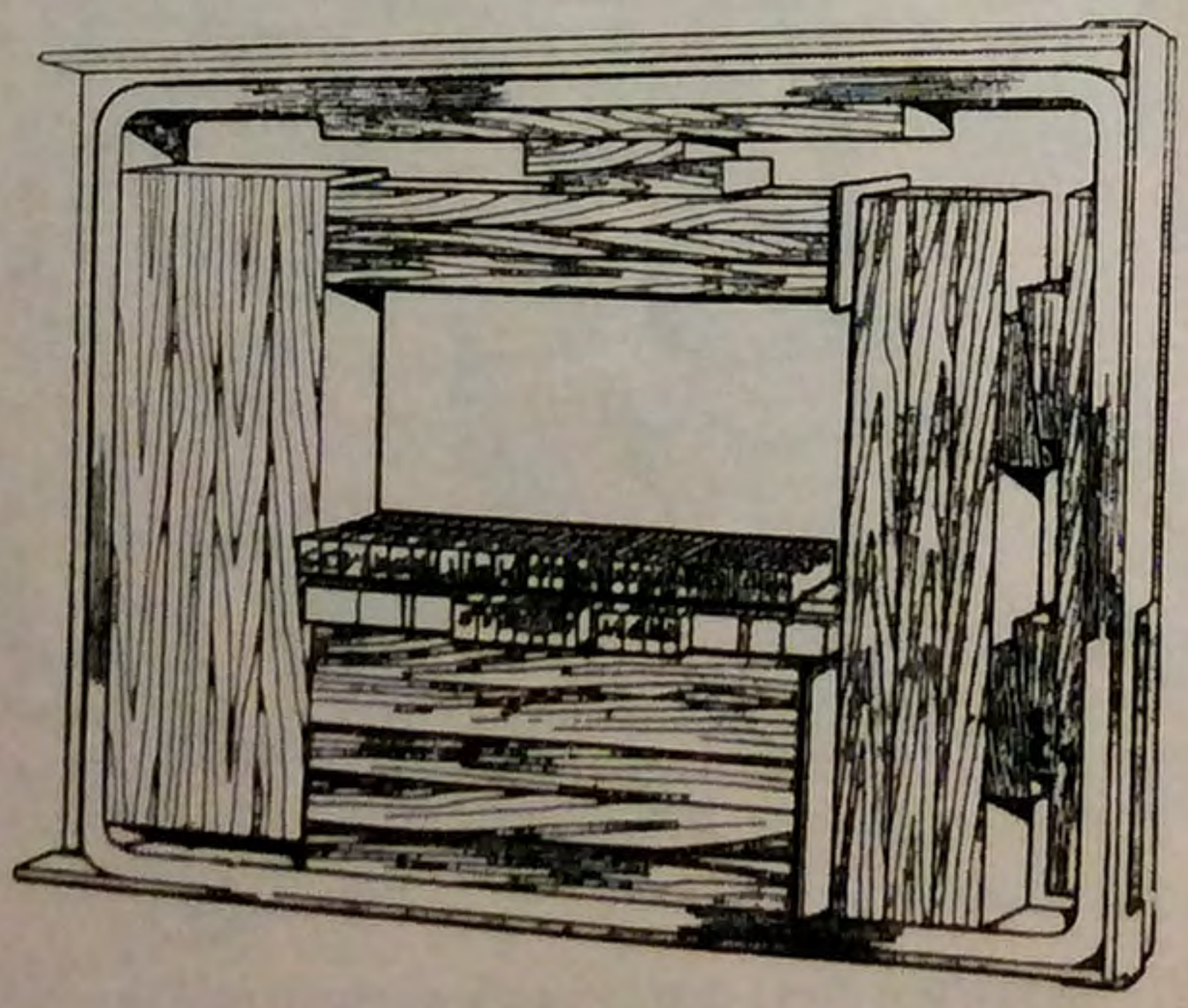

Fig. 21. Showing first line set, but not justified to the measure.

Fig. 21 shows a line set as fully as possible, but not justified to measure. The following illustration (Fig. 22) shows how the line is justified. Inset close-up shows how extra spaces are inserted between the words.

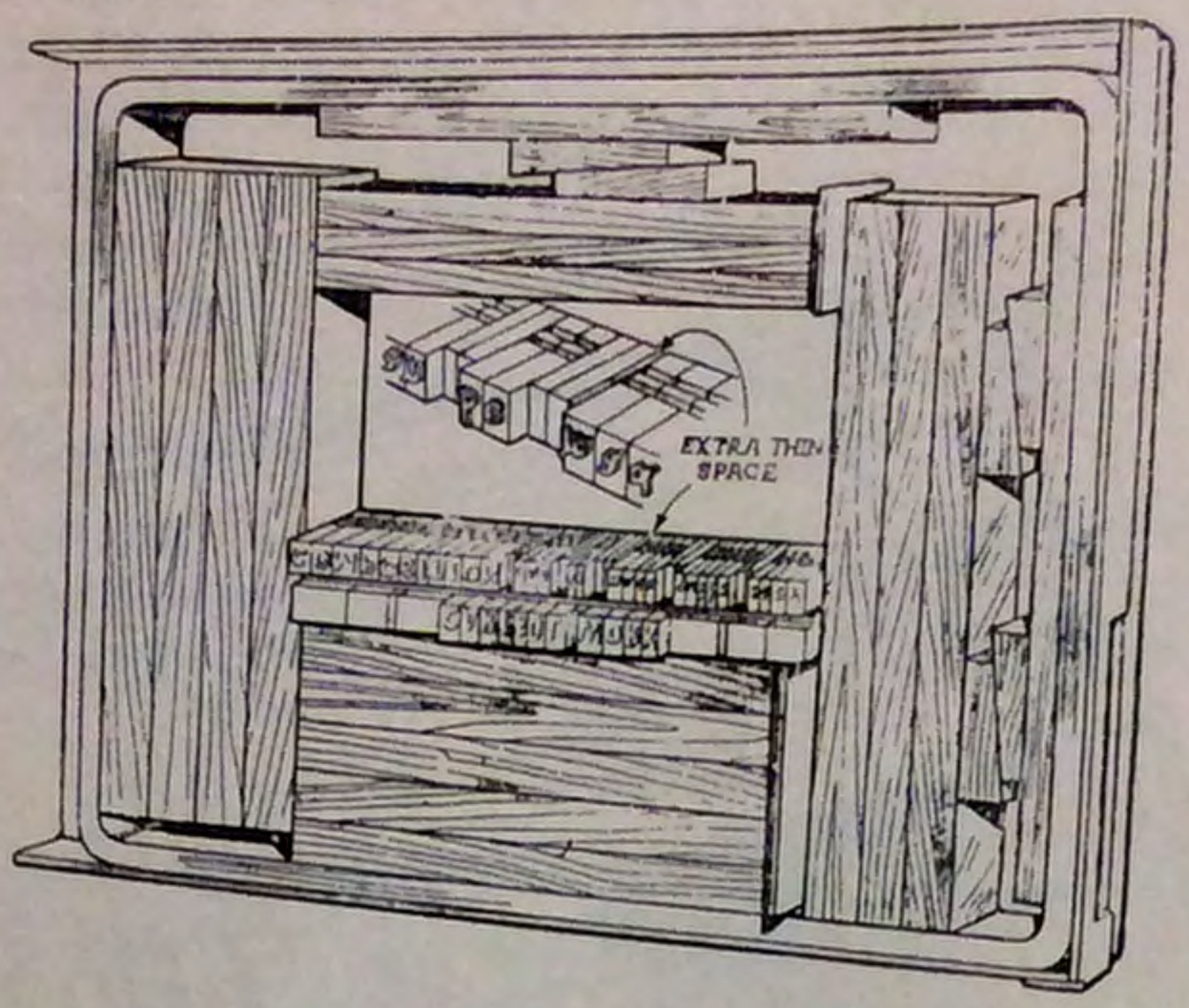

Fig. 22. Showing first line set and justified to full measure.

The next illustration (Fig. 23) shows the job well on the way to completion and in Fig. 24 we see it fully set, but not yet centred or spaced out.

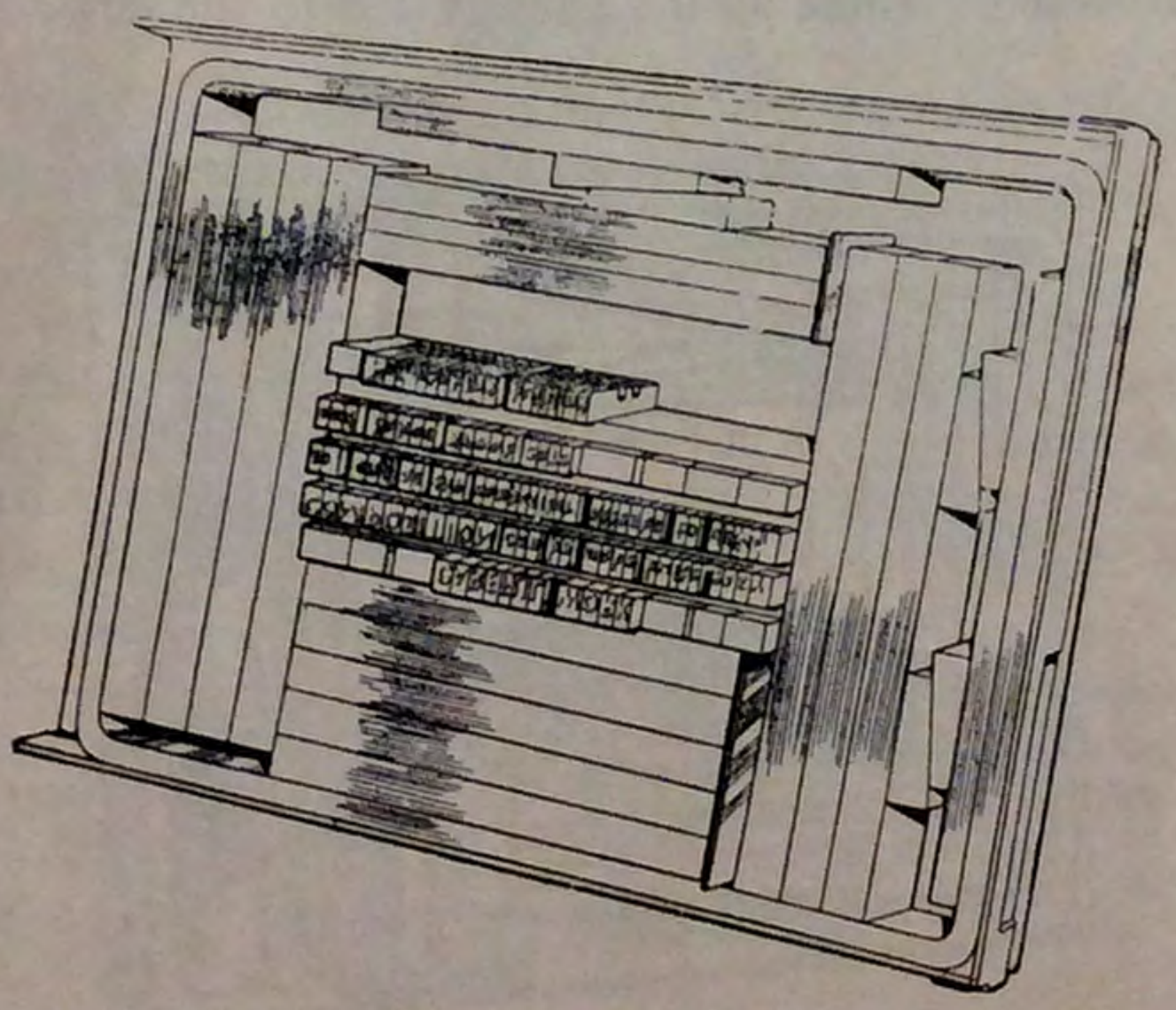

Fig. 23. Showing first paragraph completed and indented line of second paragraph started.

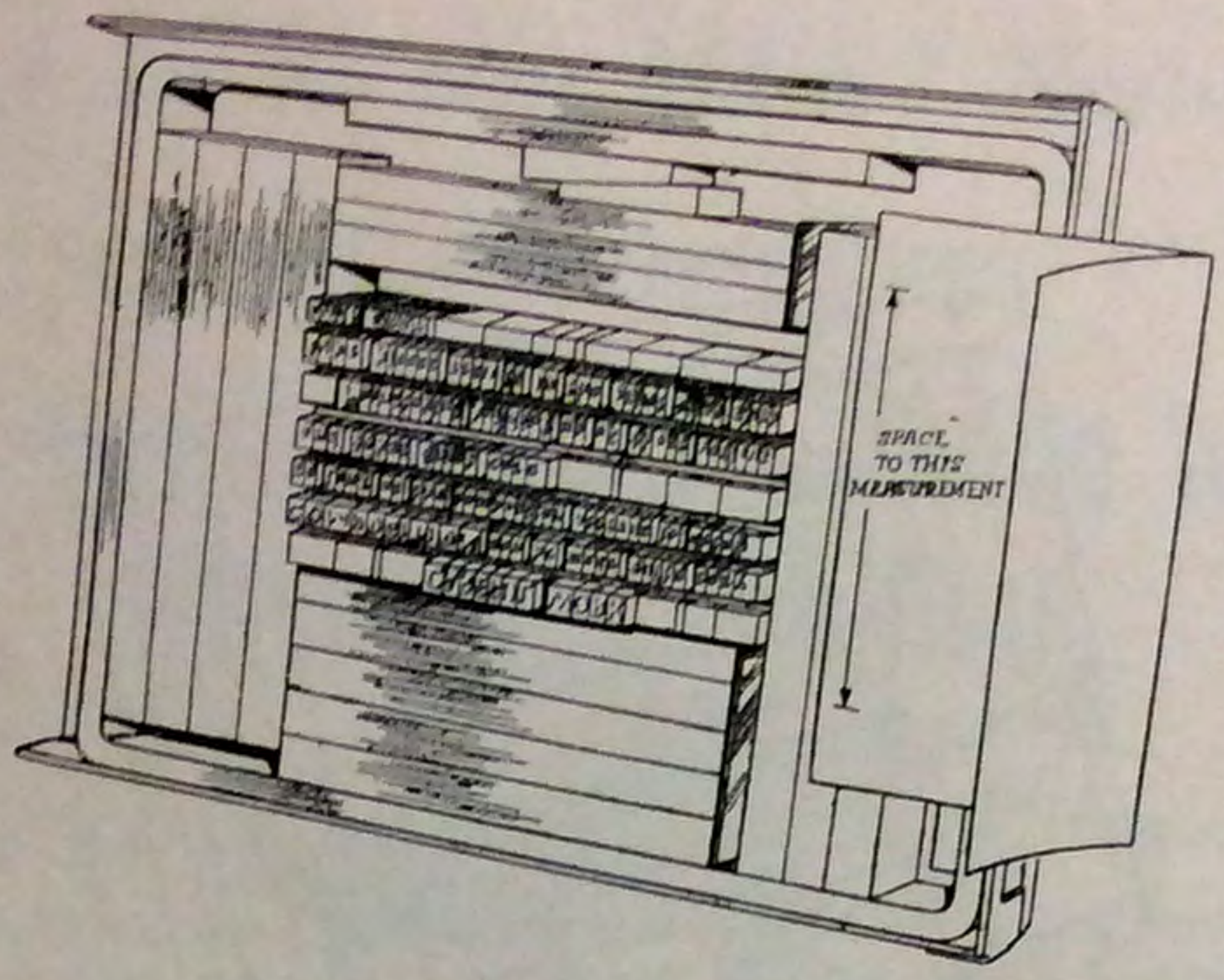

Fig. 24. Full copy set, but not central.

This and the following illustration (Fig. 25) shows how to calculate simply the quantity of spacing material required between the lines of type in order to fill the space it is desired to print. More details follow in the sections which describe the actual use of the machine.

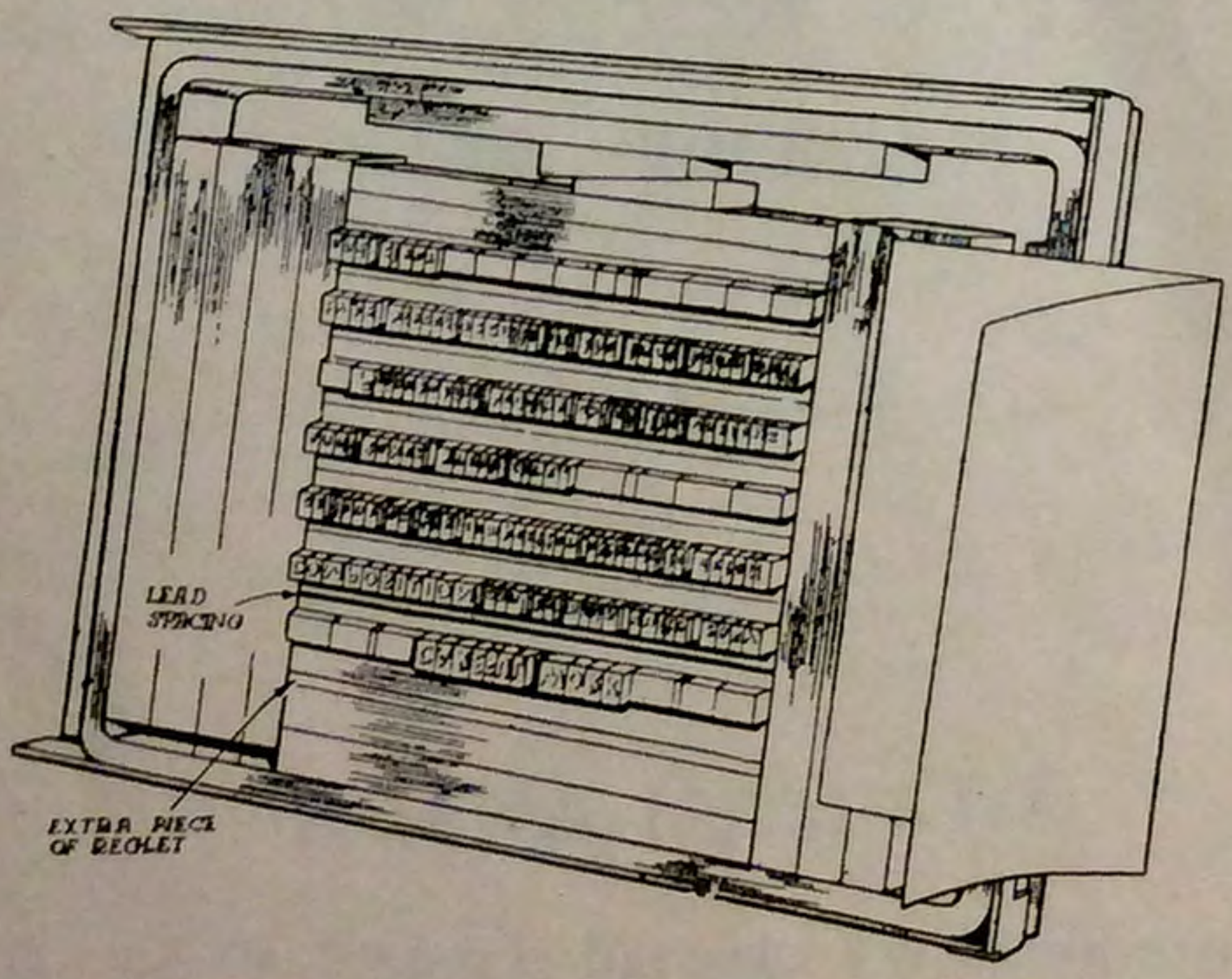

Fig. 25. Full copy spaced out evenly and suitable for size of paper.

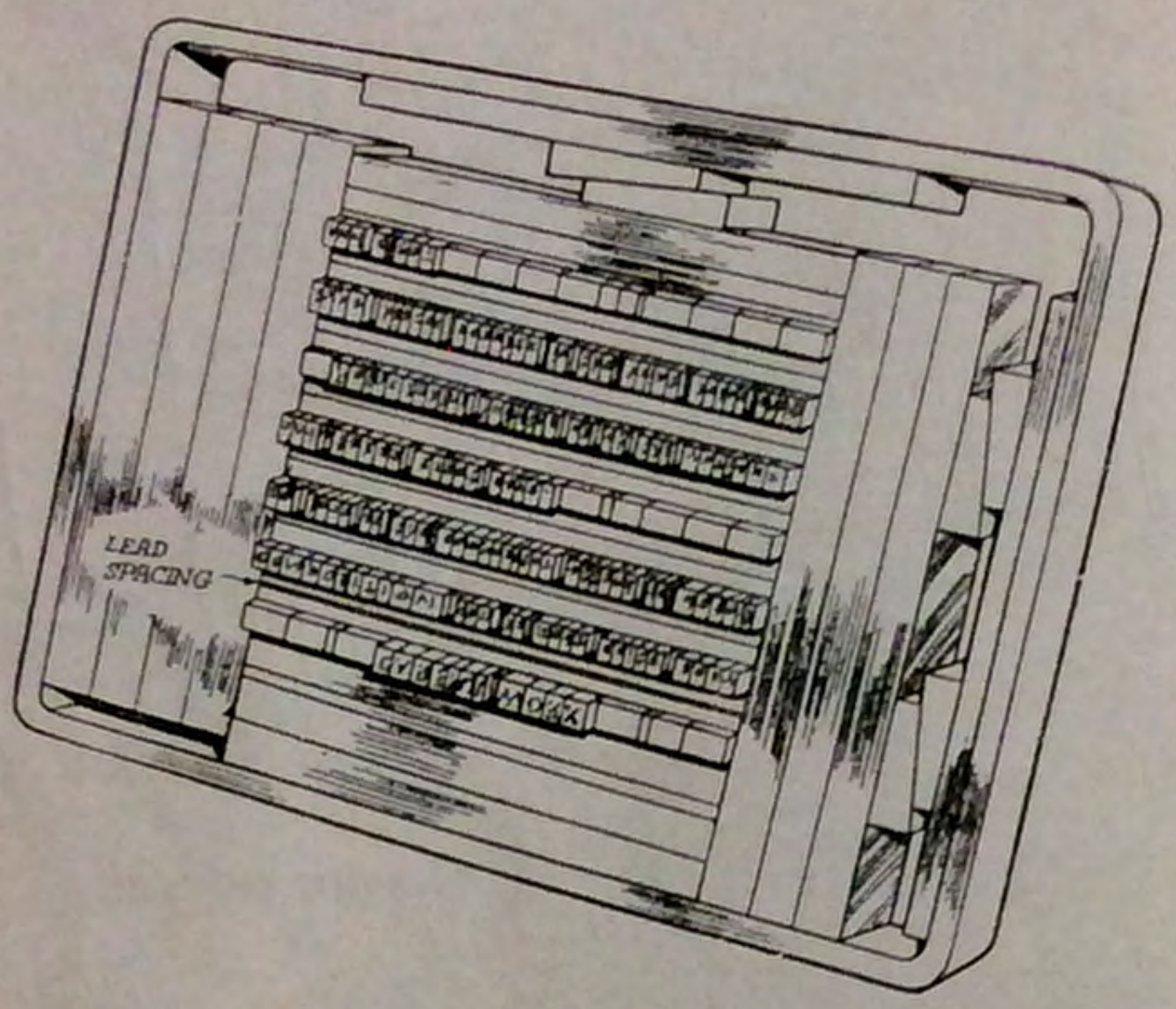

Fig. 26. Complete forme ready for machine.

Fig. 26 shows the copy spaced out and the job ready to put on the machine, once it has been planed.

Remember, when planing, that the forme should never be locked up tightly.

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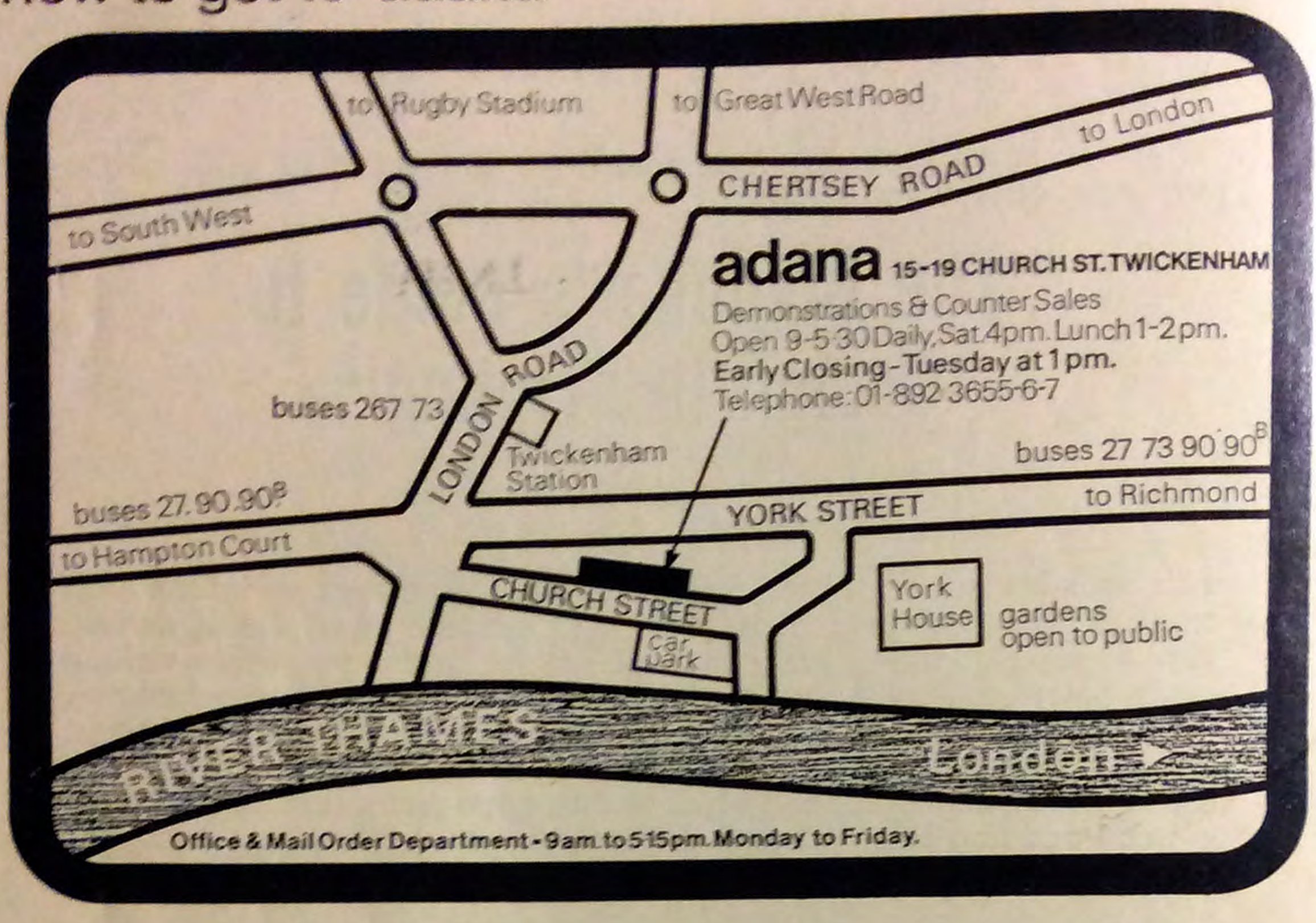

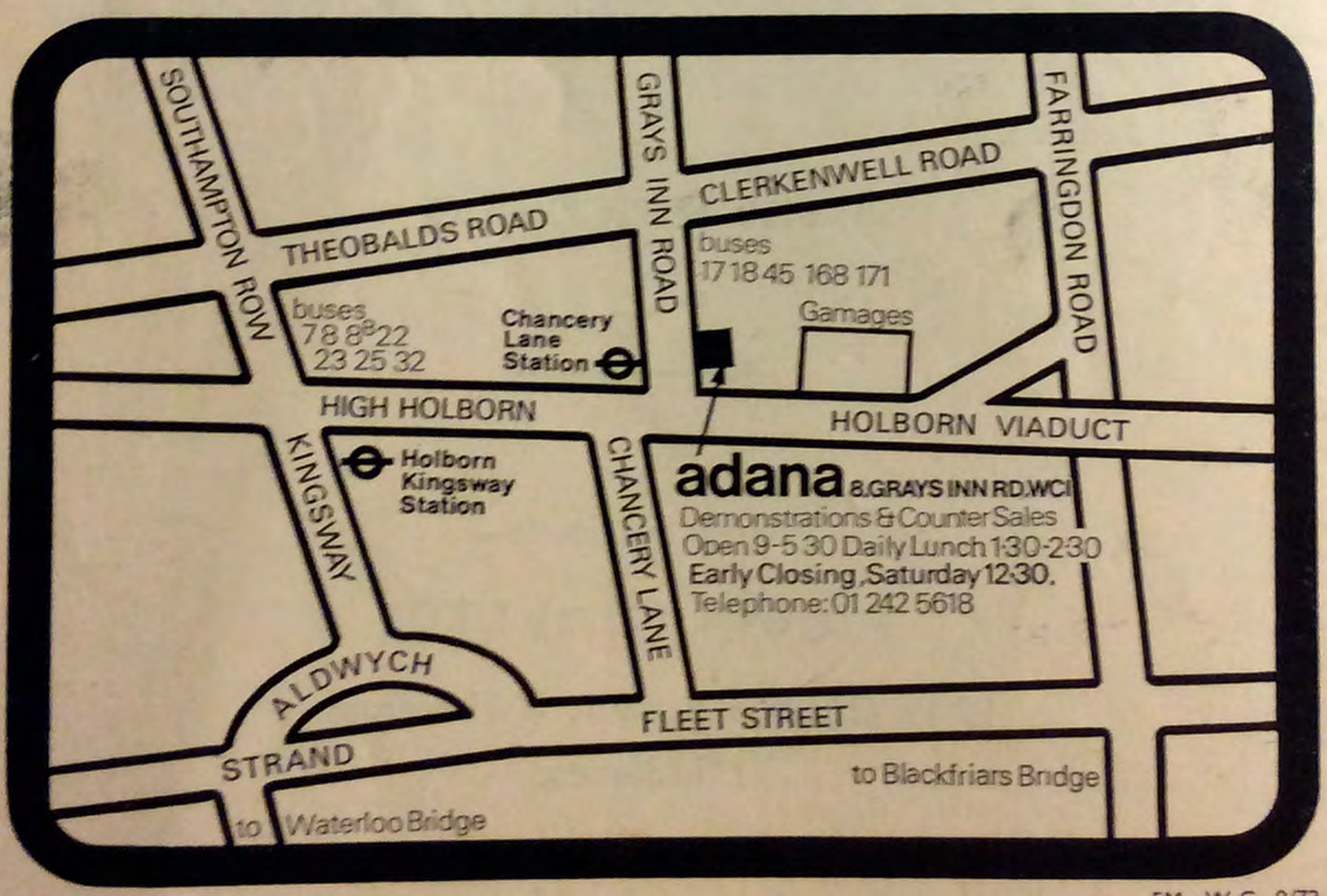

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